Med.

The Journal

OF THE

American Medical Association

A MEDICAL JOURNAL CONTAINING

The Official Record of the Proceedings of the Association, and the Papers Read at
the Annual Session, in the Several Sections, together with the

MEDICAL LITERATURE OF THE PERIOD

R
15
A48
v.55 pt.1
Cop 2

Edited for the Association under the Direction of the Board of Trustees by

GEORGE H. SIMMONS, M.D.

VOLUME LV : : : : : JULY — DECEMBER, 1910

109631
5

AMERICAN MEDICAL ASSOCIATION, CHICAGO, 1910

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION—1910-1911

GENERAL OFFICERS

President—William H. Welch	Baltimore.
President Elect—John B. Murphy	Chicago.
First Vice President—Edward E. Montgomery	Philadelphia.
Second Vice-President—Robert C. Coffey	Portland, Ore.
Third Vice-President—William G. Moore	St. Louis.
Fourth Vice President—Henry L. E. Johnson	Washington, D. C.
Secretary—George H. Simmons	Chicago.
Treasurer—Frank Billings	Chicago.

BOARD OF TRUSTEES

Wisner R. Townsend, Secretary	New York City, 1911.
Philip Mills Jones	San Francisco, 1911.
Wilbur T. Sarles	Sparta, Wis., 1911.
Malcolm L. Harris, Chairman	Chicago, 1912.
Charles A. Daugherty	South Bend, Ind., 1912.
William T. Councilman	Boston, 1913.
William W. Grant, Vice-Chairman	Denver, 1913.
Frank J. Lutz	St. Louis, 1913.
Chas. E. Cantrell	Greenville, Tex., 1913.

JUDICIAL COUNCIL

John H. J. Upham, Chairman	Columbus, O.
Lawrence M. Shaw	Osceola, Neb.
Louis A. Hahn	Guthrie, Okla.
Charles S. Huffman	Columbus, Kans.
George K. Angle	Silver City, N. Mex.

COUNCIL ON MEDICAL EDUCATION

John A. Witherspoon	Nashville, Tenn., 1911.
James W. Holland	Philadelphia, 1912.
Victor C. Vaughan	Ann Arbor, Mich. 1913.
Arthur D. Bevan, Chairman	Chicago, 1914.
George Dock	St. Louis, 1915
Nathan P. Colwell, Secretary	535 Dearborn Ave., Chicago.

COUNCIL ON PHARMACY AND CHEMISTRY

Otto Folin	Boston, 1911.
Torald Sollmann	Cleveland, 1911.
M. I. Wilbert	Washington, D. C., 1911.
Reid Hunt	Washington, D. C., 1912.
J. H. Long	Chicago, 1912.
Julius Stieglitz	Chicago, 1912.
Joseph A. Capps	Chicago, 1913.
David L. Edsall	Philadelphia, 1913.
Robert A. Hatcher	New York City, 1913.
Lyman F. Kebler	Washington, D. C., 1914.
John Howland	New York City, 1914.
Frederick G. Novy	Ann Arbor, Mich., 1915.
George H. Simmons, Chairman	Chicago, 1915.
Harvey W. Wiley	Washington, D. C., 1915.
Wm. A. Puckner, Secretary	535 Dearborn Ave., Chicago.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Henry B. Favill	Chicago, 1911
Walter B. Cannon	Boston, 1912.
Joseph N. McCormack	Bowling Green, Ky., 1913.
H. M. Bracken	Minneapolis, 1914
William C. Woodward	Washington, D. C., 1915.
Frederick R. Green, Secretary	535 Dearborn Ave., Chicago.

SECTION OFFICERS

PRACTICE OF MEDICINE—Chairman, Allen A. Jones, Buffalo; Vice-Chairman, Charles L. Greene, St. Paul; Secretary, Wilder Tileston, 405 Crown St., New Haven.

OBSTETRICS AND DISEASES OF WOMEN—Chairman, Horace G. Wetherill, Denver; Vice-Chairman, Fred J. Taussig, St. Louis; Secretary, C. Jeff Miller, 404 Hennen Bldg., New Orleans.

SURGERY—Chairman, George W. Crile, Cleveland, Ohio; Vice-Chairman, Emmet Rixford, San Francisco; Secretary, John T. Bottomley, 164 Beacon St., Boston.

OPHTHALMOLOGY—Chairman, Albert E. Bulson, Jr., Ft. Wayne, Ind.; Vice-Chairman, Edward C. Ellett, Memphis, Tenn.; Secretary, Edgar S. Thomson, 13 E. 44th St., New York.

LARYNGOLOGY AND OTOLOGY—Chairman, Dunbar Roy, Atlanta, Ga.; Vice-Chairman, W. E. Sauer, St. Louis; Secretary, George E. Shambaugh, 100 State St., Chicago.

NERVOUS AND MENTAL DISEASES—Chairman, W. A. Jones, Minneapolis; Vice-Chairman, Herman H. Hoppe, Cincinnati; Secretary, E. E. Southard, 27 Trowbridge St., Cambridge, Mass.

PREVENTIVE MEDICINE AND PUBLIC HEALTH—Chairman, W. A. Evans, Chicago; Vice-Chairman, Marshall Langton Price, Baltimore; Secretary, C. Hampson Jones, 2529 St. Paul St., Baltimore.

STOMATOLOGY—Chairman, S. L. McCurdy, Pittsburg, Pa.; Vice-Chairman, Virgil Loeb, St. Louis; Secretary, Eugene S. Talbot, 103 State St., Chicago.

DISEASES OF CHILDREN—Chairman, S. M. Hamill, Philadelphia; Vice-Chairman, Thomas D. Parke, Birmingham, Ala.; Secretary, L. T. Royster, Norfolk, Va.

DERMATOLOGY—Chairman, Charles J. White, Boston; Vice-Chairman, Martin F. Engman, St. Louis; Secretary, H. R. Varney, 601 Washington Arcade, Detroit.

PHARMACOLOGY AND THERAPEUTICS—Chairman, Lawrence Litchfield, Pittsburg, Pa.; Vice-Chairman, George B. Wallace, New York; Secretary, M. I. Wilbert, 25th and E. Sts., N. W., Washington, D. C.

PATHOLOGY AND PHYSIOLOGY—Chairman, Yandell Henderson, New Haven, Conn.; Secretary, Leo Loeb, St. Louis Skin and Cancer Hospital, St. Louis.

GENITO-URINARY DISEASES—Chairman, W. T. Belfield, Chicago; Vice-Chairman, James Pedersen, New York; Secretary, Hugh H. Young, Professional Bldg., Baltimore.

"*The American Medical Association, though formally accepting and publishing the reports of the various Standing Committees and Sections, holds itself wholly irresponsible for the opinions or criticisms therein contained, except when otherwise decided by special resolution.*"—TRANSACTIONS, 1851

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 1 Chicago, Illinois July 2, 1910

DERMATOLOGY AS A SPECIALTY, AND ITS RELATION TO INTERNAL MEDICINE*

GROVER W. WENDE, M.D.
BUFFALO

It seems appropriate that my address, as chairman of the Section on Dermatology of the American Medical Association, should be devoted not so much to the refinements of a specialty as to the general and fundamental relations of this specialty to medicine as a whole.

One by one the individual branches of medicine have been cut off the main trunk and cultivated exclusively by specialists. This process of the division of labor was inevitable and indispensable for advance through concentration of effort. But, as in all restricted effort, the very concentration tended to narrowness of observation and loss of perspective that impaired the broadest utilization of the observations made, both for the specialist and for the generalist. The specialist became too much a specialist and lost a capacity for the correlation of the minutiæ of his observations into generalizations. The generalist—and I mean by the generalist the scientific internist as well as the general practitioner—on the other hand, was separated more and more in his understanding and interest by the complexity of the specialty. He not only could not follow the complications and intricacies of the specialties but he had little interest in them, in so far as they remained separated by failure to correlate them with their general causes.

These considerations apply with exceptional force to the specialty of dermatology, which alone concerns us at present. Dermatology has become so complicated with fine distinctions of terminology and classification that its underlying principles and fundamental relations have been much obscured by the haze of details that has enveloped it.

Is it not proper, therefore, that we as dermatologists should make some effort to bridge the ever-widening separation between our specialty and the field of internal medicine? Should we not attempt to interest ourselves more in the newer generalizations of medicine and to bring the internists into closer touch with ourselves and our work? I believe that this is becoming essential to progress. The period of infancy in our specialty is passing. This period has been devoted to the collection of simple observations and facts. This collection cannot be claimed to be completed and must be still further extended. But already the unrelated facts observed and brought together in the domain of dermatology are becoming cumbersome and an impediment to progress. Correlation of these facts must be attempted if confusion is to be avoided. General causes must be sought and discovered. We as specialists alone cannot undertake this difficult task. We must unite with the internists and together work in the clinic and the laboratory in the investigation of broad relations and causes.

With the exception of parasitic and local inflammatory affections of the skin and with the further possible exception of certain skin affections of wholly unknown nature, it may be said that skin diseases are for the most part simply the superficial local manifestations or complications of general or special morbid states involving the tissues of the body either generally or specially in certain organs or groups of organs. In short, most skin diseases are nothing but symptoms or complications of constitutional or special morbid states. This statement may appear at first sight too sweeping a generalization and perhaps somewhat of a prophecy, but of its essential truth I have been convinced the more I have given consideration to it.

If I am correct in this view, then my plea for more systematic cooperation between the dermatologist and the generalist is clearly supported. Not only is this cooperation of study demanded for the highest ends of scientific medicine but also for the many incidental advantages to all concerned in it. What needless distress and even disaster ensue to the patient by reason of the ignorance of the general practitioner as to the interpretation of many skin lesions. We as dermatologists are constantly reminded of this fact. Can we claim that the reverse is not also true? How do we know that it is not? With all our little distinctions and refinements of classification of skin lesions do we know much of the internal relations and final causes of these lesions? Do we know that a skilled internist may not discover related manifestations in other parts of the body and suggest therapeutic measures of value equal to or even greater than our own? It is true that, thus far, the internist has added little or nothing to such correlation, because he has failed to realize its value.

But far more important is the determination of new facts, new relations, new conceptions, the simplification of complexity. All these will come in time. We can hasten their coming by stimulating the interest of our fellow internists and working with them.

As dermatologists we should not be summoned to the hospital clinics occasionally and separately to inspect or diagnose an unusual skin affection; we should consult with the internist, give and take, and together learn. Cooperation of study between ourselves and all the departments of scientific research in our hospitals and laboratories should be instituted and systematically prosecuted. How else can dermatology be correlated with scientific medicine?

It is surprising to note the crude notions still prevalent among the laity and even physicians regarding skin affections. How much harm and needless suffering result from these false views! How many innocent persons are cruelly subjected to unjust suspicions of moral guilt, due to ignorance of the real nature of their skin affections! How frequently do we still encounter such old superstitions as the effect of "catching cold" and of psychic influences in producing all manner of skin diseases!

---

* Chairman's address before the Section on Dermatology of the American Medical Association at its Sixty-first Annual Session, held in St. Louis, June, 1910.

The idea that skin lesions are manifestations of "impurities of the blood" and require "medicine for the blood" is too deep-rooted in the ignorance and prejudice derived from past teaching to be readily overcome. A natural variation of this view is seen in the notion very commonly held that some skin diseases should not be treated locally, lest they be "driven in." Other variations of the blood diathesis theory still widely held are the views that many skin affections are due to a scorbutic taint or to scrofula.

These are specimens of the theories formerly held by the medical profession and still deeply ingrained in the prejudices of the laity and in the ignorance of many practitioners. Other crude notions of a blood diathesis still persist within the profession, modified, however, to conform with newer conceptions of pathology but still running in the same old grooves. Thus the uric acid diathesis theory of skin affections is nothing but a modern setting of the older views. So long as nothing much was known about uric acid this theory satisfied and was dignified by a certain pseudoscientific assumption of exactness. This idea was handed on to the laity and is to-day one of the chief errors that we have to combat. With the passing of uric acid as a cause of every conceivable ill to which flesh and skin are heir, we shall presently, probably have other variations of the old dogma to contend with. That there may be an element of truth underlying these crude notions we may readily believe, for metabolism lies at the foundation of all vital processes and errors of metabolism may be presumed to account for many of the variations from normal in the different tissues and functions of the body. But in making this admission let us not again be led into the same old error of assuming to know the exact nature of such metabolic errors and of assigning to mere hypotheses the dignity of authority. This has been the trouble in the past and warns us of danger in the future. Let us keep in check our enthusiasm for new notions until we can see clearly. Let us contribute our part to the active research now being vigorously pursued in the study of faulty metabolism, but beware of crude generalizations based on incomplete data. Thus only shall we avoid falling victims to the temptation of easy conclusions based on shallow thinking.

But while striving for ideals in the scientific correlation of dermatology with internal medicine, the utilization of the practical knowledge already possessed should not be neglected. How much of practical importance can be contributed to-day by trained dermatologists to general practitioners? How slight is the understanding by most practitioners of the many lesions of the skin which they see! How often do these lesions give important clews to internal affections? The general practitioner must be far better trained in dermatology in order to comprehend and justly to estimate the relations of dermatology to general medicine. A much closer professional relation should exist between the dermatologist and the general practitioner for the good of both and of the patient.

In the short space of this address I cannot consider at length many of the numerous points of practical contact between dermatology and internal medicine, but I may refer briefly to some of them, chiefly for the sake of illustrating the shortcomings in practice resulting from a failure of intimate cooperation between dermatologists and generalists.

DISEASES ESPECIALLY CALLING FOR COOPERATION BETWEEN DERMATOLOGISTS AND INTERNISTS

Exudative Erythemas.—We have been accustomed to regard as belonging to the specialty of dermatology the several varieties of exudative skin lesions of the erythema group. Only within recent years has this whole complex group been correlated with important manifestations in the internal organs. An appreciation of this correlation is as essential to the dermatologist as to the internist and surgeon. Would it not be folly to treat the skin lesion and to overlook an acute nephritis, bronchitis, pericarditis, arthritis or abdominal complication? Are we, as dermatologists, accustomed to refer such cases for general examination? On the other hand, how rarely do the internist and the surgeon take account of the clew to diagnosis afforded by these lesions in cases presenting acute abdominal symptoms! Twice in a single week I have seen hospital patients barely saved from an unnecessary laparotomy by the timely intervention of physicians who fortunately did possess enough of broad training to embrace a knowledge of the correlation of such skin manifestations with acute abdominal symptoms and to advise against operation. Many instances of laparotomies actually performed for supposed appendicitis, intussusception, twists of the intestines, tumors and other abdominal conditions have been reported—and doubtless many more have not been reported—which could have been avoided by a knowledge of the correlation of such abdominal symptoms with exudative skin lesions of the erythema group. How long will this kind of one-sided specialism continue to the detriment of scientific practice?

Syphilis.—Of all diseases demanding the attention of dermatologists, specialists and generalists, syphilis is one of the most important, involving in its consequences not merely the health and life of individuals but the happiness of families and the welfare of society. This disease, which affects every tissue of the body and remains transmissible for years and perhaps through generations, first manifests itself by lesions in the skin and mucous membranes, for which the dermatologist is often first consulted. Later, the general practitioner is required to treat the disease for the involvement of internal organs, the neurologist for the late consequences on the nervous system, the surgeon for destructive changes in the bones and joints, and the other specialists in turn for the involvement of various organs. How important it is that this disease be understood in its broadest relations, its various manifestations mastered by all practitioners of whatever limitation in their field of work, and its proper treatment thoroughly comprehended! How far are we from this accomplishment! Dermatologists, by their unusual opportunities for observation of the skin manifestations of this disease, have acquired a skill in its diagnosis that is equalled by no other practitioner. Yet how frequently is our cooperation sought by our colleagues in their doubtful cases? In no other common disease is the penalty exacted for incorrect diagnosis and faulty treatment so severe.

Better education regarding the prevalence, manifestations, diagnosis and treatment of this disease is imperatively demanded. The general ignorance of the medical profession regarding syphilis is deplorable and a reproach that we should feel. A systematic campaign of education in syphilis might well be undertaken by the official organ of our association. To this end I would recommend that our Section take appropriate action.

Leprosy.—This is a disease fortunately rare in this country and for this very reason one that is usually mistaken for other affections, notably for syphilis. Most of its manifestations, however, are found in the skin or external portions of the body, rendering its diagnosis easy for those skilled in lesions of the skin. The training of the dermatologist especially equips him for the differentiation of this disease from those conditions with which it might readily be confused.

Pellagra.—This disease, which is now attracting so much attention and which has until recently been entirely overlooked in this country, would be readily recognized by any competent dermatologist by reason of the characteristic pigmentation of the skin.

Diabetes.—To a dermatologist such symptoms as slight, recurring inflammation of the prepuce, itching of the skin, ulceration at the base of a nail and furunculosis would at least arouse a suspicion of diabetes; the occurrence of certain skin lesions, xanthoma diabeticorum, would be almost pathognomonic. In diabetes early diagnosis and treatment are certainly important.

Punctate Telangiectases.—These little lesions, while often of no moment, are not infrequently observed in connection with cardiac and hepatic disease and should never be passed over as of no significance without examination of the internal organs.

Eczema and Psoriasis.—While these common affections cannot usually be definitely associated with internal disturbances, not infrequently they can be, and their occurrence should always suggest a careful general examination. Their correct treatment very frequently demands the treatment of the underlying or associated conditions.

Parasitic Skin Diseases.—These wide-spread and annoying diseases of the skin are usually treated by the general practitioner, who has very frequently failed to do his full duty toward them, by reason of incorrect diagnosis, careless methods of treatment and still more careless methods of enforcing personal and public hygiene and quarantine. Errors in any of these points may lead to epidemics that could have been prevented by the institution of proper measures at the outset. These diseases should be among those required by law to be reported and controlled by the public health authorities through the enforcement of suitable quarantine.

Eruptive Fevers.—No class of diseases is of such importance for the public welfare as these. Once started they become epidemic and a veritable scourge to the community. Their correct and early diagnosis is, therefore, vital to the protection of the public health. While the diagnosis is often well made by the general practitioner, how frequently is this not the case? Lack of sufficient instruction on these diseases in the medical schools leaves the young graduate poorly equipped to diagnose them. How many medical students ever saw a case of smallpox? What wonder is it, therefore, that in actual practice smallpox is rarely diagnosed until it has already become epidemic and disseminated far and wide?

Both smallpox and scarlet fever are diseases that very frequently appear in individual cases in abortive or anomalous forms, calculated to deceive all but the elect. The general practitioner must be on guard against making fatal errors of diagnosis in such cases and would receive a genuine service from the counsel of an experienced dermatologist when in doubt in his diagnosis.

Drug Eruptions.—The recognition of drug eruptions is important both for their own sake and especially for their correct differentiation from more serious conditions with which they are likely to be confused. Imperfect knowledge regarding these common conditions has often led to the gravest diagnostic and therapeutic errors. For example, the coal-tar preparations so widely used often produce eruptions of most varied form and extent in the skin and mucous membranes. Such eruptions have frequently been mistaken for syphilis, lichen [illegible], pemphigus, scarlet fever, measles, etc., and in consequence the patient has been subjected to the most unnecessary treatment and restrictions. The correct diagnosis in many such instances has been suggested only by the subsequent repeated occurrence of similar outbreaks of the skin whenever the particular drug has been taken. Every physician should be familiar with the possible cutaneous effects of the drugs which he prescribes, and this knowledge can be acquired only by a large experience and exact observation. These eruptions are as a rule well known to dermatologists and should offer little difficulty of diagnosis.

The relationship of the functions of the skin to those of internal organs are beginning to be fairly well comprehended, although many of the most important bearings are still poorly understood. The connection of cutaneous diseases with inflammation of the mucous membranes in some cases is of unusual interest. It is not uncommon for a patient to seek out a physician, bringing the information, during an acute attack of his eczema, that an asthma from which he has suffered shows amelioration, and *vice versa.*

There is another class of cases of skin involvement in which the underlying causes are vasomotor in origin, without recognizable heart lesions, although, in certain instances, the symptom of tachycardia may be present. These circulatory disturbances may be accompanied by a great variety of skin manifestations whose relations to them are as yet but poorly understood.

This list could be extended almost indefinitely, but my purpose will have been effected if the few illustrative conditions cited shall have helped a little to indicate some of the points of contact between dermatology and general medicine and to encourage a closer cooperation of study and effort among all. Our fields of work must remain more or less differentiated, yet should be united more and more by bonds of allegiance and common purpose in the pursuit of ideals in the science and art of medicine.

In the furtherance of these ideals more intimate relations should be cultivated among the special Sections in the meetings of the American Medical Association, so that each Section may have a greater educative influence on the whole body. With this end in view the program of our Section ought to be arranged to include subjects of general interest, that will instruct all. It is hoped that the slight attempt in that direction this year may be an inspiration for greater future endeavor.

It is gratifying to me to be the first to welcome this Section under its new designation of the Section on Dermatology. I am sensible of the great honor you have conferred in choosing me as your chairman, and desire to express to you my grateful thanks and to assure you of my liveliest appreciation. I also wish to acknowledge my indebtedness to our Secretary for his proverbial zeal and energy in connection with the interests of the Section.

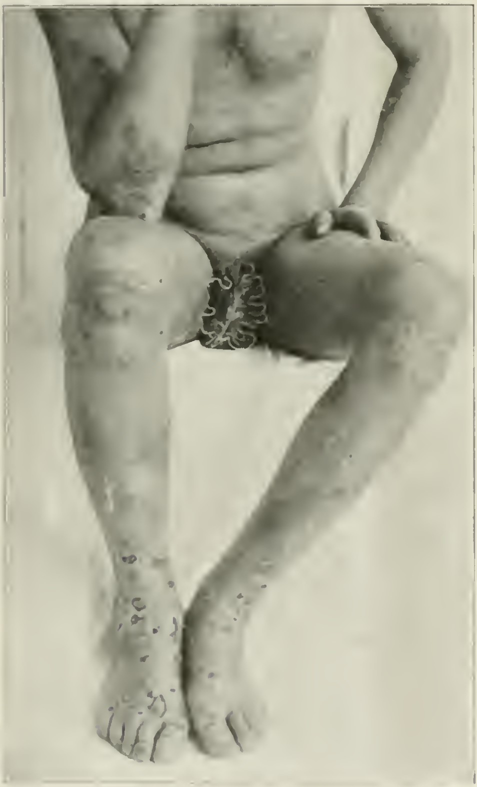
47[illegible] Delaware Avenue.

PEMPHIGUS FOLIACEUS

WITH REPORT OF A CASE*

ALFRED SCHALEK, M.D.
Professor of Dermatology, University of Nebraska
OMAHA

Pemphigus is a skin disease characterized by the eruption of blebs. These are, however, not characteristic in themselves but only in connection with other important features. The whole subject is not sufficiently cleared up yet and there is no unanimity as to what to include and what to exclude. Dermatitis herpetiformis is still considered pemphigus in Germany. Various skin diseases are denominated pemphigus, such as pemphigus neonatorum, which most probably is a bullous form of impetigo contagiosa, pemphigus syphiliticus, a manifestation of syphilis, pemphigus neuroticus and hystericus, symptoms of functional and organic nerve disorders. A strict avoidance of these names would clear the ground rapidly. Blebs are seen in bullous dermatitis, bullous erythema and bullous urticaria, but nobody thinks of including these in pemphigus. Whether there is an acute pemphigus is a matter of controversy and denied by many.



Pemphigus foliaceus

What then does constitute real pemphigus? In the first place the characteristic feature is the bleb, which must be elementary, that is must begin as such and not be due to secondary changes of other skin lesions. It must be the essential and not an incidental or unusual feature of the disease. It must not be a local condition, but the manifestation of a grave internal disorder. Its course is chronic, with exacerbations and remissions, leading to a deep systemic depression and frequently to death. With such restrictions it may easily be seen that many cases of pemphigus reported must be excluded from consideration under this head and that pemphigus as an idiopathic disease (called so in the absence of a better knowledge of its nature) is a rare disease.

Of the etiology of pemphigus nothing is known. Against a microbic theory speaks the fact that the contents of fresh bullæ are sterile; that there is no clinical evidence of its contagiousness; that not more than one case in one family has been reported. A toxic process was considered from the analogy of the action of certain poisons and drugs which, when introduced into the system, were followed by the eruption of blebs. The occasional increased percentage of eosinophils was used for this argument. Many attribute pemphigus to a neuropathic cause, arguing that some functional and organic nerve disturbances manifest themselves by the appearance of blebs. Numerous examinations of peripheral and central nerve tissues in autopsies have shown no pathological changes in them. Age, sex, race and climate have no predisposing influence. Riecke says very tersely, that our total ignorance of the etiology of pemphigus serves as a valuable diagnostic point in its differentiation from other bullous diseases.

Of the three varieties, pemphigus vulgaris, foliaceus and vegetans, the last two are the rarest. Pemphigus foliaceus, of which I wish to report a case, is clinically so different from pemphigus vulgaris that it might be considered a separate disease, were it not for the fact that they sometimes lapse into each other. Pemphigus foliaceus occurs only once in 5,000 skin diseases and Croker has only seen six cases in a life-time of extensive dermatologic practice. Pemphigus foliaceus is a chronic disease which breaks out in successive crops, until it finally involves the whole surface. The cutaneous lesions are flaccid bullæ containing only sufficient fluid to bag their dependent parts. The contents are cloudy almost from the first and soon become purulent. The blebs rupture quickly and the epidermis exfoliates in shreds leaving the corium denuded and moist. The raw patches are covered with a foul-smelling sero-pus and have no tendency to dry up and to be covered with a healthy epidermis. The exudation undermines the neighboring skin, giving it a shriveled appearance and looks, as Cazenave says, like a flaky pie-crust. When the disease is fully developed, the body is covered with raw areas of various size, shreds of epidermis and loosened skin.

The mucous membranes may take part in the process, a complication considered especially unfavorable. The general health may not suffer at first, but the patient becomes ultimately cachectic or dies from an intercurrent disease. The end is almost always fatal, though sometimes not until after a few years.

The pathology of pemphigus has been thoroughly studied. The location of the bleb may be intraepithelial or between the epidermis and the corium. The epithelial cells are edematous and swollen. The interspinous spaces are occluded. The corium is the seat of a mild, probably secondary, inflammation. The papillary blood-vessels are dilated and surrounded by small mononuclear leucocytes. An excess of eosinophils is found occasionally in the blood and the serum and was for a time considered distinctive, but no special significance can be attributed to it. In autopsies of bodies of persons dead from pemphigus, only coincidental changes were found, but nothing directly pertaining to the disease.

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

REPORT OF CASE

On March 15, this year, I first saw F. A. S., a farmer, 36 years old. Father died at the age of 60 of pneumonia, mother at 59 of typhoid. Seven brothers and one sister are living and in good health. There is no knowledge of a similar disease in the family. The patient has always been in good health outside of the usual children's diseases. His present trouble began in September, 1909, as small clear vesicles in the mouth, which increased in size and spread to the throat. Two weeks later they appeared in different places over the entire body. At first they remained unbroken and dried up, leaving behind considerable pigmentation which can still be seen. The disease was at that time probably pemphigus vulgaris. Lately the character of the bullæ has changed; they do not last long enough to become filled and tense, are only partially filled and flaccid and rupture rapidly. Large raw patches are produced in this way, partly covered with a sticky serum, partly with shreds of the exfoliated epidermis. The whole body is affected with the exception of the face, especially the lower third of the legs and the buttocks. Between the excoriated areas the skin shows plainly the separation of the horny layer from the subjacent layers by the above-mentioned shriveled finely wrinkled appearance. An exceptional feature, which I find observed only by Weidenfeld[1] was also seen in this patient. A slight rubbing of the skin or a mild trauma, like the taking of a drop of blood from the ear-lobe, was invariably followed by a large bleb. This is probably not so much due to an unstable condition of the vasomotor system of the skin, as in epidermolysis bullosa, as rather to the unstable adhesion of the individual layers of the epidermis. The mucous membranes were affected from the first. The tongue, gums, cheeks and the pharynx are involved presenting sharply outlined raw patches, partly bleeding, partly covered with a loosened grayish membrane. The eruption was at first accompanied by itching which has subsided lately and only general discomfort is complained of. Chewing and swallowing is at times extremely painful and almost impossible. The general health has not suffered much up to the present time, except for an occasional rise of the temperature and an anemic appearance. The patient has, however, lost 70 pounds in his weight since the beginning of his trouble. The urine is acid, specific gravity 1011; no albumin or sugar is present. Blood examination is as follows: Red cells, 1,232,000; white cells, 6,600; hemoglobin, 82 per cent. Differential count: Small mononuclears 40, 20 per cent.; large mononuclears, none; transitional forms 28, 14 per cent.; polymorphonuclears 128, 64 per cent.; eosinophils 4, 2 per cent. As can be seen from this, there is no considerable change from the normal except a decrease of hemoglobin. The percentage of eosinophils is not increased.

400 Bee Building.

ABSTRACT OF DISCUSSION

Dr. M. McMahon, Palmyra, Ill.: I have under observation a case of pemphigus, in an anemic woman, 55 years old, who has worked hard all her life and is broken down in health. The first lesions appeared about six months ago on the buccal mucous membrane, and finally covered the entire buccal mucous membrane, including the gums. After a time, the patient's condition improved to such an extent that she could take food, which she was unable to do at first. Early in March, the first external manifestations of the disease appeared on the face. Other regions of the body then became involved, many blebs forming and breaking down, leaving large areas of denuded skin. Then for a time the patient would improve, only to go through the entire process again with a fresh crop of lesions. Another physician saw the case with me, and confirmed the diagnosis. At the present time, the external manifestations of the disease have somewhat improved, but all the mucous membranes, including the throat, stomach and intestines are now undergoing the same process. The urine, which has been repeatedly examined, contains neither sugar nor albumin, but does contain a large amount of indican. The patient has had all sorts of treatment, arsenic, salicin and quinin being the principal internal remedies, although she had an idiosyncrasy against the latter drug. She appears to be improving at present, but on account of the condition of the mucous membranes, she cannot take a great amount of nourishment. This is the only case that I have seen in the section of Illinois in which I live. I recall a case in the City Hospital about twenty-eight years ago in which the patient was kept in a continuous bath for about six months and finally died.

Dr. H. H. Hazen, Washington, D. C.: I reported a case of pemphigus foliaceus in the *Journal of Cutaneous Diseases*, March, 1910. The patient was a man, 30 years old, who first came under my observation in 1907, and who was referred to me for study by Dr. Thomas C. Gilchrist of the Johns Hopkins Hospital. In going over the metabolism of this case, we found the ammonia output tremendously high. Normally, the ammonia is but 3.5 per cent. to 5 per cent. of the total urinary nitrogen, but in our case the ammonia constituted 15 per cent. of the total urinary nitrogen. This spoke in favor of intestinal infection. The patient was treated with autogenous vaccines in doses ranging from 10,000,000 to 100,000,000. After the first injection he became ill, with marked malaise and headache, pain in the back and limbs, redness and swelling at the site of the inoculation, and an outbreak of a fresh group of vesicles. The reaction was similar to the typical tuberculin reaction. As each injection caused more blisters and malaise, the treatment was stopped. In view of Crowe's work, large doses of hexamethylenamin were given, but without effect. The patient was placed in a continuous bath during the day; at night he slept in bed. After a few days it was noted that the scales had decreased in number, but there was a large number of fresh vesicles which were moist and flaccid. The patient's general condition, however, had improved. He did better under this treatment than any other.

I think that there is need of more thorough investigation of the entire group of pemphigoid eruptions along the lines of modern research. It is not sufficient merely to employ observation. Studies should be made on the following subjects (1) general metabolism; (2) toxicity of the perspiration; (3) bacteriologic examinations of the blood, bullæ, urine and feces; (4) agglutinating power of the blood.

Dr. E. S. Lain, Oklahoma City: Has any one experimented with the *x*-ray in these cases? I have had the opportunity of making such a test in two cases during the past twelve months, and under this treatment it has seemed to me that the exacerbations terminate much more rapidly than by any other method that I have tried. In my first case, the lesions ceased to form after the eleventh exposure to the rays. Since then the patient has not been directly under my care, but the lesions have been so few in number that her attending physician did not think it necessary to bring her to the hospital for further treatment. Of course, I do not regard the patient as cured.

In another case, which I saw a month later, the blebs ceased forming after eight exposures to the *x*-rays. Four weeks later there was a recurrence, but thus far the patient has failed to return to the hospital for further treatment. I have a photograph of this patient which I will show to-morrow at the photographic exhibit.

Dr. A. Schalek, Omaha, Neb.: Dr. Hazen's remark that cases of pemphigus foliaceus have not been studied in a sufficiently thorough manner is not quite justified. The disease is so rare and interesting, especially on account of its serious consequences, that any one who ever had a case generally took the time to study it. In spite of that fact, we do not know much more about the etiology of the disease than we did

---

[1] Cited by E. Spiegler: Mraczek's Handbuch der Hautkrankheiten, ii, 2.

I have watched my cases carefully, and I have had examinations and cultures made.

In my paper, I did not say much about the treatment of pemphigus foliaceus. So far as I know, there is no satisfactory treatment; the patients all die, some sooner, some later. I put my patients in a warm bath for several hours every day, and then have them wrapped in moistened sheets.

EXPERIENCES WITH THE DUODENAL CONTENTS*

MAX EINHORN, M.D.
Professor of Internal Medicine at the New York Post-Graduate Medical School
NEW YORK

The examinations of stomach contents, which were inaugurated forty years ago by Kussmaul and later by Ewald, Leube, Boas, Riegel and others, have now been generally introduced into the clinical investigation of digestive disturbances.

The rôle which the stomach and its secretion play in the digestive process has formerly been estimated a great deal higher than at present. At first it was determined that human beings could exist very comfortably without any gastric juice at all (as proved by the numerous cases of achylia gastrica); then it was proven by the surgeons (Schlatter) that the stomach could be excised *in toto* without fatal consequences.

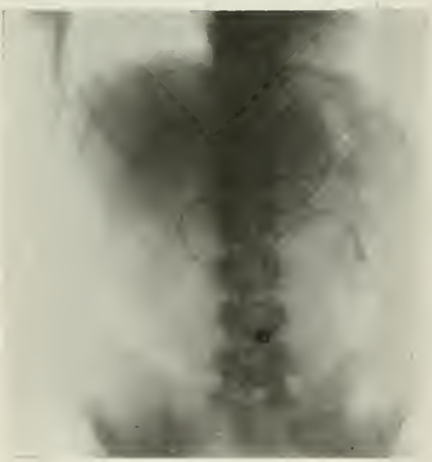


Fig. 1.—Patient T., with the duodenal pump in the small intestine previous to the ingestion of bismuth.

By physiologists as well as by clinicians the principal work of the stomach is now considered to be rather a preparatory process for the real digestion in the small intestine. The principal juices for the latter are contained in the duodenum. The potent pancreatic juice, the bile and the duodenal secretion are here poured out. The mixed juices have to fulfill two purposes, first, to make all nutritive materials ready for absorption and second to neutralize the strongly acid gastric contents; for the intestinal wall cannot, as a rule, stand free acids for any length of time.

It is, therefore, self-evident that any information as to the condition of the duodenal secretions would be of vast importance. Until recently this was considered hardly possible. Since I introduced the duodenal pump[1] however, the duodenal contents can readily be obtained, and I have therefore, made some investigations on its properties in a number of cases.

The method consisted generally in having patient drink in the fasting condition tea with sugar, without milk and then about half to three-quarters of an hour later introducing the duodenal pump, the patient meanwhile drinking a half tumblerful of water. Later, after one-half to one hour, the patient drinks a glassful of seltzer or hot water or tea and the examination then takes place. Whereas formerly I obtained the duodenal contents through continuous aspiration I now proceed differently, making suction first by means of a syringe and as soon as the contents are obtained removing the piston of the syringe and keeping the barrel of the syringe low. The fluid is thus siphoned out in a slow stream.

I have laid down the results of these examinations in the accompanying table.

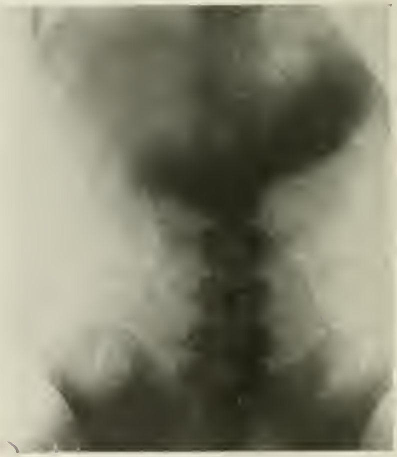


Fig. 2.—Patient T., with the duodenal pump in the small intestine, after the ingestion of bismuth. The contours of the stomach are visible. The tube of the duodenal pump is seen outside of the stomach in the duodenum and small intestine.

COMMENT ON TABLE

If we analyze all the cases of the table we first meet six cases of nervous dyspepsia (1-6) in which trypsin was absent once in the duodenal juice.

In case 8 (chronic gastritis and nervous vomiting) the duodenal contents were thick and turbid, which might point to a duodenal catarrh. In Case 11 (T), with atony of the stomach, steapsin was absent in three examinations and once in examining the duodenal contents in the fasting and dry state (11 E.) all the ferments were found to be absent. In the same patient (11 F.) thick mucus was found once in the duodenal contents after an attack of ptomain poisoning. I append the *x*-ray pictures taken of this patient with the duodenal pump *in situ* (Fig. 1-2).

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Einhorn, Max: A Practical Method of Obtaining the Duodenal Contents in Man, Med. Rec., Jan. 15, 1910.

TABLE OF EXAMINATIONS OF DUODENAL CONTENTS MADE FROM NOV [illegible] APRIL 17, 1910

No.	Name.	Diagnosis.	Date of Examination.	In What Condition Examination is Made.	Amount in c.c.	Appearance.	Reaction.	Specific Gravity.	Steapsin.	Amylopsin.	Trypsin.	Remarks.
1a.	Mrs. K.	Nervous Regurgitation.	11- 6-09	After Milk.	1.5	Golden Yellow.	Alkaline.	....	..	..		
1b.	Mrs. K.	Nervous Regurgitation.	11-10-09	After Milk.	..	Yellowish.	Alkaline.	....		.		
1c.	Mrs. K.	Nervous Regurgitation.	1-30-10	After Tea and Sugar.	8	Golden Yellow.	Alkaline.	....	+	+		Egg albumin, one-half present.
2	Mrs. M. S	Enteroptosis	11- 7-09	After Milk.	..	Yellowish.	Slightly Acid.	....	+	..	0	
3	S. E.	Gastralgia Nerv.	11 2-09	After Breakfast.	..	....	Neutral.	....	..	..	.	
4	A. Z.	Dyspepsia Nerv.	3-11-09	After Tea and Sugar.	..	....	Slightly Alkaline	....	+	..		
5	Mrs. R. A.	Dyspepsia Nervosa.	2- 2-10	After Tea and Sugar.	30	Golden Yellow.	Alkaline.	1004	+	+	+	Egg albumin, one-third present
6	B.	Dyspepsia Nervosa and Atony of the Stomach.	4-17-10	After Tea and Sugar.	5	Amber.	Alkaline.	....	+	+	+	Egg albumin, one-half present.
7a.	E. H. C.	Hyperchlorhydria.	11- 3 09	After Milk.	12	Yellowish.	Alkaline.	1007	+	..	Trace	Thymus nuclei have entirely disappeared. For comparison thymus is left for 22 hours in gastric filtrate of Pat. K. (Acidity 0). Nuclei have mostly disappeared.
7b.	E. H. C.	Hyperchlorhydria.	2-13-10	After Tea and Sugar.	10	Golden Yellow.	Alkaline.	1007	+		+	Egg albumin one fourth present.
8	Miss H.	Chronic Gastritis, and Nervous Vomiting.	12-22-09	After Tea and Sugar.	15	Greenish Yellow.	Alkaline.	1010	..	..	+	Fluid is thick and turbid.
9	S. H. K.	Gast. Chron.	12-28-09	After Tea and Sugar.	20	Yellowish.	Alkaline.	....		+	Slight	
10	K.	Hyperchlorhydria.	1- 9-10	After Milk, Tea, Bread and Port Wine.	8	Golden Yellow.	Slightly Acid.	1005	+	+	+	Albumin, one-third present.
11a.	T.	Atony of Stomach.	12- 4-09	After Milk and Bread.	6	Golden Yellow.	Alkaline.	1004	+	+	+	
11b.	T.	Atony of Stomach.	1- 2-10	After Tea and Sugar.	6	Golden Yellow.	Alkaline.	1003	0	+	+	
11c.	T.	Atony of Stomach.	1- 5-10	After Tea and Sugar.	6	Golden Yellow.	Alkaline.	1006	+	+	+	Albumin, one-third present. Catgut and thymus entirely dissolved. For control catgut and thymus are left in a stomach filtrate (HCl + Acidity 56) for 24 hours. Catgut has disappeared, thymus is disintegrated. Microscopically no nuclei are seen.
11d.	T.	Atony of Stomach.	1-16-10	After Tea and Sugar.	10	Golden Yellow.	Strongly Alkaline	1007	0	+	+	Catgut disappeared after 10 hours.
11e.	T.	Atony of Stomach.	3 27-10	Fasting, Pump Swallowed without Water.	9	At First Clear. Later Turbid Yellow.	Alkaline.	....	0	0	0	
11f.	T.	Atony of Stomach.	4-10-10	After Tea and Sugar.	24	Golden Yellow; Thick Mass.	Alkaline.	1009	0	+	+	Albumin, two-thirds present. Patient had suffered a few days previous from ptomaine poisoning. At first 8 c.c. are aspirated in three-fourths hours, then secretin gr. 1 is administered subcutaneously; then 18 c.c. are obtained for the next 15 minutes by aspiration.
12	H.	Hyperchlorhydria.	11-23-09	After Tea and Sugar.	20	Yellow.	Alkaline.	1005	+	+	+	
13	McE.	Hyperchlorhydria.	12-11-09	After Tea and Sugar.	9	Golden Yellow.	Alkaline.	1008	+	+	+	
14	S. K.	Hyperchlorhydria and Dilatation of Stomach.	11-28-09	After Tea and Sugar.	..	Yellowish.	Acid HCl.	....	..			The milk test showed that the fluid came from the duodenum.
15	Mrs. H. H. R.	Hyperchlorhydria; Enteritis Chronica.	4-12-09	After Tea and Sugar.	..	Yellowish.	Alkaline.	....				Albumin, one-third present. At first a thick mucous fluid without bile was obtained, later pure golden yellow bile.
16	Dr. Sh.	Hyperchlorhydria; Ulcer of Stomach.	2- 2-10	Fasting, Pump in Duodenum Over Night.	..	Clear, Light Amber.	Alkaline.	....	..	+	+	Albumin, one-fourth present.
17	Miss M. V.	Ulcer of Stomach.	11-22-09	After Tea and Sugar.	..	Golden Yellow.	Acid HCl. +	....	..	..		The milk test showed that the pump was in the duodenum.
18	D.	Hyperchlorhydria and Ulcer of Stomach.	3-22-10	After Tea and Sugar.	..	Watery, without Bile.	Alkaline.	....	+	+	+	Albumin, one-tenth present.
19	Dr. P.	Achylia Gastrica.	11-10 09	After Tea and Sugar.	..	Clear.	Slightly Alkaline	...	+	+	+	Albumin all disappeared in 3 hours.
20	Mrs. L.	Achylia Gastrica.	3- 7-10	After Tea and Sugar.	..	White Tenacious.	Strongly Alkaline	1002	+	+	0	
21	H. L.	Achylia Gastrica.	3- 7-10	After Tea and Sugar.	..	Yellowish.	Alkaline.	....	+	+	+	Albumin, one-fourth present
22	T. C. A.	Achylia Gastrica.	4-18-10	After Tea and Sugar.	10	Greenish Yellow.	Alkaline.	..	+	+	0	
23	D. C.	Achylia Gastrica.	4-18-09	After Tea and Sugar.	8	Yellowish.	Alkaline.	...	+	..	+	Examined with the duodenal aspirating catheter.
24	Mrs. J. R. S.	Achylia Gastrica.	2-28-10	After Tea and Sugar.	2	Golden Yellow.	Alkaline.	.	+			Albumin, one-half present.
25	W. J. C.	Achylia Gastrica.	3-31-10	After Tea and Sugar.	8	Golden Yellow.	Alkaline.	1008		+	Slight	Albumin, two-thirds present.
26	Dr. S.	Enteritis Chron.; Atony of Stomach	3- 4-10	Fasting and Water	15	Golden Yellow.	Alkaline.	1003		+	+	Albumin, one half present.
27	T. F. M.	Diabetes Mellitus; Euchlorhydria.	3- 6-10	Fasting and Water.	10	Yellow, Turbid.	Neutral.	..		0		Albumin, one-half present.
28	Mrs. S.	Diabetes Mellitus and Achylia Gastrica.	12-14 09	After Tea.	..	Bile Like.	Alkaline.	..	+	+	+	
29	Th.	Cholelithiasis and Achylia Gastrica.	1- 3-10	After Tea and Sugar.	10	Yellowish, Turbid.	Alkaline.	1010	+	+	+	Albumin, one-third present
30	D.	Icterus Chronic et Tumor Hepatic.	12-19 09	After Tea and Crackers.	10	Watery.	Alkaline.	1006		+	+	No bile. In stomach contents HCl. was present.
31	Mrs. F.	Chronic Jaundice.	1-19-10	After Breakfast.	15	Watery.	Alkaline.	....	+	+	+	No bile. Albumin, one-half present.

(Continued on next page)

TABLE OF EXAMINATIONS OF DUODENAL CONTENTS—Continued

No.	Name.	Diagnosis.	Date of Examination.	In What Condition Examination is Made	Amount in c.c.	Appearance.	Reaction.	Specific Gravity.	Steapsin.	Amylopsin.	Trypsin.	Remarks.
32a.	L.	Chronic Jaundice.	1-19-10	After Breakfast.	..	Yellowish.	Alkaline.	....	+	+	+	Contains bile. Albumin, two-thirds present. Stomach contents show absence of HCl.
32b.	L.	Chronic Jaundice.	3-15-10	After Tea and Sugar.	.	Whitish.	Alkaline.	....	+	+	+	Albumin, one-half present.
33	M. O.	Chronic Jaundice; Tumor of Liver; Hyperchlorhydria	12-16-09	After Tea and Roll	.	Golden Yellow.	HCl + Slightly Acid.	....	..	..	..	Contents of a golden yellow color mixed with mucus. Stomach contents showed no bile, acidity 90.
34	Bu.	Cirrhosis of Liver.	12-14-09	After Tea and Sugar.	12	Golden Yellow	Alkaline.	1008	+	+	?	Trypsin very weak. Stomach contents HCl. +
35a	F.	Cirrhosis of Liver; Euchlorhydria.	2-22-10	After Tea and Sugar.	10	Yellowish.	Alkaline.	1005	+	+	+	Albumin, one-eighth present. Thymus nuclei disappeared. Connective tissue partially dissappeared.
35b	F.	Cirrhosis of Liver; Euchlorhydria.	3- 1-10	After Tea and Sugar.	10	Yellowish.	Alkaline.	1004	+	+	+	Albumin, one-fourth present.
36	R. H.	Cholecystitis.	12-19-09	After Tea and Roll	..	Yellow, Thick and Turbid.	Alkaline.	....	+	+	O	Stomach contents showed presence of HCl and an acidity of 35.
37	H.	Cancer of Liver.	2-20-10	After Tea and Sugar.	8	Golden Yellow Mixed with Mucus.	Alkaline.	1004	+	+	+	Thymus nuclei disappeared, connective tissue present.
38	A.	Banti's Disease.	3- 2-10	After Tea and Sugar.	10	Golden Yellow.	Alkaline.	1007	+	+	+	Albumin, remains only in minute trace.
39	Y.	Hyperchlorhydria and Neurasthenia.	3- 6-10	After Test Meal.	8	Golden Yellow.	Alkaline.	....	+	+	Slight	Albumin, two-thirds present.
40	B.	Ulcer of Stomach.	3-14-10	After Tea and Sugar.	10	Goldeo Yellow.	Alkaline.	1005	+	+	+	Albumin, one-eighth present.

In Case 14 (severe hyperchlorhydria and atonic dilatation of the stomach), in Case 17 (ulcer of the stomach with continuous vomiting), and in Case 33 (hypertrophic cirrhosis of the liver with chronic jaundice and intense hyperchlorhydria) the duodenal contents were acid and contained small quantities of free hydrochloric acid. The tests for the ferments were negative. In all other cases the contents were slightly alkaline or neutral and only rarely slightly acid. Case 15 (hyperchlorhydria and chronic enteritis) yielded a thick mucous fluid, to which later a pure golden yellow bile was added.

Seven cases of achylia of the stomach (19-25) showed twice an entire absence of trypsin and once a weak trypsin reaction whereas the other ferments were present. In one case of diabetes mellitus with normal stomach secretion (27) the contents showed absence of amylopsin, whereas the other ferments were present. Another case of diabetes with achylia (28) showed the presence of all the pancreatic ferments. In Case 29 (cholelithiasis and achylia gastrica) the contents were yellowish and turbid, but contained all the ferments. Four cases of chronic jaundice (30-33) showed the following result: in two (30 and 31) the duodenal contents did not reveal a trace of bile, while all the pancreatic ferments were present. In Case 32 a little bile was present once, another time it was absent. In Case 33 bile was present, mixed with mucus; hydrochloric acid was also present in small quantities.

Two cases of cirrhosis of the liver (without icterus) (34-35) showed good duodenal contents with bile; in one (34) trypsin digestion was very weak. In one case of cholecystitis (36) the contents were yellow but thick and turbid and showed no trypsin reaction.

Case 37 (cancer of liver) furnished a golden yellow juice mixed with mucus, showing all the pancreatic ferments. Case 38 (Banti's disease) showed normal duodenal contents. Case 39 (hyperchlorhydria and neurasthenia) showed a weakened trypsin digestion and 40 (ulcer of stomach) normal duodenal contents.

In the column "Remarks" (Cases 7a, 11c and d, 35a, 37) a few experiments have been recorded to test the relation of duodenal contents in reference to nuclein and connective tissue digestion (thymus and catgut). For comparison the effect of gastric contents on the same substances was tested in each instance. It was found that catgut as well as connective tissue (as contained in the raw thymus gland) can disappear entirely in neutral or weakly alkaline duodenal contents and that the nuclei of the thymus gland can also be digested in the stomach contents. Thus both these specific reactions (connective tissue for gastric digestion, and nuclei for pancreatic digestion) prove themselves to be entirely unreliable and without significance.

Among "remarks" we also find an experiment with secretin, showing the marked influence it has on the augmentation of secretion of bile and pancreatic juice (Case 11f).

I wish to emphasize particularly a few points.

1. *Achylia Gastrica.*—Among the seven cases of achylia gastrica trypsin was absent twice and once was only very weak, whereas steapsin and amylopsin were present. The disturbance of the pancreatic function in the above affection of the stomach explains why we frequently find intestinal troubles associated with it.

2. *Admixture of Mucus.*—An admixture of mucus with the duodenal contents occurs in two ways and is probably of some significance. The mucus may be evenly and intimately mixed with the contents, or it may appear at intervals in the relatively clear contents of the duodenum. The latter would point to the origin of the mucus from the duodenum, whereas its intimate admixture would point to its origin either in the pancreas or the bile passages. Presence of mucus in conjunction with other clinical symptoms (diarrhea, distress some time after meals) would lead us to think of duodenal catarrh (Case 15, Mrs. H. H. R.).

3. *Absence of Bile.*—Occasionally we obtain on aspiration of the duodenal contents at first only a clear or slightly amber-colored fluid. It is of alkaline reaction and contains the pancreatic ferments. Usually after waiting a short time and after repeated aspirations a golden yellow fluid (containing bile) appears. This has no diagnostic significance. If, however, after patient waiting and aspirating, only pancreatic juice but no trace of bile appears, it may be of some importance, particularly in cases of chronic jaundice. If bile is present in the duodenal contents a complete occlusion of the common bile duct can be excluded. If the bile is entirely missing and pancreatic juice is present, it points to the seat of the obstruction above the common duct.

Even if the results of these examinations are only meager, I should like to call attention to the fact that this field is entirely new and as yet hardly invaded. It might be expected that further work in the same direction will reap rich fruits not only with regard to diagnosis but also for therapy.

20 East Sixty-third Street.

THE CUTTING IN TWO OF A LARGE STEEL PIN WHILE TRANSFIXED IN THE LEFT BRONCHUS AND ITS REMOVAL BY LOWER BRONCHOSCOPY

A BRONCHOSCOPIC PIN-CUTTER AND FRAGMENT-HOLDER, DEVISED TO MEET THE EMERGENCY

W. E. CASSELBERRY, M.D.
Professor-Emeritus of Laryngology and Rhinology in Northwestern University Medical School; Laryngologist to St. Luke's and Wesley Hospitals
CHICAGO

The conditions which result from secondary infection, bound to occur in time at the site of a foreign body, which remains unrecognized or unremedied in the bronchopulmonary tract, must often have been mistaken for primary tuberculosis or other initial disease; for instance, a chronic pulmonary abscess, menacing to life, eluded all efforts to establish its cause until the sudden expulsion by cough of a spicule of bone, which was followed promptly by healing of the abscess. But that secondary infection may be delayed, for weeks or months, with little or no suffering, provided the foreign body be of narrow caliber, non-obstructive and non-absorbent, was notably evident in connection with the glass-headed, 1½-inch, very sharp, black steel pin, which lodged in part at the bottom of the left bronchus and in part within the first bronchial branch of a 15-year-old girl. In this position the pin had remained undisturbed and undisturbing for a period of ten weeks, having caused, during only the first week or two, mild coughing spells with sensations of pin-prick and slightly blood-stained expectoration—symptoms which merely encouraged the family to hope that the pin would be coughed up; while afterward the absence of coughing encouraged the thought that it probably had been coughed up. Freedom from suffering for so long a period naturally leads a patient to forget or at least to doubt the continued presence of a foreign body, and as the physical signs are apt to be equally indefinite it is only since the discovery of the *x*-ray, supplemented now by bronchoscopic inspection, that a means of positive demonstration has existed.

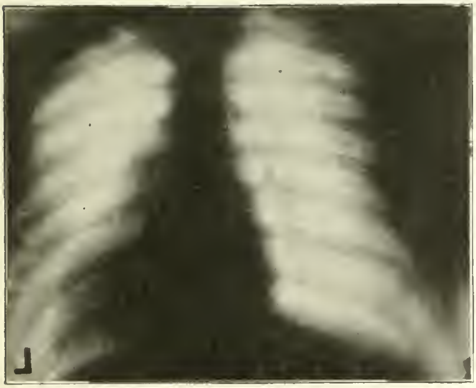


Fig. 1.—Vertical false shadow "very like a pin" on the right side, the real shadow being on the left side, obscured by the sixth rib.

Two delusions, however, in the interpretation of the radiographs, which were taken after physical examinations of the chest at the end of the ten weeks, had failed to elicit any definite signs on which a diagnosis could be based, will serve to remind us of the shortcomings of the *x*-ray and to accentuate the need, as well as availability, of direct observation through the bronchoscopic tube for orientation of the foreign body in position and for establishing its precise conditions, before one can feel assured of its ready removal. One of these delusions concerned a false shadow on the right side in the first *x*-ray plate, a shadow "very like a pin," so much so that it was for a time mistaken by every one, whereas the pin was lodged on the left side, its real shadow being visible but obscured in the shade of the sixth rib (Fig. 1). The other delusion resulted from the idea conveyed by the radiograph of a greater than the actual depth of the location of the pin in the bronchi, a fallacy due to difficulty in realizing that the sixth intercostal space at the back, the site of the pin shown in the radiograph, is on a plane not deeper than that of the third rib in front (Fig. 2), and that the bottom of the bronchus at the site of its first branch, where the pin was found, corresponds to the same plane. Notwithstanding comparative measurements, I was expecting to meet the pin lower down in the bronchial tract.

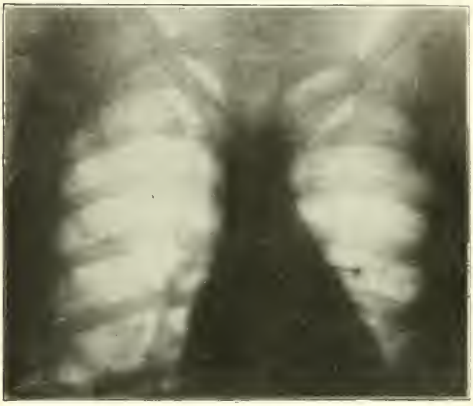


Fig. 2.—The pin in the left sixth intercostal space at the back, on the same plane as the third rib in front, and at the same level as the first bronchial branch, where the pin was found.

The manner in which the accident occurred is worthy of comment in order that women may be warned against a certain habit while dressing, for the pin had dropped so easily and naturally into the bronchial tubes, lodging where its transfixion by the impact of cough was inevitable, that one must regard it as an accident liable to repetition.

The young woman, with pin in mouth and skirt in hand, in readiness to drop the skirt by encircling it over her head, raised very high her outstretched arms—an act which is iden-

[illegible] with the first movement in Sylvester's method of resuscitating suffocated persons, a method which owes its power to the fact that raising the arms, forcibly expands the lungs and causes an inrush of air, the mouth opening, itself, as if by [illegible]; and, at the same moment, in readiness to let the skirt fall clear of her hair, the head was thrown backward and face upward—an attitude which is identical with the sword-swallower's position, so called because it brings the mouth, larynx and windpipe into a straight vertical line. The pin, let loose by the involuntary parting of the lips, simply dropped, with the air current, head foremost straightway into the left main bronchus, and on downward till its head and two-thirds of its stem had passed into the first bronchial branch, where that much of it became hidden from bronchoscopic view in the upturn by which this branch is given off to supply the upper lobe. The pin, being too long to make the turn completely, was arrested, evidently, with its head compressed against an upturning segment of the bronchial branch. The point, carrying one-third portion of the stem, which alone remained exposed to bronchoscopic view, projected from the orifice of the branch diagonally upward across the rear segment of the main bronchus, its end impinging against and its point inserted into the wall of the bronchus (Fig. 3).

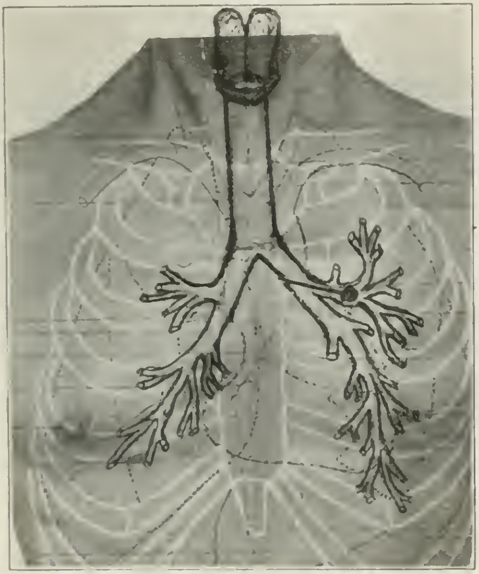


Fig. 3.—The transfixed position of the pin in the bronchial tree (Jackson) and thorax (McClellan).

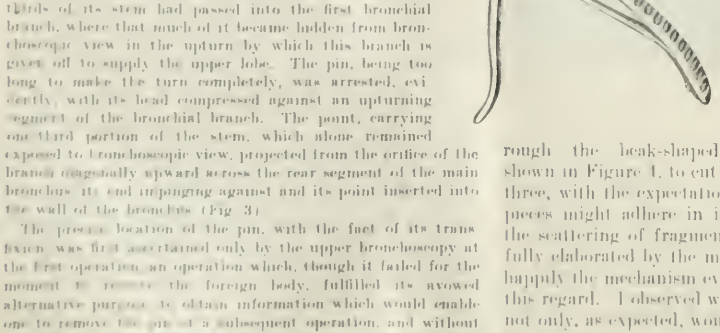


Fig. 4.—Casselberry's bronchoscopic pin-cutter and fragment-holder.

The precise location of the pin, with the fact of its transfixion, was first ascertained only by the upper bronchoscopy at the first operation, an operation which, though it failed for the moment to remove the foreign body, fulfilled its avowed alternative purpose to obtain information which would enable one to remove the pin at a subsequent operation, and without which the plan of cutting the pin in two could not have been formulated. The fact that both ends of the pin were up against a barrier explains how, by the impact of cough, the pin-point had been driven so firmly into the bronchial wall and why the repeated efforts at the first operation to displace the pin should have failed.

I need not particularize the first operation except in so far as these efforts to displace the pin tended to show the actual necessity for cutting it. A skilled first aid, Dr. G. P. Marquis, an expert anesthetist, Dr. Herman Peterson, an excellent mechanician, Mr. V. Mueller, suitable hospital facilities at St. Luke's and approved appliances were all at hand, the patient's head being satisfactorily held in the Boyce position by Dr. E. W. Bodman. Tubes of the Brunig-Killian and Jackson types were passed by the mouth through the larynx and downward, the first one, inadvertently, being passed over and beyond the pin, which rather hugged the back wall of the bronchus, but on withdrawing the tube somewhat, the exposed third of the pin came plainly into view. No difficulty was encountered in grasping the pin repeatedly through the tube, at a depth of about 11 inches, with various bronchoscopic forceps, the grasp being renewed to change forceps or the vantage-point of its grip no less than twenty times in order to apply leverage and reasonable force in every promising direction; but all without avail, other than a spontaneously uttered conviction, when the attempt was given up for the time, that the pin must first be cut in two.

Among the multiplying number of foreign bodies in the bronchial tract which are now being brought to light through the efficiency of the bronchoscopic methods introduced by Killian and advanced by Jackson, Ingals, Coolidge, Mosher and others, it is probable that additional cases complicated by transfixion will be encountered; hence, I propose as a general principle, the plan adopted in this case, of facilitating the bronchoscopic extraction of immovably transfixed pointed objects, such as pins, needles and perhaps open safety-pins, by first dividing them, via the bronchoscopic tube, into two or more parts; and I commend the instrument or pin-cutter devised for this purpose as a desirable addition to our bronchoscopic apparatus. The chief import of my theme can be expressed in the statement that, had the device (Fig. 4) and the principle now proposed for its use been already in vogue, a second operation for the extraction of the transfixed steel pin would not have been required.

A valid criticism, which will at once suggest itself, is the disposition of the parts of a pin, when cut, to fly asunder, hence, possibly, to drop out of sight or out of reach of the bronchoscopic forceps. Thus, I feared that my smaller fragment might get lost in the bronchial secretion and, as after dividing the pin, less than a quarter-inch of the larger fragment would remain exposed, I feared that it might disappear, by retraction, wholly around the curve of the bronchial branch. But neither of these contingencies occurred. I had modeled in the rough the beak-shaped slotted scissor-like device shown in Figure 4, to cut into two pieces, not punch into three, with the expectation, further, that one of the two pieces might adhere in its beak, thus limiting at least the scattering of fragments. My suggestions were skilfully elaborated by the makers (V. Mueller & Co.), and happily the mechanism even exceeded my expectations in this regard. I observed while testing the instrument that not only, as expected, would one of the fragments adhere in the serrated slit alongside the bevel, but that it adhered with dependable regularity and firmness as long as the blades were not permitted to reopen; moreover, as it was invariably the end of the pin next to the beveled side of the blade which so adhered, the operator could elect the fragment to be held and the one to be let loose, provided the pin were transfixed in space enough to admit the jaws either under or over it, hence to turn the blade bevel next to whichever end he might elect.

Profiting by these test observations, I planned to minimize the risk of losing my smaller fragment by electing it to be held in the grasp of the pin-cutter, and to diminish the risk of letting loose my larger fragment by cutting it off not too close to the bronchial branch. Beyond these precautions the chance that the fragments might still get lost was, I felt, a bare chance that must be taken.

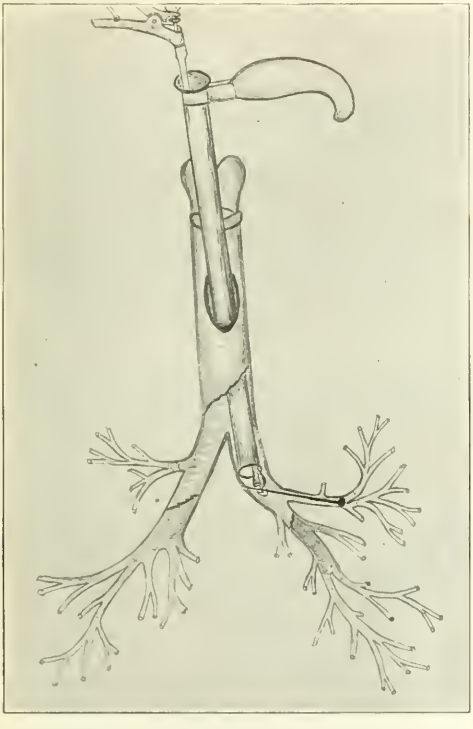


Fig. 5.—Diagram showing the method of cutting the transfixed pin in two.

I questioned the absolute necessity for shortening the route to the pin by opening the windpipe, but considering the novelty of the procedure of cutting the pin *in situ*, a position none too near at best, I deemed it inexpedient to add uncertainty by adding distance. It is now realized, however, that the pin-cutter and the principle of its use are applicable as well at the longer range of upper bronchoscopy. In fact, the only uncertainty encountered in the final operation was, not in cutting the pin, but in finding it before cutting it, a delay which was incidental to the tracheal opening, for the bronchoscopic tube, when entered at the incision was deflected by the chin somewhat out of its most favorable line; so despite the distally lighted Jackson tube, augmented by a Brunig-Killian headlight, and the best conditions for artificial lighting in the semi-darkened throat room of St. [illegible] Hospital, a combination which yielded a brilliant [illegible] of the bronchial tree, the [illegible] for a time, [illegible]. The same competent aids were present but having [illegible] tracheotomy as a first step in this operation the patient's head had not been adjusted precisely in the Boyce [illegible] readjustment of the head caused the chin to drop out of the [illegible] when on passing the tube again through the tracheal opening, [illegible] directing it as nearly in the median line as during the upper bronchoscopy at the first operation, the pin came plainly into view, being in the same location and in the same state of transfixion. A few additional efforts to extract it without cutting having proved futile, the pin-cutter (Fig. 5) came next in order. It operated exactly as planned; one could hear the snap, see the larger fragment shiver and then discern the small pointed piece in the beak of the instrument, held fast in which it was withdrawn. The larger piece settled somewhat, but its short exposed end was now an easy mark and in another minute, in the grip of a Jackson forceps, it also came safely out. (Fig. 6.)

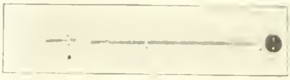


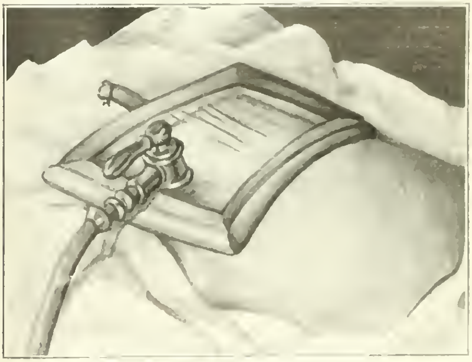
Fig. 6.—The pin in two parts, actual size.

34 Washington Street.

A PNEUMATIC SHIELD FOR OPERATIONS ON THE LUNG

W. WAYNE BABCOCK, M.D.
PHILADELPHIA

In thoracic surgery in man, positive or negative pressure devices are rarely essential. Either pleural cavity or even the anterior mediastinum may be invaded without, as a rule, a fatality from operation pneumothorax. It is a source of satisfaction, however, to have available an apparatus capable of almost instantly removing the condition of pneumothorax.



A pneumatic shield for operations on the lung.

In 1908[1] I devised an aspirating shield to be applied over the wound under such conditions. The present shield is modified by omitting the metal rim and glass window which interfered with accurate coaptation to the chest wall and substituting a simple inflated rubber rim in which is held a flexible celluloid window. The apparatus may be sterilized in the autoclave or in boiling water. A simple two-way cock connects the cavity of the shield at will with either the external air or a suitable vacuum tank. To overcome pneumothorax the shield is applied over the wound and the lever turned connecting the vacuum tank with the cavity of the shield until the lung is sufficiently inflated. The partial vacuum may be continued, or, if desired by gradually turning the lever so as to admit air one may observe the effect of a gradual reproduction of the pneumothorax. A form of artificial respiration may be produced by alternately producing and relieving the negative pressure in the thoracic cavity. The instrument may be applied during the suturing of the wound by moving the shield just in advance of the introduction of sutures. A final aspiration with the aspirating tube to free the chest of any residual air may be employed as the last suture is tightened. The large transverse area of the tubing renders the instrument efficient despite imperfect coaptation and considerable leakage. Leakage may be reduced by applying wet gauze against the sides of the shield. A regulating valve connected with the vacuum tank is desirable to prevent too violent aspiration and the production of traumatic emphysema.

---

[1] Babcock, W. W.: The Operative Treatment of Pulmonary Tuberculosis; Report of an Excision of Over One-half of the Right Lung, The Journal, April 18, 1908, p. 1263.

2033 Walnut St.

THE CLINICAL RECOGNITION OF THE SCAPHOID TYPE OF SCAPULA AND OF SOME OF ITS CORRELATIONS*

WILLIAM W. GRAVES, M.D.
Assistant Professor of Neurology in the St. Louis University School of Medicine
ST. LOUIS

In my communication, "The Scaphoid Scapula, a Frequent Anomaly in Development of Hereditary, Clinical and Anatomic Significance,"[1] presented to the St. Louis Medical Society, Feb. 5, 1910, I indicated the relative frequence of the scaphoid type of scapula in our population in dry bones and in fetal, embryo and monster forms. The main thesis of that communication was: The scaphoid scapula is an anomaly in development originating in the progeny from some abnormal circumstance operating in the parents, is thereafter transmitted from parent to child, and so on through several generations, and unless the abnormal circumstance again becomes operative in the descendants, the scaphoid scapula finally disappears and the racial type again becomes dominant.

I showed that it occurred most frequently in individuals deviating from the average in physical or mental endowments, or both, and stated that the natural habitat of the scaphoid scapula was in the deviate. I showed further that in individuals of the second generation in whose parents a definite abnormal circumstance—syphilis—had operated, the scaphoid type of scapula was correlated with certain conditions, such as nocturnal incontinence, with certain physical signs, such as catarrhal affections, adenoids, an abnormal degree of lymph-gland palpability, and above all, with vasculosclerotic changes occurring very early in life, in some detectable by the ordinary methods of clinical investigation as early as the fourth, and as a rule as early as the tenth, year of life; and in older individuals a degree of arteriosclerosis out of all proportion to their years. Even in individuals of the third and fourth generations, the last-mentioned correlations, amounting almost to parallelisms, will be frequently found. It is to the clinical recognition of the scaphoid type of scapula and of the correlations just mentioned, and to the recognition of others in the living subject, that I desire at this time to direct attention, since the appreciation of certain of these correlations is fundamental in the study of the causation of the scaphoid type of scapula and in the consideration of the many weighty and intricate problems that appear to be intimately associated with it.

The recognition of the scaphoid type of scapula in the living subject will not be found difficult if one remembers its characteristics as shown by my studies of dry bones, embryonal and fetal forms. Of these characteristics the following are usually readily discernible in the living subject: first, the vertebral border below the scapular spine is more or less concave; this may be almost or quite straight, slightly or distinctly concave; second, the scapular index is as a rule less; that is, the bone is longer in proportion to its breadth than in the average type (this may be roughly estimated in the living subject by noting the proportion between length and width of the body of the bone); third, the vertebral border in the scaphoid type more nearly parallels the

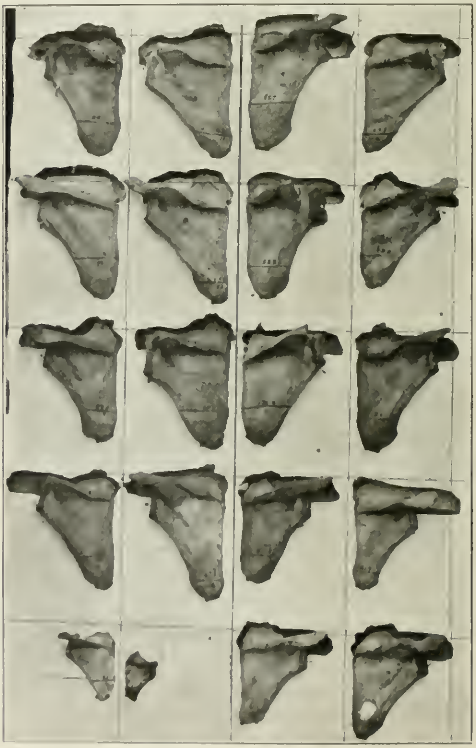


Fig. 1.—A group of scapulae of the scaphoid type, all having rather decided incurvations of their vertebral borders.

---

* Presented to the St. Louis Medical Society, May 14, 1910.

[1] Med. Rec., [illegible] p. 861.

long scapular axis and a straight line than in the average type of scapula; fourth, as a rule, the spine in the scaphoid type forms more nearly a right angle with the long scapular axis than does the spine of the average type; fifth, the vertebral border buds, tuberosities, varying in size and number, are much more common in the scaphoid, especially in those nearer straight, than in the average type of scapula; sixth, in the same subject having scapulæ of the scaphoid type, differences in size and form and specific differences in the contour of the vertebral borders are common.

Only in exceptionally thin individuals may one determine the other characteristic of the scaphoid type of scapula previously described[1]; namely, the constant absence of lips and intermediary surface in those scapulæ which have marked concavity of the vertebral borders. Two or more characteristics will invariably be found in those individuals having the scaphoid type of scapula and these may usually be determined by inspection and palpation. In individuals who are exceptionally muscular or obese, the *x*-ray may supplement inspection and palpation, an expedient I have not thus far found necessary.

As a matter of course all clothing must be removed, at least to the hips, and the patient should assume his natural attitude, standing several feet in front of the examiner in good illumination. To appreciate natural attitudes fully, the patient should be inspected from the front, laterally, and from the rear, during which the shape of the chest, the abdomen, the course of the clavicles, the length of the neck, the muscular development, the spinal curves, etc., are studied. Then by examination of the scapular region, in average individuals the upward and outward slant of the scapular spines, the graceful downward and outward curves of the vertebral borders beneath the fibres of the trapezii and the underlying mass of the rhomboids attached to these borders may be made out easily. The course of the long scapular axis may thus be readily determined to be downward and outward, so that the bases of the scapular spines will be found to be from 2 to 6 cm. nearer the spinal axis than are the inferior angles.

In individuals having the scaphoid type of scapula, the picture is completely changed. The chest is frequently narrowed in all diameters, especially anteroposteriorly. There is often a narrow costosternal angle and floating tenth ribs; the clavicles very frequently take rather a horizontal course increasing the dimensions of the supra-clavicular regions, and there is often undue prominence of the acromioclavicular articulation. The shoulders hang, drooping downward and forward. The vertebral borders stand out prominently, wing-like, and especially that portion of the borders merging into the inferior angles. There is paralleling of these borders with each other and of these with the spinal axis, so that the distance between the inferior angles of the scapulæ and the bases of their spines is nearer equal, and in some instances the bases of the spines are further away from the spinal axis than the inferior angles of the bones. In many instances, even when the individual is caused to approximate the vertebral borders of his scapulæ by drawing the shoulders directly backward, the phenomena just described will still be apparent, though to a somewhat less degree. The sluggish attitudes of such individuals, especially of the shoulder regions, the frequent lowering of one shoulder and usually on that side where the scaphoid type of scapula is most marked, the changed relations of the vertebral borders with each other and of these with the spinal axis, have their foundation in the anatomic characteristics of this type of scapula mentioned above.

In individuals having average scapulæ, marked differences between them in the same individual will rarely be found; but this is so frequent in the scaphoid type of the scapula that it must be considered as one of its chief characteristics. Marked differences will be noticed not only in the contour of the vertebral borders, but in some cases in the breadth and length as well. The differences in size, and especially the differences in contour of the vertebral borders, should also be considered in determining the presence of the scaphoid type of scapula. In the cases in which the difference is quite decided, causing the lowering of the shoulder on the side where the scaphoid type is most marked, lateral curvature of the spine is not infrequent. In some individuals who have acquired better attitudes of their shoulder regions an accentuation of the anterior curve in the dorsolumbar region occurs.

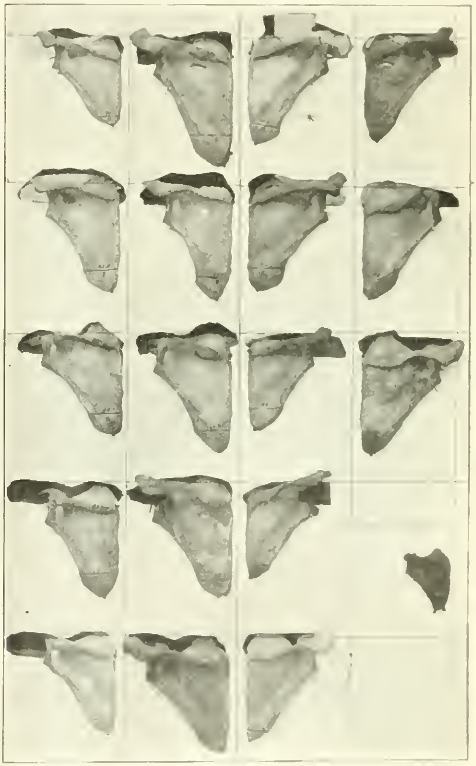


Fig. 2. A group of scapulæ of the scaphoid type, all having more or less straight vertebral borders except the one with a star next it whose border is slightly convex, a border less frequent.

In thin individuals having the scaphoid type of scapula, the hollowing out of the vertebral borders may be readily appreciated merely by inspection. But to appreciate this better and the degree of it in each scapula, to appreciate the shapes of the bones as well as the presence of the vertebral border buds, palpation of the scapula should not be neglected. The marked differences of shape and size of the scapula, as well as the degree of concavity of their vertebral borders and the number and size of the vertebral border buds, may be well appreciated in the living subject; but to facilitate this study, I reproduce here three series of bones illustrating the anatomic characteristics found in my studies of dry bones (Figs. 1, 2 and 3).

Before considering the clinical recognition of some of the correlations of the scaphoid type of scapula and the better to appreciate these, it will be well for the moment to direct our attention to the individuals in whom these are associated, and then by looking at a composite picture of such individuals to study the correlations at closer range. Confining our studies in the beginning to the individuals in whose parents an abnormal circumstance—syphilis—had operated, we shall find that such individuals, as previously pointed out, are of retrograding, deviating types. In any one of these, when compared with either parent or with the members of its species and family or with the average members of the community in whose parents the abnormal circumstance has not operated, deviation will be found in the physical or mental development, and usually in both. Among such deviants will be found many of the hereditary anatomical stigmata, precocities, psychic and psychoneurotic [illegible] to which I shall not [illegible] particularly.

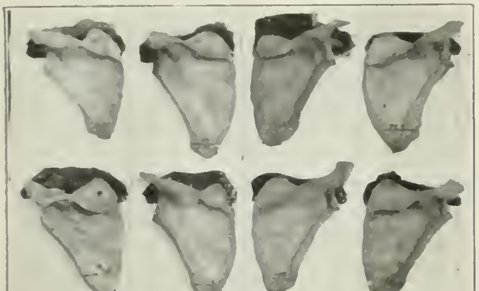


Fig. 1.—A group of average scapulae: the dominant racial type excepting the one with a star and that with a dagger near, these being border-line scapulas bordering the average type.

In only a few instances have I thus far found the well-marked scaphoid type of scapula in individuals even approaching average development. Such individuals are usually undersized, have sluggish attitudes, meager musculature and are strikingly lacking in the harmonies of physical development. They range in stature from dwarfs to giants, but whether the one or the other, or merely undersized, disharmony characterizes their physical development. Many of them, apparently physically normal at birth, in their later development show retardation or grow by fits and starts until near, either before or after, the usual age of puberty, they shoot up like weeds or forever remain stunted—blighted.

With the beginning of mental development such progeny are either backward and remain so, or they show—and this is the rule—precocity. If disharmony characterizes their physical development, it is especially true of their mental development. They have no childhood. They seem almost to jump from the cradle to adolescence. "My children are old in their ways" is a frequent expression of certain observing mothers, and they may add "They are almost always ailing." Or the unobserving mothers (and ignorance and mother-love and pride makes them so) may proudly say "My children are all healthy." Indeed, physicians usually consider such children healthy, or at least free from syphilitic blight, in the absence of "snuffles," eruptions of the skin and mucous surfaces, bone and joint affections, Hutchinson's teeth, interstitial keratitis, and deafness without otitis. Children of the second generation are as a rule older than their years; they are often ailing and are rarely healthy; but to appreciate the truth of these assertions we must, as physicians, study the individuals of families rather than the histories of individuals of families.

While idiocy, imbecility and backwardness in mental development are relatively frequent in the second generation, such mental states are by no means common. My studies of the offspring in whom an abnormal circumstance—syphilis—in the parents is beyond question, show precocious mental development to be the rule. Not only do such children appear like little old men and women in the seriousness of their ways and actions, their preference for books rather than play, and the society of their seniors rather than their kind; but as individuals, their facial expression is lacking in the freshness of infancy, childhood or youth and they ever afterward appear much older than their years.

Many of them develop sexual instincts long before puberty, and these are often gratified by masturbation, sexual intercourse, or otherwise. Strenuosity and intensity characterize many of these individuals, and before or during adolescence such mental proclivities, associated with the inherently weak constitution, sooner or later lead to an inevitable "break," and they make up a large percentage of the cases commonly classified as neurasthenia, hysteria and dementia præcox. Many cases of epilepsy developing in early or later periods of life are to be found in the individuals of the second and later generations. The incorrigible and so-called criminal classes are increased from the ranks of the second and later generations in a degree probably unequaled by that of any other source. Not a few individuals of the second generation, and many of the later generations, despite their handicap in physical and mental endowments, by learning to adjust themselves to their environment, lead successful, useful and even brilliant lives, though they rarely live out their expectancy in consequence of their abiotic natures.

If the antenatal mortality of syphilitic progeny is so great, it is but reasonable to believe that the influences underlying it are still operative in the living; if not the disease itself, its blighting influences as manifested by disharmony in physical or mental development, or both, by inability to stand the stress and strain of ordinary existence, by degenerative and involutional changes, and by lowered general resistance. Such progeny are truly abiotic; hence the instability of their natures, their proneness to so-called functional disturbances and to disease, to degenerative and involutional changes, to neuroses, psychoneuroses, psychoses, and above all, to tuberculosis.

In my studies of the scaphoid type of scapula and its correlations[2] I have been greatly impressed by the unusual frequency of tuberculosis in such progeny and in the progeny of later generations. This is not the place to dwell on the ramifications of the scaphoid type of scapula and some of its correlations in general and special pathology, but it seems proper to mention here the abiotrophies of Gowers, the neuroses and psychoneuroses and especially epilepsy, dementia praecox and tuberculosis, since my studies have shown the unusually frequent association with these conditions.

Nocturnal incontinence is relatively frequent in individuals having the scaphoid type of scapula and other correlations. It was present in about 16 per cent. of fifty boys, inmates of St. Joseph's Orphan Asylum, studied in a preliminary way, and it is such a very common condition in the second generation that it may well be considered one of the correlations of the scaphoid type of scapula. Fuchs[3] and Mattauschek,[4] in studying enuresis nocturna in adults, have shown in their cases anomalies of skin and tendon reflexes, slight sensory changes about the feet, syndactylism, deformity of the feet (pes planus, varus and valgus, etc.), the frequent association of the patency of the sacral canal in all degrees from spina bifida to the slightest change in the form and location of the sacral hiatus, the latter demonstrable only by the *x*-ray.

These findings caused Fuchs to assume an actual defect of development (myelodysplasia), meaning thereby an anomalous development about the lower part of the spinal cord. Fuchs has correlated the assumed myelodysplasia with distinct anatomic anomalies, and I have correlated similar anomalies with the scaphoid type of scapula.

The histories of catarrhal affections, tonsillitis, bronchitis, gastro-intestinal disturbance and adenoids, are unusually frequent in individuals of the second and later generations.

Of the boys studied in St. Joseph's Orphan Asylum having the scaphoid type of scapula and some of its correlations, about 60 per cent. are mouth-breathers. In a family of five children of the second generation, recently referred to Dr. R. P. Scholz, adenoids were found in all, and in four to a degree requiring operation. In a group of ten backward public school children studied with Dr. Scholz, having adenoids and mentioned in my first communication, all had the scaphoid type of scapula and other correlations. Since then Dr. Scholz has kept a careful record of those operated on by himself for adenoids, and in a recent conversation he informed me that fully 75 per cent. of them have the scaphoid type of scapula and some of its correlations. Adenoids, therefore, appear to be a very frequent correlation of the scaphoid type of scapula. The "adenoid face," consisting in a dull, vacant expression, dry and separated lips, poorly developed nostrils, etc., discerned by visual or digital examination, or both, renders the recognition of adenoids an easy matter.

A more frequent correlation is undue lymph-gland palpability, and this is so frequent that it is well-nigh constant. Enlarged anterior cervical glands are an almost constant accompaniment of adenoids, but the postcervicals, epitrochlears, and those above and below Poupart's ligament are those more easily palpable and those less frequently involved from peripheral infections; but even these enlarged from peripheral infections, the postcervicals from infections of the posterior portion of the scalp, the epitrochlears from infections of the more distal parts, and the inguinals above Poupart's ligament from infections about the genitalia and below, of the distal parts of the extremities. In any case, the history or the presence of such infection, and above all the equal enlargement, right and left, will usually enable one to determine whether or not the enlargement is peculiar to the individual or due to some peripheral infection.

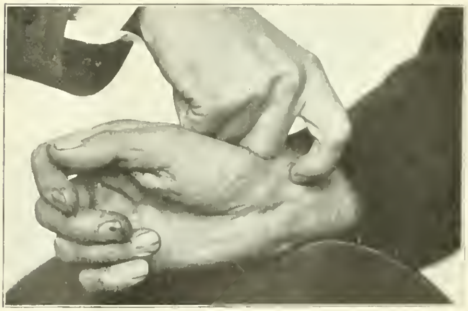


Fig. 1.—A method of finger-tip palpation of the radial artery.

Pupillary anomalies, consisting of asymmetries and differences in size, are so common in individuals of the second generation as to rank as frequent correlations. Such findings should be considered only when neither iritis nor iridocyclitis causing synechia has existed, points readily determined by the history and inspection. In searching for pupillary anomalies, it must be remembered that clumpy distribution of pigment along the pupillary margin ("Ektropium des Pigment Blattes der Iris"—Bach[5]) may cause a perfectly symmetrical pupil to appear flattened, oblong or cornered. The examination by focal light may readily exclude this condition. The Argyll-Robertson pupil with an otherwise intact nervous system is relatively infrequent in the second generation, though almost invariably associated with the scaphoid type of scapula and other correlations when present. The same may be said of Hutchinson's teeth, interstitial keratitis, deafness without otitis, hypotonia of certain muscle groups, absent knee-jerks and the usual signs of congenital lues heretofore recognized. Juvenile paresis and tabes are almost invariably associated with the scaphoid type of scapula and its chief correlations, and in my first communication I pointed out the frequency of this association with syphilis of the nervous system, with acquired tabes, paresis and other abiotrophies of Gowers.

---

[2] In a paper soon to appear, prepared in collaboration by Dr. O. H. Brown and myself, we shall show the frequent association of tuberculosis with the scaphoid type of scapula and some of its correlations.

[3] Fuchs, Alfred: Ueber den klinischen Nachweis kongenitaler Defektbildung in den unteren Rückenmarksabschnitten ("Myelodysplasie"), Wien. med. Wchnschr., 1909, Nos. 37-38.

[4] Mattauschek, Emil: Ueber Enurisis, Wien. med. Wchnschr., 1909, No. 37.

[5] Bach, Ludwig: Die Pupillenlehre, 1908.

In my studies of senility, of the later manifestations of acquired lues, and of individuals having the scaphoid type of scapula, I have been impressed with the peculiar appearance of the conjunctivæ over the sclerotics, which I have noted in my findings as "varnished scleræ." The varnished sclera is present as a rule in healthy individuals as early as the thirty-fifth or fortieth year of life and it increases with succeeding years. Its chief characteristic is a shiny, glistening appearance on a rather undulating, and in older individuals, a slightly yellowish background, so that the surface of the conjunctiva lying on the whitish sclerotic glistens like the cornea. In individuals free from senile changes the surface of the conjunctiva has a more smooth and less shiny appearance—is even dull when compared with the surface of the cornea; so that in such persons there is a distinct contrast between the brilliancy of the surface of the cornea and that of the conjunctiva on the bluish-white background of the sclera. The lack of contrast, on the other hand, is probably one reason for the expressionless eyes of tabetics and paretics and the main reason for the "settled look" in the healthiest of us after the thirty-fifth year of life. The undulating appearance is probably due to wasting of the episcleral or subconjunctival tissue and to the thickening of the walls of the conjunctival vessels, and, in addition, in older individuals, to wasting of the conjunctivæ analogous to that of other mucous surfaces and the skin in senility. The presence or absence of "varnished scleræ" may be readily determined on drawing down the lower lid when the patient is facing the light and directing his gaze somewhat upward. In this position we may readily appreciate the appearance of the conjunctiva if varnished, its tints, its undulations, and, lastly, the undue tortuosity of the conjunctival vessels—a sign usually associated with and paralleling it. When the "varnished" appearance is well marked the tortuous vessels seem to lie, rather, on than within the conjunctival tissue. Punctate hemorrhages into the conjunctival and even into episcleral tissues will frequently be found associated with the signs just mentioned.

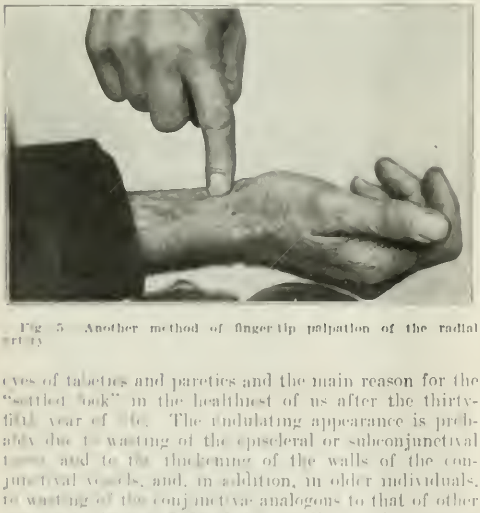


Fig. 5.—Another method of finger-tip palpation of the radial artery.

Aside from the chief correlation of the scaphoid type of scapula, possibly, the characteristics of the whole individual, probably the most constant, and to my mind the first in importance, is the correlation of vasculosclerotic changes at an unusual period of life and in older persons out of all proportion to their years. The varnished scleræ and the undue tortuosity of conjunctival vessels are probably due mainly to vasculorsclerotic changes of the conjunctival vessels. The study of these vessels with Luedde's modification of the Zapski binocular corneal microscope, as previously pointed out, appears to offer a ready means of detecting the presence of vasculosclerotic changes, from whatever cause, long before they might otherwise be recognized in the living subject. At any rate this instrument offers additional means of securing corroborative evidence—and it is impossible to have too much of this. With this instrument one may readily see the blood coursing through the conjunctival vessels and discern thickening, crinkling and aneurismal dilatations of their walls.

In certain congenital deformities correlated with the scaphoid type of scapula, studied conjointly by Drs. Luedde and V. P. Blair, evidence of such changes have been found in the conjunctival vessels of nursing infants. By the ordinary methods of clinical investigation, as previously pointed out, I have found evidence of vasculosclerotic changes as early as the fourth, and almost constantly as early as the tenth year of life in individuals of the second generation. A number of these, studied by me, have also been studied by Dr. Luedde and in no instance has he failed by studying the conjunctival vessels to find evidence of vascular changes. The almost constancy of vasculosclerotic changes in individuals of the second generation and our ability to detect them so early in life warrant the deduction that such changes begin during development *in utero*—in other words, the children are born with a degree of arteriosclerosis.

Clinical evidence of arteriosclerosis in the living subject is considered ample when two or more of the following findings are demonstrable: undue palpability of radial and other vessels, visible pulsation in the brachials, undue tortuosity in these, the temporals, and other vessels, including the conjunctival vessels, undue accentuation of the second aortic sound and the determination of the functional worth of the heart muscle. To these must be added an estimation of arterial tension with a suitable apparatus, though alone it is of but little value in determining the presence of arteriosclerosis.

A detailed description of the methods usually employed in studying the cardiovascular apparatus would be superfluous here. But the palpation of vessels is such an important procedure in determining the presence of arterial thickening that I may be pardoned for calling attention to the necessity of accuracy in technic, even in the frequent and time-honored practice of feeling the pulse.

Not only the radial, but the brachial, temporal, posterior tibial and dorsalis pedis, should be palpated and compared, right and left, in our search for vascular changes. Sahli's three-finger method is invaluable in estimating the qualities, tension, etc., of arteries; but in determining sclerotic changes in them it is not to be recommended, because sensation coming in from three fingers is more dispersed than when only from one. In order to determine the sclerotic changes, one should employ, as a rule, one, never more than two, fingers, and two only in cases in which the tension is so great as to interfere with firm palpation with one finger. In counting the pulse, it matters little whether one feels with one's finger-ball or one's finger-tip; but in feeling—in palpating—the vessel-wall with only the ball early and even decided changes may be entirely overlooked. One should, therefore, use the finger-tip in palpating arteries, because the tip is more sensitive than the ball, has less subcutaneous tissue, and more readily adjusts itself to the vessel.[6] The tip of the finger should be placed perpendicularly to the vessel at first lightly, to become aware of pulsation, then with gradually increasing pressure one should roll or attempt to roll the vessel. A moderate-sized artery, such as the temporal or radial when not thickened, is felt to collapse under the increasing pressure and it is with difficulty differentiated from adjacent structures.

When such a vessel is thickened—sclerosed—the wall remains more round, the finger-tip glides over its rounded surface, and one feels a degree of rigidity not present in normal arteries. Sclerosing arteries are frequently unduly tender to firm finger-tip pressure, more so than adjacent structures, the unpleasant sensation persisting at times for several minutes after the pressure has been removed, a point frequently mentioned by patients. As the finger-tip has less subcutaneous tissue than its ball (one reason why it should be employed), it is evident that its applied pressure should be at a point along the course of a given artery where it lies directly over bone and free from overlying muscle. Figures 4 and 5 represent two methods of finger-tip palpation of the radial artery.

In my first communication, I referred to vasculosclerotic changes as a sort of connecting thread between the syphilitic and his progeny. In my studies of many individuals and families on which that and this communication are based, a degree of such changes out of all proportion to the years is the one preeminent clinical fact discernible in the individual who has acquired syphilis, and it is the one significant clinical fact discernible in his children and his children's children. It is, probably, the main cause of the frightful antenatal and postnatal mortality among such progeny; probably the main cause of their lessened expectancy in life; of their proneness to disease—to degenerative and involutional changes; to the so-called functional nervous disorders and the underlying cause of tuberculosis in them—for is not the blood the life thereof?

Admitting vasculosclerotic changes to be even a frequent correlation of the scaphoid type of scapula, is it not incumbent on us to search for and establish its cause and that of its other correlations? My studies, extending over a period of more than three and a half years, indicate far-reaching ramifications of the scaphoid type of scapula and its correlations—a rather definite syndrome in both general and special pathology. The frequency of what may be called the scaphoid type of scapula syndrome in our population, occurring in all branches of society, seems to postulate a single cause and one sufficiently potent to modify profoundly the growing organism from its very foundations. Thus far I have found no other cause than syphilis in the ascendants, but my studies have been too brief and too incomplete to enable anyone to draw definite conclusions from them and apply them to every individual in whom this syndrome may be found. This seems certain, however: nothing occurring in the life of an individual after his birth can give him the scaphoid type of scapula and its correlations.

Before one may determine the significance of this syndrome in any individual, the individual must be studied from every angle and in a comparative way with the members of his own family and with average members of his community. With the use of modern refinements in clinical investigation; with the use of laboratory methods, merely to confirm and to control clinical deductions; with patient study of individuals and of the individuals of families rather than the histories of individuals of families on the part of many workers, the ultimate cause or causes, as well as the hereditary, clinical and pathologic significance of the scaphoid type of scapula and its correlations may readily be determined.

My studies thus far warrant my saying at this time that such research on the part of many workers will undoubtedly lead to more complete recognition of syphilis and of its blighting influence in the individual affected, in his children, and in his children's children. Out of such recognition, let us hope a sane prophylaxis may be developed, whereby much suffering which now comes to humanity from this insidious enemy of the human race may in succeeding generations pass away from the earth forever.

727 Metropolitan Building.

---

[6] Wertheim-Salomonson (Die Nagelpalpation der Arterienwand. Salomonson, Deutsch. Arch. f. klin. Med., 1910, xcviii, Nos. 4-6; abstr. in THE JOURNAL A. M. A., April 16, 1910, p. 1345) has recently called attention to the value of finger-nail palpation of arterial walls and emphasizes the point that the nail should be placed perpendicularly to the skin, thus calling into play the entire innervation of the nail-bed. Whether the "nail" is more sensitive than the "tip" is questionable. Nevertheless the method seems valuable and should be employed

---

INGUINAL HERNIA FOLLOWING APPENDECTOMY*

ALANSON M. POND, M.D.
DUBUQUE, IOWA

During the past twenty-five years the pathology of appendicitis has been cleared up and the operative treatment has been elaborated and commented on so extensively that the entire country has been thoroughly informed of the gravity of the condition and equally convinced of the necessity for surgical treatment. Dexterous surgeons perform appendectomy with such marvelous simplicity and rapidity before admiring classes and visitors that the latter are impressed with the ease and rapidity of the operation, and fail utterly to realize that there is a surgical reason for every step of this procedure, or that this seasoned operator has worked many months or years to perfect his technic and to study out his attack along the lines of proper surgical anatomy. They see only the simplified application of correct principles.

The result of this is that surgery of the vermiform appendix is more extensively practiced than ever before, and consequently the profession is becoming more and more conversant with the sequelæ of appendectomy, both immediate and remote. It is evident that not every case of survival after the operation cannot properly be called a recovery. Many patients who do not die from the operation are disabled; for the sequelæ of all abdominal operations are increasing. This is not due wholly to the increase in surgery, but partly to the increase in the number of the men who do surgery. It is purely a matter of personal equation—of ignorance or disregard of surgical or anatomic principles. When a thorough knowledge of surgical pathology dictates the operation and a perfected mastery of surgical anatomy directs it, the results, both immediate and remote, were never so satisfactory as at present.

---

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

Among the commonest sequelæ is hernia; when this is hernia of the abdominal wall or of the scar, it is as a rule the result of delayed union, impaired healing, or of improper suturing. Delayed union may result from a drain or from an infection of the line of incision subsequent to operation. Improper wall suturing may occur through undue haste, or through ignorance of the surgical anatomy of the structure penetrated.

This paper, however, deals only with inguinal hernia. The following case illustrates the type:

H. W., aged 24, was operated on Sept. 26, 1900, for an acute attack of appendicitis; wound closed without drainage; mural abscess evacuated on eighth day; recovery apparently complete on the twenty-first day. Patient resumed work on the twenty-third day after operation. On Feb. 2, 1901, patient presented himself for examination. Long broad scar in right hypogastrium showed evidence of suppuration. Palpation of wall failed to reveal weakness in line of suturing or in abdominal wall. Right inguinal hernia complete, oblique. First noticed as a sense of weakness about Jan. 1, 1901; then, lump appeared in groin, which eventually descended in to the scrotum.

This was an inguinal hernia that followed an appendectomy within four months, and the first of a series of cases that I have seen.

When right inguinal hernia appears as a sequel to an appendectomy, it can usually be ascribed to an infection of the abdominal wall, to destruction of the nervous supply of the inguinal canal, or perhaps to both. Infection of the wall above the deeper layer of the superficial fascia is not destructive of the essential structure of the abdominal wall, but if the intermuscular spaces are invaded there results a serious damage to the muscles as well as to the nerves.

Mural abscesses have been a very common complication of simple wound repair, and were ascribed formerly to improperly prepared suture material. A study of the bacteriology of the skin, however, will lead direct to the cause. The pyogenic organisms most commonly found in mural abscesses is the *Staphylococcus epidermidis albus* of Welch, and where mixed infection occurs, the staphylococcus is usually combined with the *Bacillus coli communis*. Hence the inference is natural that this infection comes primarily from the skin, either from puncture of the needle from unnecessary handling or from improper protection.

It is common experience that mural abscess almost invariably follows any inordinate hemorrhage from the needle wound, and not infrequently this hemorrhage is so sharp that it requires a compression ligature to control it. The blood from this puncture invites invasion by the bacteria of the skin, and the closed wound fulfils all the requirements of an incubator; and in about seven or eight days, just when the patient ought to be recovering, a mural abscess is discovered; repair is delayed and destruction of the integrity of the abdominal wall is reasonably certain. This interrupted recovery is decidedly discomforting; but it becomes absolutely humiliating if in three to six months the patient returns with a right inguinal hernia as a remote result of the infection. Absolute hemostasis, or, if bleeding is unavoidable, the removal of blood by a small wick of gauze emerging from the lower angle of the wound, to be removed at the end of twenty four hours, will prevent the blood-clot effectively and remove any possibility of mural abscess with its train of dire consequences.

The nerve-supply of the right lower abdomen may be damaged by sepsis, or by ruthless disregard of the course of these nerves in outlining the incision. The nerve supply of this region is obtained from the iliohypogastric and the ilio-inguinal. These nerves arise from the first lumbar with a contribution from the twelfth dorsal; they pass forward over the psoas muscle and penetrate the transversalis above the crest of the ilium and spread themselves in a fanlike manner between the internal and external oblique, perforating the external oblique from 1½ to 2 inches to either side of the linea semilunaris. After the perforation of the external oblique they become merely cutaneous nerves of sensation. But during their course in the intermuscular layer they supply the external oblique, internal oblique, transversalis, intercolumnar fascia and the conjoined tendon. Please note that the above-named structures comprise the anatomy of the inguinal canal.

Any surgical treatment that necessitates the exploration of the abdominal cavity, requires full knowledge of the structures comprising the wall of that cavity; the mere names will not suffice, but the nerves supplying the layers, their course, and distribution must be known, recognized and protected. It is not the object of this paper to discuss the various incisions preferred by surgeons in gaining access to the abdominal cavity; suffice it to say that any method or site of an incision which does not compromise the integrity of the wall, by reason of injury or destruction to important tissues, is surgically justified; and that any incision which has not that object in view is never surgically justified even if recovery without sequelæ should result.

The percentage of inguinal hernia following appendectomy is not large; but if it occurs at all, the proportion is altogether too large since the sequela can always be prevented by surgical knowledge of the structures of the abdominal wall and by surgical precaution to prevent wall abscess.

1222 Locust Street.

ABSTRACT OF DISCUSSION

Dr. E. Wyllys Andrews, Chicago: We are familiar with the occurrence of femoral hernia as a sequel to operation done for the cure of inguinal hernia or *vice versa*. There is dilatation of the one canal by reason of pulling upward or downward of its boundary. In the case reported by Dr. Pond there was evidently a weakening of this canal by the injury done to its upper boundary. It is probably true that we must revise our ideas of the pathogenesis of inguinal hernia to a considerable extent, from the important information recently obtained from the preformed sac, which it is now known exists not only in the well-known and well-recognized congenital hernia, but in a very large percentage of so-called cases of traumatic hernia. So that in traumatism we recognize only a slightly exciting cause or, as many of our corporation lawyers are now claiming, a non-existent cause. It may be that Dr. Pond's conclusions were based on an insufficient number of cases, if we lay a great deal of emphasis on the preformed sac as an element in all inguinal hernias. I cannot help recognizing the importance of the anatomic distribution of the nerves and the occurrence of the atrophic changes, which were probably all present in Dr. Pond's case.

Simulation of Pulmonary Tuberculosis.—The compulsory military service in Europe leads to considerable malingering to escape or shorten it, and the latest device of the kind is the simulation of the early signs of pulmonary tuberculosis. Dr. Batier has recently reported three cases of the kind in which the symptoms of the feigned disease promptly subsided when the patients were sent to the guard house for their attempt to deceive the medical authorities. His communication is published in the *Tribune Médicale*, April 16, 1910, page 241.

PHRENITIS PROSTATICA*

JAMES F. PERCY, M.D.
GALESBURG, ILL.

Affections of the mind proceeding from the pathologic prostate gland have had no place in the literature of disease until 1907.[1] Before this date, the prostate had been considered only from the standpoint of urinary obstruction and infection. It is the purpose of the present paper to emphasize the surgical importance of the prostate along medicolegal lines. I can do this best, perhaps, by detailing the history of a recent case. By way of preface, permit me to say that this history is not an uncommon one. The difficulty has been to attribute the cause of the trouble to its source, viz., the diseased and usually hypertrophied prostate.

Mr. X, aged 66, has a history of prostatic irritation extending over a period of ten years; voids urine three to four times during each night; does not use catheter; amount of residual urine unknown; urine normal except for occasional hyaline casts; rectal examination shows large, soft prostate of estimated diameter of two and a half inches, with length of three inches; blood-pressure, 180; temporal vessels, tortuous; radial pulse, normal; no evidence of spinal cord or brain lesion. The patient is in good general health, except that he has called himself a sufferer from "dyspepsia," for many years. He has always had the reputation of a model citizen; is honest, truthful, and of good financial standing, and of exceptional judgment on general affairs; the father of three healthy children to whom he is devoted, as he also was to his wife when alive. About a year ago he began to furnish material for the scandalmongers of his city, because of his illicit sexual relationship with a woman of questionable character. This woman's domination over him seemed to be complete, even to the extent of transferring a portion of his property to her. He will go to any length, as far as untruthfulness is concerned, to protect what he calls the reputation of the woman in question. Only in this respect has the man's character changed. In all others, he is the same model citizen and father that he has always been.

I cannot report the surgical history of this patient. But he like many of those similarly afflicted, refused operation for fear that it might rob him of his excessive sexual desire. Others in my series of cases, however, supply the necessary postoperative history to show that a chain of certain definite symptoms can accompany hypertrophy of the prostate. These symptoms are usually manifested by immoderate sexual indulgence late in life, together with a distinct mental symptomatology along the lines of the psychic life of the afflicted individual. Unfortunately, these manifestations often occur in a form to discourage the belief that man was created in the image of God.

One of my patients, a physician, aged 68, with a large soft prostate and urinary obstruction, would not use a catheter except when compelled to. His most frequent method was to empty his bladder during intercourse with his wife, aged 64. The latter suffered from an intractable form of leucorrhea. Removal of this man's prostate cured his abnormal sexual life.

Another man, aged 74, first consulted his physician because of the waning sexual desires of his wife, aged 68. He wanted medicines from the family physician to restore her sexual powers. The wife begged the physician not to give her anything, but to do something for the husband. His history showed that the sexual congress averaged from two to four times every night. The family physician suspected some form of spinal cord or brain lesion, and the patient was sent to me for diagnosis. Nothing was found beyond what one would expect in a well-preserved old man. He was very much surprised when told that his sexual activity was absolutely abnormal, and that if persisted in, he would probably develop some form of spinal cord disease. This man had a very large prostate, and its removal stopped all of his abnormal sexual symptoms.

Many of these patients are cunning in a bunglesome way in their efforts to conceal their unappreciated affliction from the family and friends. In a former paper, I described, among others, two cases, in one of which the patient almost disrupted his home and the community in which he lived because of his sexual relationship with some of the lower animals. This man was a lawyer of good standing who had served a number of terms on the bench. He was absolutely cured by the removal of a very large, soft prostate, and has remained well, now six years. The other patient was a progressive business man of the intellectual type, who had scandalized the community by his unlawful relations with negro women. An abscess of his prostate, which destroyed half of it, and caused an atrophy of the remainder, cured him. Subjects of this disorder can be found in many of the almshouses, particularly, and in the government soldiers' homes, and they are frequently admitted under the mistaken diagnosis of senile dementia. Regardless of where or when found, whether in an insane asylum or in their homes, they always form a disgusting, but nevertheless pitiable, chapter in the phenomena of sexual excess. These are the men who, at 80 years of age, marry girls of 16. They also become the easy prey of designing women who are not 16. The legal documents which they sign, especially when they attempt to divide their property, are often biased by influences that have back of them a perverted mind made so by a diseased prostate. Two celebrated cases which occurred in this country within the last two years, are in this class. I am assured by those in a position to know that both of these men suffered from the delusional sexual irritation which is characteristic of this condition in a certain as yet unknown percentage of those suffering from an enlarged prostate.

To quote partially from my former paper:

> It is possible that a certain proportion of the sexual neurasthenics and sexual perverts may have as an explanation of their mental aberration, a pelvic rather than a brain pathology. Certain it is that an earlier recognition of disease of the prostate and its appendages, with the mental symptoms that may accompany it in the young or old male, would, in a certain proportion of cases, save the pride of the family of the sufferer, and prevent the moral health of the community from being undermined. The local conditions in the prostate seems to set up an irritation which is expressed through the sympathetic and cerebrospinal symptoms; and out of this will grow visions and mental vagaries until the old man becomes a prey to all sorts of phantasms that finally make his life a mere sexual fetish. Before a diagnosis of sexual neurasthenia or of senile dementia is assumed to be the final word, the possibility of prostatic disease should be eliminated, and if this is found, especially the large hypertrophied gland, its excision will show in a large proportion of the cases that the problem was a surgical rather than a neurologic one.

The symptoms so briefly enumerated above have back of them as yet an undescribed pathology. It would seem to me, however, that the tardy recognition of the thyroid as a cause of certain classical symptoms was to be paralleled when those of phrenitis prostatica were referred to their proper origin. The microscopic anatomy of a gland does not show its vital relationship either to other glands, or to the general economy. This is true of the thyroid, and I believe it to be true, also, of the prostate. No work that I am familiar with has attributed to the prostate an extra, or an internal, secretion; and yet, in ten out of the twenty-five cases 40 per cent. on which the studies in this paper are based, the patients had large, juicy prostates. In addition to this, all of the 10 had thick capsules, making their removal by the perineal route comparatively easy. The youngest of these ten patients was 63; the oldest, 75.

---

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

[1] Tr. Western Surg. and Gynec. Assn., 1907; Illinois Med. Jour., November, 1908.

Schäfer has shown that the cortex of the suprarenals is probably a separate secreting gland tissue which may have a close relation to the sexual organs and to the pigments of the skin. Whether the changes incident to the enlarging of the prostate during the sunset period of life in the male augment or inhibit an unknown secretion, is difficult to say. Whether the hypertrophy destroys, as is evident in some cases of thyroid (colloid) enlargement, or whether it increases this assumed internal secretion, is unknown. As is well known, however, the feeding of thyroid extract in certain hypertrophies of the thyroid stops the symptoms of excessive blood-pressure (uninhibited suprarenalism), which coexist with this form of disease in some cases. It is not difficult to assume that some such problem as this may be back of the symptoms described in the title of this paper.

"The thousand-mouthed succulent prostate," as Keyes has well named it, makes the problem of separating the various secretions that enter into the seminal fluid an extremely perplexing one. I have had under way investigations that, it is to be hoped, will aid in the elucidation of this subject. It is possible that these investigations will show that the seminal vesicles have a realm of function that will suggest the suprarenals when the kidney is considered, or even the parathyroids when the thyroid is studied. Glands are the highly differentiated islands of the body, where the physical and psychic life come in touch with vital processes through the streams of nerves and vessels. The prostate is the sexual solar system. In the young man, when the functions of this gland or its environs become perverted from an infection or a neurosis, we have many times what Casper has termed sexual neurasthenia. When this irritation becomes pathologic to the degree found in hypertrophy of the prostate, we have a distinct and heretofore undescribed diseased condition of the mind that merits the title given it above. This condition, which is not senile dementia, is cured by excision of the prostate. Sexual neurasthenia, as it is found in those who are not old, usually has back of it some form of genito-urinary infection, while the senile hypertrophied prostate, as a rule, gives no evidence of infection except in the occasional case in which the seminal vesicles contain pus, yet unlike the sealed tubes found in women suffering from salpingitis. The sexual neurasthenic, the young sexual pervert, adolescent sexual precociousness, and the senile sufferer from phrenitis prostatica, however, may be affected with one and the same thing, one condition being but a varying degree of the other; and one or all of these, merely serving as a pelvic electric battery which, depending on the stage of life in which the trouble manifests itself, merely serves to ring up the psychic life of the sufferer in various ways along the line of diminished sexual balance.

In closing, permit me the following word of argument. If the removal of postnasal adenoids can transform the mental, moral and physical life of a child from the abnormal to the normal, is it beyond argument that the removal of the prostate at the other extreme of life will not produce the same good results? Embryologically, adenoids are but an aberrant branch of the nervous apparatus, and the same primitive findings regarding the prostate place it, according to Walker, as a part of the sexual system. Remembering this, we need not be surprised that adenoids, when present, give rise to characteristic mental conditions, or that the hypertrophied prostate may cause a train of disgusting mental phenomena that also can be removed by well-applied surgery.

Whether phrenitis prostatica is due to an over supply or an undersupply of an as yet unknown internal prostatic secretion; whether it is merely an obstruction, developing mental symptoms by irritation and pressure of the nervous supply to the gland itself; or, whether the prostate, with its assumed internal secretion, is thrown out of rhythm with some other gland by the hypertrophy; whether this "other" tissue is the cortex of the adrenals, which some laboratory workers have shown to be hypertrophied in the lower animals possessing extraordinary sexual development, and "atrophied when the sexual power was low;" or, "whether it is due to some abnormality in the involution of the sexual organs"; or, whether, after all, the trouble is a central one following loss of control by the brain of the immoral impulses of our bodies, I do not know. But I do know that excision of the hypertrophied prostate, in the presence of the mental symptoms above described, will restore the unfortunate possessor of them to health.

ABSTRACT OF DISCUSSION

Dr. Harold N. Moyer, Chicago: The province of the Section on Nervous and Mental Diseases has been seriously invaded by the two papers on the program of the Section on Surgery, one proposing the cure of mental troubles by the removal of the prostate and the other proposing the cure of dementia præcox by removal of the thyroid. It is not questioned that the diseased prostate may cause symptoms such as Dr. Percy described and that these symptoms will in large measure be removed by removing the prostate. Unfortunately it leads into a rather discreditable chapter in the domain of surgery, in which surgeons have cut off and cut out for the cure of nervous disorders.

I would criticize Dr. Percy's paper in many particulars; in the first place, the title of the paper, "Phrenitis Prostatica," inflammation of the mind due to the prostate. The term "phrenitis" has not been used by an alienist for seventy-five years. Dr. Percy means a certain collection of mental symptoms that have their origin in the prostate, and are undoubtedly reflex in character. Some of the arguments he advanced, I believe, are not sound, although his conclusions are sound. In the cases of sexual perversion, or those in which there exists the symptom-complex described, one should not at once excise the prostate and expect to effect a cure. One should wait a few days to be sure that the prostate is diseased, because if it is healthy it will do no good to take it out. Next, one should consider if there is no other treatment for the diseased prostate but excision, or if there is any such thing as a stricture at the membranous urethra, granulation tissue in the sinus pocularis, and other things that might be responsible for the trouble and that can be relieved very greatly, at least, by some means other than removal of the prostate gland.

I think, however, that the paper is a lesson for the surgeon as well as for the neurologist. The surgeon should know that certain things may come from the diseased prostate originally, although in exceptional cases, and for the neurologist to know that he is apt to neglect some things on the physical side of the case. No neurologist should attempt to treat sexual perversion or neurasthenia when symptoms point to the genital tract without an examination of that tract. The two things are often inextricably mixed, so that sometimes we have a strong prostate overcoming a weak brain, although if the brain is sound it will usually take care of the diseased prostate.

DR. J. F. PERCY, Galesburg, Ill.: I am sure that every practitioner of experience has encountered these cases, and it is possible that you will meet with more of them now since your attention has been called to this factor. If phrenitis prostatica does not quite answer in the way of nomenclature, will not Dr. Moyer give a term that is just right? I have tried to get a term that seemed more correct than "phrenitis prostatica," but a friend, an eminent Greek scholar, after reading my paper, gave me this title, with the assurance that it was entirely correct.

REPORT OF THE COMMITTEE FOR THE STUDY OF THE RELATION OF TUBERCULOSIS TO DISEASES OF THE EYE*

WILLIAM H. WILDER, M.D.
Chairman of the Committee
CHICAGO

This committee was formed for the purpose of studying in a cooperative way the relation of tuberculosis to certain diseases of the eye, the etiology of which is often obscure.

As was stated in the preliminary report, it was thought that a number of observers might accumulate enough data to draw conclusions that might not be warranted by the limited observations of a single individual.

Those who were interested in this work agreed to study their cases acording to a plan that was prearranged, and to keep records on blanks prepared for the purpose, so as to facilitate compilation.

This plan of study contemplated a thorough physical examination of the body to determine, if possible, the etiology of the eye disease. If, in this examination, no reasonable etiology could be determined, other than that the patient gave evidence of having either active or quiescent tuberculosis in some part of the body, it would be strong presumptive evidence that tuberculosis played some rôle in the causation of the eye disease.

Unfortunately, it is difficult to control clinic and dispensary patients as one would like; and it is also difficult to exclude syphilis, blood conditions, autointoxications and other factors, in order to get perfectly definite results in such a problem. But if we can place any reliance in the tests that have been proposed by Koch, Wolff-Eisner, Pirquet and Calmette, it is not difficult to determine whether or not a person is tuberculous, even in the absence of well-defined physical signs.

It is one thing, however, to show that an individual is tuberculous and quite another to prove that the lesion of the eye that he has is tuberculous; and yet, while there may be lacking the positive proof, the presumptive evidence may be strong.

Such is the case when, in addition to the general reaction from the subcutaneous injection of tuberculin, there appears a reaction in the affected eye, manifested by a conjunctival or ciliary injection or an aggravation of the original trouble. This has been done in many cases, when feasible; in many of them we had to rely on the physical examination or the simpler cutaneous test of Pirquet.

There has been a growing distrust and fear among ophthalmologists of the use of the conjunctival test, proposed by Wolff-Eisner and Calmette, that I think is not altogether well founded.

Most of the members declined to make use of the Calmette test in this study, because they consider it dangerous. It is true that certain ill effects from the use of tuberculin in this way have been observed, and the alarm has been sounded by several oculists of note, but I am inclined to think the reason for the bad results is that the solution has been used too strong at first. It is as necessary to know just what strength one may use with safety in the conjunctiva as it is to know what dose one may safely administer subcutaneously.

Within the past year I have made observations in a number of cases of eye disease that I had reason to believe were tuberculous in nature, and found that not only did the patients tolerate tuberculin administered in the eye in small doses, gradually increased, but they actually improved as I approached the dose that would excite a mild reaction. To be on the safe side, the first dose would be 1/1000 mg., gradually increased until in some cases 1/10 mg. would be employed, a dose nearly equal to that ordinarily employed in the Calmette test.

These cases will be made the subject of a personal communication later, after further observation and study.

The following members of the committee have submitted records of cases that are included in this report: Drs. George S. Derby (Boston), Charles Stedman Bull, Arnold Knapp (New York), W. C. Posey, George E. de Schweinitz (Philadelphia), Harry Friedenwald (Baltimore), L. W. Dean (Iowa City), and W. H. Wilder.

For various reasons, other members of the committee were prevented from engaging in the work, so that the showing is not so large as we had hoped to have it, but altogether we have 144 cases to report that have been studied with a view to determining whether tuberculosis played any rôle in the etiology. These cases have been classified as follows:

Blepharitis	3
Dacryocystitis	2
Follicular conjunctivitis	5
Phlyctenular disease of conjunctiva and cornea	47
Scrofulous pannus	4
Keratitis (deep and nodular)	12
Interstitial keratitis	18
Episcleritis	4
Scleritis	3
Sclero-keratitis	22
Chronic iritis	3
Chronic iridocyclitis	7
Uveitis	6
Choroiditis	5
Chorioretinitis	3
Total	144

BLEPHARITIS

BULL: CASE 1.—Boy, aged 4; in upper right lid a small nodule appeared, which increased in size to that of a small pea and became red and painful; no enlarged glands; lungs and other parts normal. Von Pirquet test negative after three trials. Subcutaneous test, decided general reaction; temperature 100.4 F.; no local reaction.

CASE 2.—Girl, aged 15, had a small nodule in middle of lower right lid that extended into conjunctiva, ulcerated and bled easily. Von Pirquet test negative; subcutaneous test positive. Temperature 100.2 F.

These cases were regarded as tuberculosis of the lid.

WILDER: Girl, aged 6, with blepharitis ulcerosa. Tonsils enlarged, adenoids present, superficial lymph glands enlarged. Reason to believe that child was tuberculous, but three v. Pirquet tests negative.

DACRYOCYSTITIS

WILDER: CASE 1.—F., aged 19; fistula in tear sac. Lymphadenopathy. Marked reaction to v. Pirquet test.

CASE 2.—F., aged 9; chronic dacryocystitis; appears tuberculous. Pulmonary examination negative. Three v. Pirquet tests negative.

FOLLICULAR CONJUNCTIVITIS

WILDER: Five patients, ranging in age from 1½ to 15 years. In all these cases perceptibly enlarged lymphatic glands. In all pulmonary examination negative; v. Pirquet test positive in three and negative in 2.

PHLYCTENULAR CONJUNCTIVITIS AND KERATITIS

DERBY: Eleven patients, 9 under 14 years of age, 1, 28 and 1, 30. In 8 unmistakable clinical signs of tuberculosis: 5 of the lungs, 1 of the spine, 1 of the knee and spine, and 1 of the skin. The other 3 cases showed signs of scrofula in enlarged glands. Five cases showed a positive and severe reaction to v. Pirquet test; in the other 6, test not made, the evidence being so strong that they were tuberculous. Patients were treated in the tuberculous class.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Wilder: Thirty-six patients with phlyctenular disease of the cornea and conjunctiva, ranging in age from 2 to 21 years, only 5 being over 14 years. Of the 36, 7 showed signs of active or quiescent pulmonary tuberculosis, 1 had history of tuberculous spine and showed kyphosis. With two exceptions, a well-nourished child of 7 years and a woman of 21, all had enlarged superficial lymphatic glands varying in degree. All but 4 of the 36 reacted positively to the v. Pirquet test. In one of these, a healthy boy of 8, with only slight adenopathy, and a phlyctenular conjunctivitis of right eye, two Calmette tests were negative and three v. Pirquet cutaneous tests were negative. In a woman, aged 21, with good history and no enlarged glands, two v. Pirquet tests were negative. In 2 other cases, a woman of 20 and a girl of 3, one test was negative, although there were evidences of scrofula in both of them. Possibly, if the patients had returned for repeated tests, the reaction might have been positive.

In this category may be included the cases denominated scrofulous pannus, in which extensive phlyctenular disease involves large areas of the cornea, and is very obstinate to treatment.

Four of these cases were studied, of which none showed pulmonary lesions, but all had marked lymphadenopathy and responded positively to the Pirquet test with severe reaction. One of these, a colored woman of 28, with an obstinate extensive phlyctenular keratitis of five months' duration, improved remarkably with tuberculin dropped into the eye in graduated doses.

Summary.—Fifty-one cases of phlyctenular disease of the cornea or conjunctiva, or both; 47 at least showed distinct evidence of tuberculosis, either in a quiescent or an active form.

INTERSTITIAL KERATITIS

Only those cases were considered in which with reasonable certainty syphilis could be excluded; 18 such cases were studied.

de Schweinitz: In a girl of 18, with bilateral interstitial keratitis, a general reaction was obtained and also a local eye reaction after subcutaneous test with tuberculin.

Dean: In 2 patients examined, 11 years and 46 years, one showed a positive v. Pirquet, the other was negative. Neither responded to general test.

Knapp: Three patients, 11, 18 and 23 years, all reacted to subcutaneous test, and two showed a local reaction in the affected eye, in the increased ciliary injection, or aggravation of the symptoms. The one who showed no local reaction, but a distinct general reaction, with temperature of 101 F., improved decidedly on antisyphilitic treatment. The Wassermann test was not made.

Derby: Seven patients, ranging in age from 16 to 36 years. Five showed marked general reaction to subcutaneous test with tuberculin, with local reaction in the affected eye. This local reaction was an aggravation of the symptoms of mild degree, but was considered positive by the observer.

In one case, a girl of 16, with bilateral keratitis interstitialis, there was a quiescent tuberculous process in both apices. Wassermann test was negative, but patient gave no response after two trials of the v. Pirquet test. Dr. Derby concludes, however, that the case is tuberculous. In the other case, a girl of 19, there was tuberculosis of both apices, old tuberculosis of cervical glands, and yet the v. Pirquet test was twice negative.

Wilder: Five patients, ranging in age from 6 to 25 years. Four showed distinctly positive reaction to v. Pirquet test. One who reacted negatively on first examination was a delicate child of 8, with scrofulous glands and a suspicion of beginning pulmonary trouble and did not return for further examination. Two of the patients tested with tuberculin subcutaneously showed general reaction and a slight reaction in the affected eye.

Summary.—Eighteen patients; 11 showed general reaction to subcutaneous test, 3 others showed positive v. Pirquet test. In the 4 who were negative to v. Pirquet, tuberculosis was thought to exist in 3 of them from clinical examination. Of the 11 who showed reaction to the subcutaneous test, 9 showed a local reaction in the affected eye, evidenced by increased ciliary injection or an aggravation of the conditions.

KERATITIS

Of other forms of keratitis suspected of being of tuberculous origin, 12 cases have been studied.

de Schweinitz: A man of 25 years, with nodular opacities in the anterior layer of the cornea, reacted to subcutaneous test with local reaction in affected eye. Tuberculin treatment seemed to relieve him, but vision was not improved.

Derby: Eight patients, ranging in age from 10 to 49 years, in whom there were nodular infiltrates in the cornea, several in the deeper layers, and in 3 combined with nodules in the iris. In 4 of these patients there was evidence of pulmonary tuberculosis, in 2 others a family history of tuberculosis, and in 2 no pulmonary involvement or noticeable lymphadenopathy. In all of these cases but one there was positive and marked reaction to the v. Pirquet test. This patient, a man of 32, with kerato-iritis, had nodules in the cornea and one in the iris angle that looked tuberculous. Pulmonary examination was negative; no lymphadenopathy.

Wilder: Two patients. Woman, aged 27; no pulmonary trouble; fair health; deep nodules in cornea; v. Pirquet test positive. Man, aged 40; fair health; evidence of old tuberculous trouble in each apex; nodules in superficial layer of cornea that broke down and formed small ulcers; v. Pirquet test positive. Subcutaneous test gave marked general reaction and local reaction in affected eye. Scrapings from ulcers showed no bacilli and cultures were negative. Tuberculin dropped in conjunctival sac, in graduated doses, followed by healing of ulcers and fair clearing of the cornea.

Bull: Woman, aged 19, frail, anemic, some enlarged glands. Infiltration of inferior segment of cornea, with small, yellowish nodules, and thickening and nodular elevation of adjacent conjunctiva. Pulmonary examination was negative; v. Pirquet test positive, with increased temperature. Subcutaneous test gave general reaction and temporary aggravation of condition of eye.

Summary.—Of 12 cases of nodular keratitis, 11 showed evidence of tuberculosis. In 5 pulmonary tuberculosis was demonstrated. In 3 tested subcutaneously there was general reaction, with local reaction in the affected eye.

EPISCLERITIS

Dean: Woman, aged 26, in fair health, developed episcleritis in right eye two days after conjunctival test with tuberculin, but, according to the observer, independent of it. Von Pirquet test was positive, subcutaneous test positive; temperature 102 F. after 1 mg. of tuberculin.

Wilder: Three cases. Case 1.—F., aged 18. Father died of pulmonary tuberculosis. Slight apex lesion; cervical glands enlarged; right eye affected for seven months with a nodule in episclera on temporal side; v. Pirquet test positive; Calmette test in other eye positive. Treatment with tuberculin in conjunctival sac, maximum dose being 7/1000 mg. Recovery.

Case 2.—F., aged 36; fairly healthy; lungs negative; episcleral nodule on temporal side of right eye; v. Pirquet test positive.

Case 3.—M., aged 24; fairly healthy; superficial glands enlarged; episcleral nodule in temporal side of left eye for six weeks. Von Pirquet test positive and marked; greatly improved by tuberculin injection in conjunctival sac; maximum dose, 5/1000 mg.

Summary.—Four cases, of which 1 showed evidence of pulmonary tuberculosis, 1 responded to subcutaneous test, 2 responded to v. Pirquet test.

SCLERITIS AND SCLEROKERATITIS

Bull: Two cases of scleritis in patients of 5 and 12 years. In each there was a nodule in the sclera, about 8 or 10 mm. in diameter. In one the conjunctiva over the scleral nodule had ulcerated; no organisms were found in the scrapings. There was some lymphadenopathy, but no pulmonary lesions. Subcutaneous test in each case was positive, and in the affected eye there was an increase of vascularity.

Knapp: One case of deep scleritis in one eye in a patient of 27 years; no enlargement of glands or pulmonary trouble. Subcutaneous test gave positive reaction, and a little more redness of the bulbar conjunctiva.

de Schweinitz: Three cases of typical relapsing sclerokeratitis in adults, in all of whom the v. Pirquet test was positive, and in two of which brilliant results were obtained with tuberculin treatment.

Friedenwald: One case. F., aged 18; sclerokeratitis with iritic complication, suspicion of pulmonary lesion at apex.

Von Pirquet test was positive; subcutaneous test positive; good result from tuberculin treatment.

POSEY: Two cases of sclerokeratitis in persons, 33 and 28 years of age, in good health; no glandular or pulmonary involvement. In both v. Pirquet test was positive; in both subcutaneous test was positive and in one there was pronounced local reaction in affected eye; good results from tuberculin.

DERBY: Fifteen patients ranging in age from 21 to 50, in 4 of whom the iris was involved. Seven gave physical signs of pulmonary tuberculosis, and in most of these there were also signs of tuberculous glands. In 8 physical examination was negative, except slight lymphadenopathy in 2. In 9 cases, the v. Pirquet test was made and was positive. In 5 in whom a subcutaneous test was made it was positive, and all except one of these were in persons who showed no physical signs of tuberculosis except slightly enlarged glands in 2. In 3 of these 5 cases of positive subcutaneous reaction there was also a pronounced reaction in the affected eye; in the other 2 the administration of a therapeutic dose of 6/100 mg. caused a light general reaction as well as a mild reaction in the affected eye.

WILDER: One case, a woman of 23, with enlarged glands, but no pulmonary involvement. Von Pirquet test was positive; Calmette test in sound eye was positive; subcutaneous test, 3 mg. caused marked general reaction, with slight reaction in affected eye. The patient, who had suffered for months, improved remarkably after use of tuberculin in increasing doses in the conjunctival sac, the maximum dose reaching 1/10 mg.

Summary.—Twenty-five cases of scleritis and sclerokeratitis, in 8 of which physical examination showed signs of pulmonary tuberculosis. In 12, the subcutaneous test was made and was positive, and in 10 of these there was reaction in the affected eye, manifested by an increased redness or a distinct aggravation of the condition. In the 13 remaining cases all but one gave evidence of the existence of tuberculosis by a positive Pirquet reaction. In 9 cases it is noted that marked improvement followed the use of tuberculin.

CHRONIC IRITIS

BULL: F., aged 15; previous history of iritis one year before. Left eye shows three nodules in iris, one larger than the other; post-synechiæ. Glands in neck enlarged; pulmonary examination negative; v. Pirquet test positive, with temperature increased to 100 F. Subcutaneous test positive, 101.6 F., with local reaction in eye.

WILDER: Case 1.—M., aged 37. Had repeated attacks of iritis in each eye. R. V. = fingers three feet. Severe iritis. L. V. = 20/40 +. L., post-synechiæ. Von Pirquet test positive; subcutaneous positive; reaction in eye questionable. Treated with tuberculin in conjunctival sac, with increasing doses, reaching a maximum of 1/10 mg. Improvement of condition of right eye and vision reached 20/200.

CASE 2.—F., aged 8; chronic iritis of right eye for one year. Fifteen months before she was seen, eye had been struck by a stick, but without a penetrating injury. Marked lymphadenopathy; marked v. Pirquet reaction, with a general reaction; no noticeable change in eye.

Summary.—Three cases of recurrent iritis, all of which gave evidence of existence of tuberculosis.

CHRONIC IRIDOCYCLITIS

DEAN: Case 1.—Male, aged 25; iridocyclitis and anterior chorioiditis; no enlargement of glands; pulmonary examination negative. Positive Calmette test; positive subcutaneous test after 5 mg. of O. T.; temperature 103.6 F.; marked reaction in affected eye, lasting three weeks; no improvement with tuberculin.

CASE 2.—Adult male; chronic iridocyclitis in right eye; left eye lost from previous attacks of inflammation. R. V. = F. 1 m. Glands negative; pulmonary examination negative; v. Pirquet test positive and severe; subcutaneous injection positive. Eye seemed to improve after 3 mg. and 5 mg. injections. After eight months of treatment with tuberculin, R. V. = 6/8.

CASE 3.—Female, aged 24; severe pain in right eye; V. = P. 1. Left eye was removed at age of 16 from result of an injury in childhood. Glands not enlarged; lungs normal; v. Pirquet test negative; subcutaneous test negative, 5 mg.

CASE 4.—Chronic iridocyclitis, and keratitis bullosa of right eye in adult male. Cataracts had been extracted 14 years before. R. V. = fingers, 6 inches. Von Pirquet negative; subcutaneous test negative.

KNAPP: Male, aged 17. Mother died of pulmonary tuberculosis. Iridocyclitis of left eye; L. V. = 15/200; slight lymphadenopathy; slight involvement of lung. Subcutaneous test positive; temperature, 100.4 F.; no reaction in eye.

WILDER: Case 1.—Female, aged 30; frail woman; rheumatic history. Numerous deposits on back of each cornea; gradual failure of vision and distress in eyes. Subcutaneous test, 3 mg., gave distinct general reaction and slight reaction in right eye; no marked improvement of vision under tuberculin treatment.

CASE 2.—Male, aged 19, chronic iridocyclitis of left eye. Injury of eye 10 years before, from which he recovered with good sight; gradual failure of vision, with precipitates on back of cornea; opacities in vitreous; general condition good; pulmonary examination negative. Von Pirquet test positive; subcutaneous test, 1 mg., positive; temperature 102 F., with local reaction in affected eye. Vision gradually failed; tuberculin treatment ineffective.

Summary.—Seven cases of chronic iridocyclitis and anterior chorioiditis, in only 1 of which was there evidence of pulmonary tuberculosis. In 5 there was general reaction to tuberculin subcutaneously and in 3 of these slight reaction in affected eye.

UVEITIS

BULL: Male, aged 30, anemic; iris swollen and discolored; post-synechiæ; opacities in vitreous of two months' duration; no pulmonary disease; glands normal; v. Pirquet test positive; subcutaneous test positive; temperature 102 F. In eye all symptoms were increased in severity.

DE SCHWEINITZ: Female, aged 22; relapsing uveitis, very suggestive of tuberculous origin. Tests for tuberculosis were entirely negative. Subsequent treatment along the line of intestinal autointoxication was most successful.

WILDER: Four cases. Case 1.—Male, aged 23; general health good; enlarged lymph glands in neck; no pulmonary trouble; recurrent attacks of dimness of vision of right eye; post-synechiæ; vitreous opacities. R. V. = 14/200. Later this fell to perception of light. Subcutaneous test positive; temperature, 101.6 F.; reaction in eye. Continued tuberculin treatment improved condition, so that V. = 20/40.

CASE 2.—Female, aged 40; fair health; in both eyes uveitis with iritis; old patches of chorioiditis; recurrent attacks of redness of eyes and dimness of vision; at times precipitates on back of cornea. Subcutaneous test, 5 mg., general reaction, with no local reaction in eyes.

CASE 3.—Male, aged 49; good general health; uveitis in both eyes, began in right four years before; vitreous opacities, followed by detachment of retina and blindness; failure of vision of left eye, V. = 14/200; no iritis, but numerous opacities in vitreous. Von Pirquet test positive and marked; subcutaneous test, 3 mg., positive; general reaction and local in eye. Treatment with tuberculin relieved for a time.

CASE 4.—Female, aged 62; fair general health; pulmonary examination negative; history of general uveitis in both eyes, with iritis, vitreous opacities and gradually increasing opacities of the cornea; v. Pirquet test positive; no subcutaneous test.

Summary.—Six cases of general uveitis, with no physical signs of tuberculosis. Four cases gave positive reaction to subcutaneous test, with local reaction in affected eye in 3.

CHORIOIDITIS AND CHORIORETINITIS

DE SCHWEINITZ: Male, aged 18; relapsing chorioiditis and vitreous hemorrhages; negative v. Pirquet test; marked intestinal autointoxication and relief from treatment along this line.

POSEY: Male, aged 25; family history negative; fair health; signs of old tuberculosis in left apex. Right eye: hazy vitreous; descemetitis; yellowish mass in chorioid; subcutaneous test positive; temperature, 102 F. Local reaction could not be ascertained on account of inflammatory condition. Tuberculin treatment and general measures resulted in cure. V. = 5/20.

DEAN: Male, aged 21; good health; right eye lost in infancy from chorioiditis; left chorioiditis for six months. v. Pirquet test positive; no subcutaneous test used.

KNAPP: Three cases. Case 1.—Male, aged 29, with disseminated chorioiditis in both eyes; no family history; pulmonary examination negative; no enlarged glands; disseminated patches of chorioiditis in each fundus; lowered vision. Subcutaneous test positive, 1 mg.; temperature 104.2 F., with ciliary injection in each eye.

CASE 2.—Adult male, in good physical condition; family history negative; chorioiditis exudativa in right eye. V. = 10/200; post-synechiæ; shallow retinal detachment. Subcutaneous, 1 mg.; general reaction, temperature, 104 F., and conjunctival and ciliary injection.

CASE 3.—Male, aged 15; no pulmonary signs; no gland enlargement; in macular region of both eyes, large areas of chorioidal change. R. V. = 20/200; L. V. = 12/200. Subcutaneous test, 5 mg.; temperature, 101.8 F.; positive; no reaction in eye.

DE SCHWEINITZ: Girl, with form of retinal disease, with extensive exudate, simulating tuberculous disease; subcutaneous test negative.

WILDER: Female, aged 18, failure of vision of both eyes at age of twelve; fair health; no evidence of syphilis; chorioretinitis in each eye; media normal. R. V. = 10/200; L. V. = 5/200. Von Pirquet test three times negative.

Summary.—Six cases of chorioiditis, in 4 of which subcutaneous test gave a positive general reaction, with local reaction in the eye in 2. Two cases of retinitis or chorioretinitis, in which tuberculin tests were negative.

In trying to arrive at some definite conclusions as to etiology in a group of cases like the foregoing, one should consider carefully the relative value of the means and tests employed in the examination of such cases. If active tuberculosis is present or has been present in lungs, joints or bones, sufficient to cause any marked changes, the condition may be discovered with all reasonable probability by careful physical examination. But if from 90 to 98 per cent. of all persons who have reached 60 years of age have been at some time infected with tuberculosis, as is claimed, then very many have suffered so slightly as not to present signs of the disease that can be determined during life by our methods of physical examination.

If from 90 to 95 per cent. of all persons who have passed the adolescent period of life will respond actively to the sensitive cutaneous test of v. Pirquet, as is claimed, it helps to confirm the statements of the pathologists as to the ubiquitous nature of the disease. This being so, in a given case of eye disease, one could place little reliance on this test as determining the actual etiology of the eye lesion without first positively excluding all other factors, and this is not always possible.

The same criticism would apply to the Calmette test which, on account of its danger in diseased conditions of the eye, one would hesitate to use for ophthalmic diagnosis, even if one eye were sound. Response to this test might prove, as is claimed, the existence of active tuberculosis in some part of the body, but would not necessarily determine the nature of the eye lesion.

In the test by subcutaneous injection of tuberculin, the same difficulties are encountered. A general reaction following this test would only prove that the individual is tuberculous (excluding syphilis, leprosy, actinomycosis), which might be done by the simpler v. Pirquet or Calmette test. If, however, a local reaction in the diseased eye occurs, manifested by ciliary injection, conjunctival redness, or marked aggravation of the previous condition, we have strong presumptive evidence that the lesion in the eye is tuberculous. But the eye may be so inflamed as to prevent us from observing whether or not there is increased reaction, so that the test, if made, should be made when the eye is in a comparatively quiet condition.

Again, this raises the important question whether such structures as the cornea, sclera and uvea may not be thrown into a diseased condition by the toxic substances from the bacilli in a distant focus of tuberculosis, reaching them through the blood and lymph channels, without the presence of the micro-organisms themselves in any part of the eye. This being the case, might we expect a local reaction in the eye, even if we encountered a general reaction with the subcutaneous test?

An interesting feature of this series of cases is the frequency of association of tuberculosis in some part of the body with eye conditions such as phlyctenulosis, deep and interstitial keratitis (non-syphilitic), and sclerokeratitis, and the frequency of local reaction in the eye in such cases, with the use of the subcutaneous test.

In 59 cases of keratitis, episcleritis, scleritis and sclerokeratitis, 56 gave positive evidence of being tuberculous, either by physical examination or tuberculin tests. In 27 of these cases subcutaneous tests were made and of these 22 were positive as to local reaction in the eye.

If it were possible to study all such cases that appear in a year or two in several large clinics or eye hospitals, we might arrive at some instructive conclusions as to the frequency of tuberculosis as a cause of such diseases.

ABSTRACT OF DISCUSSION

Dr. John Green, Jr., St. Louis: I observed that, under the heading "keratitis," reference is made to "nodular" keratitis, "nodular" infiltrates, etc. In the summary, Dr. Wilder speaks of twelve cases of "nodular" keratitis, in which eleven showed evidence of tuberculosis. It seems to me that the term, "nodular," in connection with tuberculous corneal opacity, should be abandoned, in view of the fact that "nodular," qualifying "keratitis" or "opacity of the cornea," has come to possess a very definite clinical significance. Groenouw has used the term "nodular" in describing a peculiar chronic affection of the cornea, characterized by the presence of discrete subepithelial masses in the central portion of the cornea, and the term has been applied by subsequent writers in describing this condition. The disease is extremely rare, there being less than fifty cases in the literature, and in less than ten of these has there been found any evidence of tuberculous origin. Confusion is bound to arise if cases such as are described in the report, which bear no relation to "nodular" keratitis or to "nodular" opacity of the cornea, are nevertheless designated as "nodular."

A CASE OF EPISTAXIS

DR. EDMUND R. BLAAUW
BUFFALO, N. Y.

The article about epistaxis in THE JOURNAL, April 30, induces me to relate the following case:

On March 25 a 19-year-old boy consulted me for very severe headache. About two weeks previously he had influenza and four days previously his head began to pain him, so that sleep was impossible; his nose began to run at the same time. Percussion on the left frontal sinus was painful; also pressure in the left upper inner orbital corner. The left middle turbinate was swollen and, after depletion by cocain and epinephrin (adrenalin), pus came from below and above the turbinate. My diagnosis was left frontal sinusitis and ethmoiditis. The symptoms had not improved markedly the next day, so I removed the middle concha. No abnormality was noticed, the headache was controlled, and packing removed the following week. Eight days after the operation slight nosebleed occurred, but the cotton plug soaked in hydrogen peroxid solution stopped it entirely. Three days later all packing was removed, and the patient told to keep quiet. In the night of April 6 the patient suffered from a profuse hemorrhage. His family physician and a colleague gave atropin subcutaneously, but were unable to control the bleeding, even after tamponing the posterior nares. On my arrival I found the amount of blood lost considerable, and becoming alarming. I removed the posterior tampon as it only caused irritation and the place from which the bleeding came was in the anterior part of the nostril. But plugs soaked in hydrogen peroxid had no effect; epinephrin had been used before without success. No drug-stores were open during that night. The only calcium preparation at hand was calcium chlorid, which we gave liberally. The only effective means proved to be keeping the patient as quiet as possible and plugging the nostrils with ordinary non-absorbent cotton, which contains fat (suggestion by Dr. Hengerer), soaked in mercuric chlorid solution. Dr. Scott Renner, who was asked to come, found the bleeding stopped and ordered morphin subcutaneously.

The patient was transferred to the hospital early in the morning and made a good recovery, so that four days later all plugs were removed; the patient was kept in bed thirty-six hours afterward; a new hemorrhage started, without a known cause, and the patient lost about one liter of blood before I could reach him. Tampons with a solution prescribed by Dr. Renner (equal parts of antipyrin, 10 per cent. aqueous solution, and tannic acid, 10 per cent. spirituous solution) proved successful. The patient left the hospital three weeks after the first severe nightly hemorrhage. We have given him calcium lactate, which has been recommended for adenoid operations and tonsillectomy, and which, in the cases in which I have used it, seemed to make the blood more coagulable and the bleeding less abundant.

A remedy which was not used in this case, but which I find advocated by Dr. R. Lenzmann* is serum, as this contains the substances which bring on the coagulation. As plain serum cannot be had generally, antitoxin serum should be used with as low a quantity of "units" as possible.

This kind of nosebleed is due to an opening of an artery; it is therefore clear that epinephrin will do harm by raising the pressure in the smaller peripheral arteries and capillaries.

327 Franklin Street.

HYPEREMIA TREATMENT IN INFECTIONS OF THE BREAST

BERTRAM M. BERNHEIM, M.D.
Assistant in Surgery, The Johns Hopkins University; Assistant Surgeon to the Out-Patient Department, The Johns Hopkins Hospital
BALTIMORE

A previous communication[1] was devoted to the use of hyperemia as applied to the various forms of infection, such as boils, carbuncles, bone-felons, etc., usually seen in a surgical dispensary. Since that time this method of treatment has been continued along the same lines and with the same uniform success. But perhaps the most striking and gratifying results have been obtained in infections of the breast, and it is these that I wish to report now.

All grades of infections were treated, ranging from those of such severity that the patient was almost prostrated, down to the simple, but at times painful, caked breasts. Indeed, several patients were truly fit subjects for the hospital, but their absolute refusal to avail themselves of the privilege of the wards compelled us to treat them in the out-patient department.

The routine treatment is about as follows: When the patient is seen early in the disease and pus formation has not occurred, cupping is at once instituted for from fifteen to forty-five minutes daily, the breast between treatments being put up in a wet boric dressing, and nursing from it stopped. Abscess formation can frequently be prevented in such cases.

Unfortunately, however, most patients do not present themselves until an abscess has already formed and not infrequently ruptured. Wide incision is practiced in such cases, the patient being under ether or nitrous oxid. All pockets of pus are broken up with the finger and where necessary counter-radial incisions are made, followed by through-and-through drainage for twenty-four hours, with iodoform gauze. This is contrary to the usual rules of hyperemia treatment, in which drains are dispensed with, but the hemorrhage is rather profuse following incision, and, inasmuch as all our patients are ambulant, we have packed, more to avoid postoperative bleeding than for anything else.

In one or two instances I have used the cup immediately after the operation and with the patient still on the table, but in the severe cases this caused a considerable loss of blood and so much discomfort to the patient that now hyperemia is not instituted until twenty-four hours later.

At this time, with the drain still *in situ*, a cup at least 1 cm. larger than the entire breast is applied. A very moderate degree of suction is at first used—that is, a degree that causes no pain, only a slight blushing of the skin and very little bleeding. This is continued for about five minutes, then the cup is removed and the breast allowed to rest for about two minutes, following which the cup is again applied. This alternate cupping and resting is kept up until actual hyperemia has been instituted for about fifteen to forty-five minutes, varying according to the condition of the patient, the condition of the breast, the pain and the bleeding, which is apt to be rather free at the first treatment.

The drains are usually firmly adherent at first, but if they are left in place during two or three cuppings, they become loosened by the flow of pus, milk and blood, and are then very easily removed, when the treatment is resumed. In cases in which they do not come away without much pain they are left until the following day.

It sometimes happens that the very large cup does not draw away the pus. In such instances the application of a small cup for a few minutes will have the desired effect, although if it is injudiciously applied, severe pain may be caused. At the end of the treatment, a strip of wet boric gauze is loosely tucked in the mouth of the wound—simply to prevent closure—and the whole breast is put up in wet boric gauze, over which is placed a very loose bandage, thus allowing the breast to hang low, so that drainage by gravity will occur. The patient is now treated every day, occasionally twice a day, every two or three days, then every four or five days, until the process is healed.

It will thus be seen that this treatment differs in several respects from the rules laid down by Bier and his followers in the handling of these cases. Where they advise a small incision, we open widely. The small puncture is effective in the superficial abscesses, but in the deep, we have found that unless a generous incision is made, followed by breaking into all the pockets, and occasionally counter-incisions, one or more secondary operations are liable to become necessary.

Where the puncture wound is practiced the pack is unnecessary. Its use is self-evident, however, in the more radical operation, and we have discovered, much to our embarrassment, that the continued use of a loose pack just in the mouth of the wound is advisable.

In the old method of handling abscesses of the breast, tight bandaging was thought essential—in order to prevent milk-formation. Our patients have all been much more comfortable and we have had far better drainage since the loose bandage has been used, the breast being allowed to hang free. But aside from this, we deem it wise to continue the lactation, and as the cup aids in this, several (four) of our patients have been able to resume nursing on the affected breast after its restoration. No ill effects have resulted from this procedure, either to the child or to the mother, and we consider it an advantage, rather than a disadvantage.

When patients have been treated outside and have come in with a persistent sinus, the sinus has been laid open and packed twenty-four hours, following which the usual treatment has been instituted.

Lack of space prevents the publishing of individual case reports. It must, therefore, suffice to say that in the fifteen cases in which hyperemia has been used, the average duration of the disease, or rather the average duration of the infection, has been 19 1/3 days. The average number of treatments (cuppings) has been 7 1/5. Thirteen of the cases were in nursing mothers and four of these were able to resume nursing on the affected breast following its restoration. Only one patient has required secondary operation, and that being one of the earliest treated by the method was the result of inexperience.[2] Eleven of the fifteen patients came in with an abscess already fully developed. One came in with a sinus following an abscess, one with a chronic mastitis and two presented themselves early enough in the course of the infection to enable us to entirely prevent abscess formation.

---

*Lenzmann, Richard: Die Leben gefährende Krankheitszüstande, Ed. 2, 1909, p. 131.

[1] Bernheim, B. M.: Passive Hyperemia by Means of the Cupping-Glass of Bier and Klapp, THE JOURNAL A. M. A., March 14, 1908, p. 840.

The advantages then of this method are: (1) almost absolute freedom from pain during the whole course of the disease; (2) better preservation of the gland function, both for present and future lactations; (3) the minimum of scar-formation; (4) shortening the course of the disease, and (5) prevention of abscess formation in cases seen early enough.

2319 Linden Avenue.

EXPERIMENTAL STUDY OF BACTERIA ISOLATED FROM TONSILS*

DAVID J. DAVIS, M.D.
CHICAGO

Work on the bacteriology of the tonsils has largely been confined to the examination of swabs and smears made directly from the surface of the tonsils *in situ*. This surface is necessarily contaminated by bacteria from the mouth, throat, nose, food, etc., and the great variety of bacteria reported to have been found here is thus at least partly explained. It is evident, too, that the bacterial flora on the surface may be very different from that in the crypts. The present study, therefore, was made before and after excision of the tonsils and a comparison made of the bacterial flora of the surfaces and in the depths. The tonsils, usually enlarged, were obtained from patients with a variety of clinical conditions, including chronic joint affections, nephritis, endocarditis, rheumatic fever, recurring tonsillitis, etc. The detailed facts are reserved for later publication.

Tonsils from forty-five patients have been examined. The excised tonsils were at once placed in a sterile receptacle and taken to the laboratory where smears and blood-agar plate cultures were made first from the surface. The tonsil was then incised with a hot sterile knife, thus exposing the crypts and from these similar smears and cultures were made. In many cases anaerobic cultures were also made. In almost every case a pure growth or a nearly pure growth of *Streptococcus pyogenes* was obtained from the crypts. This was true regardless of the clinical condition of the patient. From the surface of the tonsils the flora, as a rule, was strikingly different from that in the crypts. The predominating organisms on the surface belong to the pneumococcus group, all producing green colonies on blood-agar and some, but not all, being inulin fermenters. In many cases streptococci were also present on the surface but they were relatively few even when the crypts contained them in large numbers. In some cases examination of swabs taken from the surface of the tonsils just before tonsillectomy gave results similar to those obtained afterward. Not infrequently pneumococcus-like colonies were obtained from the depths of the tonsils in considerable numbers, but as a rule the number was in more or less direct proportion to the tissue laceration and contamination of the depths of the tonsil by surface organisms.

Anaerobic cultures gave, as a rule, few organisms and none of the varieties found occurred with any degree of constancy or appeared to be significant. In two cases a practically pure growth of *Staphylococcus albus* was obtained from the crypts. In most cases staphylococci were not present at all, or only an occasional colony occurred on the plates. Occasionally long thread-like bacilli were seen in smears; these were not cultivable. In one case of recurrent tonsillitis, the last attack being four weeks previous to the tonsillectomy, cultures from the crypts gave a nearly pure growth of *Bacillus diphtheriæ*, while cultures from the surface of the tonsils taken both before and after excision did not reveal this organism. There is good reason to believe that an outbreak of several cases of diphtheria, occurring at this time in persons closely associated with this patient, may be thus explained. This case, therefore, is an example of a diphtheria-carrier in which the bacilli were present in the tonsillar crypts and were not revealed by the ordinary method of examination. All strains of streptococci were tested on dextrose, lactose, mannite, raffinose and inulin. All fermented dextrose and none fermented raffinose and inulin. A large number of the strains fermented lactose and a smaller number fermented mannite. They may therefore be divided into well-defined groups with reference to mannite and lactose fermentation. This grouping bears no evident relation to the clinical condition. Similar groups are observed in strains of streptococci isolated from other sources, which is in accord with the findings of others.

The virulence of the twenty-five strains of streptococci isolated from the tonsils was tested by intravenous injections into rabbits. Acute arthritis developed in nearly every instance, followed usually by death in from a few days to three or four weeks. The arthritis usually appeared from the third to the fifth day manifested by lameness and swelling of the joints. When large doses were given the arthritis usually was more general and appeared earlier, the animal soon dying of septicemia. The most suitable dose was the twenty-four-hour growth from the surface of one small blood-agar slant. A number of animals recovered, no trace of the joint lesions remaining. In three instances chronic lesions occurred, manifested by enlarged and deformed joints and exostoses about the joints. In a few cases one joint only was attacked, but as a rule the arthritis was multiple, in several cases involving nearly every joint in the body, including the vertebral joints. The various joints of the fore and hind limbs were about equally involved.

Post-mortem examinations revealed the fact that not infrequently in the early stages the involvement was periarticular, often involving the tendon-sheaths. Later the joint might become infected. The exudate in the joint early was usually gelatinous and slightly turbid, containing leucocytes and streptococci. This was frequently found when there was no external evidence of arthritis. Later the exudate became more purulent and even at times almost caseous in appearance. The streptococci were always readily recovered from the joint-fluid. In some cases, but not in all, they were isolated from the heart's blood and at times from the peritoneal cavity.

Multiple arthritis followed by death in two weeks was produced in a monkey (*Macacus rhesus*) by intracardiac injection of one of the strains of streptococci. In no case did endocarditis occur. The various strains of streptococci from the tonsils regardless of the clinical condition of the patient appear to differ little in their power to produce arthritis in the animals inoculated.

---

* From the Memorial Institute for Infectious Diseases, Chicago.

[2] The wound in this case was not kept open by the loose pack

The organisms of the pneumococcus group (six strains tested) in no instance produced arthritis in rabbits. An organism of this type, which produced green colonies on blood-agar-fermented inulin and which was isolated from the depth of the tonsil of a patient with multiple arthritis not associated with endocarditis, produced on intracardiac inoculation into a rabbit an extensive vegetative mitral endocarditis with typical large renal infarcts associated with septicemia. There were no joint lesions.

The cases examined were largely from the service of Dr. Frank Billings at the Presbyterian Hospital, to whom acknowledgment is hereby made for suggestions and privileges.

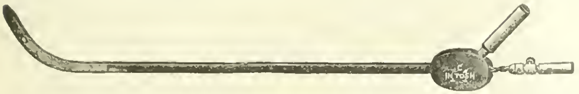
839 Lakeside Place.

AN ELECTRODE FOR THE IONIZATION OF SILVER, ZINC, OR COPPER IN THE TREATMENT OF CHRONIC URETHRITIS

J. J. P. ARMSTRONG, M.D.
DOUGLAS, ARIZONA

For some months I have been working on the ionization of silver, zinc, and copper, in the treatment of chronic urethritis, and believe that I have an electrode that will prove to be of benefit to those members of the profession who may be interested in this line of work.

I use a Neiswanger cataphoric electrode, made of hard rubber, with the tube closed at the lower end, bent to a proper urethral curve and perforated with small openings for a space of 6 inches from the distal end. The electrode shown in the illustration is only perforated for about two inches. The proximal end is pushed into a head, also made of hard rubber, to which is attached a twisted wire of silver, the length of the tube, and connected to a socket for the cord-tip. To the side of the head is attached a small metal tube one inch in length, which communicates with the long perforated tube, and which is connected by rubber tubing to a glass syringe having a long tip and capable of holding an ounce of 1 per cent. silver nitrate solution.



Electrode for silver, zinc or copper cataphoresis.

With the patient on his back I lubricate the electrode with a lubricant consisting of 2 drams of gum tragacanth and four ounces each of liquor antisepticus (N. F.) and distilled water, and pass it down the urethra to the neck of the bladder, which grasps it.

Then, having the patient hold the end of the penis tightly about the electrode, I fill the urethra full of the silver nitrate solution, and, connecting the electrode socket to the positive side of the galvanic current, and having a large, well-moistened dispersive electrode on the abdomen connected with the negative pole, I turn on a weak current and gradually increase it to ten or fifteen milliamperes for ten minutes.

Some patients appear to do better on zinc and others on copper, and for these I use the same apparatus, only substituting a zinc or copper wire and a 1 per cent. sulphate solution or $\frac{1}{2}$ per cent. copper sulphate solution as may seem best in the particular case.

The long perforated tube, being easily detachable from the socket head, can be cleansed more satisfactorily.

These applications are best made not oftener than every third day, and in the majority of cases will produce the desired result after not more than four or five treatments.

Clinical experience has taught me that the indications for the use of this method are, the "morning drop" with long, small, yellowish particles, some floating and others sinking in the urine; and those cases in which the urethroscope shows fine granulations.

RATIONAL TREATMENT OF BURNS*

H. L. FANCHER, M.D.
Professor of Gynecology, Medical Department of the University of the South, Sewanee, Tenn.
CHATTANOOGA, TENN.

A burn is an injury to or destruction of tissue by heat, the rational treatment of which is based on certain definite principles which are too often partially or wholly ignored.

If the tissue is only injured or without positive cell destruction, such injured tissue must be protected from foreign or external matter until Nature can repair the injury. If there is positive cell destruction the tissue dies; this dead tissue must be thrown off, and the underlying delicate structure must be protected until new tissue can be supplied by natural processes or by transplantation of tissue by the surgeon.

When an area of the surface of the body is burned there is either a partial or a complete paralysis of the vasoconstrictor nerves, or a direct stimulation to the vasodilator nerves, either of which will produce a dilatation of the immediate blood-vessels, and a consequent congestion or hyperemia is produced. This is Nature's way of throwing up breastworks against any foreign invasion. There is an extravasation of the fluid part of the blood into the tissues to soothe the irritated nerve-endings. An army of phagocytes are rushed to the field of action to do or die, if necessary.

If the heat is more intense or prolonged its tendency is to destroy this protecting lymph by coagulating its albumin contents, thereby producing stasis in the capillary circulation; and gradual death of tissue is the result. If the thermic action is still greater there is charring of the tissues, causing immediate death of the parts.

A burn is a wound, and must be treated as such. It is not enough to find the cause and remove it; we must know the histology and physiology of the parts, as well as the pathologic condition. The epithelial covering of the skin does not exist alone as a surface epithelium, but dips down into all the glands of the skin and hair follicles, lining their walls and bases. The most important part in the process of repair after a burn is the manufacture and protection of new epithelium to take the place of that which has been destroyed or separated from its base. "Like begets like," and epithelium is developed only from epithelial cells. The surface epithelium may be totally destroyed and another surface epithelium manufactured to take its place, provided the burn has not been deep enough to destroy all the epithelial cells in the hair follicles and glands of the skin. The exudate thrown out into the tissues and on the surface of a burn furnishes food for the development of new epithelial cells. It also furnishes a fertile field for microbic development.

---

* Read before the Chattanooga and Hamilton County Medical Society, April 22, 1910.

If the exposed surface of a burn becomes infected and suppurates there will be scar-tissue, contractions and deformity as a result. Scar-tissue continues to form as long as there is a denuded surface with any form of irritation. Therefore the amount of scar depends on the extent of the burn and the time required in forming a new epidermis.

A degree of heat sufficient to destroy living tissue will also destroy pus-producing germs. So in burns which become septic the infection almost invariably comes from without or extends from the margins of the wound. The surface of a burn does not absorb easily. Its tendency is to exude. But later in the course of a burn severe enough to devitalize the tissue decomposition takes place and toxins are formed, some of which will be absorbed.

There are four things to demand attention in the successful treatment of burns, any one or all of which may be required in a given case: first, to combat shock if it exists; second, to relieve pain and nervous excitability; third, to prevent infection and to protect exposed living tissue; and fourth, to assist Nature in her work of repair.

1. Shock, which often occurs as a result of severe burns, is treated on general principles too well known to the profession to be discussed in this paper. Some one has said, "Shock is shock," meaning that regardless of its cause, shock must be treated in the same manner under all conditions.

2. To relieve pain and nervous excitability, it is usually necessary to give a hypodermic injection of morphin and atropin and then to immerse the burned area, if it be on an extremity, in cold water to which has been added a tablespoonful of bicarbonate or chlorid of sodium to the gallon. It is not necessary for the water to be ice-cold. A temperature of from 50 to 60 F. is preferable.

If the burned area cannot be immersed in water on account of its location it may be covered with a light smooth cloth which has been dipped in the solution; then by gently and continuously mopping this cloth the same result will be obtained.

This water-bath may be continued for some time or until the systemic effect of the morphin is manifest.

In institutions where trained assistants are always at hand the whole bath may be used and continued for many days if a large area of the surface of the body is burned.

3. Protection of the tissues and prevention of infection demands our greatest efforts and must be kept in mind from the beginning. Nature puts forth her greatest efforts, and the system will exhaust its entire resources to accomplish this end; but Nature cannot prevent the invasion of pus-producing micro-organisms—the surgeon can.

I wish here to condemn two things often done, and at least sanctioned by most of our text-books: first, puncturing blisters immediately after a burn and second, the use of carron oil and other remedies of its kind as a protecting dressing.

A blister is a non-irritating protection to the delicate underlying structures, and the surgeon can furnish none better. I have never known the raised epidermis to reunite with its base after the blister was punctured. In most cases it acts as an irritant and for several days following it causes serum to be poured out under the dressings to soil them and furnish a good culture-medium for any possible pus-producing germs which may be barricaded waiting for an opportunity to assert themselves.

Within a few days the epithelial cells in the deep glands of the skin will have accomplished their work of repair if properly protected by the blister.

If any blisters are accidentally burst with the epidermis rolled up or displaced to any degree, such epidermis should be treated as so much débris and at once removed.

We long since discarded the once popular idea that the most favorable symptom appearing in the course of any wound was the free flow of pus. With that theory any agent which hastened suppuration was the most plausible remedy for a burn. Balsams, oils and poultices were used. The last one of such remedies to be discarded by rational ideas is still mentioned and advised by some of our modern text-books, especially works on practical therapeutics, namely, carron oil (equal parts of lime-water and linseed oil). In my opinion this remedy has to its credit more unsightly scars and disfiguring contractions than all other empiric remedies combined: with all of its kind it should have been discarded many years ago and buried with the theory which prompted its use. I consider the following the ideal method of protecting the tissues and preventing infection.

When the patient is fairly comfortable the bath may be discontinued, and the burned area with the surrounding surface sprayed or mopped with peroxid of hydrogen. The entire surface should then be mopped dry with gauze. Then strips of gauze which have been previously soaked in the following solution should be applied over the entire area.

℞	gm. or c.c.		
Picric acid	4		ʒi
Alcohol	64	or	℥ii
Water	72		O.iss

Over this a thin layer of cotton should be applied. The dressings should be kept in position by loosely applied adhesive strips or a roller bandage. This dressing soon dries and may remain for several days, or until it becomes soiled: at which time remove all soiled or wet dressings, spray with peroxid, mop dry and reapply fresh gauze soaked in the picric acid solution.

After the third day the larger blisters should be opened and the fluid contents mopped away and fresh dressings applied. This treatment is applicable to all burns whose severity is not great enough to cause sloughing.

If sloughing does occur as a result of charred tissue or later as a result of infection, the dead tissue should be removed as rapidly as it becomes separated, and the underlying exposed surface sprayed with peroxid, and mopped with the picric acid solution; over this should be applied small strips of rubber tissue which have previously been soaked in 1:1000 bichlorid solution. The dressing should be finished as before suggested.

The picric acid solution, by its slight astringent action, limits the exudation of serum by constricting the congested superficial capillaries, and does not interfere with the development of new epithelium. Its germicidal action prevents infection, and in my hands has never produced any systemic toxic effect.

The rubber-tissue strips furnish a non-irritating covering to the denuded surface, and do not interfere with granulation in their removal. If the rubber tissue is applied in narrow strips, the edges being allowed to overlap, the dressing more perfectly conforms to the irregularities of the surface. This dressing should be changed as often as it is necessary to keep the surface clean and free from pus.

The treatment above outlined, allowing modifications in each individual case, is one which I consider most nearly ideal after ten years' experience in mining camps, dealing with every degree of this most common accident, from a slight scald to that produced by the most terrific mine explosions.

I have said nothing in this paper about the later complications and sequelæ, such as contractions, abscess formation, duodenal ulcers and those extensive burns demanding skin-grafting.

The object of this paper will have been attained if I have made clear the importance of treating all burns as wounds, and on a surgical basis, and that the prevention of infection and suppuration is by far the most important part of the treatment.

Therapeutics

PULMONARY TUBERCULOSIS TREATED IN HOME SANATORIA

The Medical Board of the Gaylord Farm Sanatorium, located at Wallingford, Connecticut, has just presented its annual report, and there is so much of general interest that it seems worth while to comment on it. This sanatorium is a state institution, supported by state funds and private charity. Most of the patients pay a small fee, but there is a weekly deficit for every patient treated. This institution has a capacity for 65 patients, and has just completed its sixth year of existence. It is located three miles from the small city of Wallingford, and fifteen miles from the city of New Haven, and from twelve to fifteen miles from Long Island Sound. It is situated on a hill not more than 400 feet above sea level, and has connected with it a large farm from which part of the produce, eggs, milk and poultry are furnished to the sanatorium.

The total number of patients under treatment during the last year was 166, the average number of patients under treatment at one time being 59. These patients came from all parts of the state of Connecticut, represented 15 nationalities, and came from 50 different occupations. Sixty-two of these patients remained at the sanatorium less than three months; of these 50 left the institution distinctly improved; in one the disease had progressed, and one died of acute pulmonary tuberculosis. One hundred and four patients remained at the Institution more than three months, the average stay being 161 days. Twenty-three of these patients who remained at the institution more than three months had the disease in its incipiency, and 21 of them were discharged with the disease arrested, 1 improved, and in 1 the disease was progressive. This result distinctly shows the advantage of early treatment of pulmonary tuberculosis in sanatoria. Seventy-five patients had the disease moderately advanced, of these 51 were discharged with the disease arrested, 11 had improved, in 11 the disease was progressive, and 2 died. Of 6 patients who had the disease far advanced, in 2 the disease was arrested, 2 improved, and 2 failed. Of the 104 patients who remained at the institution more than three months (incipient, moderately advanced, and far advanced), 74 or 71 per cent. of all, nearly three-fourths, were discharged with the disease arrested, and 14 more were distinctly improved. This is a record that is astonishing when not long since it was considered that patients with this disease must go to climates far better than southern New England before they could improve.

Ninety of the 104 patients who remained in the institution more than three months gained, on an average, 17.7 pounds as against 16.3 pounds in 1909 and 15.2 pounds in 1908. This is especially worthy of comment, as during the last eight months the patients had received no raw eggs, and have had no meat or eggs for breakfast, and the average consumption of milk has been a quart and a half pint daily. The gain is above the average of eight other leading sanatoriums, their average being 13.1 pounds, and the highest gain by any of them being 15.1 pounds.

From the very opening of this institution the medical board and the medical superintendent were a unit in believing that forced feeding in tuberculosis was a mistake. The over-working of organs and tissues to take care of enormous amounts of nutrition because one or two organs were diseased would seem an economic and physical mistake if it was not an actual physiologic error. Consequently good, nutritious food, but not forced feeding has been the character of the diet at this institution from its opening day, and Dr. David R. Lyman, the medical superintendent, has this year well demonstrated that even in earlier years the patients received too much food. The object is to furnish enough of each particular nutriment that is necessary to promote health, increase the weight of the patient, and to have a sound mind in, as far as possible, a sound body. Enormous amounts of food cloud the mental faculties and irritate and finally stagnate the functions of the body.

Since the institution was opened, 513 patients have been discharged prior to Jan. 1, 1910. Accurate information has been obtained concerning all but 17 of these patients. Up to Jan. 1, 1910, 105 patients who had the disease in its incipiency had left the institution. Of these 91, or 87 per cent. still have the disease arrested. Of the 293 patients who had the disease moderately advanced, 177, or 61 per cent. still have the disease arrested. Of 111 patients who had the disease far advanced, 16, or 15 per cent. still have the disease arrested.

These statistical results positively demonstrate that patients suffering from tuberculosis can have the disease well arrested and have it remain arrested, and perhaps be permanently cured, in the region, or at least in the climate to which they are accustomed. This is emphatically true if the patient, after the disease is arrested, is to remain and work in the locality where he acquired the tuberculosis.

Dr. Lyman is accumulating statistics which in a few years will be of great value in proving to the world what he has already proved to the medical board of this institution, viz., that patients who have the disease arrested thrive better, remain well longer, and are more permanently cured if they return to the occupations from which they came, *i. e.*, to the occupations to which they are used, and do not seek, under mistaken advice, some out-door work that is physically a hardship and generally causes them to work more hours and for which the wage is inferior to inside shop, store, factory or office work.

The points of this report for practical application are:

1. Early diagnosis of pulmonary tuberculosis.
2. Treatment in nearby sanatoria when possible.
3. A sensible diet and no forced feeding.
4. The stay at the sanatorium should be long enough to arrest the disease thoroughly.
5. Unless some particular unfavorable conditions should prevent, the patient should be returned to the occupation to which he is used.

VALUE OF DRUGS NOT NOW OFFICIAL

This is a subject now timely for active discussion, as, soon, the Committee on Revision of the United States Pharmacopeia must decide which new drugs are of sufficient therapeutic value to claim recognition in the Pharmacopeia of 1910.

Prof. H. C. Wood, Jr., of Philadelphia, in a paper recently read in Washington, presents the subject in such a terse manner for general discussion that his own abstract of his paper is here presented. Dr. Wood says:

Progress in materia medica does not consist merely in changing our drugs; we must improve them as well. There is no reason for abandoning old and tried remedies for new substitutes unless there is some definite evidence that the new remedy possesses more power or is free from some objection of the older one. For instance, in the series of coal-tar anodynes we have had brought to the attention of the profession a large number of synthetic compounds even in the single group of the phenetidin derivatives of which we have a representative in the Pharmacopeia in acetphenetidin. It is beyond comprehension how substituting for the acetyl radical that of some other organic acid can alter the therapeutic properties of the compound and yet the manufacturers have burdened our literature, to say nothing of the druggist's shelves, with lactylphenetidin, citrylphenetidin, salicylphenetidin, and so on. There is no satisfactory evidence that any of these can accomplish more than the official representatives of the series or that they are less dangerous in their secondary effects.

SEDATIVES

The drugs that are used to quiet cerebral excitement may be divided into two classes, those which are used to allay nervousness and those which are employed for the purpose of promoting sleep. Under the first head are two groups of substances, the derivatives of valeryl and various compounds of bromin. The pharmacologist can recognize no effect on the system by the valerates and the clinical evidence of their value is at least questionable. Of the substitutes for the bromids, the chief advantage that is claimed is that they are less likely to give rise to gastric disturbances. The irritation of the stomach by inorganic bromids is generally due to faulty administration and it is a matter of much doubt whether there is a necessity for any of the organic combinations in which bromin is the active ingredient.

SOMNIFACIENTS

The new hypnotics have come to be almost as numerous as the coal-tar anodynes. Three of them have been sufficiently tested to merit consideration. These are veronal, bromural, and isopral. The study of the relative value of these drugs necessitates an understanding of the chemical composition of hypnotic remedies. There are three principal groups of drugs which have the power to promote sleep. These are those belonging to the methane derivatives of which paraldehyd may be taken as a type, those containing an ester of urea and those containing the ethyl-sulphone radical, of which trional is the most popular member. The introduction of a chlorin atom into the molecule of the fatty series greatly increases the narcotic power. This is illustrated, for instance, by the higher activity of chloroform as compared with ether, and of chloral as compared to paraldehyd. At the same time that it increases the narcotic powers of the drug, there is an increase of the depressant action on the circulation, so that while these halogenic compounds are potent, they are likewise dangerous. If we remember that isopral is a trichlor-alcohol of propyl its chemical alliance to chloral (trichloraldehyd of ethyl) becomes apparent. It is also physiologically very similar and although Impens (*Therap. Monatsh.*, Sept. 1903) claimed that it was a safer remedy, the elaborate investigations of Sollmann (The Journal, Aug. 8, 1908, p. 487) and of Hatcher (The Journal, June 1, 1907, p. 1849) show that while it requires smaller doses of isopral to produce sleep, it requires correspondingly smaller doses to kill. There appears, therefore, to be no reason for the introduction of this substance into practical therapeutics.

An interesting group of hypnotics which includes a number of the newer drugs are the carbamic esters, or derivatives of urea. One of these is official, the carbamate of ethyl commonly called urethan. Two drugs of this group, diethylmalonylurea (veronal) and the alphamonobrom-isovalerylurea (bromural) have been used extensively in this country. The official representative of this group, ethyl carbamate, is one of the safest of all the sleep producing drugs. Its effects, however, in comparison to chloral hydrate are relatively feeble, and while in minor degrees of insomnia it is a useful remedy, in the more obstinate types of this condition it generally fails. In the case of veronal the narcotic power of the carbamic radical has been greatly enhanced, but as is so frequently the case, at the expense of its safety. A number of unpleasant symptoms and even serious poisoning by this substance have been reported. Bromural is generally conceded to be less powerful as a somnifacient than veronal and while perhaps useful as a nerve sedative, as a somnifacient does not appear to have any advantage over ethyl carbamate (urethan).

ANALGESICS

Of the central anodynes aside from the coal-tar derivatives, there are certain derivatives of morphin which merit a word of discussion. Generally speaking, the morphin esters differ from morphin itself chiefly in the fact that they have relatively less influence upon the higher cerebral centers. They are therefore greatly inferior as somnifacients or analgesics and also less liable to give rise to narcotic habits, although not entirely free from this danger. While these remedies may perhaps have occasional value as substitutes for morphin in painful conditions, it is necessary in order to produce an even approximate degree of anodyne effect to administer relatively much larger doses than of the natural alkaloid. The chief use of this group is as sedatives to the respiratory center in the treatment of excessive cough, asthma, and other respiratory irritations. The most valuable of them for this purpose is probably the acetyl ester of morphin commonly known as heroin. The advantages of heroin are that it is less likely to give rise to narcomania, that it produces less disturbance of the general health than morphin, and that it is relatively safer. The comparative safety of a drug is not to be judged merely by the quantity required to kill, but by the ratio between the lethal dose and the effective dose. Thus, in the experiments of Impens (*Arch. d. ges. Physiol.*, 1899, lxviii, 527) it was found that if a given weight of dog was killed by 1 grain of morphin although ½ a grain of heroin would kill the same weight of animal, it required but ¼ the dose of heroin to produce the same amount of respiratory sedation as of morphin. In other words, although the heroin was twice as poisonous as morphin, it was twice as safe because the limit between the therapeutic and toxic dose was larger.

LOCAL ANESTHETICS

The introduction of the method of producing anesthesia by injection of local anesthetics into the subarachnoid space, the so-called spinal anesthesia, has stimulated chemists to the invention of a number of compounds which might possess the local anesthetic power of cocain and be free from its objectionable features. Of these local anesthetics there are four which merit consideration. These are eucain, stovain, novocain and tropacocain. The advantages claimed over cocain for each of these are that they are less toxic than cocain; they do not produce vasomotor spasm; they do not affect the pupil or accommodation; and that they may be sterilized by boiling. As the advantages of each of them over cocain are the same, it is evident that the choice between them rests on their relative powers of toxicity. Biberfeld (Quoted by Schley, *New York State Journal of Medicine*, December, 1907) compared the toxic power of cocain, stovain, and novocain, and found that if the fatal dose of cocain be taken as one, that of stovain would be three and of novocain about six. In other words, novocain was one-half as toxic as stovain and only one-sixth as poisonous as cocain. Le Brocq (*British Med. Journal*, 1909, i. 783) has made a study of the comparative value of a number of local anesthetics. As regards their toxicity he ranks them as follows: alypin, 1.25, cocain, 1.00, stovain, 0.63, tropacocain, 0.50, novocain, 0.49 and eucain, 0.41. Stovain he condemns not only on account of its comparative poisonousness but also because it is intensely locally irritant. On the basis of this last quality, local irritation, he gives the preference to novocain over eucain and all others of the group. As for the comparative power on nerve endings while Le Brocq ranked them all as about equal with cocain, except stovain which he asserts is slightly stronger, the general concensus of opinion is that eucain and novocain are distinctly, if slightly, inferior to cocain while stovain is about equal to cocain. According to Harris, a 15 per cent. solution of eucain lactate is about equivalent to a 10 per cent. solution of cocain. It is possible that the clinical inferiority of these remedies as against cocain depend on the fact that not constricting the blood vessels circulation remains active and the drug is carried away from the point at which it is applied. At any rate, it has been shown that the addition of adrenalin not only prolongs the action of these anesthetics but also enhances their power.

DIURETICS

Among the drugs which increase excretion the most interesting are the diuretics of the xanthin series. Of these, caffein is already recognized by the Pharmacopeia. The disadvantages of caffein are its effects on the central nervous system (especially on the cerebrum, producing general nervousness and wakefulness) and its action on the circulation. Owing to the effects on the vasomotor center, the dilatation of the renal blood vessels, which is so closely associated with, if not the cause of, the increased activity of the kidney, is partially antagonized by the general contraction of the blood vessels in which the vessels of the kidney more or less share. For this reason, the diuretic action of caffein is frequently not so great in practical conditions as it is in laboratory experiments on the isolated kidney. The other members of this series have a less marked action on the central nervous system and therefore are less prone to produce wakefulness and also do not contract the blood vessels by vaso-motor stimulation. Of the series, two have been largely employed, theobromin and theophyllin. Theobromin, an alkaloid found in the chocolate bean, has some, but very slight stimulating effect on the brain, and while it increases the rate of the heart, causes almost no change in blood pressure. As a diuretic it is generally held to be superior to caffein chiefly because it can be given so much more freely without danger of undue nervous excitement. Theobromin itself is insoluble in water but becomes soluble in the presence of sodium salicylate or sodium acetate. The latter combination seems less prone to upset the stomach than the combination with sodium salicylate and is probably therefore preferable. Although theophyllin occurs in small amounts in the tea leaf, the supply from this source is so insufficient that it was impractical as a remedy until a means was found to manufacture it artifically. This synthetic theophyllin occurs in the market under the trade name of theocin. The general physiologic action of this substance has not been carefully worked out but is probably similar to that of theobromin.

ARSENICALS

A great deal of interest has recently been aroused in connection with various arsenical derivatives of which an immense number have been prepared by the chemist. The last word concerning these arsenic preparations has not yet been said. A large number of active workers are at present engaged in inventing and testing new organic compounds of arsenic, especially with the idea of determining an antidote to the trypanosome of sleeping sickness and may perhaps some day reach the ideal. In 1907, Drs. Dawes and Jackson (The Journal, June 22, 1907, p. 2090) made an elaborate study of sodium cacodylate. They found that this remedy had a range of usefulness analogous to that of the inorganic forms of arsenic. The advantages of lessened toxicity as compared with arsenic is more apparent than real because the therapeutic activity of the substance is also correspondingly less. Cacodylic acid and its salts are partially broken up in the system and varying amounts of the inorganic arsenic appear in the organs of the body and in the urine. Under a variety of trade names, such as "atoxyl," and "soamin," the sodium paramidophenylarsenate has been largely used not only in those conditions in which inorganic arsenic preparations are deemed useful but also in syphilis and a number of other conditions. While there is some evidence of its value in these cases, the considerable number of instances of blindness from optic atrophy following its use (*Brit. Med. Jour.*, March 5, 1910; abstract in The Journal, Apr. 16, 1910, p. 1323) ought to exclude it entirely from our materia medica. There is little evidence that anything can be accomplished by inorganic arsenic that cannot be done with the older forms; but the cacodylates can be given with less danger of irritating the stomach and consequently a larger amount of the metal can be introduced into the system. They are also much better preparations for hypodermic medication.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 2, 1910

LENGTHENING THE SPAN OF LIFE

Publication within the past three years of such works as Professor Minot's "Age, Growth and Death" and Metchnikoff's "Prolongation of Life," and their quick acceptance by the general public, are marked manifestations of the interest which is being taken in working out a rationale which shall result in making old age pleasant to itself and profitable to mankind. All men desire long life, but no man desires old age if this means feebleness of mind and inability to work; and since the days of Solomon this has been the common meaning attached to length of days. It has been frequently proved, however, that useful work can be performed by the aged. Only recently Dr. W. A. N. Dorland, of Philadelphia, in a magazine article, made an end of the "forty-year limit" so wilfully misunderstood by the critics of the eminent sponsor for that unfortunate jest. Plato, Goethe, Victor Hugo, Michelangelo, Titian, Franz Hals, to mention only a few illustrious names of the past, accomplished great things for posterity at a time when most of us now living would have been making hurried plans in preparation for eternity.

The average duration of human life has been on the increase for the last three hundred and fifty years. In the seventeenth and eighteenth centuries this increase was about four years per century; in the early part of the nineteenth century it was lengthened to nine years. In Massachusetts life is now lengthening at the rate of fourteen years per century; in Europe about seventeen; and in Prussia twenty-seven. The influence of the great strides in medical science is here quite apparent; for in India, where the application of new methods of preventing and treating disease has been retarded and neglected, the average life-span is now only about twenty-five years and remains stationary.

With the advancing world movement for the ultimate conquest of disease and death, the name of Elie Metchnikoff is indissolubly associated. For more than forty years (he is now sixty-five) Professor Metchnikoff's great gifts of mind have been employed in the cause of science, and, unlike some of his less fortunate predecessors and colleagues, he has seen these gifts bring rich returns in the service of mankind. To many laymen his name was doubtless unknown until two or three years ago, when the so-called "sour-milk method" for repelling the premature onset of old age was so widely exploited in the newspapers; but this is seemingly the least of his successes, and deserves to be so regarded until time and the collection of facts shall show that the Bulgarian bacillus wages warfare against the host of would-be destroyers in the intestinal tract of every living creature, without itself exerting in turn any injurious effect on the body economy. As yet this theory remains unproved; up to the present no elixir of life has been demonstrated.

It is to preventive medicine that we must look for the maintenance of that vigorous health which shall lead to the final period when one experiences a sense of satiety of life and a wish for death. That is the ideal of ripe old age—a practical, useful life rounded to a fitting close and marked by a minimum of suffering throughout. When one sees an active intellect, abundant scholarship and splendid judgment, ripened by experience and fruitful in wise counsel, tottering to its fall because of old age, it seems more than a pity that this mental growth, cultivated at such great expense of time and effort, cannot by some strange procedure of husbandry be grafted directly into a sound young body. Someone has said of a great man rapidly approaching the period of superannuation: "He needs only a pair of strong legs to be young again." That is, of course, an unrealizable ideal. It certainly is becoming possible, however, to eliminate some of the most dreaded scourges of youth and to protect normal old age from some of its greatest dangers; and these are the functions of the progressive physician and of the true philanthropist.

THE USE OF TOBACCO

In England, at least, it seems that the question "Do you use tobacco?" must now be added to the anamnesis for women as well as for men. Angina pectoris has heretofore been comparatively rare among women; but Osler,[1] in a recent lecture, presages an increasing number of cases of cardiac neuralgia and of a mild form of angina in women, commensurate with the rapid increase of cigarette smoking among them. In England, it seems, many women are becoming habituated to the use of tobacco in this form; and possibly also, this vogue is obtaining among us to a degree which we, as practitioners, shall have to take into serious account.

Osler, for example, cites the case of an American woman whom he saw in Italy, whose daily allowance of cigarettes was never under twenty-five. Every morning precordial pains made dressing difficult for her. His observation that very heavy smokers may die from vagus-inhibition, such as obtains in angina pectoris, may be noted also in passing. Three of his acquaintances, seemingly strong, healthy men, not known to have had heart disease, but all incessant smokers of strong cigars, died suddenly and without warning—one while smoking, another while sitting comfortably in his club, the third on the beach after bathing.

---

[1] Osler, W.: Angina Pectoris, Lancet, March 12 and 26, 1910; abst. in THE JOURNAL, April 9, p. 1239, and April 23, p. 1410.

Another word may here be interjected regarding angina pectoris in our profession. The proportion of our colleagues who suffer from this malady, the pain of which is so excruciating, and so dreadful to the beholder of these sufferings, is much greater than that in other professions. One reason for this is the profound nervous shock which physicians must feel when aroused after a couple of hours' sleep—when sleep is deepest; undoubtedly, however, another reason lies in smoking, to which the profession is unusually prone. Comment has been made, flippantly, but not without truth, on the coolness with which the medical man will advise his patient against smoking, while several cigars appear most obtrusively from his vest pocket.

WHERE GLUCOSE IS NOT CORN SYRUP

One of the first breaches made in the defenses raised in the interest of the public by the passage of the national Food and Drugs Act, was that secured by the manufacturers of glucose. While the pure food law demands that the label shall tell the truth, the makers of glucose protested that they should be permitted to call their product by the more euphemistic term "corn syrup." Permission to do this was granted, though the reason for such a liberal interpretation of the law in favor of the manufacturer and so evidently against the interests of the consumer, is not known.

Fortunately for the consumer, however, some of the states are not so accommodating to special interests. The state of Wisconsin, for instance, has a pure food law which requires that the label shall contain the naked truth rather than the skilfully adorned euphemism. Moreover—and this is of even greater moment—this state has a food commissioner who believes that the law is made to protect the public rather than to be used as an advertising asset by the manufacturer.

The result of this excellent combination has been that when the glucose trust tried to sell a mixture of 90 per cent. glucose with 10 per cent. real syrup under the name "Karo Corn Syrup," two retailers were arrested and the case brought into court. The case was fought bitterly, as might be expected, but first the Circuit Court upheld the contention of the state and later the Supreme Court of Wisconsin, to which it was appealed, sustained the constitutionality of the law. The opinion expressed by Judge Stevens of the Circuit Court, regarding the question, whether the term "corn syrup" was or was not misleading is so clear-cut and full of good sense that it is worth quoting:

"The evidence convinces the court that the public generally understand a 'syrup' to be the concentrated sap of a sugar-producing plant. The term 'corn syrup' naturally suggests that the product is a syrup produced from corn. Certainly the name carries no suggestion that it is produced by the action of acid on starch, which may be made from a score of different substances as well as from corn...Even if the product be a syrup, the difference in the cost of producing it, if no other factor were involved, would make it a fraud to sell this article to the public under a name that induces the belief that it is procuring a syrup produced in the usual way by boiling down the sap of a sugar producing plant..."

"The question is not whether the term 'corn syrup' is coming into general use; the question is whether this name deceives the public and leads it to buy that which it would not otherwise purchase. Whether the product be wholesome or unwholesome, whether the consumer have valid reasons or only unreasoning prejudices in regard to the matter, the public has a right to know, and the state the right to compel the disclosure of, what is contained in all food products offered to the consumer...When the defendants established the fact that the public generally would not purchase the product if it were put out under the name of glucose (which is shown to be a proper designation), they brought the case within the realm where the state, exercising the police power, has the right to determine that it shall no longer be sold under a name which misleads the public."

"The Constitution does not confer on any man the right to keep secret the composition of the substance which he offers to the public as a food product. To compel him to disclose its composition does not deprive him of his property without due process of law, even though it may prevent him from using a trade name. He may be compelled to sell the product for what it actually is, on its own merits, and is not entitled to the benefit of any additional market value which may be imparted to it by resorting to any means which shall make it resemble, or sell for, or in the place of, any well known food product."

And the judge of the Supreme Court voiced the same sentiment when he said: "Nor can it be said that the great mass of persons understand that 'corn syrup' is a mixture of glucose and syrup. The natural result of such use of the term 'corn syrup' is to mislead the consumers into the belief that they are obtaining a table-food of the variety and kind commonly known as syrup, the product of sugar-producing plants, and the consequences of such practice are that the consumers are misled and deceived in the respects as to the actual nature, the constituents and the value of the article as a food product."

To punish the people of the state of Wisconsin for daring to dictate to the glucose trust that this concern shall tell the truth about its product, the trust has declared a "glucose boycott" on the Badger state. No more "corn syrup" will be shipped into Wisconsin, so the papers say, "until the existing condition of affairs is reversed." This is a modification of the famous "red clause" of the "patent medicine" interests, adapted to the glucose industry. For the past few years "Karo"—a trade-marked name for glucose flavored with syrup—has been heavily advertised all over the country. We may now expect the advertising patronage of the glucose trust to be withdrawn from the state of Wisconsin in the hope that the newspapers of the state will bring pressure to bear on the state legislators to amend and emasculate the present law. It is to be hoped that Wisconsin newspapers in this instance will not sell their birthright of journalistic freedom for a paltry mess of advertising pottage, as they did when a bill was before their legislature requiring "patent medicine" manufacturers to state the composition of their nostrums.

As for the people of Wisconsin, they are doubly to be congratulated: first, on possessing both an admirable law and honest officers to enforce it; second, on being relieved of the necessity of watching to see whether they are having a glucose mixture foisted on them in the place of, and at the price of, real syrup. Incidentally Wisconsin would seem to offer great commercial opportunities to the makers of real syrup.

PHARMACEUTICAL MANUFACTURERS AND THE GREAT AMERICAN FRAUD

The story is told that a few years ago an enterprising gentleman of the Rufus Wallingford type advertised that he would mail, post paid, to all who sent him fifty cents, a handsome picture of the Father of Our Country. Those who rose to the bait received an uncancelled two-cent postage stamp. The advertiser was declared a fraud and the get-rich-quick scheme was frustrated.

Let it be supposed for an instant that the courts had decided in this case that no technical offense against the law had been committed; that as the advertiser had actually furnished what he advertised he was legally within his rights. Let it be supposed, further, that under such a court ruling the postal authorities contracted to furnish this "picture" seller all the "pictures" (stamps) that he cared to purchase. What would be the status of the government in such a case? Undoubtedly in the eyes of the public the postal authorities would have been considered as aiding and abetting a swindle and a fraud—a moral fraud, and one more despicable than a legal fraud because under the existing law it could be perpetrated with impunity.

Supposedly reputable pharmaceutical houses that furnish medicinal products to firms or individuals whom they know to be in the business of cruelly defrauding that most helpless portion of the public—the sick—are in the same position that the postal authorities would be in the hypothetical case just given. Legally they may be within their rights but ethically and morally their course is iniquitous. No amount of argumentative sophistry will justify, in the eyes of the medical profession, the attitude taken by those manufacturing pharmacists who are willing to sell their products to any who will pay for them, no matter to what use the drugs are to be put.

In our Pharmacology department, this week, attention is called to specific cases in which nostrum exploiters have been supplied with their stock-in-trade by pharmaceutical houses which should be above such things. That a much greater list than that given could be made if the data were available, nobody doubts. "Castor-Oil Pills" were widely exploited not long ago by an advertising man; the pills, which were a simple laxative mixture without a trace of castor oil, are said to have been made by one of the large "ethical" pharmaceutical firms which must have known of the dishonesty and fraud connected with their sale. "Pennyroyal Pills," which were extensively advertised as alleged abortifacients but which contain no pennyroyal, are also credited as having their origin in a pharmaceutical house which stands high in the estimation of the medical profession. One of the cruellest and most fraudulent of the innumerable "consumption cures" on the market is alleged to be put up for the quack who sells it by an "ethical" firm. And so it goes.

How much longer manufacturers of pharmaceuticals will maintain this Janus-faced attitude depends largely on the medical profession. It is safe to assert that no firm would for long continue this wretched business in the face of insistent disapproval from physicians.

Current Comment

CHINA AND OPIUM

According to missionary testimony, China is acting in earnest in the suppression of the opium curse, and anti-opium leagues have been formed in many of the great cities. According to Rev. W. L. Beard, there were, in the city of Fu Chau, three years ago, more opium dens than rice shops, but now, through the influence of the anti-opium league, there is not a single one. One of the most encouraging evidences, however, is the fact stated in a recent dispatch that the danger of famine in the western districts of China is lessened by the amount of land which has been diverted from opium culture under the recent laws and devoted to the growth of food products. While there used to be enormous fields of poppy flowers, making this crop the most conspicuous of any, there are now fields of rice and hemp and the open culture of the opium plant is largely a thing of the past. Without doubt there are opium dens publicly open in some provinces, especially near the European settlements, and illicit sales still continue in Chinese "blind pigs" elsewhere, but the outlook seems to be encouraging.

FACULTY CHANGES

Dr. David Streett, dean of the Baltimore Medical College, writes that the following additions have been made to the medical faculty: Dr. T. B. Marden has been elected professor of biology, including histology, embryology and zoology; Dr. E. L. Whitney has been reelected professor of physiologic chemistry and pharmacology; Dr. H. Raymond Spencer, demonstrator in physiology; Dr. Reginald D. West, demonstrator in anatomy. It is stated that these instructors will devote all their time to teaching and research and that a full-time instructor in pathology and bacteriology will also be secured in the near future.

NEW INSTITUTE OF CLINICAL RESEARCH

It is reported that $200,000 has been donated by Mrs. Robert Dawson Evans, of Boston, for the erection of an Institute of Clinical Research and Preventive Medicine, to be under the direction of the Massachusetts Homeopathic Hospital. It will be built on land immediately adjoining the Boston University School of Medicine with which it will be connected by a passageway. It will also be connected by a subway with the hospital. The object of the institute is the investigation of all phases of clinical medicine as they are allied to methods of laboratory study, including particularly cancer and other diseases at present considered incurable. There will also be a ward for neurologic patients and the top floor will be entirely occupied by laboratories of pathology, bacteriology, physiology, chemistry and drug pathogenesis.

STRAW ITCH

Straw itch may be considered a new disease or, possibly more properly, a disease of which we have but recently acquired definite knowledge. In the early part of the summer of 1909 there was an outbreak of an eruptive skin disease among sailors in Philadelphia. The disease was studied by Goldberger and Schamberg, who ascertained that the cause was a small mite (*Pediculoides ventricosus*) in the straw of mattresses on which all those affected with the disease had either slept or had put their clothes. Outbreaks of what is in all probability the same disease have been reported from various points in New Jersey, Maryland, Pennsylvania, Ohio and Indiana. The mite preys on the larvæ of certain insects which live on grain and especially wheat. It remains on the straw and may attack man during the handling of the grain as in thrashing or if the straw is used in filling mattresses those sleeping on them may be infected. The main symptoms of the disease are a severe itching and an eruption consisting of wheals surmounted by vesicles which develop in a few hours into pustules.

Medical News

CALIFORNIA

College Commencement.—On June 2 the Oakland College of Medicine and Surgery graduated three physicians. Dr. J. Dudley Tait, San Francisco, delivered the principal address.

King Edward's Physician in San Francisco.—Sir Felix Semon, K.C.V.O., and wife, physician extraordinary to the late King Edward VII, made a short stay in San Francisco, May 2[illegible], on the completion of a tour around the world to the eastward.

Antituberculosis Societies.—The San Diego Society for the Study and Prevention of Tuberculosis was recently [illegible]ated. Among the physicians taking an active interest are Drs. Joseph A. Parks and Fred R. Burnham.—The Long Beach League for the Prevention of Tuberculosis has elected Dr. Charles Bown, president; Dr. Francis L. Rogers, secretary, and Dr. Balzar W. Scheurer, treasurer.

Personal.—Dr. William K. Lindsay, a physician of Sacramento, has been appointed by the State Board of Education to supervise the health department work in the public schools. Dr. Gustav Henrikson has been made assistant.—Dr. and Mrs. Harry F. Alderson, San Francisco, have gone to Honolulu.—Dr. Augustus F. Shafer, Bakersfield, has been employed by the Mexican government to combat typhus fever.—Dr. Stewart M. Doherty, Napa, has been appointed pension examining surgeon.—Drs. Robert F. Rooney and J. N. Ward have been appointed on the board of health of Auburn.

COLORADO

Hospital for State Penitentiary.—The former Women's Department of the State Penitentiary, Canon City, has been remodeled into a hospital building with sun parlor and seperate quarters for tubercular patients.

Inspection of Lying-in Hospitals.—The State Board of Charities recently conducted a rigid inquiry into the methods of lying-in hospitals in the state. Insanitary and otherwise objectionable institutions have been closed. The state will safeguard infants adopted from such institutions.

ILLINOIS

Chicago

Personal.—Dr. and Mrs. Albert E. Mowry sailed from Montreal, June 30, for the Continent.—Dr. Benjamin H. Fray[illegible] has also left for Europe.——Dr. and Mrs. William O. Krohn have left for Europe by way of a motor trip through New England to Montreal.

Chicago Medical Society Election.—The annual election of the Chicago Medical Society occurred June 14 and resulted as follows: President, Dr. Alexander Hugh Ferguson; secretary, Dr. George F. Suker; councilors at large, Drs. Henry F. Lewis, Arthur M. Corwin, Adolph Gehrmann, Charles J. Whalen and Ludwig Hektoen.

Police Department to Run Hospital.—The Harrison Street Emergency Hospital will be conducted under the supervision of the chief of police after July 7, when it will be abandoned by the city health department. Chief Steward says it is the only hospital of the kind in the city and too valuable to be abandoned. It cares for from thirty to fifty cases each week. The chief inspected the hospital and found it in good condition.

The Work of the United Charities.—The report of the work accomplished during the past year by the United Charities of Chicago is sufficient to justify the hope that $50,000 additional annual subscriptions may be secured, making in all $200,000 annual income. There was a deficit of $2,300 in the last year's work, which is considered a good showing. Infant mortality has been reduced to 165 in each 100,000 inhabitants, the lowest record reached in Chicago.

Donations for Loyola Medical Department.—It is reported that $60,000 has recently been contributed for the construction of a new three-story medical building, at the corner of Fulton and Ada streets, for Loyola University Medical Department. This is to provide space for anatomic and [illegible] laboratories and for two large lecture rooms. It is also reported that provision has been made for five instructors who will devote all their time to teaching in the medical school.

IOWA

Drake Alumni Meeting.—At the alumni meeting of Drake University, held at Fort Madison recently, Dr. John R. Walker, Fort Madison, was elected president. A gift of $50,000 to Drake University by Theodore P. Shonts, an alumnus, now of New York, was announced.

Personal.—Dr. Harry E. Kirschner, superintendent of the state sanatorium at Lakedale, has been granted a three months' leave of absence for study in the east. Dr. Clarence E. Van Epps, Iowa City, will have charge of the sanatorium during Dr. Kirschner's absence.——Dr. Irenarch S. Buzard, Russell, has gone to England for study.——Dr. William P. Crumbacher, superintendent of the state hospital for insane, Independence, has been reappointed.——Dr. Francis H. Boucher has been appointed coroner to fill the unexpired term of the late Elijah W. Jay, at Marshalltown.

MARYLAND

Psychiatric Society Meets.—The Maryland Psychiatric Society was entertained at Creighton's Sanatorium, Lutherville, June 23, by Dr. L. Gibbons Smart. A paper was read by Mr. Nathaniel G. Grasty, secretary to the supervisors of city charities, on "The After-Care of the Insane." A committee was appointed to report on an epileptic colony in Maryland. The next meeting will be held in Annapolis.

Baltimore

New Feature of Hopkins Medical Clinic.—A "heart station" will be instituted at the medical clinic of Johns Hopkins Hospital next fall. It will be equipped with a special laboratory for examining the heart by electricity and other new graphic methods of registration.

Law Cases.—Suit for $50 against Dr. John D. Blake for alleged unskilled treatment of a child at birth, was decided in his favor.——A verdict for $500 is said to have been awarded May 25, against Dr. G. Milton Linthicum on account of injuries sustained by a driver from a mule frightened by Dr. Linthicum's automobile.

Personal.—Dr. Alexius W. McGlannan, of the College of Physicians and Surgeons, delivered the address at the commencement of St. Joseph's College, R. C., June 21.——Dr. John M. T. Finney sailed for Europe June 22.——Dr. Peregrine Wroth, Hagerstown, was operated on at the Union Protestant Infirmary, June 22, for appendicitis.——Surgeon Henry R. Carter, United States Public Health and Marine-Hospital Service, was given the degree of LL.D. by the University of Maryland at its recent convocation.

MISSOURI

St. Louis

Hospital Staff Named.—The hospital board of St. Louis has appointed thirty-six physicians on the visiting staff of the several institutions for four months. Future appointments will be determined by competitive examination.

Medical Degrees at Washington University.—Washington University graduated 175 students in Graham Memorial Chapel June 8. Rev. Dr. George Hamilton Combs, Kansas City, delivered the main address. Dr. William H. Welch also addressed the students.

American Medical College Reorganized.—The trustees of the American Medical College of St. Louis—eclectic—decided, June 6, that in the future the college should be conducted as a regular college of medicine. New officers elected were: Dr. James Moores Ball, dean, Dr. Ward T. Burdick, secretary, and Dr. J. Joseph Link, treasurer.

Hospitals Merge.—The Martha Parsons Free Hospital for Children and the St. Louis Children's Hospital consolidated June 1. The Martha Parsons property will be abandoned and the patients transferred to the St. Louis Children's Hospital. The income of the former will be used jointly with that of the latter for maintenance of the institution.

Apportion Medical Fund.—The income from the $100,000 originally intended for the purchase of a suitable hospital site, and estimated at $5,000 annually, is planned to be apportioned among the hospitals connected with the St. Louis University, as follows: St. John's, $1,000, St. Mary's, $500; Alexian Brothers', $300, St. Anne's Infant Asylum, $200, and Rebekah Hospital, $3,000.

NEW YORK

Employers Liability Bill Signed.—Among the last bills signed by Governor Hughes was the Wainwright compulsory employers liability bill. A plan of compulsory compensation applicable to certain dangerous employments was presented in the present bill and it also contained the proposals of the commissioner appointed to investigate the subject of employers' liabilities as amended in certain particulars by the legislature.

Milk Violations Decrease.—Figures compiled at the attorney-general's office at Albany indicate that the strict enforcement of the pure food law since Jan. 1, 1909, has raised the standard of milk sold throughout the state. In the last few months the number of violations in regard to the sale of milk has shown a decrease. For several years impure milk has given the attorney-general's office more trouble than any other article of food.

Mayors' Health Conference.—The Mayors' Health Conference which convened in Schenectady June 24, will become a permanent institution and will hold conferences annually. At this session Dr. Albert W. Ferris, President of the State Commission in Lunacy, read a paper on "Fighting Insanity." Prof. Walter Wilcox of Cornell University spoke on "Methods of Determining Economic Losses from Preventable Diseases." He placed the economic loss of the nation due to tuberculosis at from $450,000,000 to $650,000,000 annually. Dr. H. D. Pease of the Lederle Laboratory places the loss in New York state at $70,000,000 annually. Dr. George W. Goler of Rochester spoke on "How to Get Competent Health Officers." At the evening session Dr. Woods Hutchinson spoke on "The Greatest Problem of Modern Sanitation," Dr. Harvey W. Wiley of Washington on "What the Small City Can Do to Protect Its Food Supply," and Prof. Charles Zueblin of Boston on "Obligations and Opportunities of Local Officials."

New York City

Seagoers.—Dr. and Mrs. W. E. Lambert, Dr. and Mrs. J. William White, Dr. R. M. Cramer and Dr. Austin W. Hollis have sailed for Europe.

Gift for Cancer Victims.—The Servants of Relief, under the leadership of Mother Alphonse, Nathaniel Hawthorne's daughter, have received a gift of $25,000, with which they expect to build an annex to the cancer hospital, known as St. Rose's Home, on Cherry street.

Dispensary Reopened.—The Bedford Dispensary, Atlantic and Ralph avenues, has been reopened after having been closed for a period of two years on account of lack of funds. A band of women who have made it possible to renew this work are determined that treatment shall be reserved for those who really are needy and have appointed several agents who look up applicants.

More Aids at Bellevue.—The Board of Trustees of Bellevue and the allied hospitals made three new medical appointments. In accordance with the request of Dr. W. H. Smith, the general medical superintendent, Drs. George O. Hanlon and Mark L. Flemming were appointed assistant medical superintendents and Dr. Edward S. Bishop was appointed resident physician in charge of the alcoholic service.

Personal.—The degree of doctor of science was conferred on Dr. Francis Valk at the commencement exercises of Washington College at Chestertown, Md., June 15.——The following changes have taken place in the Eastern District Hospital, Brooklyn: Dr. Martin J. Leibovici has completed his service and opened offices for practice; Dr. Aaron B. Cohn has been promoted to house surgeon; Dr. Louis J. Frank has been appointed ambulance surgeon; Dr. Joseph Rosenberg, house physician, and Dr. Albert Polon, pathologist.

Objects to Judicial Decision.—Bellevue Hospital will cause an appeal to be prosecuted in a case recently decided in the supreme court in this city by Justic Erlanger. A lawyer was charged with violating the penal code in having procured an attendant in Bellevue Hospital to furnish him with information regarding the condition of patients being treated for personal injuries attributed to negligence. The defendant contended that it was no crime to solicit such information and Justice Erlanger seems to have upheld this view.

Find Evils in Hospitals.—A special commission appointed by the State Board of Charities has just completed an investigation of some sixty private hospitals in the greater city and adopted resolutions to remedy some of the evils found. In at least twelve of the hospitals the sanitary, ventilating and fire-escape facilities were found to be inadequate. A half a dozen hospitals were found to be much overcrowded, there being insufficient space between the beds. One of the resolutions provides that no patient shall be retained at public expense in any hospital wholly or partly under private control, unless the building is fireproof and sanitary with at least twelve hundred cubic feet of air space for each patient in the ward.

New Long Island Hospitals.—The hospital being erected on Surf avenue, Coney Island, by the Brooklyn Children's Aid Society at a cost of $90,000 will be managed in connection with the Seaside Home. It is expected that it will be ready by December 1.——St. Mary's Maternity Hospital, Brooklyn, will be reopened after having been closed for a year. It has been remodeled and renovated at a cost of $50,000 and will be known hereafter as the Hospital of the Holy Family.——Those interested in the proposed Beth Jacob Hospital and Dispensary announce that sufficient funds have been raised to enable them to begin erection. The hospital is to be conducted in accordance with Jewish dietary laws, though they will not discriminate in accepting patients.——The Bayside Infirmary, a twenty-bed, well equipped private hospital, under the directorship of Dr. Harris A. Houghton, will be opened for patients at Bayside, August 1.

PENNSYLVANIA

Personal.—Dr. Henry H. Dancy, Phoenixville, while hastening to the bedside of a dying friend, June 24, was thrown from an automobile and seriously injured. Dr. William W. Keen, Philadelphia, sails for England July 2.——Dr. William T. Moore, Washington, has been appointed medical missionary to Egypt by the board of foreign missions of the Presbyterian Church.

Smallpox at Dickson City.—An epidemic of smallpox has been discovered at Dickson City, which is practically a suburb of Scranton. Twenty-six cases have been reported. Dr. Samuel Dixon, head of State Department of Health, has assigned Dr. P. F. Royer to take charge of the situation. All patients convalescing and those suspected of being infected are strictly quarantined.

King Edward Memorial Research Laboratory.—This laboratory is not to be given to the proposed municipal tuberculosis hospital, as stated in The Journal June 18, but is given to the hospital of the Tuberculosis League of Pittsburg, which has been carrying on a comprehensive municipal scheme for the city of Pittsburg for the past three years. Dr. William Charles White, the director of the tuberculosis league, is to be the director of the new laboratory.

Medical Societies Celebrate.—A joint midsummer outing, closing the winter session of the Lackawanna and Luzerne county medical societies, was held on June 21 at Rocky Glen Park, near Scranton. One hundred and eighteen physicians attended the afternoon session, at which addresses were made and papers were read. In the evening a banquet was served in the "Swiss Chalet" of the park. Dr. J. M. Wainwright is president of the Lackawanna and Dr. G. A. Clarke is president of the Luzerne County Medical Society.

Governor Talks to Medical Alumni.—At a meeting of the alumni of the Medico-Chirurgical College, June 2, Governor Stuart was the chief speaker. He declared that Pennsylvania had expended more money in the advancement of medical science than any other state. He said that Pennsylvania gives $7,000,000 to the cause of medicine and $1,000,000 goes annually to the support of the health department. Pennsylvania is a pioneer in the cause of tuberculosis and has expended $2,000,000 in two years in the erection of sanatoriums for the care of persons afflicted with the disease.——In discussing the question of union of the Medico-Chirurgical with Jefferson, Henry F. Walton, president of the board of trustees of the Medico-Chirurgical College, expressed himself as unalterably opposed to such a union.

Henry Phipps Tuberculosis Institute.—Mr. Henry Phipps of New York has selected the University of Pennsylvania to carry on the work of the Phipps Institute and has acquired ground in Philadelphia on which will be erected a hospital for this purpose. The extent of the benefaction exceeds $5,000,000. The report of the comittee appointed to consider the future policy of the institute has been approved by Mr. Phipps and the trustees of the university. For director of the laboratory Dr. Paul Lewis, now of the Rockefeller Institute, has been selected; for director of the sociologic department, Mr. Alexander M. Wilson, of the Boston Association for the Relief and Control of Tuberculosis; for director of the clinical department, Dr. H. R. M. Landis. In addition to a board of eight directors, who will be directly responsible to the trustees of the university, an advisory council will meet annually at the institute. The following have accepted the invitation to serve as members of this body: Drs. Samuel G. Dixon, Harrisburg, Pa.; S. M. Lindsay, New York City; William H. Baldwin, Washington, D. C.; Herman M. Biggs, New York City; William H. Welch, Baltimore; Theobald Smith, Boston; H. Gideon Wells, Chicago; Simon Flexner, New York City; James A. Miller, New York City; L. Brown, Saranac, N. Y.; Henry Baird Favill, Chicago, and James Pratt, Boston.

Philadelphia

Addition to Methodist Hospital.—Through the munificence of Thomas Bradley, president of the Methodist Hospital, a four-story building, known as Bradley Hall, will be built at once on the hospital grounds at Broad and Wolf streets. The building will cost $41,000 and will contain kitchens, dining room, sewing room, chief resident's suite and rooms for help, affording room in the main building for fifty additional beds.

Personal.—Dr. Walter S. Cornell, demonstrator of [illegible] at the University of Pennsylvania, was taken to the university hospital on June 20, suffering from gastric ulcer. His condition is improving.

Plan Home for Feeble-Minded.—At a meeting held at the Civic Club on June 21, attended by prominent sociologists and city officials, plans were considered for the establishment of a fully equipped institution for the care of feeble-minded children. From statistics gathered by Director Neff of the Bureau of Health it was estimated that there are 1,000 feeble-minded persons at large in this city, through the lack of sufficient accommodations in the state institutions. Byberry, where the city owns vast tracts of land, was favored as the site for the erection of such home.

Pellagra at Blockley.—Dr. W. W. Hawke, chief resident physician of the insane department of the Philadelphia General Hospital, under the supervision of government officials, began a rigorous examination of all the patients in the insane department. Twelve cases of pellagra have recently been discovered in the institution, the first cases of the disease recognized in this city. Sixteen other patients are believed to be pellagra victims, but the diagnosis has not been fully established. Dr. J. D. Long, a government physician, who has made an extensive study of pellagra, and Dr. H. F. Harris, of the Georgia State Board of Health, in association with Dr. Hawke, are making a careful study of the cases.

GENERAL NEWS

Milk Commissions Meet.—The American Association of Medical Milk Commissions held its fourth annual session in St. Louis, June 4 and 6, and elected the following officers: President, Dr. Milton J. Rosenau, Harvard University; secretary, Dr. Otto P. Geier, Cincinnati; treasurer, Dr. Albert W. Myers, Milwaukee, and councilor, Surgeon John W. Kerr, U. S. P. H. and M.-H. Service. Philadelphia was selected as the meeting place for 1911.

Memorial to Dr. Howard T. Ricketts.—A memorial tablet was unveiled in the City of Mexico in honor of Dr. Ricketts, June 24, as will be seen by the invitation to the ceremony given below:

> "La Secretaria de Instrucción Pública y Bellas Artes suplica á Ud. se sirva honrar con su presencia la ceremonia que se efectuará el 24 del actual, á las 10 de la mañana, en el Instituto Bacteriológico Nacional (Popotla, D. F., calle de Gonzalo Sandoval 4), para descubrir una lápida conmemorativa en el laboratorio del mismo Instituto en que trabajó el Sr. Dr. D. Howard T. Ricketts, distinguido profesor de las Universidades de Chicago y Pennsylvania, que perdió la vida en el curso de sus investigaciones sobre el tabardillo. Mexico, 17 de junio de 1910."

[The Minister of Public Instruction and Fine Arts requests the honor of your presence at the ceremony which will be held at 10 a. m., June 24, in the National Institute for Bacteriology, for the unveiling of a memorial tablet in the laboratory of that institute in which worked Senor Dr. Don Howard T. Ricketts, distinguished professor in the universities of Chicago and Pennsylvania, who lost his life in the course of his research on Mexican typhus. Mexico, June 17, 1910.]

American Association of Medical Journal Advertisers.—The association held its fourth annual meeting in St. Louis, June 9. Vice-President Dr. S. Grover Burnett, Kansas City, presided. The secretary's report showed that a [illegible] number of objectionable advertisements has been eliminated from the pages of medical journals through the efforts of the association during the year, but that there was [illegible] to clear their pages of quack advertisements. The following resolution offered by Dr. Burnett was unanimously adopted:

> *Resolved*, That, where the [illegible] has been built up by newspaper advertising [illegible], the owners or managers thereof shall not be accepted as members of this association or their advertisements permitted to appear or remain in journals containing the advertisements of members of this association until such institution has purged itself of irregularity to the satisfaction of the county medical society of the county in which it is located.

The following officers were elected: President, Dr. S. Grover Burnett, Kansas City, Mo.; vice-president, Dr. George H. Moody, San Antonio, Tex.; secretary, Dr. George E. Pettey, Memphis, Tenn.; executive committeemen, Dr. J. Joseph Kindred, Astoria, L. I.; Dr. F. H. Barnes, Stamford, Conn.

CANADA

Annual Meeting of the Canadian Association for the Prevention of Tuberculosis.—The seventh annual meeting of this association was held in Montreal, June 7 and 8, under the presidency of Prof. J. George Adami. Dr. Adami advocated the formation of Protestant institutions for the care of the tuberculous similar to those in vogue under the charge of the Catholic Sisters of Quebec, who the past few years, especially the Sisters of Providence, have been doing a great deal of good work along these lines. Major-General George M. Sternberg of Washington delivered an address on "The Housing of the Working Classes As a Factor in the Prevention of Tuberculosis."

Personal.—The following Toronto practitioners are sailing for Europe: Drs. Adam H. Wright, Herbert A. Bruce, Allen Baines, Irving H. Cameron, F. N. G. Starr.——Dr. Charles A. Hodgetts, secretary of the Ontario Board of Health, has resigned and has been appointed secretary to the public health section of the Canadian National Conservation Commission. Dr. J. W. McCullough of Alliston, Ont., has been appointed to succeed Dr. Hodgett.——Dr. A. I. Maider, Halifax, has returned from Edinburgh.——Dr. Oskar C. Gruner, clinical pathologist to the General Infirmary, Leeds, England, has been appointed pathologist to the Royal Victoria Hospital, Montreal, and lecturer on pathology at McGill.——Dr. Charles Sheard, medical health officer and chief of the street cleaning department of Toronto, has resigned.——Dr. John D. Wilson, London, is reported to be critically ill.

The Carnegie Foundation Report and Canadian Medical Colleges.—According to this report, which has just been distributed in Canada, four of the eight medical colleges would meet the needs of medical education in Canada. These are Toronto, McGill, Manitoba and Laval at Quebec. Toronto and McGill are put down as first class. Toronto has about reached its efficiency. McGill and Manitoba are capable of considerable expansion. Laval at Montreal and the Halifax Medical College are feeble. London is said to be very bad. The future of Queen's at Kingston is doubtful. Probably it would be a good thing for Canadian medical education if Laval at Montreal united with Laval at Quebec, that Halifax should become a preparatory school for McGill, and the Western at London and Queen's should become preparatory schools for Toronto. McMaster University, Toronto, however, has some idea of some day establishing a medical faculty. Later on, as the west develops, there will likely be a medical college in Vancouver.

Convocation at McGill.—On June 10 convocation was held at McGill University for medical and dental degrees. Dr. T. Wesley Mills, who for many years has been professor of physiology, delivered an address to the graduates in which he announced his retirement. Dr. Mills will take up his residence in Germany for the recuperation of his health. In his address he scored the citizens of Montreal for taking so little interest in their university. Referring to the teaching of medical students, he said they were given a great deal too much to digest; they should be taught less but taught better. He thought there were too many practitioners on the faculty, and that the aim of the faculty should be to teach the students to be men first and medical practitioners second. At the close of his address he was presented with a purse of gold by Dean Shepherd, on behalf of the faculty. Dr. Shepherd announced the retirement of Prof. William Gardner from the chair of gynecology. Dr. Gardner has been connected with the faculty for twenty-seven years. Announcement was also made of the appointment of Dr. J. C. Simpson as professor of embryology and histology.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, June 18, 1910.

The Antituberculosis Campaign

The antituberculosis campaign is still being pursued with great energy, but the problem of providing adequate sanatorium accommodation remains a difficult one. There has been a great diminution in the number of cases of consumption in England and Wales in recent years, but they still amount to between 250,000 and 300,000, while the number of beds available at sanatoriums numbers only 1,500. The average duration of treatment in a sanatorium is from 4 to 6 months. Therefore there is only sanatorium accommodation for 1 to 1.5 per cent. of those who may require it. Each year there are 40,000 deaths from consumption and 20,000 from other forms of tuberculosis. It seems that adequate accommodation can be provided only by the state or by some form of insurance against disease, including tuberculosis, like that adopted by Germany. The cost would to a large extent be saved by diminution in the loss which now results from tuberculosis. It is calculated that friendly societies pay each year for consumption $6,000,000, the poor-law authorities $7,000,000 and the special hospitals $2,500,000. In addition to this the indirect loss due to loss of wages cannot be less than $20,000,000 to $25,000,000. This makes a total annual loss of $40,000,000, a figure which some authorities consider much too low. Addressing the Manchester and Salford Sanitary Association, Dr. Arthur Latham of St. George's Hospital said that if all this money were intelligently spent the disease could be eliminated in 20 to 30 years.

The National Association for the Prevention of Consumption and Other Forms of Tuberculosis is undertaking a new educational campaign by means of traveling tuberculosis exhibitions, caravans with lantern-slides, popular lectures, an information bureau for the press and public and the distribution of leaflets. It is estimated that an efficient campaign on these lines will cost not less than $25,000 annually. A special effort is being made to secure the cooperation of working-class organizations in the campaign. A tuberculosis exhibition has been held at various centers in London. At Whitechapel (in the east end) 70,000 persons visited it, and it was equally successful at the other centers, as well as in the country, at Cambridge, Oxford and other places.

Decline of Venereal Disease in the Army in India

One of the remarkable features of the medical statistics of the British army in recent years is a decline in the number of cases of venereal disease. In India the admission rate in 1908 fell to 69.6 per 1,000, the lowest on record. This result is largely due to the efforts of the authorities to stamp out vice and to make the men's lives attractive. The various church bodies and the Royal Army Temperance Association have worked strenuously for this end.

Leprosy in London

The presence of a case of leprosy in the Whitechapel Union Infirmary (in the east end of London) has given rise to some anxiety, as no provision exists in London for the isolation of this disease, which in the popular mind is regarded as an almost extinct rarity in this country. But the fact is that London always contains a sprinkling of lepers who go about their daily work without doing harm to anyone and without their neighbors being aware of the fact. Some of them are clerks working in city offices; others perform a certain amount of manual labor, and several leper children regularly attend the London county council schools. According to Sir Jonathan Hutchinson there are never fewer than 100 cases of leprosy in England and now there are probably 50 in London. The presence of the disease is always concealed by the patients and their physicians do not reveal it because of the popular prejudice against the disease. It always occurs in persons who have been abroad and lived in leprous districts. No case of contagion in England is known. Sir Jonathan Hutchinson, who has always taught that the leprosy is not contagious, has had under his care for the last 10 years a boy suffering from the disease. The lad is now nearly 20 and has recovered. He went to school in London and is now working in an office.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, June 17, 1910.

Protest Against the Disorders in the Concours

The council of the Lyons medical college, the Société des médecins des hôpitaux de Paris, and the Syndicat médical de Paris, like the professors of the Paris college of medicine, have voted their disapproval of the disorders which took place at the last concours de l'agrégation. The syndicate has resolved that the question of the reform of medical instruction ought to be seriously studied by the minister of public instruction and ought to be solved as soon as possible by a commission composed of equal numbers of professors and of practicing physicians.

Dedication of Pasteur Monument at the Higher Normal School

When the Pasteur monument in Paris was erected a few years ago by public subscription, the cost of the monument did not entirely absorb the funds. At the suggestion of Dr. Roux and the family of Pasteur this remainder was offered to the Ecole Normale Supérieure for a modest memorial to the great scientist in the school rendered illustrious by his own works. After having taught in the scientific schools of Strasburg and of Lille, in 1867 Pasteur entered the Paris normal school as director of scientific studies, and remained there until he established the Pasteur Institute in 1889. Most of Pasteur's great discoveries issued from the modest laboratory of the normal school on the rue d'Ulm, near which the monument stands. The dedication took place on June 5.

Return of the Charcot Mission

The mission for the study and exploration of the Antarctic regions directed by Dr. Jean Charcot, son of the celebrated neurologist, has just returned to France. The program laid out for the expedition by the Académie des Sciences included exploration of that region of the Southern Pacific included between the meridians of South America and New Zealand and the study of meteorology, terrestrial magnetism, marine currents and natural history of this unknown region.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, June 9, 1910.

The Death of Robert Koch

The wave of excitement set in motion by the death of our gifted bacteriologist and hygienist has not yet subsided. In consequence of the importance of this pioneer investigator, medical societies as well as the press and society in general are still engrossed with this most significant event of the last week. The ashes of the dead scientist, cremated in Baden-Baden, have been brought to the Institute for Infectious Diseases, which was the place of his labors for the last decade, and they will be permanently installed in a room which, with the permission of the national authorities, is to be converted into a mausoleum for Koch. In this room also there will be placed the bust, contributed by his pupils on his sixtieth birthday, his works and other memorials. A memorial room will be produced, similar to the one which has been provided for Pasteur in his Paris institute. In order to avoid a large number of single memorial services in the various societies of which Koch was an honorary member, a committee has been formed which is preparing a single memorial service for all these bodies in common. The date for this celebration has been postponed to December 11 of this year, which will be the sixty-seventh birthday of Robert Koch; this resolution has been taken because, as is generally understood, in the next few weeks many of the persons who would be interested in this memorial will be away from home and, moreover, because representatives from foreign countries are expected at the celebration (particularly from America, an expectation which we hope will not be disappointed), and finally because Koch himself wished a quiet interment. The memorial address at the proposed service will be delivered by Gaffky, the oldest pupil of Koch and his successor in the directorship of the Institute for Infectious Diseases. Gaffky is also chairman of the committee, which includes in addition a large number of prominent Berlin physicians.

Mortality in Prussia in 1908

In 1908 362,259 males and 331,465 females died in Prussia. In addition there were reported 21,876 still births of the male sex and 16,908 of the female. Without reference to the still births the mortality rate per thousand on Jan. 1, 1908, was 18 (for males, 19.1; for females, 17). This figure is the most satisfactory since the institution of uniform vital statistics (quite as good as the two preceding years).

Warning Against Selecting the Medical Profession

The Leipsic league has lately again undertaken to dissuade the graduates of our secondary schools from undertaking the study of medicine. In the circular issued for this purpose it is noted that in 1908 only 618 places could be placed at the disposal of 898 physicians who were seeking localities to practice through the intermediation of the league. In that year only 6,000 persons were studying medicine, but the number of students of medicine has risen continually since 1905, from 6,080 in 1906 to 8,568 in 1908-09, and in the summer semester of 1909 to 9,509. That the income of German physicians is quite small has been recently shown by a statement of the statistical bureau of Saxony. According to this in the entire kingdom of Saxony 34.8 per cent. of the physicians had not yet an annual income of $1,050 (4,300 marks), and only [illegible] per cent. of the physicians received more than $1,500 ([illegible] marks). In this calculation of the income the professional expenses have been deducted but on the other hand the income from private property of man and wife and all other outside sources are included. These economic conditions will become even worse after the introduction of the new imperial insurance law, for then all persons who have an income of $500 (2,000 marks) and under will be entitled to sick insurance. This means that in Prussia, for instance, 92 per cent. of the population will belong to the Krankenkassen.

Lactation in the Blazek United Twins

Considerable scientific interest has been aroused over the phenomena of lactation in the united Bohemian twins, the Blazek sisters, one of whom was delivered recently of a boy at Prague (mentioned in the Vienna letter April 28). The father of the child is the manager of the two sisters, who has exhibited them to the public for several years. The Blazek twins form a pygopagus; that is, twins joined at the buttocks. All the organs of the trunk are duplicated, except that the rectum and the introitus vaginæ are in common. Formerly the sisters menstruated for a four to five day period. During pregnancy the menses ceased in the pregnant woman, while the other sister menstruated regularly until the last two months before the birth. It is remarkable that lactation set in not only in the woman who was delivered but also in her sister. Dr. Basch, who examined the sisters in the Prague hospital, reports this fact and its explanation in the last number of the *Deutsche medizinische Wochenschrift*. (Trunecek and Baudouin also discuss the teratologic aspect of the case in the *Semaine Médicale*, May 18.) Basch regards the influence of the sympathetic nervous system on the secretion of milk as small. The rôle of the sympathetic is especially shown in the transmission of reflexes in sucking or milking which are necessary to a uniform continuous activity of the mammary glands. The essential specific activity of the mammary glands is independent of the nervous system. According to Basch, the growth of the breasts is occasioned by stimulant substances which are present in the ovary after impregnation, while the initiation of the secretion of milk is brought about by stimulating substances which may be obtained from the expelled placenta. According to his opinion the secretion of milk in the non pregnant twin is to be explained by the fact that we have to do with two individuals living in parabiosis in whom the necessary stimulus to the production of lactation generated by the pregnant sister was carried by the common blood stream to the other sister with positive effect. Whether this idea will be sustained by other investigators remains to be seen.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, June 3, 1910.

The Weather in May and Public Health

This last month of May was most unusual on account of the weather and its effects on the general health. The first half of the month was characterized by excessive rainfall which exceeded that in any month of May since reliable records have been kept in this country (1775). It amounted to 181 mm. Nevertheless, the general health was excellent, especially among children. A complete absence of gastro-intestinal disturbance was noted, and also among the adults. Vital statistics for this period show remarkably favorable figures. When on May 15 fine weather set in and continued without interruption till the end, with high summer temperature at [illegible], the number of diseases went up by leaps and bounds. Summer diarrhea set in and numerous infectious diseases were reported, especially pertussis, measles and diphtheria. [illegible] disturbances of the respiratory organs were common. Another remarkable feature was the belated appearance of the so-called hay-fever, which in this country generally is observed already in the last days of April, while this year [illegible] for these poor patients, the [illegible] of [illegible] without much harm to them. [illegible] at the beginning of our summer [illegible] numbers of mosquitoes, which for many years [illegible] around Vienna, to invade all country places so that at present they are veritable pests in such places. No appreciable influence has been hitherto noticed on the appearance of epidemic cerebrospinal meningitis and poliomyelitis which have been seen sporadically during the winter. It was feared that the moist weather would cause a rise in the number of those cases, but hitherto, luckily, nothing of this kind has happened.

Report of Vienna General Policlinic

The report of the Policlinic in Vienna contains the following interesting figures: In 1909, not less than 76,950 new patients were admitted, 5,000 more than 1908. Of these 5,011 were patients who stayed 52,133 days altogether in the wards. Besides, 854 children were admitted, 17,000 minor operations were performed in the out-patient departments, while 970 major operations were performed on the in-patients. The mortality of the operations was only 5 per cent., while the mortality of the entire hospital was 10.5 per cent.; 59 per cent. of the patients were discharged cured. An interesting feature was the fact that diphtheria, of a light nature only, was observed, the mortality being 4 per cent. This is quite unusual and must be ascribed only to an accidental influence, as otherwise the mortality is from 8 to 12 per cent., even with antitoxin, which is here the routine treatment. The expenditure exceeds the income by 51,000 kronen, so that the deficit is keenly felt. There were altogether 220 students (mostly duly qualified doctors) in the wards and out-patient departments; 60 per cent. were English or American, and a good many lectures were delivered in English. The medical staff of the Policlinic, which comprises special professors for all branches of medicine, numbers 21 professors and 80 physicians and assistants. The hours of attendance on the patients vary from 8 a. m. till 8 p. m., so that during practically all the day specialist help is available for all patients and diseases.

Pharmacology

PHARMACEUTICAL MANUFACTURERS AND THE GREAT AMERICAN FRAUD

How Pharmaceutical Houses Aid and Abet the Nostrum Evil

At various times we have given more or less complete accounts of the prosecutions the United States Government has brought against nostrum exploiters under the Food and Drugs Act. One of the more recent of these, while of comparatively little interest *per se* is of importance to the medical profession, because of certain elements connected with it. The case is known technically as "Notice of Judgment No. 284" and deals with the "Alleged Misbranding of Danderine." The gist of the case is as follows: Casks of Danderine—a widely advertised "hair tonic"—were shipped in carload lots from Michigan to West Virginia, where the product was bottled, labelled and put in condition to be retailed. Danderine contains a percentage of alcohol which, while given on the labels of the bottles in which it is sold, was not stated on the casks in which the preparation was shipped in bulk. The government sought to confiscate under the Food and Drugs Act, 65 casks thus shipped because the quantity or proportion of alcohol in the casks was not stated. The Knowlton Danderine Company resisted the confiscation and the court upheld the company's claim.

The point in this case which is—or should be—of interest to the medical profession is to be found in the "statement of facts" presented by the Knowlton Danderine Company in its own defense. Here it is said that: "Parke, Davis & Co., who are mentioned in the said libel as shippers . . . are under contract with the said Knowlton Danderine Company . . . to compound the said formula . . . ." Elsewhere it is stated: "Parke, Davis & Co. were . . . the manufacturing agents under contract, of the owner, the Danderine Company . . . ."

This evidently means that Parke, Davis & Co., who are generally supposed to manufacture only "ethical" preparations—proprietary or otherwise—and as such to desire the respect and good wishes of the medical profession, are in the business of furnishing the supplies for nostrum vendors. What Danderine is, it is hardly necessary to specify. The widely distributed advertisements of this "hair tonic" nostrum with the slogan "Danderine Grows Hair and We Can Prove It" are sufficiently well known to all who read to make a lengthy dissertation on the product unnecessary.

It is interesting in this connection to note that according to newspaper dispatches the Danderine Company has absorbed the Sterling Remedy Company, which exploits "Cascarets." Some years ago a physician, who is also a pharmacist, wrote to the *Medical World* regarding the manufacture of Cascarets:

> ". . . I have positive evidence, which I will gladly submit, that P., D. & Co., make all of them [Cascarets], and that they have a contract with the Cascaret people not to make anything similar for any one else."

In the circular which comes in the Danderine packages two other "specialties" are advertised: "Neuralgine" for "sick, weak, tired nerves" and "Drake's Palmetto Compound" for "weak stomachs, sluggish livers, disordered kidneys" and various other derangements of the system. The question naturally arises, are these, too, shipped in casks from Parke, Davis & Co., and merely bottled and labelled in West Virginia?

Not that the Danderine case is the first one in which Parke, Davis & Co. have been exposed as manufacturers of nostrum supplies. "Vitaopathy" a method of "treatment" practised by the notorious New York Institute of Physicians and Surgeons in the person of "Prof." Adkin and apparently consisting of "absent treatment" and pills, was finally put out of business by a fraud-order from the post office department. The concern used to advertise:

> "In Professor Adkin's laboratory, his chemists are daily engaged in extracting the life-and-health-giving principle from rare vegetables, fruits and plants."

"Prof." Adkin had no laboratory; his chemists, according to the government report, were Parke, Davis & Co., from whom he purchased the tablets which formed part of his stock in trade of quackery.

The Nutriola Company of Chicago was declared fraudulent by the postal authorities and a full account of the methods of this fake medical concern appeared in The Journal, April 28, 1906. Nutriola was advertised as:

> "The greatest Chemical-Medical Preparation ever prepared by the skill of man."
>
> "Nutriola and Nature are the only invincible conquerors of diseases ever known."

The promoter of this scheme was one Edward F. Hanson, who was questioned by the government inspectors regarding the manufacture of the Nutriola nostrum. Quoting from the government report:

> "*Q.* Please name the chemists who now manufacture the remedies of the Nutriola Company."
>
> "*A.* Parke, Davis & Company, Detroit; E. L. Patch Manufacturing Company, Stoneham, Mass.; Seabury & Johnson, New York."

Not that the course pursued by Parke, Davis & Co. is by any means an exceptional one in the pharmaceutical world. It may be recalled that The Journal has previously referred to the fact that Sharp & Dohme are reported to make or to have made the "Getwell Tablets" for the "patent medicine" concern which exploits the nostrum; and that Frederick Stearns & Co. make or did make the widely advertised "cures" Shac and Zymole Trokeys also has been mentioned. That Seabury & Johnson made preparations for a fake medicine concern was brought to light by Mr. Adams in the "Great American Fraud" series. And unquestionably there are many others. The attitude taken by such houses seems to be that they are willing to furnish anything in the pharmaceutical line that anyone is willing to pay for, whether it is for legitimate use of the physician or pharmacist or for furthering the business by which the ignorant or gullible sick are humbugged and defrauded.

[Contribution from the Chemical Laboratory of the American Medical Association.]

MOTHERSILL'S SEASICK REMEDY

W. A. Puckner and W. S. Hilpert

While, from published analyses, the composition of such classes of proprietary remedies as cough cures, headache powders, etc., has become well known, very little has appeared regarding the nature of nostrums advertised to prevent seasickness. For this reason the examination of Mothersill's Seasick Remedy, as an extensively exploited representative of this class, was undertaken in the Association laboratory. The manufacturers, "Mothersill Remedy Co., Ltd., Detroit," send out circulars containing the most extravagant and sweeping statements regarding the efficacy of their remedy. For instance:

> "The only remedy which stops instantly and prevents, in every case, when taken according to directions, seasickness, carsickness and nausea caused by motion, climbing, etc."
>
> ". . . It is a great stomach strengthener."
>
> "No bad after-effects are ever produced by this remedy."
>
> "Mothersill's Seasick Remedy has never been known to fail in a single case."

These statements are backed by the "guarantee" of the manufacturers as follows: "We guarantee the successful action of Mothersill's Seasick Remedy in every case."

Further to inspire confidence, an analytical report and testimonials are included in the advertisements. The chemist reports that he found neither "opium, morphin, cocain or any other alkaloid ——." The testimonials are principally in the form of reprints from newspapers, mostly of English origin, and are as lavish in their praise of the remedy as the firm's own advertisements.

The preparation, as purchased on the market, comes in small boxes containing sixteen capsules, half of them containing a pink powder and the remainder a brown powder. The capsules are wrapped in tin-foil and packed with a circular and the reproduction of the analyst's report mentioned above. The cover of the container bears the name and manufacturer of the preparation with statements as to its use. The under side of the box bears the "guarantee" and special directions for the use of the remedy in the Irish and the English channels.

The pink powder possesses an odor resembling camphor, and when placed on the tongue produces a slight anesthesia. It is partly soluble in water and partly in chloroform. Qualitative examination[1] indicated the presence of chlorbutanol (acetone-chloroform; chloretone; methaform), caffein, milk-sugar and a fatty acid. Quantitative analysis demonstrated that 100 parts of the material contained approximately:

Chlorbutanol	46.1 per cent.
Caffein	7.9 per cent.
Milk-Sugar	27.0 per cent
Fatty acid	18.2 per cent.
Undetermined	0.8 per cent.

The brown powder possessed the same general properties as the pink and was found to contain chlorbutanol, caffein, powdered cinnamon and a fatty acid. The quantitative analysis showed that 100 parts of this brown powder contained approximately:

Chlorbutanol	45.6 per cent
Caffein	8.3 per cent.
Cinnamon, powdered	24.8 per cent.
Fatty acid	20.3 per cent.
Undetermined	1.0 per cent.

From the above it will be seen that the chief constituent of this preparation is chlorbutanol, a substance some years ago introduced as a substitute for cocain and used as a local anesthetic; it has been recommended as a preventative of nausea.

EDITORIAL NOTE: It is evident from the analysis that in this nostrum we have but another example of a scheme that is as old as quackery itself—selling a well known remedy under another name and investing it with virtues that are little short of miraculous. While chlorbutanol (better known under the proprietary names of chloretone and methaform) has been used to some extent and with a limited degree of success in the treatment of sea-sickness, it is evident that if it were the marvelous specific against *mal de mer* that the exploiter would have us believe, its use would long ago have become universal. This nostrum, like all others, depends for whatever popularity it may have on several factors. The first, and largest, is the universal tendency to give any therapeutic agent—worthy or worthless—the credit that rightly belongs to beneficent Nature. Second is the psychic element, which is enhanced by the exaggerated but very positive claims that are made for all nostrums, strengthened by the fact that the victim is paying ten times more than the thing is worth. The element of suggestion is still further augmented by the device of administering two powders of different colors containing essentially the same substances. Last, and least, the fact that the principal ingredient has a therapeutic value in selected cases.

Correspondence

Snake Poisoning—A Case of Plagiarism

To the Editor:—My attention has just been called to an article entitled "Practical Consideration of Snake Poisoning," by Benjamin H. Orndorff, B.A., M.D., Instructor in Pathology, Chicago College of Medicine and Surgery, Pathologist to Frances Willard Hospital, Chicago." This article was published in the *Medical Standard*, Chicago, September and December, 1909, pages 476 to 481 and 637 to 640. There was published by me in the *Archives of Internal Medicine*, Chicago, volume 1, June, 1908, pages 516 to 570, a paper entitled "Snake Poisoning in the United States; a Study Based on an Analysis of 740 Cases." This paper was the result of a large amount of work, which involved not only an examination of the literature but a collection, by correspondence with physicians practicing in the South, of a considerable number of unpublished cases. This article was commented on editorially by THE JOURNAL, July 11, 1908, page 132, and later reviewed in the Department of Therapeutics (THE JOURNAL, Aug. 8, 1908, p. 498).

The article by Dr. Orndorff, mentioned above, seems to be based almost entirely on my article published in the *Archives of Internal Medicine*. The outline and the division of the subject are identical. Not only paragraphs, but whole columns are exactly and literally quoted without quotation marks. The conclusion and summary of my article, divided into ten numbered paragraphs, has been appropriated as a whole, without change and again without quotation marks. Dr. Orndorff makes absolutely no mention of my communication, gives absolutely no credit. Indeed, in one of the few paragraphs not taken bodily from my paper he states (in substance) that his article is based on a careful study of the literature.

It would seem that such a flagrant case of plagiarism as this should not go unnoticed, constituting, as it does, a disgrace to medical journalism. I trust THE JOURNAL will see its way clear to compare the two articles mentioned. Any comment it might see fit to make would be appreciated.

PRENTISS WILLSON, M.D., Washington, D. C.

[Proof of the above letter was submitted to Dr. Orndorff who replies:]

The article is a publication of abstracts taken from several original articles appearing in current literature. These abstracts I prepared to assist me in giving a lecture on the subject and were intended to be the basis of an article for publication; however the abstracts, as they stood, appeared in the *Medical Standard* without my seeing a proof sheet for approval, indeed, the first portion appeared while I was in Europe, the second about fifteen days after my return.

All credit to the men writing the original articles was unfortunately omitted and the publication, as it stands, appears as a clumsy combination of plagiarism and ignorance on the part of the author. While I am certain there is nothing I can say or do that will amend the injustice done to the men whose brains have developed the material from which these abstracts were taken, still it would please me [illegible] in the columns of THE JOURNAL of the American Medical Association that the most excellent monograph by Dr. Willson "Snake Poisoning in the United States: a Study Based on the Analysis of 740 Cases," appearing in the *Archives of Internal Medicine*, June, 1908, furnished the greater part of the information found in my abstracts, while the summary and conclusion were copied entirely.

On receiving the reprints from this publication, I immediately observed the important omissions of authors and personally called at the office of the *Standard* to negotiate for another set of reprints which should contain the two omitted paragraphs, quotation marks and many other corrections, hoping that by the corrected print I might offset in a small measure the gross mistakes. On learning the cost of such alterations, I decided to ignore the entire affair and to dispose of the reprints without distribution.

---

[1] The details of the analysis will be sent on receipt of a stamped, addressed envelope; they will also be published in the annual report of the Chemical Laboratory

In conclusion I wish to express my profound regret for this mistake and trust that this explanation and apology may serve as a slight atonement of the injustice imposed on these men, for whose labor I possess the highest regard.

B. H. Orndorff, M.D.

[Comment: We suggest that those who are interested in the subject of journalistic plagiarism should examine the two articles. They can then decide for themselves whether or not the explanation explains.]

Hay-Fever Not a Contraindication to Antitoxin

To the Editor:—The note in the Medicolegal department (June 18, 1910, p. 2094), in regard to the use of tetanus antitoxin on patients who have hay fever, leads me to say that I have used the antitoxin as a prophylactic measure on several occasions. Many patients have suffered in varying degree from hay fever, yet in no case have I seen any untoward effect follow its use.

I myself suffer severely from hay-fever during August and September of each year. Last September I received an injury which made it seem wise to use a single large injection of the antitoxin. At the time I was suffering severely from hay-fever. I suffered no inconvenience whatsoever following the injection.

There is at times so much at stake as a result of injuries which tetanus may complicate, and prophylactic treatment is so very satisfactory, that I should not in the least hesitate either to use the antitoxin on a hay-fever patient or to have the antitoxin used on myself as frequently and in as large doses as might seem to be useful.

Edward M. Colie, Jr., M.D., New York.

A New Word for Vaccine

To the Editor: There is need of a new descriptive word in our nomenclature. "Vaccine," from *vacca*, "a cow," is a misnomer when applied to serums taken from any other source, man, horse, goat, guinea pig or rabbit; and doubtful, if a culture is made from a broth. We need a word which defines the character of the remedies now so much used as antidotes. We reverse the old dictum of the homeopathic school: "Similia similibus curantur," and say "Like kills like;" and this likeness of remedy to disease should be asserted.

My own suggestion for the new word is "viroid," i. e., like the virus for which it is the antidote. This name is distinctive, and it follows the analogies of medical language. It claims to combat a disease with its specific antidote. "Viroid" would be the name of the type of remedy, and a prefix would define the special remedy.

We may hope before long to have in use a pneumonia viroid, an influenza viroid, a scarlatina viroid, as we have now a rabies viroid.

"Antitoxin," by popular and professional use, is assigned to diphtheria. Itself a cumbrous word, any prefix or combination would make it worse. "Viroid" is definite, is descriptive, and is an easy helpmate when yoked with any named disease.

Henry Freeman Walker, New York.

Miscellany

Constriction Hyperemia in Local Prophylactic Treatment of Rabies.—Fermi and Cano report that the results of their experimental research suggest the possible advantage of applying a constricting elastic band, according to Bier's technic, to a limb that has been bitten by an animal suspected of rabies. Fermi applied the constriction from 1 to 4 or even 5 hours after injection of a 1 per cent. emulsion of fixed virus and maintained it for from 1 to 12 hours. All the animals thus treated survived, while the controls all died. Cano reports from Suez that in similar experiments 8 of the 9 dogs survived, that is 88 per cent., while only 55 per cent. were saved out of 9 rabbits and dogs treated by searing the lesion with a hot iron. Fermi also was able to save only 50 per cent. of those treated with the hot iron. Cano's report is published in the *Centralbl. f. Bakt.*, March 2, 1910, liv, page 37.

Diagnosis of Morphin Addiction by the Leucocytes.—Achard, Bénard and Gagneux state that it is possible by examination of the leucocytes to recognize morphin intoxication, to supervise the effects of treatment of morphin addiction and to distinguish between morphin and heroin intoxication. In their communication on the subject in the *Bull. Soc. Méd. des Hôp. de Paris*, 1910, xxxvi, 958, they relate a number of experiences with clinical, experimental and chemical tests showing the action of morphin on the leucocytes. The resisting power and activity of the leucocytes are rapidly reduced by injection of morphin except in those accustomed to the drug; in them there is no modification of the leucocytes after a test injection of morphin. The properties of the leucocytes are determined by the cytolytic action of a hypotonic salt solution; the mechanical activity being determined by their capacity of absorption of a stain (neutral red) or of foreign bodies (sterilized thrush fungus). The findings in 42 cases are given in detail.

Blister Method for Transplanting Epidermis.—A. Tedeschi had occasion to treat a patient with extensive burns who refused to permit Thiersch flaps to be taken from elsewhere to cover the defect. After excluding kidney trouble, Tedeschi applied a caustic to the skin over the desired area for a few hours and then cut the skin of the resulting blister to use for flaps, which he was able to make of the exact size and shape desired. The defect thus covered with the flaps was protected with perforated rubber tissue with moist gauze above. In his communication on the subject in the *Semana Medica*, 1910, xvii, 247, he states that the results were very good. The superficial layer of the transplanted flaps was thrown off in a few days, but the epithelial layer left soon grew to cover the raw area under the usual measures.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

VERMIN AS CARRIERS OF DISEASE

To the Editor: Please give references to literature on common insects and animals as carriers of diseases to man.

S. E. Woody, Louisville, Ky.

Answer.—Giles: Gnats and Mosquitoes, William Wood & Co.

Levy: The Extermination of Mosquitoes, W. B. Saunders Co.

Mitchell: Mosquito Life, G. P. Putnam's Sons.

Ross: Mosquito Brigades and How to Organize Them, Longmans Greene & Co.

Herzog, M.: The Plague; Bacteriology, Morbid Anatomy and Histopathology, Including a Consideration of Insects as Plague-Carriers, Dept. of the Interior, Bureau of Government Laboratories, Manila, 1904, No. 23.

Merriam, C. H.: California Ground Squirrels, U. S. P. H. and M. H. Service, Washington, 1910.

Rosenau, M. J.: Disinfection Against Mosquitoes with Formaldehyd and Sulphur Dioxid, Bull. 6, Hyg. Lab., U. S. P. H. and M. H. Service, Washington.

Stiles, C. W.: A Zoologic Investigation into the Cause, Transmission and Source of Rocky Mountain "Spotted Fever," Bull. 20, U. S. P. H. and M. H. Service, Washington.

The Rat and Its Relation to the Public Health, U. S. P. H. and M. H. Service, 1910.

Weber, S. E.: Dissemination of Tubercle Bacilli by Insects, *New York Med. Jour.*, Nov. 3, 1906; abstr. in The Journal A. M. A., Nov. 17, 1906, p. 1683. Also editorial in The Journal A. M. A., Dec. 29, 1906, p. 2161.

Editorial: The Control of Insect-borne Diseases in the Army, The Journal A. M. A., Aug. 3, 1907, p. 421.

Lord, B. J.: The Rat and His Parasites in the Spread of Disease, Especially Bubonic Plague, *California State Jour. Med.*, April, May and June, 1907.

Sofer, L.: Transmission of Disease by Insects, *Therap. Monatsh.*, April, 1908; abstr. in The Journal A. M. A., May 16, 1908, p. 1659.

Verjbitski, D. T.: Insects in the Epidemiology of Plague, *Jour. Hyg.*, London, May, 1908; abstr. in The Journal A. M. A., Aug. 15, 1908, p. 628.

Dutton, W. F.: Insect Carriers of Typhoid Fever, The Journal A. M. A., Oct. 16, 1909, p. 1248. This article is accompanied by a full bibliography.

Some valuable information on this subject can be obtained from the Reports of the Wellcome Research Laboratories Bureau, published by the Department of Education, Sudan Government, Kartoum.

THYMINIC ACID

To the Editor:—Where can I obtain thyminic acid, which has been used apparently with success in gout by Dr. Fenner of England? I cannot find it listed in any catalogues of American drug houses. 2. Has it been used in this country with any success?

F. H. Norwood, Prague, Okla.

Answer.—1. Thyminic acid is also known under the name "solurol," a name which was given to it by its discoverer, Minkowski, and which appears not to be proprietary. We presume it can be obtained through the regular channels of the drug trade.

2. An article describing the use of thymic acid in gout by E. Schmoll, appears in The Journal, April 29, 1905, p. 1348, but we find no reference to it in American literature since that time. Schmoll treated about 30 patients with it with favorable results. The term thymic acid as used by Schmoll refers to the substance which is more properly known as thyminic acid. A general account of this substance was given in The Journal, Aug. 22, 1908, p. 692. In an article on "The Pathology and Therapy of Gout" (*Therapie der Gegenwart*, February, 1909), F. Umber makes the following statements: "We have used solurol in gouty patients with exact observation of the metabolism without any clinical effect and without any effect on the curve of uric acid excretion." It is well to remember, as Umber remarks, that there is scarcely any so-called gout remedy which has not been credited by this or that author with brilliant success.

The Public Service

Medical Department, U. S. Army

Changes for the week ended June 25, 1910.

Oliver, Robert T. E. S. D., surgeon, returned to Fort Hamilton, N. Y., from temporary duty at Fort Hancock, New Jersey.

Gritlis, F. C., M. R. C., left station with 4th Field Artillery to Fort D. A. Russell, Wyo, Target and Maneuver Reserve.

Loag, Charles J., dental surgeon, reports for temporary duty at Fort Andrews, Mass.

Guackel, George L., dental surgeon, reports for temporary duty at Fort Screven, Ga., left Fort Sarrancas, Fla., June 10, 1910.

Ferenbaugh, Thomas L., M. R. C., reported at Fort D. A. Russel, Wyo., for temporary duty.

Gray, William W., col., reported for duty as Chief Surgeon, Headquarters Department of Dakota, St. Paul., Minn.; left St. Paul, Minn., June 18, 1910, on 30 days' leave of absence.

Oliver, Robert T., E. S. D. S., will proceed to the camp of instruction to be held at Gettysburg, Pa., to arrive July 1 for dental service during the encampment.

Hall, William E., M. R. C., on arrival at San Francisco, will proceed to Whipple Barracks, Ariz., for station.

Clark, John A., capt., on arrival at Seattle, Wash., will proceed to Plattsburg Barracks, N. Y., for station.

Roberts, William M., major., granted 3 months' leave of absence.

Pinkston, O. W., capt., reported for temporary duty at Fort D. A. Russel, Wyo.

Gostin, Bernard S., lieut., honorably discharged from the service of the United States.

Ekwurzel, George M., major, left Fort MacKenzie, Wyo., on 10 days' leave of absence.

Lynch, Edward C., M. R. C., ordered to active duty in the service of the United States, and will proceed to Fort D. A. Russel, Wyo., for station and duty.

Warriner, B. B., M. R. C., granted 10 days' leave of absence.

Banister, William B., lieut. col., will, in addition to his duties at Fort Snelling, Minn., take charge of the office of chief surgeon, Department of Dakota, St. Paul, Minn., during the absence of Colonel William W. Gray, Medical Corps.

Sharpe, Herbert H., M. R. C., ordered to proceed from Fort Jay to Fort Niagara, N. Y., for temporary duty.

Holmes, R. W., M. R. C., left Plattsburg Barracks, N. Y., on 10 days' leave.

Clark, John A., capt., granted leave of absence for 1 month.

Coffey, Albion McD., M. R. C., granted leave of absence for 1 month.

Coe, Henry C., M. R. C., ordered to active service and will proceed to Camp of Instruction, Gettysburg, Pa., for duty.

Hughes, Leonard S., M. R. C., ordered on expiration of his present leave of absence to proceed to Fort D. A. Russel, Wyo., for station and duty.

Pinquard, Joseph, M. R. C., granted leave of absence from June 22 to Sept. 9, 1910, at which date he is honorably discharged from the service.

Long, Charles J., dental surgeon, ordered to proceed at the [illegible] time to Pine Camp, Jefferson County, N. Y., [illegible] dental [illegible] during the Camp of Instruction.

Snyder, Henry D., major, granted 30 days' leave of absence, [illegible] ordered to proceed to New York City, on official business pertaining to the Medical Department of the Army.

Medical Corps, U. S. Navy

Changes during the week ended June 25, 1910.

Woodland, L. E., acting asst.-surgeon, appointed acting assistant surgeon from June 18, 1910.

Fitts, H. B., medical inspector, detached from command Naval Hospital, Pensacola, Fla., and ordered to continue other duties.

Pryor, J. C., surgeon, ordered to command the Naval Hospital, Pensacola, Fla.

Shipp, E. M., surgeon, detached from the Naval Recruiting Station, N. Y., and ordered to the Naval Medical School Hospital, Washington.

Asserson, F. A., surgeon, detached from the Naval Hospital, Portsmouth, N. H., and ordered to duty at the Naval Hospital, [illegible]

Heiner, R. G., P. A. surgeon, ordered to duty at the Naval Hospital, Norfolk, Va.

Haynes, J. P., surgeon, detached from the Navy Yard, Norfolk, Va., and ordered to the Naval Recruiting Station, and the Naval Station, New Orleans.

Stuart, A., P. A. surgeon, ordered to duty at the Naval Hospital, Boston.

Jenness, B. F., P. A. Surgeon, detached from the Naval Recruiting Station, Buffalo, N. Y., and ordered to the Naval Hospital, Portsmouth, N. H.

Howard, J. V., A. A. surgeon, ordered to duty at the Naval Hospital, Philadelphia.

[illegible], C. C., A. A. surgeon, ordered to duty at the Naval Hospital, New York.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended June 22, 1910.

Glennan, A. H., assistant surgeon-general, granted 1 month's leave of absence from July, 1910.

Cofer, L. E., assistant surgeon-general, granted 4 days' leave of absence from June 22, 1910.

Wertenbaker, C. P., surgeon, granted 1 days' leave of absence from June 27, 1910.

Wille, C. W., P. A. surgeon, detailed to attend the joint meeting of the Ohio State Board of Health with local boards of health to be held in Cleveland, Ohio, June 30-July 1, 1910.

Long, J. D., P. A. surgeon, relieved from duty in the Hygienic Laboratory and detailed for duty in the Bureau as assistant surgeon general in charge of the Division of Domestic (Interstate) Quarantine, effective June 16, 1910, Paragraph 12, Service Regulations.

Stimson, A. M., P. A. surgeon, granted 4 days' leave of absence from June 15, 1910, under Paragraph 191, Service Regulations.

Roberts, Norman, P. A. surgeon, granted 1 day's leave of absence June 13, 1910, under Paragraph 191, Service Regulations.

Frost, W. H., P. A. surgeon, granted 2 days' leave of absence en route to station.

Mullan, F. H., P. A. surgeon, granted 13 days' leave of absence from June 17, 1910.

Stiles, C. W., Professor, Chief Division of Zoology, Hygienic Laboratory, detailed to attend the annual meeting of the Medical Society of North Carolina, to be held at Wrightsville Beach, June [illegible], 1910.

Delgado, J. M., acting asst. surgeon, granted 26 days' leave of absence from July 1, 1910.

Hough, J. Spencer, acting asst.-surgeon, granted 30 days' leave of absence during the calendar year, 1910.

Hunter, W. R., acting asst. surgeon, granted 10 days' leave of absence from June 18, 1910.

O'Neill, A. A., acting asst.-surgeon, granted 3 days' leave of absence without pay from June 10, 1910, under Paragraph 210, Service Regulations.

Marriages

Robinson Bosworth, M.D., Calais, Me., to Miss Mary [illegible] of Boston, June 21.

John Merlin Alford, M.D., Galva, Ill., to Miss [illegible] of Chicago, June 17.

Charles Ogilvy, M.D., to Miss Evelyn Hunter, both of New Rochelle, N. Y., June 15.

Louis Rosenthal, M.D., to Miss Elizabeth [illegible], both of New York City, June 7.

Charles Wilson Doughtie, M.D., Norfolk, Va., to Miss Alice Glenn Smith, June 18.

William F. Beitsch, M.D., to Miss [illegible], both of New Brighton, Pa., June 11.

Henry Symes Stinson, M.D., to Miss [illegible], both of Berwyn, Ill., June 18.

Etta Barkdoll, M.D., Greencastle, Pa., and J. Roy [illegible], at Hagerstown, Md., June 11.

William Garfield Fox, M.D., to Miss Susie Lucretia [illegible], both of Lancaster, Pa., June 21.

Thomas Worth Keller, M.D., to Miss Hannah B. Jones, both of Pittsburg, Pa., recently.

Francis C. Goldsborough, M.D., to Miss Mollie Pitcher Cook, both of Baltimore, June 8.

William Roy Elgin, M.D., Ruleville, Miss., to Miss Zerah Harpole of Europa, Miss., June 11.

Charles F. Daniels, M.D., Tiffin, Ohio, to Miss Olga Mary Hierholzer of Celina, Ohio, June 14.

Howard T. Clarke, M. R. C., U. S. Army, to Miss Elinor L. Tracy, at Fort Thomas, Ky., June 7.

Arthur Clarkson Smith, M.D., Oakland, Cal., to Miss Algae Margaret Hurd of Lodi, Cal., June 4.

Washington Flood Sager, M.D., Woodstock, Va., to Miss Helen Newman, at Woodstock, June 14.

Charles Butterfield, M.D., Rock City, Ill., to Miss Charlotte Heath of Lawrence, Mich., recently.

John Boyer Laughlin, M.D., Hagerstown, Md., to Miss Myrtle F. Binkley, at Hagerstown, June 15.

Walter Everett Deering, M.D., Hollywood, Cal., to Miss Lillian Rose Moody, at Hollywood, June 21.

George William Kirmse, M.D., Frazee, Minn., to Miss Aldine Jacobsmeyer of Clayton, Mo., June 15.

Alfred Curtis Rice, M.D., McSherrystown, Pa., to Miss Violet M. Smith, at McSherrystown, June 14.

Harold Bailey, M.D., to Miss Mabelle Rague, both of Charles City, Iowa, at Waterloo, Iowa, June 15.

Albert Ege Craig, M.D., Washington, D. C., to Miss Azelia DeGrange Jones, at Shepherdstown, W. Va., June 16.

Clarence W. Russell, M.D., Lamar, Colo., to Mrs. Abby C. Howe of Laporte, Ind., at Logansport, Ind., recently.

Charles Hatch Stoddard, M.D., Milwaukee, Wis., to Miss Eloise Marie Jackson of Birmingham, Ala., June 25.

Harvey B. Sanborn, M.D., to Miss Bernice Esther Monk, both of Providence, R. I., at Campello, Mass., June 10.

Ernest L. Ruffner, M. C., U. S. Army, to Miss Jessie B. Bowen of Buffalo, N. Y., at Mount Vernon, N. Y., June 14.

William Worthington Herrick, M.D., New York City, to Miss Emily Elizabeth Schwab of Ossining, N. Y., at Scarboro, N. Y., June 15.

Deaths

William Henry Seaman, M.D. (Hon.) Howard University, Washington, D. C., 1883; professor of chemistry and toxicology in Howard University; a fellow of the American Association for the Advancement of Science; corresponding member of the Maryland Academy of Sciences; member of the Biological, Geographical and Chemical societies of Washington; president of the Washington Microscopic Society in 1900, and secretary of the American Microscopical Society from 1891-1894; principal examiner of the United States Patent Office, Washington; died in that city, June 11, from arteriosclerosis and acute cardiac dilatation, aged 72.

John Wesley Tope, M.D. Rush Medical College, 1870; a member of the American Medical Association; a veteran of the Civil War; superintendent of the Asylum for the Insane at Dunning for five years; member of the surgical staff of Cook County Hospital for fourteen years; founder of the Oak Park Hospital; president of the Alumni Association of Rush Medical College; president of the Aux Plaines branch of the Chicago Medical Society, died at his home in Oak Park, June 18, aged 65.

Meyer Herman, M.D. Columbia University, Washington, D. C., 1891; contract surgeon U. S. Army, 1898 to 1901; assistant surgeon, U. S. Volunteers; a veteran of the Spanish-American War, who went to the Philippines with the Thirty-eighth Volunteer Infantry as a captain-surgeon after a season in Cuba combating yellow fever; of Manila; died in St. Paul's Hospital at that place, May 12, from diabetic coma, following an operation for appendicitis, aged 49.

John Francis Bennett, M.D. Michigan College of Medicine and Surgery, Detroit, 1892; a member of the American Medical Association; professor of physical diagnosis and clinical medicine in his alma mater; U. S. pension examining surgeon; a resident of Detroit and coroner of Wayne county, died at the home of an aunt in Northville, Mich., June 19, from valvular heart disease and heat prostration, aged 45.

Jules A. Simon, M.D. University of California, Medical Department, 1879; Faculty of Medicine, Paris, France, 1883; a member of the Medical Society of the State of California; at one time president of the Board of Health of San Francisco; and a member of the staff of Mount Zion Hospital; died from heart disease while ascending Mount Vesuvius Italy, June 8.

E. Rose Dorsett, M.D. Jefferson Medical College, Philadelphia, 1868; a member of the Medical Society of the State of North Carolina; coroner of Rowan county for thirty years; died at his home in Salisbury, June 16, from pericardial effusion, aged 76.

Edward D. Swift, M.D. Louisville (Ky.) Medical College, 1894; a member of the Indiana State Medical Association; of Macy, Ind.; died at Oskaloosa, Kan., where he had gone for his health some weeks ago, June 10, from heart disease, aged 39.

Robert Booth, M.D. University of Michigan, Department of Medicine and Surgery; 1867; a member and chairman of the Millbury, Mass., Board of Health; died at St. Vincent Hospital, Worcester, June 14, from cystitis and heart disease, aged 69.

John Belton O. N. Harrington, M.D. Louisville (Ky.) Medical College, 1879; a member of the Mississippi State Medical Association; of Crawford, Miss.; died at the home of his sister in that place, June 13, from chronic gastritis, aged 57.

Charles Herbert Boxmeyer, M.D. Cornell University Medical College, 1906; at one time state bacteriologist of Florida and later city bacteriologist of Sacramento, Cal.; health officer of Palo Alto, Cal.; died at that city, June 13, aged 34.

David D. Stewart, M.D. Jefferson Medical College, Philadelphia, 1879; a pioneer practitioner of Johnson county, Iowa; a veteran of the Civil War; died at his home in North Liberty, Iowa, June 10, from heart disease, aged 79.

Randall Doyle Bibber, M.D. Medical School of Maine, Brunswick, 1871; a member of the American Medical Association; three times mayor of Bath, Maine; died at his home in that city, June 9, from chronic nephritis, aged 64.

Burwell Philip Goode, M.D. Medical College of Ohio, 1858; a member of the American Medical Association; a practitioner of Cincinnati for fifty years; died at Cincinnati, April 23, from cerebral arteriosclerosis, aged 77.

Wesley A. Cormack, M.D. Eclectic Medical Institute, Cincinnati, 1874; for more than thirty years a practitioner of Cherryvale, Kan.; died at his home in that place, June 9, from heart disease, aged 71.

Randall Williams, M.D. Albany (N. Y.) Medical College, 1848; a practitioner of LeRoy, N. Y., for half a century, and said to have been the oldest physician in Genesee county; died at his home, June 10, aged 85.

Edward Goodell Larrabee, M.D. Dartmouth Medical School, Hanover, N. H., 1909; a member of the staff of the Maine State Sanatorium, Hebron; died at that institution, June 12, from tuberculosis, aged 24.

Robert Newton Hawley, M.D. College of Physicians and Surgeons, New York City, 1879; a veteran of the Spanish-American War; formerly of Milwaukee, Wis.; died at Baltimore, June 13, aged 51.

Levi D. Tebo, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1873; a practitioner of Bordentown, N. J., for thirty years; died in that city, June 14, from cardiac degeneration, aged 65.

Allen P. Mitten, M.D. Rush Medical College, 1867; Bellevue Hospital Medical College, New York City, 1873; formerly of Columbia City, Ind.; died at his home in Seattle, Wash., June 13, aged 65.

William Kennedy Brown, M.D. Jefferson Medical College, Philadelphia, 1845; a practitioner of medicine for sixty years; of Paris, Texas; died at the home of a son in Detroit, Texas, June 9, aged 91.

George P. Yost, M.D. Washington University School of Medicine, Baltimore, 1871, of Glen Rock, Pa.; died at the home of his son in law in Baltimore, June 12, from heart disease, aged 62.

John Winthrop Spooner, M.D. Harvard Medical School, Boston, 1871, a member of the American Medical Association; died at his home in Hingham, Mass., June 19, from paralysis, aged 64.

William Ekwurzel, M.D. Jefferson Medical College, 1868; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, June 18, from heart disease, aged 67.

Ephraim S. Wynn, M.D. Jefferson Medical College, Philadelphia, 1872, of Camden, N. J., and Philadelphia; died at his residence in Camden, June 13, from heart disease, aged 61.

Thomas H. Ferguson, M.D. Washington University Medical Department, St. Louis, 1867; of Gridley, Cal.; died at the Rideout Memorial Hospital, Marysville, Cal., June 18, aged 73.

W. A. Martin, M.D. Medical College of Georgia, Augusta, 1843; of Cobbham, Ga.; while shaving, accidentally cut his throat so severely that he bled to death, June 12, aged 89.

Elijah Wilson Carney, M.D. Medical Department of Nashville and Vanderbilt University, Nashville, Tenn., 1892; of Shelbyville, Tenn.; died at that place, June 15, aged 40.

Robert A. Hammond, M.D. Jefferson Medical College, Philadelphia, 1876; of Monroe, Ga.; died at his home in that place, June 13, following an operation for appendicitis, aged 58.

Willis Brooks McMichael, M.D. Harvard Medical School, 1881; of Boston; died at the home of his mother in South Newcastle, Maine, June 11, from heart disease, aged 50.

William Eugene Trautwein, M.D. Bellevue Hospital Medical College, New York City, 1890; of New York City; died at his home, June 19, from heart disease, aged 44.

William Hendrik Horsley, M.D. California Eclectic Medical College, Los Angeles, 1900; of Manton, Cal.; died at that place, Oct. 14, 1909, from disease of the liver, aged 50.

Asa C. Wilton, M.D. University of Wooster, Medical Department, Cleveland, Ohio, 1882; died at the home of his sister in Youngstown, Ohio, June 16, aged 61.

Frank Cecil Fenhagen, M.D. College of Physicians and Surgeons, Baltimore, 1875; died at his home in Baltimore, June 13, from nephritis, aged 55.

William Alexander Simmons, M.D. Jefferson Medical College, Philadelphia, 1855; died at his home near Troy, N. C., recently, from nephritis, aged 82.

Henry W. Stork, M.D. Medical College of Evansville, Ind., 1878; died at his home in Holland, Ind., June 3, from cerebral arteriosclerosis, aged 59.

John M. McKnight, M.D. Tulane University, New Orleans, 1872; a confederate veteran; of Laredo, Texas; died at that place, June 19, aged 64.

Lorin North Pontius, M.D. Rush Medical College, 1881; of Canton, Ohio; died at a hospital in Gallipolis, Ohio, June 20, aged 56.

Daniel P. Durst, M.D. Jefferson Medical College, Philadelphia, 1850; died at his home in Wheatland, Cal., June 11, aged 85.

Stephen H. Fuller, M.D. Fort Wayne (Ind.) College of Medicine, 1880; died at his home in Pleasant Lake, Ind., June 21, aged 62.

Society Proceedings

AMERICAN SURGICAL ASSOCIATION

Annual Meeting, held in Washington, D. C., May 3-5, 1910

Operative Treatment of Tumors of the Hypophysis

Dr. A. E. Halsted, Chicago: A survey of the literature on the operative treatment of tumors of the hypophysis shows that many of the procedures proposed are based, not on clinical experience, but on observations made in the post-mortem room; therefore, the merits of these methods are still unproved. The routes of approach previously advocated have been the intracranial and the extracranial. I propose what I term the oronasal route, which I employed successfully in one case. It is a modification of the infranasal method of approach, but is without the trauma and disfiguration which must follow the König operation.

DISCUSSION

Dr. S. J. Mixter, Boston: In a patient operated on by the route suggested by Kanavel, there was a large cyst in the hypophysis filled with cholesterin and holding about one and a half to two ounces of fluid. The patient made a good recovery after the operation and his vision, which before was extremely poor, has been benefited.

Dr. Harvey Cushing, Baltimore: The various means of approach to the hypophysis do not make so much difference as does the matter of dealing with the structure when it is brought into view. The growth often becomes malignant, as is true of long-standing trouble with the thyroid, and it is conceivable that it cannot be entirely removed. In fatal cases it has often been found that only a mere fragment of the growth has been taken away. The operation in the first place has for its object the relief of pressure; the symptoms can be combated by the mere removal of the lower part of the sella turcica and the splitting of the capsule of the gland.

Dr. A. B. Kanavel, Chicago: Concerning the technical procedure in Dr. Halsted's cases, in the first one particularly the view could not have been better. The operation was very quickly done, the anterior wall of the sphenoidal sinus quickly removed, the bulging sella turcica opened, and a tumor protruding into the sinus was removed without difficulty. In the second case, the sella turcica did not bulge into the sinus, it was seen with more difficulty and was arrived at by anatomic deductions. In two cases there was considerable hemorrhage and I would suggest the elevation of the head during the operation. In the majority of cases it will only be necessary within the nose to remove the vomer and the anterior portion of the sphenoid in order to come down on the sella turcica.

Dr. Dean Lewis, Chicago: The tissue removed from the first case contains no elements which are ordinarily found in the anterior lobe or the pars intermedia, but is composed of stratified epithelium with a papillary arrangement, therefore we must assume that the tumor has probably developed from an epithelial inclusion which has not gone on to complete differentiation. The tissue removed from a second case came from the anterior lobe. In some sections the cell columns are cut parallel, long rows of cells resting between rather thick connective tissue trabeculae; in other fields the cells have fused and in still other fields the fusion has become so marked that large groups of cells are found, hyperplasia apparently having ended in adenoma formation. It is important to recognize the complex structure of the hypophysis in making the anatomic diagnosis of tumors of this gland, and to remember that the cells of the anterior lobe, when growing rapidly tend to reproduce the structure of a sarcoma.

Benign Bone Cysts, Ostitis Fibrosa, Giant-Cell Sarcoma and Bone Aneurism of the Long Pipe Bones

Dr. Joseph C. Bloodgood, Baltimore: In many lesions technic is ahead of diagnosis. The development of technic is more rapid, because the results of faulty technic are immediate while the development of diagnosis is more difficult, especially in tumors, because the results are more remote. Treatment of tumors which will assure the patient the greatest possibility of a permanent cure with the least mutilation will be accomplished only when surgeons have a better conception of the local growth of neoplasms. The so-called benign bone cyst may present itself in five forms: First, as a medullary cyst without any definite gross lining; second, as a similar cyst with a definite connective tissue lining which is easily stripped from the bony capsule; third, as a medullary mass of fibrous tissue with a small cyst; fourth, as the same medullary mass of fibrous tissue without any cyst formation; and fifth, as multiple medullary cysts. Among 89 cases of which 20 were personally observed, 69 belong to the variety of true localized bone cyst or ostitis fibrosa. The other 20 cysts have different etiologic factors, for example, cysts in enchondroma, in pure myxoma, in giant-cell sarcoma, in ostitis deformans; cysts due to subperiosteal ossifying hematoma, and callous cysts. At the exploratory incision in benign cysts there is always found a thin shell of bone; the contents of the cyst are usually of a dark brown color and thin. The giant-cell sarcoma of which I have studied 19 cases, can also be recognized at the exploratory incision. The medullary cavity is filled with a soft hemorrhagic tissue resembling granulation tissue mixed with whitish areas which, when removed with the curette, come away in masses of irregular shape. This tumor also has been cured by curetting. It is 8 years since I curetted from the medullary cavity of the upper end of the tibia such a tumor and this patient has no evidence of recurrence today. Patients have been cured even after repeated curetting; amputation is indicated only when the patient has allowed the tumor to grow to such a size that it has perforated the bone capsule and infiltrated the soft parts to such an extent that its complete removal would leave a functionless limb. The so-called bone aneurism is a much less frequent tumor and is distinctly malignant. It is a hematoma due to hemorrhage in the most malignant form of medullary spindle, round, or mixed-cell sarcoma, and I believe that in this stage of this tumor metastasis has already taken place, so that no harm could come from mistaking such a tumor for a bone cyst or giant-cell sarcoma. I have seen 3 cases, in one of which the patient was not saved by the highest amputation; in the second case amputation was refused; the third case was first treated as bone cyst, amputation was done later, but the patient died of metastasis.

DISCUSSION

Dr. Rudolph Matas, New Orleans: In one case in which, after removal of a giant-cell sarcoma from the humerus, there was a large cavity, I used about an ounce and a half of Mosetig cement, and the patient later developed extreme symptoms of iodoform poisoning, from which he recovered in 10 days, and the arm healed with a perfect contour of the bone. I believe that in Beck's paste we have a most valuable means of filling up cavities, it being superior in my opinion to any other paste.

Dr. William L. Rodman, Philadelphia: I recall a patient operated on in 1889 for large giant-cell sarcoma of the lower jaw by free chiseling and curettement but without removal of the maxilla. The patient lived for more than ten years after this operation, and may be alive today.

Dr. Joseph A. Blake, New York: I had a case of sarcoma of the fourth finger. A simple operation in this case proved most satisfactory, and now, three years since operation, there is a normal phalanx.

Dr. Harry M. Sherman, San Francisco: In my experience salt solution poured into these cavities a little in excess just before the last stitches are taken is as good as any other material for filling; it is replaced by blood and obviates the necessity of putting in any foreign body.

Dr. Dudley P. Allen, Cleveland: Some years ago, I removed the lower jaw of a patient for giant-cell sarcoma, leaving but a small portion of the substance of the jaw. I used a splint to hold the teeth in place. The patient recovered entirely and is now well.

Dr. William S. Halsted, Baltimore: In a case of myxoma of the humerus, although the disease involved the bone from one end to the other, there was no cyst and no fibrous tissue. The bone was excised four years ago except for a strip posteriorly and at the lower end, and the entire cavity carefully swabbed out with phenol. The patient made a good recovery and had a strong humerus, but there were implantation recurrences in the soft parts on two occasions. The patient is now perfectly well.

Dr. Nathan Jacobson, Syracuse: I recall a patient with giant cell sarcoma of the jaw in whom I did a partial excision of the upper jaw about 25 years ago. The patient is still living. There was never any recurrence. In my experience in these cases of giant cell sarcoma in which there is reasonable cleaning out there is seldom a recurrence of the growth.

Professor A. Von Eiselsberg, Vienna: In such cases as those mentioned, in Vienna we are in the habit, before finishing the operation, of pouring boiling water into the wound in order to destroy all the germs and have found it a most satisfactory method.

Dr. J. Bloodgood: Dr. Halsted's case of exostosis with involvement of the humerus brings out the point that pure myxoma is a benign tumor; recurrence after operation may be due not so much to leaving a portion of the tumor growth behind as to infecting the wound in removal of the tumor. In such cases it would be well to use boiling water, pure phenol, or the Paquelin cautery to disinfect the wound.

Diagnosis and Surgical Treatment of Esophageal Diverticula

Dr. C. H. Mayo, Rochester, Minn.: Most cases of esophageal diverticula are pharyngo-esophageal. The condition is confined to adults. Dysphagia is the most common symptom, cough and dyspnea are common. Distended sacs are often visible in the neck and can be emptied by pressure. The condition is disclosed by probing and by radiograph of the bismuth-distended sac. H. S. Plummer's method of diagnosis is a combination of the technic of Mixter and Dunham, as used in stricture. The patient swallows a silk thread which passes into the intestine. The Plummer perforated acorn probe passed on the thread gives the depth of the pocket and location of its neck. Gastrostomy for temporary feeding may be necessary. Operation is by lateral oblique incision; blunt dissection; exposure of sac and excision; closure by suture; rubber tissue drain.

Thoracic Surgery on Human Beings

Dr. Willy Meyer, New York: I have operated on 10 patients with the help of my differential pressure apparatus. In two young patients, 6 and 11 years old respectively, who had suffered for years from bronchiectatic abscess symptoms, and were bad risks, I extirpated a lobe of the lung in each case, but neither recovered. Three times exploratory thoracotomy was done for cancer of the esophagus with recovery. In order to do good surgical work when operating for a malignant stricture of the esophagus I have found it necessary to get the scapula out of the way and, therefore, propose as a preliminary operation the Schede-Friedrich flap operation, by which the entire shoulder girdle is turned up, thus permitting the surgeon to make his incision into the thoracic cavity wherever required; often two incisions are necessary. On March 31, 1910, I proceeded in this way for a cancer of the esophagus in a patient aged 43. It was found that the malignant tumor extended from about 1½ inches above the cardia to the aortic arch. After division of the esophagus and inversion of the lower stump through the sixth intercostal space, the third interspace was opened, and the healthy portion of esophagus reached, outside of the common carotid artery, after proper division of the costal pleura; then the entire diseased portion was shelled out and brought in front of the aortic arch. To my dismay I found in the course of this latter part of the operation that the growth involved the right pneumogastric nerve; it was impossible to push the nerve off; it had to be divided at the lower end of the tumor, and again interfered with in amputating the esophagus above the upper border of the tumor. The proximal end was also inverted by a double purse-string suture, the intention being to do gastrostomy two or three days later. The interference with the pneumogastric nerve had a deleterious effect on the heart action, which up to this time had been splendid. The operation was well completed, but in spite of intravenous infusion given, the patient succumbed shortly afterward. The only hope of operative success in these cases lies in early operation, certainly before the intimately adjacent pneumogastric branches are involved, and the first step of such operation should be to free these nerves. Their involvement will more or less decide the operability or inoperability of the given case. Up to the present time resection of the esophagus has a mortality of 100 per cent.

End-to-End Intestinal Anastomosis by the Invagination Method

Dr. C. L. Gibson, New York: End-to-end intestinal anastomosis by telescoping one segment into the other has been practiced from time immemorial, but at present has no recognized position in surgery. My present technic, I believe, furnishes a method for which there is a demand, particularly in the surgery of the lower end of the colon. It is as follows: The upper cut edge of the gut is seized with two Kocher clamps and introduced by these into the lumen of the lower end and maintained there by an assistant. The extent to which it is feasible to accomplish this invagination will vary. The gut is rotated about a quarter circle so that the non-periosteal covered surfaces do not entirely approximate in the circumference. From eight to twelve interrupted silk sutures are introduced thus: A Lembert suture is begun on the lower segment, the needle issuing just short of the cut edge, on the upper segment the needle is introduced just above the line where the cut edge of the lower segment lies against the intact wall of the upper. When the knot is tied the free cut edge has been turned inward, and only the peritoneal surfaces are in contact. A continuous running suture is applied over this area further invaginating the first ones, the Kocher clamps being previously withdrawn.

Postoperative Intestinal Obstruction

Dr. George Woolsey, New York: Postoperative intestinal obstruction is either mechanical or paralytic. In early cases diagnosis is not so easy as it is obscured by peritonitis, operative trauma and the sequelæ of anesthesia. Many of the symptoms of obstruction and peritonitis are identical. Rigidity is the important sign of peritonitis and absolute constipation of obstruction. If the latter cannot be relieved, a diagnosis of obstruction should be made. The problem in prophylaxis is to prevent sepsis, operative trauma and adhesions, to which nearly all cases are due; hence operation is indicated in all cases of appendicitis as soon as diagnosis is made. When septic peritonitis is present modern technic (Murphy's) will cure in most cases and prevent paralytic ileus. To prevent atony rough and undue handling of intestines should be avoided. When early distention is marked and increasing, enemata of various kinds may be used with or without physostigmin. Stupes and lavage are also very useful. The prevention of adhesions is largely a matter of careful technic. Operate early, rapidly, yet carefully, and avoid drainage. If drains are necessary, the kind of drains and their position are of great importance. I remove source of infection, avoid displacing bowels, cover denuded peritoneum if possible, encourage early peristalsis and advise frequent change of position after operation. Treatment of actual obstructions is operative. In late obstructions, ample incision should be made over site of obstruction, if it is known, otherwise exploratory operation is indicated. Collapsed and distended coils are guides to obstruction. If gut is not viable I resect and anastomose. In early obstructions, palliation by enemata, physostigmin, lavage, etc., should not be persisted in too long. Most patients are operated on too late.

DISCUSSION

Dr. Charles H. Mayo, Rochester, Minn.: I want to testify to the invagination method being a good one in the removal of tumors low in the sigmoid, at the upper rectum; in fact, it is about the only way one can get union.

Dr. Albert J. Ochsner, Chicago: If immediately on the appearance of nausea or gaseous distention gastric lavage be instituted, there will be fewer instances of intestinal obstruction following shortly after operation.

Dr. E. Wyllys Andrews, Chicago: End-to-end anastomosis implies for success that we get the lumen at once, and this is not true with the McGraw ligature; but if we can devise a method by which all the advantages of this ligature can be strengthened by obtaining the open lumen immediately we will have an ideal method.

Dr. Alexander H. Ferguson, Chicago: In regard to operative obstruction and the prevention of adhesions following operations, I would say that for four years I have used subgallate of bismuth, smearing it over all raw surfaces, with most complete satisfaction.

Abnormal Position of the Duodenum

Dr. G. E. Armstrong, Montreal: The duodenum is singularly constant in its relations, course and length; any exceptions are exceedingly rare and worthy of note. In the anomaly reported, the duodenum ran to the right and then turned downward external to the hepatic flexure, ascending colon and cecum, and, merging into the jejunum, passed from without inward below the cecum into the small intestine area. The duodenum was completely surrounded by peritoneum. It had a long mesentery throughout and could easily be held two or three inches in front of the abdominal wall. The head of the pancreas, closely applied to the duodenum, was visible and palpable between the layers of the duodenal mesentery, and readily followed the duodenum when the latter was brought outside the body. There was no ligament of Treitz and no fossa duodeno-jejunalis. The condition is clearly one of arrested development. The cecum in this case did not mount upward to the lower hypochondrium and did not pass in front of the loop of the duodenum. The cecum did not descend to its usual final resting place in the right iliac fossa. It was [illegible] completely surrounded by peritoneum, very movable and could be brought out through the epigastric incision and held eight inches in front of the body.

DISCUSSION

Dr. Maurice H. Richardson, Boston: I have observed a case in which the appendix, the gall-bladder, the liver and the ileocecal valve were on the left side, the spleen on the right side, and the heart on the right side.

Dr. Emmet Rixford, San Francisco: I would put on record a case of failure of rotation of the primary gut. The explanation of this condition is probably to be explained on the basis of adhesions of the cecum to the parietal peritoneum the result of a fetal peritonitis.

Dr. Leonard Freeman, Denver: I had a case in which acute dilatation of the stomach followed an unimportant pelvic operation, and which at autopsy showed the duodenum passing directly beneath the liver.

(To be continued)

AMERICAN ORTHOPEDIC ASSOCIATION

Annual Meeting, held in Washington, D. C., May 3-[illegible], 1910

(Concluded from page 1996, Vol. LIV)

Officers Elected

The following officers were elected: President, Dr. Albert H. Freiberg, Cincinnati; vice-presidents, Drs. A. R. Shands, Washington and Robert B. Osgood, Boston; treasurer, Dr. G. G. Davis, Philadelphia; secretary, Dr. Ralph R. Fitch, Rochester, N. Y.

SYMPOSIUM ON SCOLIOSIS

Treatment of Structural Scoliosis

Dr. Walter Truslow, Brooklyn: In my opinion the embarrassing and health-depleting conditions of the severely scoliotic patient should be vigorously attacked. I do not consider either prolonged rest or vigorous gymnastic treatment adequate to overcome structural changes. There is considerable room for improvement in methods of treating these cases, and an analysis of the deformity into its component elements, with regard to the degree of each, would lead to a better understanding of the cases in hand, and would point out the method of correction to be used. Frequently changed plaster-of Paris jackets with large windows are employed because of their cheapness and the adaptability of the material.

Apparatus for the Treatment of Scoliosis During Sleep

Prof. Fritz Lange exhibited a brace that he had devised for this purpose, thus preventing patients from losing at night all the good that they have acquired in the day time.

DISCUSSION

Dr. R. H. Sayre, New York: Patients who are badly deformed cannot be cured, but a great deal can be done to ameliorate the condition of such patients. In a good many cases we do not exert our force as we should. We do not exert a rotating force to the vertebræ. The result of applying the pad in Professor Lange's apparatus and in Dr. Truslow's method of treatment is to cause a lateral, instead of a rotating pressure. Dr. Lange is right in saying that to correct the spine for six hours and leave it to get crooked sixteen hours during the night is useless. If we stop the brace at the axilla we leave the upper part of the body very much unprotected. I believe that not enough stress has been laid on preventing cases from becoming scoliotic from anterior poliomyelitis in which the thorax is involved, by means of traction on the head for a long time.

Dr. A. H. Freiburg, Cincinnati, showed an apparatus for measuring scoliosis. It combines in one instrument the work formerly performed by two imported instruments, and is cheaper for Americans to obtain.

Dr. Truslow, Brooklyn: I was very much pleased to hear that Dr. Lange appreciates the necessity for the fixation treatment in scoliosis. It seems as if the tendency were certainly toward that method of treatment.

SYMPOSIUM ON POLIOMYELITIS

The Relation of Poliomyelitis to the Community with Reference to Etiology and Prevention

Dr. Robert W. Lovett, Boston, read an exhaustive paper on this subject, illustrated with charts containing statistics gathered from the Massachusetts epidemic that occurred last year. The following facts were mentioned:

Outbreaks of infantile paralysis have greatly increased in various parts of the world within the last five years, in a measure not to be explained in any way by the increased interest in the disease. It is apparently more prevalent in warm than in cold countries. From the northern part of the United States more cases have been reported than from other parts of the world. We no not know by what channel the disease enters the body, nor how to prevent its spread. Careful investigations have been made, including a house to house canvass in infected districts, made by competent medical men, giving their whole time to the investigation.

The Clinical Aspects of Poliomyelitis: Types; Communicability; Mortality

Dr. L. Emmet Holt, New York: The disease varies greatly in its communicability at different times, and these differences cannot yet be reconciled. It often demands strict quarantine. Healthy persons may be carriers of infection, which may occur at a considerable time after contact with active cases. There is no evidence of the existence of any other medium of contagion than contact with persons suffering with the disease or those exposed to it. A new name for the disease should be sought, and I suggest the term epidemic myelitis or epidemic myelo-encephalitis.

Experimental Epidemic Poliomyelitis and Its Relation to Human Beings

Dr. Simon Flexner, New York, presented a report on the experimental study of poliomyelitis in monkeys, giving facts relating to the spontaneous disease in man, covering the work recently reported in The Journal.

Paralysis of the Neck and Diaphragm in Poliomyelitis

Dr. Irving M. Snow, Buffalo: Neck paralysis in combination with loss of power in the extremities is not unusual in poliomyelitis, but isolated neck paralysis is extremely rare. Paralysis of the diaphragm is scarcely mentioned in treatises on poliomyelitis, except in connection with the fatal type of Landry's paralysis. From my study of the literature on the subject, the following conclusions may be drawn: 1. Poliomyelitis affecting the origins of the phrenic and spinal accessory nerves is rare, but in the two reported cases recovery occurred. 2. Paralysis of the neck muscles occurs occasionally in epidemic poliomyelitis and severe Landry's paralysis. The prognosis is favorable as to restoration of function; some improvement always takes place. 3. Paralysis of the diaphragm is exceptionally seen in poliomyelitis; and although this is dangerous, recovery is possible.

Pathology of Poliomyelitis

Dr. Israel Strauss, New York: The rapid disappearance of the extensive paralysis often present, even in sporadic cases of poliomyelitis, is probably due to a subsidence of the inflammatory edema that has interfered with the conductivity of the nerve-fibers, a similar condition being found in the collateral edema causing paraplegia in Pott's disease. Many of the cells at any particular level of the cord are either not at all or very slightly affected and probably undergo a rapid restoration of function. Sporadic cases rarely have symptoms referable to the meninges, probably because the virus is not virulent enough to cause the final infiltration of the fatal cases. The extent of the paralysis gives no idea of the extent of the lesion. The bulbar cases may have cord involvement, and yet no symptoms of it. In every case in which the cord is affected, there are some inflammatory changes in the bulb, even though no symptoms are present, as even in those cases in which death is due to respiratory failure an examination of the bulb shows an increasingly intense inflammation extending up into the basal ganglia, and yet causing no other symptoms than paralysis of the motor nucleus of the nasal and glosso-pharyngeal nerves. In the vast majority of cases the physician is handicapped by his inability to recognize the disease.

The Treatment of Poliomyelitis

Prof. Fritz Lange, Munich: In the early stage of the disease one should try to prevent the extension of the seat of the infection into the spinal column, and holding the affected organ still is a most important requirement for speedy recovery. After the acute stage has passed a second task devolves on the orthopedist, to assist the restoration of the paralyzed muscles and prevent the occurrence of contractions. The nourishment of the affected muscles by the blood can be favored by the application of stimulation; but I warn physicians against the use of rough, hard massage, or of hard apparatus. Most patients are content with the relief afforded by the use of apparatus, and will not submit to operation; but I have seen undoubted success obtained by operative treatment. Patients are often troubled by stiffness of the foot in walking over irregular ground, and I therefore sought an operation that would retain the movements of the foot to 90 degrees, and only restrain the dangerous sinking of the foot beyond this point. In performing this operation artificial ligaments of silk were used and I think the results will be good. Transplantation of the tendon takes the place of arthrodesis.

The chief advantages of the operation are that, with careful after-treatment, the patients are able to walk without apparatus or danger of relapse, and with normal function of the transplanted muscle. The profession will soon learn to distinguish better between the indications for arthrodesis and those for transplantation of tendons. The latter operation, having already brought benefit to countless patients, may be considered among the greatest advances in orthopedic surgery.

DISCUSSION

Dr. Bernard Sachs, New York: Although the pathological conditions show that there is much more than a mere anterior poliomyelitis in the disease called by this name, I think it is well to retain that designation, which is so well known, as the lesion is largely in the gray matter. In the treatment of these cases of infantile spinal paralysis I believe the time given to massage and electricity to be practically wasted. I will not say that this method of treatment does harm, but in my experience I cannot put my finger on any definite good done by it. I believe that more good will be done by the early institution of orthopedic measures. I trust that the bloodless and the bloody surgery will be applied to these cases; and the earlier the period, the better will be the results. The so-called atypical forms of poliomyelitis are so rare compared with the typical that we should not allow our conception of the disease to be disturbed by the occasional occurrence of atypical cases.

Dr. H. Winnett Orr, Lincoln, Neb.: I have been endeavoring to collect as much information as possible regarding the epidemic that recently occurred in Nebraska. There were over six hundred cases. I have records of 619, concerning two-thirds of which I have been able to obtain detailed information.

Muscle-Group Isolation and Nerve-Anastomosis in the Treatment of Paralyses of the Extremities

Dr. Nathaniel Allison and **Dr. Sidney I. Schwab**, St. Louis, considered briefly the position now occupied in the treatment of the paralyses of the extremities by peripheral nerve surgery as compared with that of muscle and tendon transference, and laid stress on the importance of tabulating cases of paralyses of the extremities in terms of nerves rather than in terms of muscles or deformities. Cases of athetosis and spasticity were treated by muscle-group isolation only; flaccid paralyses, by muscle-group isolation and nerve-anastomosis and cases with complicated tic movements, by induced paralysis. Illustrative cases of each of these groups were cited.

DISCUSSION

Dr. Sidney I. Schwab, St. Louis: The alcohol injections in spastic cases are not curative. All that we attempted was temporarily to throw out of action the antagonistic muscle. The opposing group is meanwhile exercised with massage; so that by the time the original nerve regenerates, the muscular force has been somewhat transferred to the opponent group. A great advantage, also, is that the patient can be up out of bed within a few days. There is no necessity for the wearing of a plaster cast. In the second group of cases the operation of throwing out of action the antagonistic pull was very effective. By the time the nerve regenerates, the antagonistic muscle has not regained its original force. The third class of cases, tics, can be attacked in a much better way than ever before by surgical treatment. In one case, while three nerves were alcoholized and thrown out of function, and there was complete anesthesia to touch and pain, no trophic disturbance appeared in any part of the arm.

Dr. B. E. McKenzie, Toronto: Will Dr. Allison tell us some particulars regarding the technic and the strength of the alcohol used in the injections?

Dr. G. G. Davis, Philadelphia: To my mind, the alcohol injection of nerves is similar to the division of nerves. After the nerves unite they resume their functions; and after the effects of the alcohol wear off they also resume their functions. If they do not resume their functions absolutely after alcoholization, there is an advance over division; but I do not think that we have had sufficient results shown yet to demonstrate that regeneration of the nerve does not take place entirely, or to what extent it fails to return. In regard to treatment by means of nerve anastomosis, I think that we must wait longer before we can determine the value of that method of treatment.

Dr. Virgil P. Gibney, New York: If these gentlemen can, by attacking the nerves, destroy them for a number of months, they can develop the opposing muscles during that time; and this cannot be done with the use of plaster of Paris. If the children are going around, their education can be carried on; so it seems a wonderful advance in the therapeutics of spastic paralysis.

Dr. Walter G. Stern, Cleveland, O.: Whatever operation you do for athetosis, the movements return after awhile. Amputate the arm below the shoulder and the shoulder will move.

Dr. N. Allison, St. Louis: We varied the strength of the alcohol to a certain extent. It must be 50 per cent. to have any effect. Some patients had more lasting paralyses than others. I think that the percentage of alcohol may have something to do with this. I have used straight alcohol in some cases.

VACCINE THERAPY

The Indications for and the Uses of Vaccine Therapy in Orthopedic Diseases

Dr. Charles F. Painter, Boston: There is no well-established theoretical ground for the belief that, in gonorrheal and tuberculous joint infections vaccines can play a curative rôle. Very little progress has been made as regards either the diagnosis or treatment of chronic non-tuberculous infections. The complement-binding reaction in the diagnosis of syphilitic bone and joint infections has stood the test of practical experience very well. There is reason for thinking that the future treatment of these conditions will be much facilitated by vaccine and serum therapy, although the results of this are not yet even comparable to those obtained from the use of Marmorek's serum in the treatment of tuberculous arthritis. The efforts of the members of the association should be directed to the perfection of methods of putting into practice a test for which there seems to be so much theoretical and experimental justification; but statistics, however favorable, are undesirable, unless there is indisputable ground for the claim that the results recorded can be obtained under no other form of treatment.

Investigations as to the Value of Tuberculin in the Treatment of Tuberculous Joint Disease at the Home for Destitute Crippled Children at Chicago

Dr. John Ridlon, Chicago, gave the details of these investigations, which were first by Wright's opsonic method and later by the so-called clinical method. His conclusions were that tuberculin administered by the clinical method in harmless doses was useless; and that in larger doses it was both dangerous and harmful.

DISCUSSION

Dr. V. P. Gibney, New York: May I present an optimistic report? During the past winter my staff used streptococcus and staphylococcus serum in cases of tuberculous sinus but have not used tuberculin. In half a dozen of these cases the sinus has been permanently closed. I quite agree with Dr. Painter that these patients do improve at first under almost any form of treatment.

Dr. J. K. Young, Philadelphia: We have had very good results in Philadelphia in treating tuberculous sinuses by means of autogenous serums. It is important to use the autogenous method and the opsonic index, and not to employ the clinical method.

Dr. A. H. Freiberg, Cincinnati: Tuberculin is not the toxin of the tubercle bacillus, but a means of calling forth in the body the production of an increased amount of this toxin. In order to cure tuberculosis by the vaccine method we should have to use the toxin of the tubercle bacillus. At the same time tuberculin is entitled to a fair test. Evidence is pretty conclusive that in joint tuberculosis it is the bovine form of the tubercle bacillus that is present. If that is true we should use bovine and not human tuberculin in these cases. I have had excellent results from the use of Marmorek's serum, the only difficulty being that it is hard to get and very expensive.

Dr. Clarence L. Starr, Toronto: In Toronto we have dropped the use of tuberculin in joint or sinus cases, because we obtained no results from its use. The opsonic index is absolutely useless, as it varies materially in children as the result of autointoxication. In mixed infections we have adopted the use of staphylococcus, and occasionally streptococcus serum, with sufficiently good results to warrant us in continuing their use. We have equally good success, whether we use stock vaccine or vaccine prepared from the patient himself.

Dr. S. J. Hunkin, San Francisco: It seems to me that the results obtained by the use of vaccines in the treatment of bone tuberculosis depend purely on the temperament of the man employing them.

Dr. Charles F. Painter, Boston: I purposely said nothing about mixed infections, but I believe that the only satisfactory results have been obtained in that sort of cases.

Further Observations on the Pathology of Joint Tuberculosis, and Practical Deductions Therefrom

Dr. Leonard W. Ely, New York: Only two elements of joints are subject to tuberculosis: the synovial membrane and the red marrow of the bone as shown in the specimens of tuberculous joints here exhibited. In the sixty cases from which these specimens were taken, there were thirty-five errors in diagnosis. Tuberculosis might exist in one spot in a joint and not in another, repair and invasion going on simultaneously in different parts of the same joint. The way to cure the process is to deprive the joint temporarily of motion, but this is seldom successful in adults. In adults, therefore it is necessary to deprive the joint of motion permanently. The presence of bone marrow and of synovia depends on their function; and when function is stopped they disappear. The disease, having nothing on which to feed, disappears also.

DISCUSSION

Dr. J. K. Young, Philadelphia: The occurrence of syphilis preceding tuberculosis in the same individual is interesting, because I have seen tuberculosis in individuals who previously suffered from syphilis.

Dr. M. M. Shaffer, New York: I should like to know whether the initial lesion is in the synovial membrane or the bone marrow.

Dr. Fred H. Albee, New York: It has been noted in my observations that it is not necessary to remove all the infected tissue from the knee joint in order to obtain a good result.

Dr. Wallace Blanchard, Chicago: I have been surprised at the number of cases of old resected knee joint that have come to me with a history of having been healed for two or three years, and afterwards developing sinuses. I question very much whether excision of the knee joint modifies the progress of the disease except temporarily; and it more than quadruples the deformity.

Dr. G. G. Davis, Philadelphia: Would Dr. Ely, as soon as practicable after he has made a diagnosis of a distinct case of synovial tuberculosis in an adult, proceed to resection—that is to say, such resection as he does, which, as I understand it, is nothing more than an arthrodesis in which he takes off the cartilage in order to get immobility?

Dr. R. R. Fitch, Rochester, N. Y.: I think that Dr. Ely would accomplish the doing away with function more quickly, if he would put on a bone plate, or sink screws and apply strong wires, for the purpose of obtaining bony apposition.

Dr. L. W. Ely, New York: Dr. Young did not understand me aright. At first I thought it a case of syphilis, and then one of osteomyelitis; it turned out to be tuberculosis. Regarding the origin of the disease, I think that in adults it is equally common for it to start in the synovia and in the bone. If it starts in one, it may never involve the other; but the general rule is that after it starts in one it involves the other before long. I cannot diagnose the synovial from the bony type, but I can make a fairly good guess at it. I think that the synovial disease is characterized by less atrophy, milder symptoms, less tendency to deformity, and a slower course. When I diagnose synovial tuberculosis I tell the patient that I will recommend that he have his joint put up in plaster for six months, in case of a mistake in the diagnosis; and that at the end of that time I shall probably have to resect the joint. Bone plates are not necessary. Usually the two ends of the joint lock tightly together, and there is no tendency to mobility.

Osteochondritis Desiccans

Drs. Albert H. Freiberg and **Paul G. Woolley**, Cincinnati: Koenig has maintained the existence of osteochondritis as a distinct entity and as the cause of joint mice, excepting those produced by arthritis deformans. [They reported a case in which operation and pathological investigation furnished corroboration of Koenig's views, but in which certain new aspects were added.] The great interest in our case lies in the fact that three varieties of joint changes were found going on in one joint at the same time, apparently depending in their reciprocal relation on the vascular changes. We do not think that the types of chronic deforming joint affections can be looked on as separate and distinct diseases. The future will disclose the etiological factors that determine the prevalence of this or that type in a give case.

DISCUSSION

Dr. C. F. Painter, Boston: It does not seem to me that these *x* rays are suggestive of the appearances in the ordinary cases of chronic hypertrophic osteoarthritis. The explanation may be that these appearances were the result of the vascular changes present at the same time.

Dr. Woolley, Cincinnati: I do not think that we have proved anything by the small amount of work we have done, but I do think we have some basis for supporting the work of Wollenberg. It was interesting that we could get these various changes in one case changes that appeared like those described by other men in various forms of atrophic and hypertrophic joint disease.

Dr. A. H. Freiberg, Cincinnati: I did not mean to convey the impression that these appearances were like those we see usually in radiograms of hypertrophic arthritis. The interest lay in the fact that we had a case in which free bodies had formed, and were apparently still forming; and in which a second kind of free bodies had apparently formed on other occasions. When we came to examine the changed synovial membrane of these joints, we found changes in accord with the changes described by Wollenberg in cases that were typical of hypertrophic arthritis; and it seemed to us that these two things must be brought into correlation, and that some explanation of this character is to be found for these cases in the *osteochondritis desiccans* of Koenig.

Syphilis of the Bones and Its Bearing on Hypertrophy and Atrophy

Dr. S. L. McCurdy, Pittsburg: Syphilis is a factor in the majority of cases of bone disease of all varieties. Hypertrophies and atrophies should have a reclassification, with the causative factor as the basis, rather than the pathological end. In tuberculous disease of the bones the bones are always atrophied; while in syphilitic bone disease they are always hypertrophied and also eburnated, with exostoses. There is always a spindle enlargement, and not only a hyperostosis, but an endostosis. Charcot's disease is in many instances syphilitic, because it melts away under constitutional treatment. Saber-tibia I also consider to be always syphilitic. The objects of operation in syphilitic bone disease are to liberate pus, to relieve pain, and to remove sequestra. One should excise but never destroy tissue. I approve of the use of iodid of potash, but not of mercurial inunctions, and mechanical treatment should be employed just as in ordinary tuberculous bone disease.

DISCUSSION

Dr. Leonard W. Ely, New York: While I believe that syphilitic bone disease in cases diagnosed as tuberculosis has existed, I think it is comparatively rare. The statement that the lesions of tuberculosis are always atrophic is also an error, nor is the therapeutic test decisive.

Dr. S. L. McCurdy, Pittsburg: I did not expect very many to agree with me. I think that these statistics that I have been collecting for a number of years are sufficient ground for me to continue my plan of treatment, because I have usually cut short the course of the disease by employing iodid of potash.

Coxa Vara

Dr. Wallace Blanchard, Chicago: The two cases of sadly deforming coxa vara here reported may help to clear up some questions of differential diagnosis. I object to the statement that coxa vara is due to tuberculosis, as I have found rachitic coxa vara greatly in excess of all other types. This might, however, be due to my special line of work, the correction of knock knees. Treatment of the deformity during its progress is very unsatisfactory; but when the disease has run its course, osteotomy for the elevation of the head of the femur and for the relief of the adduction deformity gives good results.

DISCUSSION

Dr. G. G. Davis, Philadelphia: I would suggest that the first case was analogous to cases of subluxation of the wrist, which occur in adolescents and young adults, and in which the wrist is distorted, especially the lower end of the radius. This disease is probably due to rickets.

Juxta-Epiphyseal Fractures of Hip and Shoulder

Dr. Fred H. Albee, New York discussed the diagnosis and the frequency of occurrence of juxta-epiphyseal fracture of the upper end of the humerus and femur, and said that faulty diagnoses are frequent. He took into consideration the different elements displacing the fragments, and laid stress on the importance of the use of position in fixing the long, or controllable, fragment in alignment with the short, or uncontrollable, fragment. Several illustrative cases were cited.

DISCUSSION

Dr. H. Winnett Orr, Lincoln, Neb.: The tracing of one of Dr. Albee's cases might have been taken for the plate of one of my patients. I immediately placed this boy in the sort of plaster dressing described by Dr. Albee, but took the liberty of extending it a short distance farther, so as to include the hand.

Dr. Frank R. Peckham, Providence, R. I.: It should be recognized by the profession that these fractures should be treated by orthopedists rather than by general surgeons. Regarding fractured neck of the femur, if you put every such fracture in extreme abduction, you will not always have the fragments in perfect apposition. The correct angle should be determined by the *x*-ray. Dr. Albee has demonstrated the application of the same principle to fractures of the upper extremity. When these fractures are treated in bed you can begin passive motion and massage early. Then, when you have union, you have the functional result also.

Dr. S. J. Hunkin, San Francisco: My experience has shown that not in every case can the fragments be held in apposition in a position of extreme abduction; and in two or three instances I have found it absolutely impossible to hold them in apposition, regardless of any position that was taken by the leg. It is also sometimes impossible to tell whether the fragments are in apposition or not, even by means of the *x*-ray. I think that practically all fractures of the femur should be cut down on. The fragments should then be found to be replaced by the finger and eye, and fastened with some metallic suture. The splint used at first should be one that will allow you to see the part.

Dr. Albee, New York: I want to emphasize the difficulty of holding the epiphyseal fragments of the humerus. An epiphyseal fracture is held much more firmly by this method than is one of the neck, although it will usually hold the latter.

SYMPOSIUM ON THE FOOT

Relaxation of the Annular Ligament of the Ankle-Joint as a Cause for Weak Foot and Flat-Foot

Dr. J. Torrance Rugh, Philadelphia: I have for some years been inclined to believe that the cause of weak feet and flat-feet lies in the lower portion of the annular ligament, which performs three distinct functions in the economy of the foot. It binds down the tendons of the tibialis anticus and the extensor proprius hallucis, and keeps them tense; it acts as a sling for the support of the dorsalis; and it takes up the slack in the plantar fascia, when the tibialis anticus and the dorsal flexor of the great toe contract. It, therefore, not only has important functions of its own, but it also assists the neighboring structures in the performance of their functions; and if they become relaxed, the strain on this portion of the ligament increases, and it may give way. For this reason, it should be considered in cases of weak or flat foot.

Osteophytes of the Os Calcis

Dr. J. D. Griffith, Kansas City, Mo.: Bacteria are not necessary to the production of a deposit of bone by the periosteum, but constant irritation and pressure may easily inaugurate a *locus minoris resistentiæ* and cause osteoblastic deposition, especially when perverted metabolism is added. This thickened condition or deposition of extra bone is frequently the cause of painful feet. The horseshoe incision is the only one that is entirely satisfactory and devoid of the possibility of causing future trouble.

An Operation for the Relief of Anterior Metatarsalgia, Including Morton's Disease

Dr. A. Mackenzie Forbes, Montreal: This condition is primarily due to abnormal laxity of the ligaments and the transverse metatarsus muscle, allowing the falling of one or more metatarsal heads. The pressure of the displaced bone on the soft tissues beneath it is the cause of the pain, which may later become exaggerated by the formation of a callus on the weight-bearing skin. Secondarily, a mild form of arthritis sometimes supervenes. As the second, third and fourth metatarso-phalangeal joints are supplied by the external branches of the anterior tibial, which motor nerve supplies the extensor longus digitorum, spasm of this muscle often results, causing hyperextension of the phalanges of the affected joints. When chronic, the hyperextension is soon followed by a dorsal subluxation of the phalanx; and this tends to depress the heads of the affected metatarsals against the adjacent soft tissues. The only difficulties in the operation proposed for the relief of this condition are those connected with the attachment of the extensor tendon to the depressed heads and the guarding against a low grade of infection, which may destroy the attachment. The first difficulty is overcome by raising the head by direct pressure from below.

Problems in the Treatment of Club Foot

Dr. W. G. Stern, Cleveland, Ohio: When not due to faulty technic in applying the plaster cast, a decubitus occurring on the dorsum of the foot is due to cutting off the arterial supply of the arch afflicted; and the cyanosis of the toes is due to a damming back of the venous return. Both of these untoward occurrences are caused by the compression of the soft tissues of the dorsum from over-correction. The relief of this condition may be brought about by reducing the over-correction and fixing the foot in a less extreme position. The amount of correction practicable at any one sitting is primarily dependent on the circulation, and is often considerably less than the maximum. For the best results in club foot, a maximum over-correction must be secured; but this should not be done at one sitting. The circulation in this, as in other forcible operations, should control the amount of correction obtainable at any one sitting; and if the latter is not sufficient for a permanent cure, the correction must be repeated at suitable intervals until the maximum over-correction can be safely maintained.

Flat-Foot. Mid-Tarsal Valgus

Dr. E. H. Bradford, Boston: The foot changes shape under different static conditions, and there is difficulty in checking the inward sag and twist. After operation in order to regain suppleness and strength, daily exercise is a necessity. It is important to correct joint stiffening and restore muscular strength. Supports are beneficial but not curative.

DISCUSSION

Dr. H. P. H. Galloway, Winnipeg: I have used Dr. Griffith's incision with more satisfaction than the simple linear incision. I never employ the latter on the center of the heel. The operation described by Dr. Forbes is an exceedingly ingenious application of an operation employed by all of us for other conditions. I have frequently transplanted the extensor tendons of the toes to overcome the closed condition of the toes met with in static paralysis, and to secure more power of dorsal flexion by transplanting these tendons from a very movable to a fixed point. I have devised a simple instrument that automatically centers the drill in making holes in bones of very small diameter. There is then no possibility of the drill's slipping. I have always succeeded in relieving metatarsalgia by mechanical means. If I find a case that I cannot relieve in this way, I will adopt this operation.

Dr. G. G. Davis, Philadelphia: I should like to call attention to resection of the head of the metatarsal bone for metatarsalgia. Morton did this, and not infrequently found that it destroyed the stability of the toe. Later he often performed amputation of the toe. Therefore, it would be interesting to know whether in Dr. Forbes's procedure the tendon of the extensor brevis is sufficient to maintain the toe in a straight line.

Dr. S. L. McCurdy, Pittsburg: I want to speak of a method that I have used when the tendons are taken from the foot. I take from the toes tendons long enough to pass entirely around the foot in cases of claw toe. They are brought back and sutured to themselves. This gives a perfectly stable anchorage.

Dr. Young: I have had occasion to perform the Morton operation several times, and have always had to remove the toe. The statement has been made that it is not necessary to operate on these cases. As a man's experience increases, he will find that some of these cases will require operation; and that of Morton is perfectly satisfactory.

Book Notices

Preparatory and After Treatment in Operative Cases. By Herman A. Haubold, M.D., Clinical Professor in Surgery and Demonstrator of Operative Surgery, New York University and Bellevue Hospital Medical College, New York. Cloth. Price, $6. Pp. 650, with 429 illustrations. New York: D. Appleton & Co., 1910.

The author intends his book to furnish a source "from which the practitioner can draw information with regard to the handling of a patient to be operated on from the time the decision to operate is reached up to the making of the incision," taking up the case again from the time the operative technic is ended until recovery is complete.

The unjust relations which often obtain between the surgeon and the man who sends him the case are deplored, conditions which have resulted in loss of the family to the practitioner, or to a division of fees. To the end that these conditions may be improved, the author very commendably would educate the general practitioner in surgical technic, make him a closer ally of the surgeon and keep him in closer touch with his patient. There will, however, be some hesitancy on the part of surgeons to assume the responsibility for some one who has not the knowledge nor the experience to manage properly the preparation and after-care.

Where the operating is done in the country or in private homes, it is conceivable that a book of this kind can be invaluable to both practitioner and surgeon. For this purpose, however, the author covers too wide a field, going into operative technic and other details which are beyond the subject, according to his introductory declaration. Why should there be thirty pages descriptive of a hospital operating room? Why should so much space be devoted to the suturing of wounds? As for catgut, the busy practitioner would scarcely be in a position to prepare catgut of sufficient reliability to recommend itself to the average surgeon. The author might have sacrificed some of the detail, and emphasized the great fundamental principles involved in surgery, preparatory and postoperative. He gives in detail the preparation of the patient, the instruments, dressing and suture material. Then follow chapters on the suturing, drainage and dressing of operative wounds. The methods are well illustrated and follow the newest technic. The treatment of postoperative vomiting, thirst and pain and the important question of feeding are admirably handled.

A discussion follows of operations in different regions, namely, head, neck, thorax, abdomen and extremities; also the pelvic and genitourinary organs. There is a good chapter on artificial limbs.

This book is more than a guide for the general practitioner; it contains much valuable information for the surgical assistant, and even for the surgeon himself. The text is carefully written and illustrated profusely with many original photographs. The mechanical side has been very well taken care of by the publishers.

Appleton's New Practical Cyclopedia. Edited by Marcus Benjamin, Ph.D., Editor of the United States National Museum, Washington, D. C., assisted by Arthur E. Bostwick, Librarian of the St. Louis Public Library; Gerald Van Casteel, Chief of Editorial Staff; George J. Hager, Expert Compiler and Statistician, with an Introduction by Elmer E. Brown, Ph.D., United States Commissioner of Education. In Six Volumes. Cloth. Price, $18 the set. Pp. 3000 (about). New York: D. Appleton & Co., 1910.

In the introduction Commissioner Brown says: "It is one province of works of reference to supply, to a reasonable degree, the definite and elementary information which will enable any ordinary reader to make good his individual lack of knowledge on any subject of ordinary discussion." An examination of this work in six volumes, as compared with the "Universal Cyclopedia" of the same publishers in twelve volumes, shows that this decrease in volume has been secured by leaving out many subjects contained in the longer work and by condensation and abbreviations of others. The publishers say that an attempt has been made to give the descriptions of technical things in language that may be easily understood by any one. The work is, of course, intended for those who cannot afford to own and have not access to the larger and more exhaustive works of general reference, and should be judged on that basis. While condensation has been carried to a degree which will strike one familiar with the larger encyclopedias as excessive, this work will be useful to those who need more frequently to find some particular item of information than to find exhaustive information on some broad subject. Its plan of arrangement makes it easy of consultation. The index with analytical cross-references, and the group, or synthetical, index, are good features.

The book is mechanically well executed. The illustrations are for the most part identical with those used since cyclopedias were first made, but in addition there are some half-tone photographic reproductions and a number of admirable colored plates.

Remedial Gymnastics for Heart Affections used at Bad-Nauheim. By Dr. Med. J. Hofmann and Dr. Med. L. Pohlman. Translated by John G. Garson, M.D., Edinburgh, Physician to Sanatoria and Bad-Nauheim, Eversley, Hants. Cloth. Price, 5 shillings. Pp. 128, with 42 illustrations. London: Swan Sonnenschein & Co., 1909.

The authors briefly refer to other systems of gymnastics used in heart diseases, but do not discuss them. The second chapter, which is one of the most important in the book, is a reprint of an article by Professor von Romberg, and tersely but fully describes the indications for and against the use of gymnastics in these affections. The succeeding chapters relate to methods of estimating the effect of gymnastics on the heart. The authors urge that no one method be relied on fully, for no single one will afford the needed information in every case. The effect on the pulse and the inferences to be adduced are first considered; then the effect of gymnastics on blood-pressure and on the size and shape of the heart, as shown by auscultation, percussion and *x*-ray, are discussed. Sommer's analysis of movements is highly commended as a means of determining fatigue of the heart muscle. This is a mechanical contrivance which registers on a moving paper tremors in all directions of a leg held horizontally without support. The various ways in which gymnastics can be used and their order are next considered. Nearly one half of the volume is devoted to illustrations and brief descriptions of the movements which constitute the Nauheim exercises.

This book is a commendable exposition of the Schott exercises used at Nauheim.

Studies in Immunity. By Professor Paul Ehrlich, Privy Councillor and Director of the Royal Institute for Experimental Therapy, Frankfurt, Germany, and his Collaborators. Collected and Translated by Charles Bolduan, M.D., Bacteriologist, Research Laboratory, Department of Health, City of New York. Second Edition. Cloth. Price, $6. Pp. 712. New York: John Wiley & Sons, 1910.

It reflects no little credit on the condition of medical science in America that so technical a work as this translation of the collected papers of Ehrlich and his collaborators has exhausted the first edition in less than four years. The translator has taken advantage of the opportunity, in this second edition, to add eight of the more recent papers, on the following topics: "The Multiplicity of Antibodies Occurring in Normal Serum," "The Binding of Hemolytic Amboceptors," "The Joint Action of Normal and Immune Amboceptors in Hemolysis," "The Power of Normal Serum to Deflect Complement," "The Joint Action of Several Amboceptors in Hemolysis," "Studies in Amboceptors," "Dissociation Phenomena in the Toxin Antitoxin Combination," and "The Partial Function of Cells," the last being Ehrlich's Nobel Prize lecture. The absence of an index constituted a defect of the first edition which has been remedied in the second, and this will add much to the usefulness of the work. American medicine is much indebted to Dr. Bolduan for his service in rendering these masterpieces accessible to a larger audience than they could reach in their original vehicle.

Twenty Eighth Annual Report of the State Department of Health of New York. For the Year Ending Dec. 31, 1907. Volume II. Report of the Sanitary Engineering Division. Cloth. Pp. 869, with illustrations. 1908.

The second volume of the twenty-eighth annual report of the New York State Board of Health contains the report of the chief engineer, Theodore Horton, on sewerage and sewage disposal of the towns of the state, giving diagrams, illustrations and explanations of a large number of plants for sewage disposal. He shows that a great many towns of the state are adopting modern methods of treatment by settling tanks, septic tanks and filter or contact beds. The reports on the preservation of public water-supplies, the investigation of stream pollution and watersheds and the sanitary inspections of summer resorts, with the report to Governor Hughes of investigations ordered by him on the pollution of the upper Hudson and other streams, all go to show that New York has good laws and is well in advance in sanitary matters involving engineering problems. The report should be a valuable one to sanitarians and health boards as showing the method of handling the numerous difficult problems that come up in questions of state-wide sanitation.

Theoretical Principles of Methods of Analytical Chemistry Based on Chemical Reactions. By M. G. Chesneau, Ingénieur en Chef des Mines. Authorized Translation by Azariah T. Lincoln, Ph.D., Assistant Professor of Chemistry, Rensselaer Polytechnic Institute, and David H. Carnahan, Ph.D., Associate Professor of Romance Languages, University of Illinois. Cloth. Price, $1.75 net. Pp. 184. New York: The Macmillan Company, 1910.

The object of this work is not primarily to increase the number of methods of analytical procedure, but to increase the exactness of the methods now in use, by investigations in the light of recent physicochemical theories. The electrolytic or ionic theory appeared to the author to be in contradiction, in many cases, to facts, established by experiments; therefore another means of explanation was sought. The author discusses the chemistry of analytical reactions on the basis of calorific phenomena involved in the ordinary reactions and of the laws deduced from the principles of thermodynamics. From the nature of the theories employed it is not a handbook for the beginner but rather a book which can be employed only in very advanced work in theoretical lines.

Association News

PROCEEDINGS OF THE ST. LOUIS SESSION

(Continued from page 2090, Vol. LIV)

Section Transactions

Those who desire copies of the 1910 Transactions of any of the sections, but who are not on the permanent subscription list, should order them at once, as printing will commence soon on several. Only enough are printed to supply the demand, and each year some persons order too late to be supplied. Each volume is a cloth-bound book containing the articles and discussions in that particular section. A volume is issued for each section except the Section on Stomatology. When ordered in advance, each book costs the subscriber $1.00, payable at time of delivery.

It is to be remembered that one may give a permanent order for Transactions; and those specified are sent, from year to year, until the order is cancelled. Address orders to the American Medical Association, 535 Dearborn Avenue, Chicago.

Minutes of Sections

The minutes of the proceedings of the sections at the sixty-first annual session, held at St. Louis, June 7 to 10, 1910, are given below.

SECTION ON PRACTICE OF MEDICINE

Tuesday, June 7—Afternoon

The Section was called to order by the Chairman, Dr. George Blumer, New Haven, Conn., at 2 p. m., in the Third Baptist Church.

Dr. Max Einhorn, New York, read a paper on "Experiences with the Duodenal Contents in Man." No discussion.

Drs. Harvey G. Beck and William Royal Stokes, Baltimore, read a paper on: "A Case of Diffuse Ventriculo-Septal Myocarditis with Adams-Stokes' Syndrome."

Dr. Isaac I. Lemann, New Orleans, read a paper on "A Study of a Case of Heart-Block with Auricular Alternating Pulse." These two papers were discussed by Drs. Haven Emerson, New York, and Albert E. Taussig, St. Louis.

Dr. Seale Harris, Mobile, Ala., read a paper on "The Radical Cure of Malaria; Its Importance and How It May Be Attained." Discussed by Drs. Charles MacLellan, Chicago; Arnold Taubitz, Neelysville, Mo.; W. E. Chapman, Sheboygan, Mich.; L. J. Woelf, Kansas City, Mo.; Vernon Blythe, Paducah, Ky.; S. P. Child, Kansas City, Mo.; C. C. Bass, New Orleans; Joseph H. Pratt, Boston; G. C. Smith, Boston; J. A. Witherspoon, Nashville, Tenn.; C. Shattinger, St Louis; R. Alexander Bate, Louisville, Ky.; Arthur C. Bell, Dallas, Tex.; I. I. Lemann, New Orleans; B. W. Fontaigne, Memphis, Tenn.; J. A. Chilton, Van Buren, Mo.; T. J Ragsdale, Lees Summit, Mo.; D. C. Walt, Little Rock, Ark.; A H. Vandivort, St. Joseph, Mo.; A. Comingo Griffith, Kansas City, Mo.; Seale Harris, Mobile, Ala.

Dr. W. J. Calvert, Dallas, Tex., read a paper on "A Possible Differential Sign Between Cardiac Dilation and Pericarditis with Effusion." Discussed by Drs. Haven Emerson, New York, and W. J. Calvert, Dallas, Tex.

Wednesday, June 8—Morning

The Section held a joint meeting with the Section on Pharmacology and Therapeutics for the consideration of papers in a Symposium on the Circulatory Disorders in Acute Infections. For the minutes of this meeting, see minutes of the Section on Pharmacology and Therapeutics.

Wednesday, June 8—Afternoon

Dr. Richard C. Cabot, Boston, delivered the Oration on Medicine, entitled, "A Study of Mistaken Diagnoses Based on the Autopsy Findings in One Thousand Cases."

The Chairman announced that the following would serve on the Nominating Committee: Drs. George Dock, New Orleans; Seale Harris, Mobile, Ala., and Horace D. Arnold, Boston.

Dr. William F. Boos, Boston, read a paper on "Magnesium Poisoning: A Study of Ten Cases." Discussed by Drs. P. S. Roy, Washington, D. C.; W. T. Engle, Grand Island, Neb.; Nathan Rosewater, Cleveland; H. E. Dunlop, Canton, Mo.; C. C. Conover, Kansas City, Mo.; J. W. Bolton, Iola, Kan.; L. Leroy, Memphis, Tenn.; J. D. Reid, Pilger, Neb.; W. H. Philp, St. Francis, Ark.; H. R. St. John, Alton, Kan.; G. R. Neff, Farmington, Iowa, and William F. Boos, Boston.

Dr. James B. Herrick, Chicago, read a paper on "Certain Popular but Erroneous Notions Concerning Angina Pectoris." Discussed by Drs. Joseph L. Miller, Chicago; G. W. McCaskey, Fort Wayne, Ind.; Gustav Baar, Portland, Ore.; S. P. Child, Kansas City, Mo.; J. A. Witherspoon, Nashville, Tenn.; Allen A. Jones, Buffalo, N. Y., and James B. Herrick, Chicago.

Drs. Thomas A. Claytor and Walter H. Merrill, Washington, presented a paper on "Orthodiagraphy: Presentation of a Series of Diagrams of the Heart and Aorta, with Explanatory Remarks." Dr. James G. Van Zwaluwenburg, Ann Arbor, Mich., read a paper on "The Diagnostic Value of the Orthodiagram." These two papers were discussed by Drs. Sidney Lange, Cincinnati; Thomas A. Claytor, Washington, and James G. Van Zwaluwenburg, Ann Arbor, Mich.

Thursday, June 9—Morning

The Committee on Nominations nominated the following: Chairman, Dr. A. Allen Jones, Buffalo, N. Y.; Vice-Chairman, Dr. D. C. L. Green, St. Paul, Minn.; Secretary, Dr. Wilder Tileston, New Haven, Conn.; Delegate, Dr. J. A. Capps, Chicago; Alternate, Dr. Alexander Lambert, New York; Orator, Dr. C. F. Hoover, Cleveland.

It was moved, seconded and carried that the Secretary be instructed to cast a ballot for these nominees.

Dr. Kate C. H. Mead, Middletown, Conn., read a paper on "Persistent Patency of the Ductus Arteriosus, Stenosis of the Isthmus of the Aorta, with Degeneration of the Coronaries of the Cardiac Muscle and of the Sino-Auricular Bundle." Discussed by Dr. Wilder Tileston, New Haven, Conn.

Dr. C. F. Hoover, Cleveland, read a paper on "Regional Vasomotor Hypertonus, with a Report of a Case." Discussed by Drs. Judson Daland, Philadelphia, and C. F. Hoover, Cleveland.

Drs. L. F. Barker, A. D. Hirschfelder and G. M. Bond, Baltimore, presented a paper on "The Electrocardiogram in Clinical Diagnosis." Discussed by Drs. M. J. Lichty, Cleveland; John H. Musser, Philadelphia, and A. D. Hirschfelder, Baltimore.

Dr. Claude A. Smith, Atlanta, Ga., read a paper on "Hookworm Infection and its Prevention." Discussed by Drs. Henry B. Ward, Urbana, Ill.; B. B. Bagby, West Point, Va.; C. C. Bass, New Orleans; Morgan Smith, Little Rock, Ark.; William Letterer, Nashville, Tenn.; John William Colbert, Albuquerque, N. M., and Claude A. Smith, Atlanta, Ga.

Drs. Louis B. Wilson and Byrd C. Willis, Rochester, Minn., read a paper on "Pathologic Relationship of Ulcer and Carcinoma of the Alimentary Canal." Discussed by Drs. H. E. Robertson, Minneapolis; J. N. Hall, Denver; Frank Wilbur Foxworthy, Indianapolis; D. C. Walt, Little Rock, Ark.; Charles G. Stockton, Buffalo, N. Y.; Richard Weil, New York; John A. Lichty, Pittsburg, Pa.; Abraham Jacobi, New York; Hugo A. Freund, Detroit; Harvey G. Beck, Baltimore; G. C. Smith, Boston; Frank Smithies, Ann Arbor, Mich.; T. Potter, Indianapolis, and Louis B. Wilson, Rochester, Minn.

THURSDAY, JUNE 9—AFTERNOON

Dr. H. D. Arnold, Boston, read a paper on "The Importance of a Low Protein Diet in Chronic Nephritis." Discussed by Drs. G. C. Smith, Boston; P. S. Roy, Washington, D. C., and H. D. Arnold, Boston.

Dr. W. W. Duke, Baltimore, read a paper on "The Relation of Blood Platelets to Bleeding in Certain Cases of Purpura." Discussed by Drs. J. H. Pratt, Boston, and W. W. Duke, Baltimore.

Dr. John D. Dunham, Columbus, Ohio, read a paper on "Clinical Results of Gastroenterostomy for Non-Malignant Diseases." Discussed by Drs. Judson Daland, Philadelphia; M. J. Lichty, Cleveland, Ohio; John A. Witherspoon, Nashville, Tenn.; DeLancey Rochester, Buffalo, N. Y.; A. L. Benedict, Buffalo, N. Y.; Gustav Baar, Portland, Ore., and John D. Dunham, Columbus, Ohio.

Dr. M. J. Lichty, Cleveland, read a paper on "The Influence of Perigastric Lesions on Gastric Secretions, Based on Clinical and Experimental Study." Discussed by Drs. DeLancey Rochester, Buffalo, N. Y.; James T. Pilcher, Rochester, Minn.; A. L. Benedict, Buffalo, N. Y.; G. C. Smith, Boston; Gustav Baar, Portland, Ore.; John A. Lichty, Pittsburg, Pa., and M. J. Lichty, Cleveland, Ohio.

Dr. Gustav Baar, Portland, Ore., read a paper on "Indicanuria." Discussed by Drs. DeLancey Rochester, Buffalo, N. Y.; Judson Daland, Philadelphia; Jay I. Durand, Atlantic City, N. J.; C. Shattinger, St. Louis, and Gustav Baar, Portland, Ore.

Drs. Judson Daland and George E. Pfahler, Philadelphia, presented a paper on "The Roentgen Ray in the Diagnosis of Diseases of the Alimentary Tract." Discussed by Drs. J. N. Hall, Denver; A. W. Crane, Kalamazoo, Mich.; M. J. Lichty, Cleveland, and Judson Daland, Philadelphia.

FRIDAY, JUNE 10—MORNING

Dr. Anders Frick, Chicago, read a paper on "The Different Forms of Mediastinal Exudative Pleurisy, with Report of Three Cases." Discussed by Drs. DeLancey Rochester, Buffalo, N. Y.; Frank Smithies, Ann Arbor, Mich., and Anders Frick, Chicago.

Dr. Frank Smithies, Ann Arbor, Mich., read a paper on "The Diagnostic Significance of the Paravertebral Triangle of Percussion Dulness (Grocco's Sign)." No discussion.

Dr. Edward C. Rosenow, Chicago, read a paper on "Autogenous Vaccine Therapy in Endocarditis." No discussion.

Dr. Willard J. Stone, Toledo, Ohio, read a paper on "The Treatment of Typhoid Carriers, with Report of a Case Treated by Inoculations of Typhoid Vaccine." Discussed by Drs. John J. Buettner, Syracuse, N. Y.; James J. Terrill, Galveston, Tex., and Willard J. Stone, Toledo, Ohio.

SECTION ON OBSTETRICS AND DISEASES OF WOMEN

TUESDAY, JUNE 7—AFTERNOON

The Section was called to order at 2 p. m., in Association Hall, Y. M. C. A. Building, by the Chairman, Dr. John G. Clark, Philadelphia.

Dr. William S. Gardner, Baltimore, read a paper on "Infections of the Endometrium." Discussed by Dr. Novak.

Dr. Henry O. Marcy, Boston, read a paper on "The Plastic Surgery of the Pelvic Structures." Discussed by Drs. Gilliam, Gilbert, Hayden, Hall, Shoemaker, Glasgow, Rosenthal, Hinchey and Marcy.

Dr. Sidney A. Chalfont, Pittsburg, read a paper on "Arteriosclerosis of the Uterine Vessels." Discussed by Drs. Novak and [illegible]krod.

Dr. Samuel Wyllis Bandler read a paper on "An Ideal Operation for the Cure of Total Prolapse of the Uterus." Discussed by Drs. Carstens, Goffe, Lawrence, Baldy and Bandler.

Dr. George Erety Shoemaker read a paper on "Papillary Cystadenoma of the Kidney, Associated with Myoma of the Uterus and Spinal Caries." No discussion.

Dr. J. H. Carstens read a paper on "Uselessness of Local Treatment in Puerperal Sepsis." Discussed by Drs. Zinké, Wetherill, Boldt, Glasgow, Schwartz and Carstens.

WEDNESDAY, JUNE 8—MORNING

The following papers were read and discussed as a symposium on observations by inventors of operations for retroflexion of the uterus:

Dr. R. C. Coffey, Portland, Ore.: "Plication of the Round and Anterior Fold of the Broad Ligament on the Anterior Surface of the Uterus for Retrodisplacement."

Dr. J. M. Baldy, Philadelphia: "Attachment of Ligaments Posterior to the Uterus."

Dr. D. Tod Gilliam, Columbus, O.: "Intraperitoneal Implantation of Round Ligaments."

Dr. F. F. Simpson, Pittsburg, Pa.: "Intraperitoneal Shortening of Round Ligaments (Simpson operation)."

Dr. A. Goldspohn, Chicago: "Shortening of the Round Ligaments Via the Temporarily Dilated Inguinal Canals Combined with the Bassini Technic in Closure of the Wounds."

Dr. E. C. Dudley, Chicago: "Resumé of the Surgical Treatment of Retrodeviations of the Uterus."

These six papers were discussed by Drs. Montgomery, Murphy, Boldt, Carstens, Barrett, Marcy, Wathen, Massey, Gellhorn, Byford, Baldy, Gilliam and Simpson.

WEDNESDAY, JUNE 8—AFTERNOON

The meeting was called to order at 2 p. m. by the Vice-Chairman, Dr. C. C. Frederick, Buffalo.

Dr. John G. Clark, Philadelphia, read his Chairman's Address entitled "Embryologic and Anatomic Causes for Obstinate Constipation in Women; Operative Methods for Relief." Dr. E. E. Montgomery of Philadelphia moved that a vote of thanks be given Dr. Clark for his very able presentation. Seconded and carried.

The following five papers were read and discussed as a Symposium on Enteroptosis:

Dr. Richard R. Smith, Grand Rapids, Mich., read a paper on "Enteroptosis, with Special Reference to Its Etiology and Development, and Remarks on the Results of Examination of 400 Women, with Reference to This Condition."

Dr. E. H. Skinner, Kansas City, Mo., read a paper on "The *X*-Ray in the Diagnosis of Enteroptosis."

Dr. A. W. Crane, Kalamazoo, Mich., read a paper on "Value of the Roentgen Ray in Enteroptosis."

Dr. John H. Musser, Philadelphia, read a paper on "The Physician's Viewpoint."

Dr. A. J. Ochsner, Chicago, read a paper on "The Surgical Viewpoint."

These five papers were discussed by Drs. Einhorn, Coffey, Korsell, Carstens and Crane.

THURSDAY, JUNE 9—MORNING

The Nominating Committee reported the following nominations: Chairman, Dr. Horace G. Wetherill, Denver; Vice-Chairman, Dr. Fred J. Taussig, St. Louis; Secretary, Dr. C. Jeff Miller, Louisiana; Delegate, Dr. A. E. Benjamin, Minnesota; Alternate, Dr. S. W. Bandler, New York.

The report was accepted and the nominees were elected.

The report of the Cancer Committee, Dr. Horace G. Wetherill, Chairman, recommended an active and educational campaign along the lines indicated in the report of the Committee of 1906, and urged anew that the Section on Obstetrics and Diseases of Women cooperate with the Board of Public Instruction on Medical Subjects [now the Council on Health and Public Instruction] in an energetic effort to educate women to an appreciation of the early signs of cancer and to the importance of an examination by a competent physician; and that all available resources be exhausted in an endeavor to impress on each member of the profession his personal responsibility for an early and accurate diagnosis of cancer and a timely removal of the growth by a competent surgeon. On motion of Dr. Dorsett the report was accepted.

Dr. J. Riddle Goffe, New York City, read a paper on "Tuberculosis of the Female Organs of Generation and the Peritoneum." Discussed by Drs. Novak, Frederick, Gilmore, Byford, Gilliam, A. Miles Taylor, and Goffe in closing.

The following four papers were read and discussed as a Symposium on Carcinoma of the Uterus:

Dr. John A. Sampson, Albany, N. Y.: "The Participation of the Glandular System and Tissues Adjacent to the Uterus in Carcinoma of the Uterus."

Dr. J. H. Jacobson, Toledo, O.: "The Results Obtained by the Radical Abdominal Operation for Carcinoma of the Uterus."

Dr. Emil Ries, Chicago: "The Diagnosis of Operability of Carcinoma of the Cervix of the Uterus."

Dr. C. C. Frederick, Buffalo, N. Y.: "Further Observations on the Use of the Cautery in the Treatment of Carcinoma of the Uterus."

These four papers were discussed by Drs. Gellhorn, Peterson, Goldspohn, Mosier, Wetherill, Jacobson and Ries.

Thursday, June 9—Afternoon

The Vice-Chairman, Dr. C. C. Frederick, Buffalo, N. Y., called the meeting to order at 2 p. m.

Dr. Channing W. Barrett, Chicago, read a paper on "The Place of Hebosteotomy as an Aid to Delivery." Discussed by Drs. Zinke, Foulkrod, Fry, Burns and Barrett.

The report of the Committee on Revision of the Pharmacopeia was presented, and on motion adopted.

The following five papers were read and discussed as a Symposium on Eclampsia:

Drs. E. P. Davis and Collin Foulkrod, Philadelphia: "The Etiology of Eclampsia"; read by Dr. Foulkrod.

Drs. Edwin B. Cragin and Edward T. Hull, New York: "Treatment of Eclampsia, Including a Comparison of the Dangers of Chloroform and Ether in this Condition"; read by Dr. Hull.

Dr. Henry D. Fry, Washington: "Vaginal Cesarean Section in Eclampsia."

Dr. Reuben Peterson, Ann Arbor, Mich.: "Indications for and Technic of Rapid Emptying of the Uterus in the Toxemias of Pregnancy."

Dr. Joseph B. De Lee, Chicago: "The Surgical Treatment of Eclampsia"; read by the Secretary, Dr. C. Jeff Miller.

These five papers were discussed by Drs. Schwartz, Zinke, Carstens, Blondhe, Burns, Rosenthal, Ritter, Foulkrod, Hull, Fry and Peterson.

SECTION ON SURGERY

Tuesday, June 7—Morning

The meeting was called to order at 2 p. m. in the Odeon Theater.

Dr. Charles H. Mayo, Rochester, Minn., the Chairman, delivered his address on "Prophylaxis of Cancer."

Dr. A. Primrose, Toronto, Canada, read a paper on "Surgical Treatment of Compression Paraplegia."

Dr. W. W. Grant, Denver, read a paper on "Anastomosis of Facial and Spinal Accessory Nerves and the Distal End of Spinal Accessory, with Descending Hypoglossal."

These two papers were discussed by Drs. J. B. Murphy, J. T. Bottomley, A. Primrose and W. W. Grant.

Dr. Henry H. Sherk, Pasadena, Cal., read a paper on "Injuries of Abdominal Viscera without External Signs of Violence." Discussed by Drs. M. H. Richardson and Hough.

Dr. E. E. Irons, Chicago, read a paper on "Present Status of Vaccinotherapy." Discussed by Drs. J. B. Deaver, A. W. Crane, W. W. Grant and E. E. Irons.

Dr. H. C. Deaver, Philadelphia, read a paper on "Appendicitis in Children, with Report of Five Hundred Cases." Discussed by Drs. L. S. McMurtry, E. Vander Veer, Lucid, M. Rosenthal, H. Tuholske and J. B. Deaver.

Wednesday, June 8—Morning

Dr. E. H. Ochsner, Chicago, read a paper on "Final Results in Dislocation of the Hip." Discussed by Drs. A. J. Gillette, J. P. Lord and E. H. Ochsner.

Dr. L. W. Ely, New York, read a paper on "Tuberculosis of Adult Knee-Joint, with New Theory and Plan of Operation."

Dr. J. B. Murphy, Chicago, read a paper on "Acute and Chronic Joint Infections and their Surgical Treatment."

These two papers were discussed by Drs. J. T. Moore, Pearse, A. J. Ochsner, J. F. Binnie, L. W. Ely and J. B. Murphy.

Dr. R. Abbe, New York, delivered the Oration on Surgery, entitled "Radium: A Contribution to Surgery."

Dr. A. F. Jonas, Omaha, Neb., read a paper on "Open Treatment of Fractures." Discussed by Drs. E. W. Andrews, Pearse, J. L. Crook and A. F. Jonas.

Dr. J. T. Bottomley, Boston, read a paper on "Congenital Atresia of Ureter." Discussed by Drs. D. N. Eisendrath and S. E. Sanders.

Dr. C. A. L. Reed, Cincinnati, read a paper on "Extracapsular Fixation of Kidney." Discussed by Dr. S. Lloyd.

Wednesday, June 8—Afternoon

Dr. T. S. Cullen, Baltimore, read a paper on "Surgical Diseases of the Umbilicus." Discussed by Drs. W. D. Haggard and T. S. Cullen.

Dr. O. C. Gaub, Pittsburg, Pa., read a paper on "Traumatic Rupture of the Fixed Portion of the Male Urethra." Discussed by Drs. H. M. Sherman, Corrigan, P. Syms, Anderson, H. Cabot, H. H. Young and O. C. Gaub.

Dr. D. S. Fairchild, Clinton, Iowa, read a paper on "Surgical Considerations in the Treatment of Chronic Suppurative Nephritis." Discussed by Drs. A. H. Ferguson and D. S. Fairchild.

Dr. Miles F. Porter, Fort Wayne, Ind., read a paper on "Kidney and Ureteral Stone." Discussed by Drs. H. H. Young, Sumter, M. H. Richardson, J. B. Deaver, Elam, M. Ballin, Mahoney, A. D. Bevan and Miles F. Porter.

Dr. T. C. Witherspoon, Butte, Mont., read a paper on "Surgery of Congenital Cystic Kidney." Discussed by Drs. D. N. Eisendrath, C. M. Nicholson, J. E. Moore and T. C. Witherspoon.

Dr. J. F. Percy, Galesburg, Ill., read a paper on "Phrenitis Prostatica." Discussed by Drs. H. N. Moyer and J. F. Percy.

Thursday, June 9—Morning

Dr. R. Winslow, Baltimore, read a paper on "Partial Tyroidectomy in Dementia Praecox." No discussion.

Dr. H. S. Plummer, Rochester, Minn., read a paper on "Diagnosis and Treatment of Esophageal Lesions." Discussed by Drs. W. Meyer and H. S. Plummer.

Dr. George W. Crile, Cleveland, Ohio, read a paper on "Certain Surgical Aspects of Goiter." Discussed by Drs. A. J. Ochsner, A. MacLaren, M. B. Tinker, W. R. Cubbins, C. H. Mayo and George W. Crile.

Dr. A. D. Bevan, Chicago, read a paper on "Surgical Management of Suppurative Peritonitis." Discussed by Drs. W. L. Rodman, W. H. Wathen, J. P. Runyan, Cahill, J. B. Murphy, A. J. Ochsner and A. D. Bevan.

Dr. F. McRae, Atlanta, Ga., read a paper on "Conservative Surgery of Pelvis and Lower Abdomen." Discussed by Drs. A. H. Ferguson, J. M. Baldy, Fowlkes, Schmauss, Murphy and McRae.

The Nominating Committee made the following nominations: Chairman, Dr. George W. Crile; Vice-Chairman, Dr. E. Rixford; Secretary, Dr. J. T. Bottomley; Orator, Dr. George E. Brewer; Delegate, Dr. A. F. Jonas.

The report of the Nominating Committee was accepted and the nominees were elected.

Dr. A. MacLaren, St. Paul, Minn., read a paper on "Some Further Experiences with Drainage of Pelvic Abscess Through the Rectum." Discussed by Drs. J. M. Baldy, M. H. Richardson and A. MacLaren.

Thursday, June 9—Afternoon

Drs. R. Matas and C. W. Allen, New Orleans, presented a paper on "Temporary and Permanent Occlusion of the Large Arteries with Metallic Bands." Discussed by Drs. George W. Crile, D. N. Eisendrath and C. W. Allen.

Dr. W. L. Rodman, Philadelphia, read a paper on "Diagnosis of Mammary Cancer."

Dr. M. H. Richardson, Boston, read a paper on "Operative Treatment of Cancer of the Breast."

These two papers were discussed by Drs. W. Meyer, P. Syms, H. Tuholske, Miles F. Porter, W. L. Rodman and M. H. Richardson.

Dr. R. C. Coffey, Portland, Ore., read a paper on "Physiologic Implantation of Severed Ureter or Bile Duct into Intestine." Discussed by Drs. A. G. Sullivan, J. W. D. Maury and R. C. Coffey.

Dr. Le Grand Guerry, Columbia, S. C., read a paper on "A Further Consideration of Cholecystenterostomy in Certain Cases of Pancreatitis."

Dr. J. P. Runyan, Little Rock, Ark., read a paper on "Pathology of Gall Bladder and Gall Tract."

These two papers were discussed by Dr. Schmauss.

Dr. A. M. Pond, Dubuque, Iowa, read a paper on "Inguinal Hernia Following Appendectomy." Discussed by Dr. E. W. Andrews.

Dr. M. B. Tinker, Ithaca, N. Y., read a paper on "Teaching the Principles of Surgery: The Ideal and the Practical." Discussed by Drs. J. Stewart and L. Hirschman.

Dr. L. J. Hirschman, Detroit, read a paper on "A Simple Operation for Hemorrhoids without Hemorrhage." No discussion.

SECTION ON OPHTHALMOLOGY

Tuesday, June 7, 1910—Morning

The Chairman, Dr. W. C. Posey, Philadelphia, called the meeting to order at 2 p. m. in Aschenbroedel Hall, 3535 Pine Street. He then delivered his address on "Examination of the Eyes in the Public Services in the United States."

Dr. W. H. Wilder, Chicago, offered a resolution concerning the Chairman's address, which on motion was adopted, and which recommended that the President of the Association be empowered to appoint a commission to cooperate with the Department of Commerce and Labor and with the Marine Hospital Corps in establishing proper visual standards and tests to govern state and federal pilots. [The text of this resolution is given in The Journal, June 18, 1910, p. 2069, and its adoption by the House of Delegates is noted on page 2076.]

Dr. R. L. Randolph, Baltimore, read a paper on "Question of Enucleation in Purulent Panophthalmitis, Together with Brief Experimental Study of the Subject." Discussed by Drs. L. Webster Fox, Philadelphia; C. J. Kipp, Newark, N. J.; L. H. Taylor, Wilkesbarre, Pa.; C. H. Williams, Boston; S. L. Ledbetter, Birmingham, Ala.; E. C. Ellett, Memphis, Tenn.; A. E. Prince, Springfield, Ill.; S. L. Ziegler, Philadelphia; Edward Jackson, Denver; Hiram Woods, Baltimore, and R. L. Randolph, Baltimore.

Dr. Percy Fridenburg, New York, read a paper entitled "A Study of Transillumination." Discussed by Dr. Edward Jackson, Denver, and R. D. Gibson, Youngstown, Ohio.

Dr. S. L. Ziegler, Philadelphia, read a paper on "The Radical Treatment of Lacrimonasal Disease by Rapid Dilatation and Allied Measures." Discussed by Drs. H. Moulton, Fort Smith, Ark.; J. L. Thompson, Indianapolis; J. A. Donovan, Butte, Mont.; C. H. Williams, Boston; Mr. J. H. Parsons, London; Drs. John E. Weeks, New York; Hiram Woods, Baltimore, and S. L. Ziegler, Philadelphia.

Dr. Arnold Knapp, New York, read a paper on "Intermittent Closing of the Retinal Arteries." Discussed by Drs. W. C. Posey, Philadelphia; L. Connor, Detroit; William Zentmayer, Philadelphia; J. L. Thompson, Indianapolis; M. Feingold, New Orleans; Wendell Reber, Philadelphia; E. C. Ellett, Memphis, Tenn.; Haughey, Battle Creek, Mich.; A. Greenwood, Boston, and Arnold Knapp, New York.

In the absence of Dr. Alvin Hubbell, Buffalo, a member of the Executive Committee, who was ill, Dr. Lewis H. Taylor, Wilkes Barre, Pa., was appointed on that committee.

The Committee on Promotion of Family Physician Refracting presented its report, as follows:

REPORT OF COMMITTEE ON PROMOTION OF FAMILY PHYSICIAN REFRACTING

Your committee appointed under resolutions relative to Chairman Hubbell's address, 1909, begs leave to report progress.

These resolutions affirm that every physician's equipment should enable him to do two things; to manage infectious eye diseases, and to determine the refractive defects of the eye. These resolutions also instruct your committee to report on methods for insuring such equipment. The problem thus given us is both broad and complicated; broad in that it affects individually every doctor and citizen, complicated in its relations to medical education, state boards of registration, medical societies, medical journals and popular sentiment. With our time limit, the committee has given it such study as was possible and submits the following:

Since economic reasons prevent a great increase of ophthalmologists, we turn to family doctors, who number about 130,000. If these could do simple refracting, and the entire number of eyes were divided among them, each would have about 1,200—a number possible for adequate refractive service. Of these, the most complicated, in population centers, would fall to the ophthalmologist; the simple and those distant from population centers, to the family doctor. Thus the profession would form a refracting army, family physicians being the soldiers, ophthalmologists the officers—united able to refract and keep refracted the entire 180,000,000 human eyes.

Family physician refracting will be defined differently by individuals, but your committee defines it as "that training which enables its possessor (1) to recognize a normal ocular fundus with the ophthalmoscope, and (2) by test cards and simple lenses to determine those that give the best sight with least discomfort to simple presbyopes, myopes and hyperopes." The ability to do these two things, with celerity and positiveness, opens the door to such other things as complete his equipment.

To meet the present conditions the medical college curriculum must be adjusted and young physicians and such other physicians as have begun encouraged to master it. For this the medical societies, medical press, medical books and personal friendship must be utilized. Most important is the State Board of Registration. As the people's representative, it should refuse license to those ignorant of simple refraction. Much remains to interest some of these boards in this part of their duty, and especially in their becoming properly qualified therefor. Thus, from start to finish, the work of your committee is educational.

In [illegible] of [illegible] your Committee held meetings in Atlantic City, New York, Philadelphia, Baltimore and St. Louis. Its members kept in touch with each other by frequent correspondence. Individually its members discussed the matter with fellow doctors, singly or in groups, as opportunity admitted. Rarely did they fail to win to the cause a friend, if time allowed a fair presentation of facts. Not rarely did these friends present novel ideas and helpful suggestions. Thus during a journey with a member of a state board of registration, while discussing the quantity and quality of ophthalmology a family physican ought to be able to practice, the physician said, as a substantial agreement was reached, "Fix up details as briefly as possible, send to me, and I will see that our board requires the same for license." His state now requires simple refracting for license, as he educated his board. Yet he was simply a family physician of good education, faithful in his endeavor to serve the people.

We found objections to family physician refracting mainly based in two classes of reasons—lack of broad comprehension of the subject, or selfish interest. Usually the removal of the first carried the second. All granted that a family physician ought to be qualified for simple refracting, even when conditons forbade its practice, but they doubted its possibility. Often this doubt was removed by showing that family physicians had mastered the art and were practicing it, even under unfavorable conditions. Many ophthalmologists find it hard to realize that simple refraction can be safe, or of practical value. They forget that, while a family doctor may open a felon, amputate a finger, and do other minor surgery easily, he may not operate for appendicitis. So in time they will learn that the family doctor can satisfactorily do simple refracting, leaving to the ophthalmologist complicated refracting; that a knowledge of personal limitations will restrain him from exceeding them; and that his little knowledge will check any tendency to practice in ignorance.

With a view of stimulating state boards of registration to make a practical study of family physican refracting and to adopt such requirements for license as would encourage medical colleges in its teaching, your Committee prepared the following circular letter and mailed a copy, within a sealed envelope, to members of each board:

Nov. 11, 1909.

"Dear Doctor ———:"

At the late meeting of the Section on Ophthalmology, American Medical Association (eleven hundred members), the undersigned were appointed a committee to promote a working knowledge of simple refraction among family physicians.

It has secured abundant evidence that such knowledge has been acquired and is now used by many physicians, so proving that all medical men can do likewise, if they so desire.

But that the practice may become uniform, it is necessary that the state boards of registration require it for license and medical colleges teach it in course.

Recognizing its importance, the Michigan State Board of Registration, on Feb. 12, 1909, notified medical colleges that thereafter it would grant licenses to practice only to such applicants, as demonstrated, on a living subject, with simple spherical lenses and test types, their working knowledge of simple refraction.

Your Committee is confident that every state board of registration would make a like requirement, if it grasped the situation; and then all medical colleges would qualify their students therefor.

Recalling the fact that our system of medical education makes no adequate provision for training the family physician in simple refraction, and that it is impossible for experts to meet the needs of all the people in this respect, it is plain that this class of cases had no source of relief other than the optician. But if the state boards require a working knowledge of simple refraction for license, the needs of all the people will be fully met by qualified physicians, and the optician resumes his normal vocation as a spectacle merchant.

Recognizing your great influence in medical affairs, and assuming your vital interest in enlarging the field of family practice, your Committee confidently ask your active endeavor to persuade your state board of registration to require "a working knowledge of simple refraction" from each applicant for license.

Each member of your Committee stands ready to assist you to a fuller understanding of the situation, or to cooperate with you in seeking its relief.

With thanks for your aid, and a report of your success, we remain, dear doctor,

Sincerely yours,

Leartus Connor, Detroit, Chairman.
A. R. Baker, Cleveland, Ohio.
J. Thorington, Philadelphia.

Further, a copy of this letter was also sent to officers of a few medical societies, medical journals, medical colleges and other leaders in the profession. Courteous replies were promptly received, some seeking further details, that led to extended correspondence. In December, 1909, the State Board of Registration in Nebraska announced that it would require a working knowledge of simple refraction as a condition for license; in January 1910, Vermont and Utah made similar announcement; Michigan had already been operating the same requirement since Feb. 12, 1909. Replies from other states may be summarized thus:

1. In some the laws did not admit of such specific examination and more time was needed to induce legislatures to make needed changes.

2. Other boards reported that as their individual members knew nothing of refraction they were unable to examine applicants thereupon but that they would keep the matter under consideration and hoped in the near future to qualify themselves.

3. Other boards reported such an unstable political status that they feared any agitation lest they lose what they already possessed; they promised strong efforts for creating a better public sentiment.

4. Some states desired more time for study of methods for making the proposed examinations a success.

5. No state doubted the wisdom of the suggested requirement; and those unable to make it now regretted the inability and hoped to be able to make the requirement in the near future.

6. Much correspondence was required to make clear the best methods for conducting the examinations, the proper text books, apparatus, etc., under the varying conditions of the boards, which your Committee conducted with its best judgment.

While medical colleges were not appealed to directly, for lack of time, some, on learning of the Michigan State Board of Registration requirements, voluntarily undertook the preparation of their students therefor. The Association of American Medical Colleges invited your Committee to meet it at Baltimore last March and contribute to the untangling of its problems. Two of the members of your Committee were present, the other being prevented by illness from attending. One read a paper on the "Economic Value of Simple Refracting," which was discussed, and both discussed several points relating to simple refraction in the general medical curriculum. Privately they sought to interest members in simple refracting.

MEDICAL JOURNALS

From the editorials relative to simple refraction we can refer only to two brief extracts. The *Boston Medical and Surgical Journal*, Dec. 9, 1909, p. 865, says: "It is apparent that a need exists in the community that has not been met by the medical profession, and we are therefore in complete accord with the efforts of this committee of the Ophthalmic Section of the American Medical Association to impress on medical schools the importance of teaching simple refraction, not in special courses, but rather as part of the general medical discipline. The pressure to bring this about must, no doubt, in a measure come from state boards of registration, but we do not question that the medical schools will be quick to recognize the desirability of instituting such undergraduate instruction. While there will be some opposition by interested parties, we have no doubt that the best interests of the public will ultimately be subserved through the complete assumption of this work by the medical profession, to which it properly belongs."

The *Medical Fortnightly*, St. Louis, Mo., after quoting the Committee's letter, restates the vexed problem of the itinerant optician and endorses the solution offered, viz., "make doctors good refractionists themselves." It thinks that the medical colleges could easily make space for simple refraction by omitting some of the things now in the course, but absent from every physician's needs in practice. Thus the addition of simple refraction would even lessen the student's burden. "The new movement is a good one and deserves hearty support."

STATE MEDICAL SOCIETIES

The able secretary of the Kentucky State Medical Society last fall secured some reprints of a paper on simple refracting and distributed them among his members. This brought on a lively discussion at its annual meeting, but in the end the practice was endorsed. It is certain that by tactful arrangement the subject could be brought before other state medical societies. Whether the result was approval or disapproval, the facts would receive consideration, and new friends made, which in turn would make other friends, and so the promotion of simple refracting advance. In fact, the movement started in the Michigan State Medical Society in 1908.

SPECIAL CONFERENCE OF OPHTHALMOLOGISTS WITH STATE SOCIETY OFFICERS

On May 3, 1910, the Detroit Ophthalmological Club invited to a Conference on the Economic Value of Family Physician Refracting, the officers of the Michigan State Medical Society; those of the Wayne County Medical Society; those of the Michigan State Board of Registration; the Deans of the Medical Department of the University of Michigan and Detroit Medical College, and two family physicians doing simple refracting. After a discussion lasting several hours, the club unanimously passed the following resolutions, offered by the professor of ophthalmology in Detroit Medical College, Dr. Don M. Campbell:

WHEREAS, Family physician refracting promotes the cooperation of family physician and ophthalmologist; provides physicians adequate to the people's refractive needs; enriches ophthalmology and ophthalmologists; general medicine and family doctor; strengthens medical organization, and solves the optician problem.

Resolved, That the Detroit Ophthalmological Club endorses the action of the Section of Ophthalmology of the American Medical Association in promoting family physician refracting; the action of the Michigan State Medical Society, in seeking to qualify its members to meet the people's refractive needs; the action of the Kentucky State Medical Society, endorsing the Michigan idea of family physician refracting; the action of medical colleges in substituting family physician ophthalmology for special ophthalmology, and the action of the state boards of registration in Michigan, Vermont, Nebraska and Utah, in requiring for license, a working knowledge of refracting.

Resolved, That the Detroit Ophthalmological Club urge state boards of registration to require (1) for license, family physician refracting, and (2) for the right to practice ophthalmology, a comprehensive laboratory and clinical study, after securing a license.

Resolved, That the Detroit Ophthalmological Club encourage family physicians to qualify for intelligent cooperation with ophthalmologists by equipping themselves for simple refracting.

It is noteworthy that most members of this conference two years previous were antagonistic to the movement. When conditions are favorable your Committee commends the holding of similar conferences. As ophthalmologists become interested they will take the matter up with their county medical societies. It is suggested that if they can secure the attendance of one or more family doctors who practice family physician refracting and have them give their actual experience, the outcome will be more.

It will surprise not a few ophthalmologists to learn of the satisfactory, useful refracting done in far away locations.

VIEWS FROM LEADERS IN THE PROFESSION

Space admits quotations from only three. Dr. William C. Gorgas, President of American Medical Association says: "Your circular letter of November 13 is acknowledged. I think the plan you outline is excellent."

Dr. Charles A. L. Reed, Ex-President of the American Medical Association says: "The plan to require a working knowledge of simple refraction by all candidates for medical licensure is capital and distinctively the logical remedy for the "optometric evil" that seems to threaten the eyes of all the people."

Dr. W. W. Grant, of Denver: "Your communication in regard to simple refraction by the family physician is received. It will give me pleasure to advance the action suggested with our state board. I believe the action of your state board of registration to be wise, timely and greatly to its credit."

Your Committee commends wise efforts to secure the attention of leaders in the profession by suitable circular or private letters, especially in keeping them posted as to the [illegible] and [illegible] greatest progress is being made, and suggesting their activity [illegible] in some specific direction.

Your Committee recommends:

1. The continued promotion of family phy[illegible]
2. The authorization of your Committee to [illegible] an auxiliary committee of three physicians, especially adapted to deal with State problems in simple refracting [illegible]

RECENT PAPERS RELATING TO FAMILY PHY[illegible]

1. Baker, A. R.: "Teaching of Ophthalmology," *[illegible] Lancet-Clinic*, May 14, 1910.

2. Connor, Leartus: "The Economic Value of Family Physician Refracting," *Bull. Am. Acad. Med.*

3. Connor, Leartus: "Conference of Ophthalmologists [illegible] Organization Leaders," THE JOURNAL A. M. A., May 28, 1910, p. 1820.

4. Thorington, James O.: "Refracting Optician," *Pennsylvania Med. Jour.*, February, 1910.

5. Connor, Leartus: "General Practitioner and Simple Refracting," THE JOURNAL A. M. A., April 10, 1909, p. 1195.

6. Connor, Leartus: "Ophthalmology for General Practitioner," THE JOURNAL A. M. A., Nov. 28, 1908, 1833.

7. Connor, Leartus: "Layman Occupancy of Large Patches on the Field of Medical Practice," *Jour. Michigan State Med. Soc.*, May, 1909.

8. Connor, Leartus: "The Needs of the Entire Field of Medical Practice, the Rational Standard of a System of Medical Education," *Bull. Am. Acad. Med.*, x, No. 5.

9. Connor, Leartus: "Simple Refracting for Family Physicians: Its Promotion During 1908-9," THE JOURNAL A. M. A., Oct. 9, 1909, p. 1226.

LEARTUS CONNOR, Chairman.
ALBERT R. BAKER.
J. THORINGTON.

The Committee for Legislation on Optometry then presented its report, as follows:

REPORT OF COMMITTEE FOR LEGISLATION ON OPTOMETRY

The Committee for Legislation on Optometry report to the Section on Ophthalmology that prior to its appointment at Atlantic City in 1909 twenty-four states had passed laws recognizing the optical trade as a quasi-medical profession; that since the Committee took office no states have passed such law. Late in 1909 Massachusetts, Connecticut, Pennsylvania, Illinois, Missouri and Texas rejected "optometry" bills, while in the current year Massachusetts, New Jersey, Maryland and Ohio have followed up the good work by similar action.

The partial medical work of the optician has been tolerated; but, not content with that, he seeks to have his work legalized. In many states the step from toleration to legalization has been easy, as the political activity of the optician has encountered but little resistance from the masterly inactivity of most oculists and general medical practitioners.

Legalization is but a back-door entrance into medical practice, as shown by the curriculum of their schools and the questions asked by their optometry examining boards. If you wish medicine for medical men and ophthalmology for oculists you must at least be active citizens and show actively and aggressively your wishes and your objections in this matter.

We, cognizant of what has happened in the past and what is threatened in the future, say that so-called "optometry" should not be recognized in any way, that we should cry "No recognition and no compromise!" on all occasions.

But in this stand we must ask the active support of our profession in checking this fad, and if such support be accorded we are certain that these advertising tradesmen will make little or no progress in the future.

The American Medical Association will [illegible] publish in the near future a history of the claims, schools and legislative efforts of the opticians, to be used as a textbook or brief by medical societies in the states where this question is still to be fought.

We freely give our efforts, but we ask aid rather than opposition from our own ranks.

Resolutions which will now be read embody our ideas in regard to this entire question.

JOHN C. BOSSIDY.
JAMES THORINGTON.

Dr. H. Woods, Baltimore, offered the following resolution concerning the report of the Committee on Promoting Family Physician Refracting and moved its adoption:

Recommendations of a committee appointed by chairman of the Section on Ophthalmology, 1909, on teaching in medical [illegible] infectious diseases of the eye and refractive errors.

WHEREAS, The refracting of human eyes is an [illegible] part of medical practice; and

WHEREAS, The Section on Ophthalmology of the American Medical Association recommends that every general [illegible] have the training in ophthalmology which will enable [illegible] infectious diseases of the eye and its refractive defects [illegible]

Resolved, That the House of Delegates of the American Medical Association (1) requests its Council on Medical Education [illegible] range a curriculum able to equip [illegible] training, and recommend [illegible] approves of the state [illegible] license; and (2) advises like [illegible] boards at an early date.

The motion was seconded.

Dr. J. Thorington, Philadelphia, [illegible] of the Committee on Optometry Legislation, offered a resolution concerning the report of the Committee on Optometry Legislation, the text of which is given in THE JOURNAL, June 18, 1910, p. 2060, and which urges that legal recognition of the optometrist as a diagnostician of the diseases of the eye is an infringement on medical practice laws and should not be sanctioned by any state or institution; that referring patients to opticians should be deprecated; that the House of Delegates be requested to publish a history of so-called optometry and optometry colleges and to send copies to officials of state medical societies and to other medical men who are; and that a committee of two members of the Section on Ophthalmology be appointed to furnish the necessary data.

The resolutions of the two committees as given above were passed and sent to the House of Delegates for action. [The approval of that body is noted in The Journal, June 18, p. 2076.]

Wednesday, June 8—Morning

Dr. Mark D. Stevenson, Akron, O., exhibited an instrument for elevating and holding the upper lid in the treatment of ophthalmia neonatorum, or other trouble, to facilitate the application of medicaments to the upper cul-de-sac. Dr. Stevenson also showed a Goodrich No. 7 shut-off, to be used on an irrigator.

Dr. A. Greenwood, Boston, presented an appliance for shutting out surrounding light in examining the interior of the eye with the ophthalmoscope.

Dr. C. H. Williams, Boston, exhibited some correctly colored worsteds for performing the Holmgren color test of the eyes, and explained his method of keeping a record of the examinations of patients for color-blindness.

Dr. G. C. Savage, Nashville, exhibited his muscle indicator and explained how it might be used in the light tests.

Dr. Lucien Howe, Buffalo, Chairman of the Committee on Collective Investigation Concerning the Ocular Muscles, read the report of that committee.

On motion of Dr. J. E. Weeks, New York, the report was accepted and the committee continued. The report was discussed by Dr. Weeks, Dr. Savage and Dr. Howe.

The report of the Committee on Tuberculosis was read by the Chairman, Dr. W. H. Wilder, Chicago. On motion of Dr. Mark D. Stevenson, Akron, O., the report was adopted and the committee ordered continued. The report was discussed by Dr. John Green, St. Louis.

Dr. Edward Jackson, Denver, read a paper on "Tests of Visual Subjective Correction of Ametropia." Discussed by Dr. C. H. Williams, Boston; Dr. F. Park Lewis, Buffalo; Dr. W. H. Luedde, St. Louis, and Dr. E. Jackson, Denver.

On motion of Dr. A. E. Bulson, Jr., Fort Wayne, Ind., the delegate from the Section was directed to present the name of Mr. J. Herbert Parsons, London, the guest of the Section, to the House of Delegates for election as an honorary member of the Association.

Drs. Mark D. Stevenson, Akron, and E. M. Weaver, Akron, O., presented a paper on "Prescribing of Lenses For Close Work." Discussed by Drs. A. G. Bennett, Buffalo; A. E. Bulson, Jr., Fort Wayne, Ind.; A. Greenwood, Boston; S. L. Ledbetter, Birmingham, Ala.; G. C. Savage, Nashville; Joseph S. Lichtenberg, Kansas City, and Mark D. Stevenson, Akron, O.

Dr. F. Park Lewis, Buffalo, N. Y., read a paper on "Prevention of Blindness." Discussed by Drs. A. E. Bulson, Jr., Fort Wayne, Ind.; Lucien Howe, Buffalo, N. Y.; A. Greenwood, Boston; John Green, Jr., St. Louis; J. A. Donovan, Butte, Mont.; G. C. Savage, Nashville, Tenn.; Miss C. C. Van Blarcom, New York; Mr. Elliott, of the Russell Sage Foundation, New York, and Dr. Mark D. Stevenson, Akron, O.

Dr. F. Park Lewis, Buffalo, N. Y., offered the following resolution covering certain recommendations in Dr. Lewis' paper:

> Whereas, The American Medical Association has at present a Committee on Ophthalmia Neonatorum, the purpose of which is the prevention of blindness from this disease, and
>
> Whereas, Trachoma, industrial accidents, intermarriage of the blind and wood alcohol amblyopia are also preventable causes of blindness, therefore be it
>
> *Resolved*, That the House of Delegates be requested to appoint a "Committee on the Prevention of Blindness," the membership of which shall consist of the Chairman of the Committee on Ophthalmia Neonatorum and such other members for the investigation of the above causes of blindness as the president may appoint. This Committee shall invite the cooperation of the American Ophthalmological Society and similar organizations.

[The approval of this resolution, with modifications, is noted in The Journal, June 18, page 2076.]

Dr. W. Zentmayer read a paper on "Present Status of the Etiology of Squint." Discussed by Drs. C. D. Wescott, Chicago; G. C. Savage, Nashville; L. Emerson, Orange, N. J., and Dr. W. Zentmayer.

Wednesday, June 8—Afternoon

Mr. J. Herbert Parsons, London, the guest of the Section, delivered his address on "The Effect of Bright Light on the Eye." No discussion.

Dr. A. E. Davis, New York, read a paper on "Post Operative Treatment of Strabismus." Discussed by Drs. Nelson M. Black, Milwaukee, Wis.; W. Reber, Philadelphia; G. C. Savage, Nashville, Tenn.; Lucien Howe, Buffalo, N. Y.; W. Zentmayer, Philadelphia, and A. E. Davis, New York.

Dr. V. H. Hulen, Houston, Tex., read a paper on "Advancement Operation in Squint." Discussed by H. H. Briggs, Asheville, N. C.; G. C. Savage, Nashville, Tenn.; F. C. Todd, Minneapolis; Mark D. Stevenson, Akron, O.; John Green, St. Louis, E. C. Ellett, Memphis, Tenn.; V. H. Hulen, Houston, Tex.

Dr. Casey Wood, Chicago, read a paper on "Surgical Treatment of Separation of the Retina." Discussed by Drs. L. Webster Fox, Philadelphia; Oscar Dodd, Chicago; H. Gifford, Omaha, Neb.; S. L. Ziegler, Philadelphia; Hiram Woods, Baltimore; A. Greenwood, Boston, and Casey Wood, Chicago.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., read a paper on "The Noguchi Serum Reaction for Syphilis as an Aid to Diagnosis in Eye Lesions." Discussed by Drs. E. V. L. Brown, Chicago, and A. E. Bulson, Jr., Fort Wayne, Ind.

Thursday, June 9—Morning

Dr. H. Hill, Benton Harbor, Mich., exhibited an addition to the trial frame for measuring the near reading focus.

Dr. W. Reber, Philadelphia, presented a circular, concave glass shield on a handle made to fit over the cornea to prevent loss of vitreous in cataract operations. He also presented a pair of magnifying lenses in a spectacle frame with hooks to be attached over the glasses of the operator in doing needling or other operations on the eye. Dr. Allen Greenwood, of Boston, stated that he had devised and had been using the same appliance for twelve years.

Dr. Nelson Black, Milwaukee, presented an appliance to be used on the trial frame when using the red glass to aid in determining diplopia, so that the patient cannot look above, below or to the right or left, but must look through the red glass. It is simply an enlargement of the red glass that fits up against the patient's nose closely.

Dr. C. H. Williams, Boston, presented an apparatus and method for making enlarged prints of microscopic specimens, which gave a sharpness of definition which could not be obtained in the ordinary way.

Dr. H. Gradle, Chicago, showed his modification of the Schiotz tonometer.

Dr. H. Gifford, Omaha, Neb., read a paper on "Danger of Sympathetic Ophthalmia From the Use of the Cautery in Treating Iris Prolapse; with Discussion of Other Methods of Treatment. Discussed by Drs. R. H. T. Mann, Texarkana; J. A. Donovan, Butte, Mont.; Edward Jackson, Denver, and Gifford, Omaha, Neb.

Dr. W. R. Parker, Detroit, read a paper on "Ophthalmia Nodosa, or Caterpillar-Hair Ophthalmia, with Report of a Case." No discussion.

Dr. E. C. Ellett, Memphis, Tenn., read a paper on "Spontaneous Rupture of the Eyeball—A Phenomenon of Glaucoma." Discussed by Drs. J. M. Ray, Louisville, Ky.; S. L. Ledbetter, Birmingham, Ala.; R. H. T. Mann, Texarkana, and E. C. Ellett, Memphis, Tenn.

Dr. Hiram Woods, Baltimore, read a paper on "Auto-intoxication and Allied Intestinal Troubles as a Possible Cause of Certain Vascular and Functional Disturbances." Discussed by Drs. J. F. Shoemaker, St. Louis; Judson Daland, Philadelphia; J. L. Thompson, Indianapolis; L. Connor, Detroit; A. G. Bennett, Buffalo, N. Y.; R. D. Gibson, Youngstown, O.; S. L. Ziegler, Philadelphia, and H. Woods, Baltimore.

Dr. J. E. Weeks, New York, read a paper on "Status of Serum and Vaccine Therapy in Ophthalmology." Discussed by Drs. M. Wiener, St. Louis; H. Gradle, Chicago; H. Gifford, Omaha, Neb.; A. G. Bennett, Buffalo, N. Y.; E. V. L. Brown, Chicago, and J. E. Weeks, New York.

Dr. Wendell Reber, Philadelphia, read a paper on "The Ocular Palsies Associated with the Introduction of Various Solutions into the Spinal Cord for the Induction of Surgical Anesthesia." Discussed by Drs. John Green, Jr., St. Louis; W. W. Graves, St. Louis; Prof. Alfred Saenger, Hamburg, Germany; James Bordley, Baltimore; G. C. Savage, Nashville, Tenn.; and W. Reber, Philadelphia.

Prof. Alfred Saenger, of Hamburg, Germany, the guest of the Section on Nervous and Mental Diseases, was invited to address the Section on Ophthalmology and spoke on the Wilbrandt method of differentiating cortical from basal hemianopsia.

Thursday, June 9—Afternoon

The Executive Committee submitted its report as follows:

> Your Committee submit the following recommendations as their report:
>
> First, we recommend that the officers shall so construct the program for next year that the reading and discussion of papers shall

continue until noon of Friday, the fourth day, and that clinical demonstrations, if any, shall be given on Friday afternoon

As to officers of the Section for another year, we recommend A. E. Bulson, Jr., Fort Wayne, for Chairman, as a fitting recognition of his long and faithful services as Secretary, in which office he has grown bald if not gray.

We recommend the "Chesterfield" of Southern Ophthalmology, E. C. Ellett, of Memphis, for Vice-Chairman.

We recommend the vigorous, promising young ophthalmologist, Edgar S. Thompson, of New York City, for Secretary.

Finally, we recommend that John C. Bossidy, of Boston, be made our representative in the House of Delegates.

G. C. Savage,
W. H. Wilder,
Lewis H. Taylor.

Dr. L. Webster Fox, Philadelphia, offered the following resolution, which, on motion, was adopted and ordered transmitted to Governor Crothers of Maryland and Governor Harmon of Ohio:

Resolved, That the thanks of the Section on Ophthalmology of the American Medical Association be extended to Governor Crothers of Maryland, and Governor Harmon of Ohio, for their action in vetoing bills legalizing the practice of so-called optometry.

Dr. A. E. Bulson, Jr., Fort Wayne, Ind., moved that the Chairman appoint a committee of three to represent this Section before the Board of Trustees to discuss the action which prevented the Section on Ophthalmology from having an exhibit and demonstration at the meeting-place of the Section, and to make some satisfactory arrangement with the Board of Trustees for such scientific exhibit and demonstration in the future. Carried. The Chairman appointed on that committee Drs. Albert E. Bulson, Jr., Fort Wayne, Ind.; Casey Wood, Chicago, and Edward Jackson, Denver.

Dr. A. E. Bulson, Jr., Fort Wayne, Ind., brought up the question of the establishment by the Section of a fund to be known as the Herman Knapp Testimonal Fund, said fund to be used for the following purposes, or for such purposes as might be agreed on by the Section or the committee provided for the purpose of taking charge of the fund:

1. A Knapp Medal to uninvited contributors for original work in ophthalmology or a summary of the literature, or some contribution of such a highly meritorious character in the field of ophthalmology as would warrant the granting of a medal.
2. A prize or medal to be given to those who are invited to contribute on some special topic or work.
3. A portion of the fund to be used to meet the expenses of the scientific exhibit and various practical demonstrations.
4. A portion of the fund to make provision for incidental expenses of the Section.
5. A portion to make provision for the expenses of committees carrying on scientific work, as, for instance, the Committee on Tuberculous Diseases of the Eye, etc.
6. A portion to make provision for the contingent expenses of the Section not met by the Association, as expenses for postage, etc., now paid by the Secretary.
7. A portion to make provision for the local expenses of invited guests or guests of honor of the Section.
8. A committee of five to be appointed to carry out the above purposes of securing a fund in accordance with a circular already sent to the members, on which the sum of about $400 had been collected, and to have charge of and administer the fund, one member of said committee to be appointed for one year, another for two years and another for three years, thus changing the membership of the board each year.

Dr. G. C. Savage, Nashville, Tenn., made a motion, which was seconded and carried, that the Section on Ophthalmology approve of the plans and purposes of the Herman Knapp Testimonial Fund as outlined by Dr. Bulson.

Dr. John E. Weeks, New York, moved that the committee consist of the Chairman and Secretary of this Section and the Executive Committee of the Section. Seconded and carried.

REPORT OF THE COMMITTEE ON THE SMITH OPERATION FOR CATARACT

The Committee on the Smith Operation for Cataract submitted a report as follows:

The committee appointed by this Section at Atlantic City last year, to report on the merits of the Smith operation as applied to American patients, begs leave to report progress and asks for more time. The time since its circular was issued has been too short to gather enough cases to do justice to the operation. If this committee is continued it will insist that all operations reported to it shall be made according to the general plan laid down by Colonel Smith, and with his instruments, as recorded in the *Ophthalmic Record*, February, 1910. We feel that a record of 25,000 operations has given him the right to say just how a Smith operation shall be performed.

D. W. Green,
Arnold Knapp,
Edward Jackson,
Casey Wood,
Walter R. Parker, Secretary.

On motion of Dr. L. Webster Fox the report was received and the committee continued.

Dr. G. C. Savage, Nashville, Tenn., read a paper on "Cataract-in-Capsule Extraction by a New Means and a New Method."

Dr. J. L. Thompson, Indianapolis, read a paper on "My Experience in the Operation for Cataract."

These two papers were discussed by Drs. T. H. Wood, Nashville, Tenn.; A. E. Bulson, Jr., Fort Wayne, Ind.; D. W. Green, Dayton, Ohio; L. Webster Fox, Philadelphia; J. L. Thompson, Indianapolis, and G. C. Savage, Nashville, Tenn.

Dr. Allen Greenwood, Boston, read a paper on "Filtering Cicatrix for Chronic Glaucoma, with Report of Cases Operated on by the Method of LaGrange." Discussed by Drs. J. E. Weeks, New York; H. Gifford, Omaha, Neb., and A. Greenwood, Boston.

Dr. G. C. Savage, Nashville, explained that Dr. F. P. Calhoun, Atlanta, on account of the illness of his father, a member of the Association, could not be present to read his paper on "Plastic Surgery of the Eyelids, Using the Wolfe Graft," and moved that the paper be postponed and put on the program for next year. Carried.

Dr. S. L. Ziegler, Philadelphia, moved that a message of condolence be sent from the Section to Dr. Calhoun on the illness of his father. The Secretary was so instructed.

SECTION ON LARYNGOLOGY AND OTOLOGY

Tuesday, June 7—Afternoon

The Chairman, Dr. Chevalier Jackson, Pittsburg, called the meeting to order at 2:30 p. m., in Sodality Hall.

Dr. Jackson delivered the Chairman's Address, entitled, "Esophageal Stricture Following the Swallowing of Caustic Alkalies."

Dr. E. Fletcher Ingals, Chicago, made a motion, which was passed, that the subject be referred to the Committee on Pharmacy with the request that they do what may be necessary to secure the proper labeling of these dangerous substances.

Dr. Holger Mygind, Copenhagen, Denmark, the foreign guest of the Section, delivered an address, "In Memoriam: Wilhelm Meyer."

Dr. Dunbar Roy, Atlanta, Ga., read a paper entitled "Clinical Observations on Nasal Diphtheria." Discussed by Drs. W. E. Casselberry, Chicago; B. R. Shurly, Detroit; Max Goldstein, St. Louis; J. A. Stucky, Lexington, Ky.; Henry Horn San Francisco; G. L. Cott, Buffalo; Fletcher Ingals, Chicago; Otto Glogau, New York; C. M. Miller, Richmond; and Dr. Dunbar Roy, Atlanta, Ga.

Dr. Ross Hall Skillern, Philadelphia, read a paper on "The Comparative Pathology of Hyperplastic and Suppurative Ethmoiditis," with lantern slide demonstration. Discussed by Drs. W. L. Ballinger, Chicago; W. E. Casselberry, Chicago; G. P. Marquis, Chicago; O. T. Freer, Chicago; W. L. Ballinger, Chicago; and R. H. Skillern, Philadelphia.

Wednesday, June 8—Morning

Dr. Henry Horn, San Francisco, read a paper on "The Bronchoscopic Treatment of Bronchial Asthma." Discussed by Drs. E. Fletcher Ingals, Chicago; Chevalier Jackson, Pittsburg; W. E. Casselberry, Chicago; W. S. Anderson, Detroit; and Henry Horn, San Francisco.

Dr. Justus Matthews, Rochester, Minn., read a paper on "Observations on the Vocal Cords in One Thousand Cases of Goiter." Discussed by Drs. W. E. Casselberry, Chicago; G. L. Cott, Buffalo; Henry Horn, San Francisco; G. P. Marquis, Chicago; and Justus Matthews, Rochester, Minn.

The following three papers were read and discussed as a Symposium on Faucial Tonsils:

Dr. Robert Levy, Denver, "The Tuberculous Tonsil."

Dr. Joseph C. Beck, Chicago, "Conditions Demanding Enucleation of Faucial Tonsils."

Dr. Burt R. Shurly, Detroit, "The Difficulties Associated with the Operation for Enucleation of the Faucial Tonsils and Contraindications for This Procedure."

These three papers were discussed by Drs. A. H. Andrews, Chicago; W. E. Sauer, St. Louis; W. F. Welty, San Francisco; J. E. Logan, Kansas City; O. T. Freer, Chicago; F. E. [illegible], Belleville, Ill.; Max Goldstein, St. Louis; B. D. Sheedy, New York; Henry Horn, San Francisco; and J. C. Beck, Chicago.

Wednesday, June 8—Afternoon

Dr. Burt R. Shurly offered a resolution that a committee be appointed by the chair to draw up resolutions in memoriam of Drs. Stubbs and King, which was adopted, and the chair appointed Drs. Shurly, Pierce and Goldstein as such committee.

The following three papers were read and discussed as a Symposium on Otitic Meningitis:

Dr. E. B. Dench, New York, "Symptomatology and Diagnosis of Meningitis of Otitic Origin."

Dr. S. MacCuen Smith, Philadelphia, "Indications for Surgical Interference for the Relief of Otitic Meningitis."

Prof. Holger Mygind, Copenhagen, Denmark, "The Surgical Treatment of Otitic Meningitis."

These three papers were discussed by Drs. Norval H. Pierce, Chicago; J. A. Stucky, Lexington, Ky.; W. F. Welty, San Francisco; C. M. Brown, Buffalo; Scholtz, St. Louis; Otto Glogan, New York; E. P. Dench, New York; S. M. Smith, Philadelphia; and Holger Mygind, Copenhagen, Denmark.

On motion of Dr. MacCuen Smith, the delegate from the Section was instructed to recommend to the House of Delegates that Prof. Holger Mygind, Copenhagen, Denmark, be made an honorary member of the Association.

Dr F. P. Emerson, Boston, read a paper on "The Results of the Operation of Submucous Resection of the Septum in Private Practice."

Dr. Clyde E. Purcell, Paducah, Ky., read a paper on "Submucous Resection of the Nasal Septum."

These two papers were discussed by Drs. J. O. Roe, Rochester, N. Y.; O. T. Freer, Chicago; Scholtz, St. Louis; B. D. Sheedy, New York; W. L. Ballinger, Chicago; O. Tydings, Chicago; G. Sluder, St. Louis; James Steffens, Chicago; L. P. Emerson, Boston; and C. E. Purcell, Paducah, Ky.

Thursday, June 9—Morning

The Vice-Chairman, Dr. George F. Cott, Buffalo, presiding, the election of officers took place.

The report of the Executive Committee, Dr. S. MacCuen Smith, Philadelphia, Chairman, recommended the following as officers for the ensuing year: Chairman, Dr. Dunbar Roy, Atlanta, Ga.; Vice-Chairman, Dr. W. E. Sauer, St. Louis; Secretary, Dr. George E. Shambaugh, Chicago; Delegate, H. W. Loeb, St. Louis.

On motion, duly seconded, the report of the Executive Committee was accepted and the Chairman instructed to cast the ballot for the nominees.

Dr. S. MacCuen Smith, on behalf of the Executive Committee, made a motion, which was seconded and adopted, that in the future the senior member of that Committee be recommended to the Section for the next member of the House of Delegates.

An Exhibition of Patients, Instruments and Specimens was then held.

Dr. Greenfield Sluder, St. Louis, demonstrated a method of removing tonsils, in their capsule, with a modified MacKenzie tonsillotome, and exhibited a number of tonsils so removed, and patients who had been operated on by this method, showing the after-results.

Dr. C. A. Leavy, St. Louis, exhibited a case of laryngeal stenosis.

Dr. Max Goldstein, St. Louis, showed a case of angioma cavernosa of the uvula, and described the method of its removal He also showed an interesting case of paralysis of the vocal cords.

Dr. W. E. Sauer, St. Louis, exhibited a case of osteoma of the nasal process of the maxillary bone; and, a case of thrombosis of the lateral sinus, which had occurred without involvement of the middle ear.

Dr Mark D. Stevenson, Akron, Ohio, exhibited a new ear-drain made of cotton covered with gauze, of round form, which could be cut into convenient lengths, and used by the patient, who could change it at frequent intervals.

Dr. H. W. Loeb, St Louis, showed a case in which laryngectomy had been done six years previously for epithelioma of the larynx; the patient, a working man, bricklayer, had been able to continue his work ever since very satisfactorily. At home he could express himself so as to be understood by his family.

Dr Max Goldstein, St. Louis, showed a patient, a young girl of 17 who had been totally deaf for five years and who in two months of systematic teaching had acquired a knowledge of lip reading by which she could communicate with others. Discussed by Prof Holger Mygind, Copenhagen, Denmark

Dr Otto Glogan, New York, exhibited a submucous septum saw, for removing the deviated bony portion of the deflected septum

Dr Henry Horn, San Francisco, exhibited an instrument or apparatus for determining the presence of pus in the accessory cavities by means of negative pressure.

Dr J D Heitger Kalamazoo, Mich., exhibited a device for warming the laryngeal mirror by means of an attachment to the ordinary electric socket.

J. W. Radu, Tonawanda, N. Y., showed an improvement on the diagnostic lamps to be used with battery or street currents, which produced a perfectly white light instead of a yellow one, and gave no heat. This closed the exhibition.

Dr. Sydney Lange, Cincinnati, read a paper on "The Pathology of Mastoiditis as Revealed by the *X*-ray. Discussed by Drs. Henry Horn, San Francisco; C. F. Welty, San Francisco; Frank E. Auten, Belleville, Ill.; and S. Lange, Cincinnati.

Dr. Frank C. Todd, Minneapolis, read a paper on "Neuralgias and Functional Disturbances Occurring in the Head and Neck Arising from Infections in and About the Tonsils." Discussed by Drs. Lafayette Page, Indianapolis; Frank E. Auten, Belleville, Ill.; MacLaren, Oklahoma; C. F. Welty, San Francisco; H. B. Lemere, Omaha, Neb.; George F. Cott, Buffalo; and Frank C. Todd, Minneapolis.

Dr. George W. Boot, Evanston, Ill., read a paper on "The Development of the Human Temporal Bone." Discussed by Dr. George E. Shambaugh, Chicago.

Dr. Will Walter, Chicago, read a paper on "A Study of the Bacterial Flora of the Nasal Mucosa." Discussed by Drs. E. R. Lewis, Dubuque, Iowa; W. S. Anderson, Detroit; and W. Walter, Chicago.

Dr. Henry Horn, San Francisco, demonstrated preparations showing (a) "Cholesteatoma of Middle Ear with Defect in the Horizontal Semicircular Canal and Infection of the Labyrinth"; (b) "Cholesteatoma of Middle Ear with Defect in Horizontal Canal Without Infection of the Labyrinth." Discussed by Dr. George E. Shambaugh, Chicago.

Thursday, June 9—Afternoon

The Vice-Chairman, Dr. George Scott, Buffalo, N. Y., presided.

The committee appointed to draw up resolutions in memoriam of Drs. Stubbs and King asked for further time in which to gather biographic data, and asked to be empowered to submit one copy of report to the Secretary to be spread on the minutes, and a copy to be sent to the respective families. On motion of Dr. J. J. Kyle, the request of the committee was granted.

The following papers were read and discussed as a Symposium on Labyrinthine Suppuration:

The paper of Dr. Jaques Holinger, Chicago, on "The Pathology and Prognosis of Internal Ear Complications Resulting from Inflammatory Middle Ear Diseases," was read by Dr. B. R. Shurly, Detroit, Dr. Holinger being absent because of illness.

Dr. L. K. Guggenheim, St. Louis, gave a lantern-slide demonstration of specimens, showing the pathology of internal ear disease.

Dr. J. R. Fletcher, Chicago, read a paper on "The Symptoms and Diagnosis of Infections of the Labyrinth Resulting from Chronic Suppurative Otitis Media."

Dr. George E. Davis, New York, read a paper on "The Present Status of Vertigo Considered from a Diagnostic Standpoint."

The three papers, with the lantern-slide demonstration, were discussed by Drs. A. B. Duel, New York; Prof. Holger Mygind, Copenhagen, Denmark; George F. Cott, Buffalo; C. F. Welty, San Francisco; George E. Shambaugh, Chicago; Robert Barclay, St. Louis; C. M. Brown, Buffalo; L. K. Guggenheim, St. Louis; Henry Horn, San Francisco; Otto Glogan, New York; J. R. Fletcher, Chicago; and G. E. Davis, New York.

SECTION ON NERVOUS AND MENTAL DISEASES

Tuesday, June 7—Morning

The meeting was called to order at 2 p. m., in the St. Louis University Library, by the Chairman, Dr. Theodore Diller, Pittsburg, who then read his address.

A committee, consisting of Dr. Collins and Dr. Langdon, was appointed to prepare resolutions regarding the death of Dr. Wharton Sinkler.

Dr. Alfred Saenger, of Hamburg, Germany, was, on motion, recommended for honorary membership. [The House of Delegates approved.]

A resolution deprecating the custom of printing details of suicides in the secular press on account of the harmful, suggestive effect on certain individuals, and requesting the Legislative Committee to be instructed to secure, if possible, the enactment of a national law forbidding the use of the mails to newspapers publishing such details, and making it a misdemeanor to publish them, was referred to the Executive Committee.

Dr. Joseph Collins, New York, read a paper on "The Urgent Need of Hospitals for the Study and Treatment of Nervous Diseases."

Dr. L. Vernon Briggs, Boston, read a paper on "Prevention of Insanity by the Treatment of Incipient Cases in General Hospitals."

Dr. Irwin H. Neff, Foxboro, Mass., read a paper on "The State Care of the Inebriate."

These three papers were discussed by Drs. Alfred Saenger, Hamburg, Germany; Charles L. Dana, New York; T. D. Crothers, Hartford, Conn.; F. P. Norbury, Kankakee, Ill.; A. E. Sterne, Indianapolis; Frank R. Fry, St. Louis; Philip Zenner, Cincinnati; Hugh T. Patrick, Chicago; Theodore Diller, Pittsburg; Haldor Sneve, St. Paul, Minn.; Herman H. Hoppe, Cincinnati; Joseph Collins, New York; L. Vernon Briggs, New York; and Irwin H. Neff, Foxboro, Mass.

The Chairman appointed as an Executive Committee, and also as a Committee on Nomination of Officers: Drs. Charles L. Dana, New York; H. T. Patrick, Chicago; and F. W. Langdon, Cincinnati.

Dr. Herbert J. Hall, Marblehead, Mass., read a paper on "Manual Work in the Treatment of the Functional Nervous Diseases."

Dr. Haldor Sneve, St. Paul, Minn., read a paper on "The Treatment of Nervous Diseases by Gymnastic and Massage."

These two papers were discussed by Drs. C. R. Woodson, St. Joseph, Mo.; John Punton, Kansas City, Mo.; Frank R. Fry, St. Louis; Philip Zenner, Cincinnati; C. P. Emerson, Clifton Springs, N. Y.; L. H. Mettler, Chicago; Theodore Diller, Pittsburg, Pa.; Herbert J. Hall, Marblehead, Mass.; and Haldor Sneve, St. Paul, Minn.

Wednesday, June 8—Morning

Dr. H. E. Robertson, Minneapolis, read a paper on "Pathology of Anterior Poliomyelitis."

Dr. David Silver, Pittsburg, Pa., read a paper on "The Surgical Treatment of Anterior Poliomyelitis."

These two papers were discussed by Drs. Archibald Church, Chicago; L. H. Mettler, Chicago; P. Bassoe, Chicago; A. L. Skoog, Kansas City; Arthur S. Hamilton, Minneapolis; Nathaniel Allison, St. Louis; Frank R. Fry, St. Louis; C. R. Woodson, St. Joseph, Mo.; C. H. Hughes, St. Louis; H. E. Robertson, Minneapolis; and David Silver, Pittsburg.

Wednesday, June 8—Afternoon

Dr. Herman H. Hoppe, Cincinnati, read a paper on "The Topographical Diagnosis of Subtentorial Tumors."

Dr. Frank Warren Langdon and Simon P. Kramer, Cincinnati, presented a paper on "Brain Tumor of the Psychomotor Area."

Dr. Julius Grinker, Chicago, read a paper on "Tumor of the Cerebello-Pontile Angle."

These three papers were discussed by Drs. C. H. Hughes, St. Louis; George W. Hall, Chicago; A. E. Sterne, Indianapolis; Charles L. Dana, New York; Theodore Diller, Pittsburg, Pa.; D'Orsay Hecht, Chicago; H. H. Hoppe, Cincinnati; and Julius Grinker, Chicago.

Drs. Edward E. Mayer and Otto C. Gaub, Pittsburg, Pa., presented a paper on "Intradural Tumor of Lower Cervical Cord with Operation."

Discussed by Drs. Theodore Diller, Pittsburg, Pa.; Julius Grinker, Chicago; Charles L. Dana, New York; and Edward E. Mayer, Pittsburg, Pa.

Dr. Archibald Church, Chicago, read a paper on "Nervous and Mental Disturbance at the Male Climacteric." No discussion.

Dr. Charles L. Dana, New York, read a paper on "Study and Interpretation of Pains and Dysthesias." Discussed by Drs. Frank R. Fry, St. Louis; John Punton, Kansas City, Mo.; Sanger Brown, Chicago; L. H. Mettler, Chicago; Julius Grinker, Chicago; C. A. Wingerter, Wheeling, W. Va.; William W. Graves, St. Louis; Théodore Diller, Pittsburg; Charles L. Dana, New York.

A resolution was adopted by rising vote in memory of the late Wharton Sinkler.

Dr. E. M. Hummel, New Orleans, read a paper on "Syphilitic Disease of Arteries of the Central Nervous System, with Detailed Report of a Case." Discussed by Drs. William W. Graves, St. Louis; George A. Moleen, Denver; Sanger Brown, Chicago; Theodore Diller, Pittsburg, and E. M. Hummel, New York.

Dr. A. L. Skoog, Kansas City, Mo., read a paper on "Amyotonia Congenita." Discussed by Dr. Theodore Diller, Pittsburg, Pa.

Dr. E. Bosworth McCready, Pittsburg, Pa., read a paper on "The Relation of Stuttering to Amusia." No discussion.

Thursday, June 9—Morning

The following officers of the Section for 1911 were elected: Chairman, W. A. Jones, Minneapolis; Vice Chairman, Herman H. Hoppe, Cincinnati; Secretary, E. E. Southard, Boston; Delegate, Theodore Diller, Pittsburg, Pa.; Alternate, J. H. McBride, Pasadena, Cal.

The resolution deprecating the custom of printing details of suicides was adopted as the sense of the Section, and the action was ordered referred to the House of Delegates of the American Medical Association for action. [See next page, first column; see also The Journal, June 18, 1910, page 2076.]

Dr. Alfred Saenger, Hamburg, Germany, read an address on "Choked Disc in Its Relation to Cerebral Tumor and Trepanning." Discussed by Drs. J. Herbert Parsons, London; Julius Grinker, Chicago; J. Bordley, Jr., Baltimore; N. M. Black, Milwaukee, Wis., and Alfred Saenger, Hamburg, Germany.

Dr. Alfred Saenger, Hamburg, Germany, illustrated and discussed Wilbrand's prism test.

Dr. W. W. Graves presented two cases, one of brain tumor and another of a condition of hemianopsia, etc., resulting from skull fracture. Discussed by Dr. Alfred Saenger, Hamburg, Germany.

Dr. John Punton, Kansas City, Mo., read a paper on "The Plea of Insanity as a Defense for Crime and Its Remedy." Discussed by Drs. Louise G. Robinovitch, New York; David S. Booth, St. Louis; A. E. Sterne, Indianapolis; George A. Moleen, Denver; C. W. Thierny, St. Louis; L. V. Briggs, Boston; C. A. Wingerter, Wheeling, W. Va.; C. R. Woodson, St. Joseph, Mo.; Edward Bow, Jacksonville, Ill.; John Punton, Kansas City, Mo.; S. G. Burnett, Kansas City, Mo., and Sanger Brown, Chicago.

Drs. W. A. Jones and Arthur S. Hamilton, Minneapolis, presented a paper on "Hemiplegia Following Acute Infections." Discussed by Drs. M. M. Perry, Parsons, Kan.; Sanger Brown, Chicago; L. H. Mettler, Chicago, and W. A. Jones, Minneapolis.

Dr. George E. Pettey, Memphis, Tenn., read a paper on "The Treatment of Acute Ailments Occurring in Persons Addicted to Narcotic Drugs." No discussion.

Dr. George Edward Fell, Buffalo, N. Y., read a paper on "Twenty Years of Electrocution." No discussion.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Tuesday, June 7—Afternoon

The Section was called to order at 2 p. m., in Association Hall, by the Chairman, Dr. J. N. Hurty, Indianapolis.

The Chairman read his address on "The Bookkeeping of Humanity." On motion of Dr. P. M. Townsend, Marshalltown, Iowa, duly seconded, the paper was referred to a committee of three, appointed by the Secretary, Dr. Marshall L. Price, Baltimore (temporarily acting as chairman), as follows: Dr. W. R. Batt, Harrisburg, Pa.; Dr. C. H. Jones, Baltimore, and Dr. P. M. Townsend, Marshalltown, Iowa. Discussed by Drs. Prince A. Morrow, New York; W. F. Snow, Sacramento, Cal.; Arthur Reynolds, Chicago, P. M. Townsend, Marshalltown, Iowa; Henry B. Hemenway, Evanston, Ill., and J. N. Hurty, Indianapolis.

Dr. Walter P. Bierring, Iowa City, Iowa, read a paper on "The Rôle of Pathology and Physiology in Preventive Medicine."

Dr. Joseph P. Remington, Philadelphia, read a paper on "The Rôle of Pharmacy in Preventive Medicine."

These two papers were discussed by Drs. [illegible], Philadelphia, and William Le Roy Dunn, Asheville, N. C.; W. A. Evans, Chicago; Liston H. Montgomery, Chicago; J. N. Hurty, Indianapolis, George Edward Fell, Buffalo, N. Y.; Walter P. Bierring, Iowa City, Iowa, and Joseph P. Remington, Philadelphia.

Dr. G. Lloyd Magruder, Washington, D. C., read a paper entitled "Further Observations on the Milk Supply of Washington, D. C.," with illustrative lantern slides. Discussed by Drs. William C. M. Woodward, Washington, D. C.; William H. Welch, Baltimore; B. Franklin Royer, Harrisburg, Pa.; Will iam Edward Grant, Louisville, Ky.; Seneca Egbert, Philadelphia. A vote of thanks to the author of the paper, Dr. Magruder, was moved by Dr. W. Forrest Dutton, Carnegie, Pa., and given.

The Secretary, on behalf of the officers of the Section, then nominated for associate membership in the American Medical Association John M. Glenn of New York, director of the Russell Sage Foundation. The report was adopted, and the nomination referred to the House of Delegates.

Wednesday, June 8—Morning

Dr. Henry B. Hemenway, Evanston, Ill., offered the following resolution:

> According to the published reports of the Census Bureau there has been a great and marked increase in the number of suicides in this country. The death-rate from this cause per hundred thousand was as follows: 1902, 12.7; 1903, 13.9; 1904, 14.8; 1905, 16.1; 1906, 14.3; 1907, 16.2; 1908, 18.5. An increase of practically 50 per cent. in the seven years demands investigation and energetic action. The publication in the secular papers of these unfortunate occurrences can do no one good; on the other hand, it is well recognized by those in a position to judge that such publication has a powerful suggestive effect on susceptible individuals, and it is unquestionably one of the most active causes of this form of death; therefore, be it
>
> *Resolved*, That such publication of accounts of suicides is detrimental to the good of the people in this country, and that we request the House of Delegates to take action in the case by requesting the press of the land to stop such publication; and, further, that the Legislative Committee be instructed to further the enactment of a national law forbidding the use of the mails by any paper making such publication; and, further, that the same committee be instructed to assist in the passage of state laws making such publication a misdemeanor and providing suitable punishment therefor.

This resolution was approved by the Section for submission to the House of Delegates. [The House adopted a substitute of similar import. The Journal, June 18, page 2076.]

The Chairman appointed as a Committee on Nominations Drs. W. Forrest Dutton, Carnegie, Pa.; T. R. Crowder, Chicago, and J. E. King, Richmond, Ind.

Dr. Wilmer R. Batt, Harrisburg, Pa., on behalf of the committee to which the Chairman's address was referred, recommended its early publication and wide distribution.

The Chairman explained that he had not, in the session of June 7, 1910, given Dr. G. Lloyd Magruder opportunity to make the final statement in regard to the latter's paper, "Further Observations on the Milk-Supply of Washington, D. C." Dr. Magruder then spoke.

Dr. Seneca Egbert, Philadelphia, read the Oration on State Medicine and Hygiene. Discussed by Drs. Henry B. Hemenway, Evanston, Ill.; W. A. Evans, Chicago; Rosalie Slaughter Morton, New York; Arthur Reynolds, Chicago; William C. Woodward, Washington, D. C.; John H. White, New Orleans; Mazyck P. Ravenel, Madison, Wis. Dr. Marshall Langton Price, Baltimore, moved a vote of thanks to Dr. Egbert, which was given.

Dr. Henry B. Hemenway, Evanston, Ill., offered the following resolution:

> Whereas, Public health administration is greatly helped by popular education and cannot advance far beyond the state of common knowledge; and
>
> Whereas, Our literary colleges and normal schools to-day give practically no instruction of this kind; and
>
> Whereas, Much of the instruction in the graded schools of the land is based on misinformation; therefore be it
>
> *Resolved*, That such instruction by lectures or otherwise should be given in every such institution of learning, and
>
> *Resolved*, That the House of Delegates be asked to appoint a committee to promote a course of instruction in all literary colleges and normal schools.

This was adopted for submission to the House of Delegates [which referred it to the newly-formed Council on Health and Public Instruction. The Journal, June 18, page 2076.]

Dr. Joseph Collins, New York, read a paper on "The Epidemiology of Poliomyelitis and Cerebrospinal Meningitis." Discussed by J. N. Hurty, Indianapolis.

Dr. Hiram Woods, Baltimore, read a paper on "The Rôle of Ophthalmology in Preventive Medicine." Discussed by Drs. Leartus Connor, Detroit; Prince A. Morrow, New York; Seneca Egbert, Philadelphia; Henry B. Hemenway, Evanston, Ill.; W. Forrest Dutton, Carnegie, Pa.; and Hiram Woods, Baltimore.

Dr. Thomas S. Southworth, New York, read a paper on "The Rôle of Pediatrics in Preventive Medicine." No discussion.

Wednesday, June 8—Morning

The following papers were read and discussed as a symposium on Hookworm and Pellagra:

Dr. John D. Long, Washington, D. C.: "Pellagra," illustrated by lantern slides.

Dr. Charles W. Stiles, Washington, D. C.: "Sanitary Phases of the Hookworm Problem," illustrated by lantern slides.

Dr. Allen W. Freeman, Richmond, Va.: "Hookworm Disease; The Farm; the Next Point of Attack in Sanitary Progress."

These three papers were discussed by Drs. Marshall Langton Price, Baltimore; John L. Jelks, Memphis, Tenn.; C. C. Bass, New Orleans; James W. Babcock, Columbia, S. C.; William L. Medling, Nashville, Tenn.; Seneca Egbert, Philadelphia; John D. Long, Washington, D. C.; Charles W. Stiles, Washington, D. C.; J. N. Hurty, Indianapolis, Ind., and Allen W. Freeman, Richmond, Va.

Dr. W. Forrest Dutton, Carnegie, Pa., read a paper on "Present-Day Problems and Progress in Prevention of Typhoid Fever."

Dr. George Edward Fell, Buffalo, N. Y., read a paper on "The Currents at the Eastern End of Lake Erie and the Head of Niagara River: Their Influence on the Sanitation of the City of Buffalo, N. Y.," illustrated with lantern slides.

These two papers were discussed by Drs. H. W. Hill, Minneapolis; C. Hampson Jones, Baltimore; Liston H. Montgomery, Chicago; W. Forrest Dutton, Carnegie, Pa., and Seneca Egbert, Philadelphia.

Dr. I. D. Rawlings, Chicago, read a paper on "The Campaign Against Diphtheria and Scarlet Fever in Chicago."

Dr. C. Hampson Jones, Baltimore, read a paper on "What Can Health Departments Do to Control Scarlet Fever?"

These two papers were discussed by Drs. Henry B. Hemenway, Evanston, Ill.; B. Franklin Royer, Harrisburg, Pa.; H. W. Hill, Minneapolis; Seneca Egbert, Philadelphia; R. M. Winn, Hannibal, Mo.; G. Koehler, Chicago; H. Delamater, Kansas City, Mo.; I. D. Rawlings, Chicago, and C. Hampson Jones, Baltimore.

By motion duly made and carried, Papers 15 and 16 were made the first order of business for the ensuing meeting.

Thursday, June 9—Morning

Dr. T. D. Crothers, Hartford, Conn., read a paper on "The Relation of Alcoholism and Drug Addictions to Preventive Medicine." Discussed by Drs. Liston H. Montgomery, Chicago, and J. N. Hurty, Indianapolis.

Dr. W. Forrest Dutton, Carnegie, Pa., Chairman of Committee on Nominations, submitted the following nominations: Chairman, Dr. W. A. Evans, Chicago; Vice-Chairman, Dr. Marshall Langton Price, Baltimore; Secretary, Dr. C. Hampson Jones, Baltimore, Md.; Delegate, Dr. J. N. Hurty, Indianapolis; Alternate, Dr. J. H. White, New Orleans. The Secretary was instructed to cast the ballot for these nominees, and they were declared elected.

Dr. Arthur Reynolds moved the nomination of Dr. W. A. Evans, Chicago, as Orator on State Medicine and Hygiene, which was seconded, and Dr. Evans was elected, and made a stirring speech foreshadowing the creation of a Council on Public Health, whose function should largely be the coordination of work now done nation-wide in the interests of public health.

Dr. W. C. Gorgas, Ancon, Canal Zone, declared his sympathy with the Chairman-Elect's program for widening the scope of the Section.

Dr. Arthur Reynolds, Chicago, moved "That the Chairman of this Section be empowered to appoint such committees as in his judgment seem wise, to carry out the purposes he has outlined." Seconded and carried.

Dr. Miles F. Porter, Fort Wayne, Ind., read a paper on "The Rôle of Surgery in Preventive Medicine." Discussed by Drs. J. N. Hurty, Indianapolis; Seneca Egbert, Philadelphia; Liston H. Montgomery, Chicago; H. W. Hill, Minneapolis, and Walter P. Manton, Detroit.

Dr. Walter P. Manton, Detroit, read a paper on "The Rôle of Obstetrics in Preventive Medicine." Discussed by Drs. J. N. Hurty, Indianapolis; Henry B. Hemenway, Evanston, Ill.; P. M. Townsend, Marshalltown, Iowa; Charles W. Stiles, Washington, D. C.; C. Hampson Jones, Baltimore; Seneca Egbert, Philadelphia, and Walter P. Manton, Detroit.

Dr. J. J. Kyle, Indianapolis, read a paper on "The Rôle of Rhinology and Otology in Preventive Medicine." Discussed by Drs. Robert Levy, Denver; J. D. MacLaren, Norman, Okla.; H. W. Hill, Minneapolis; Liston H. Montgomery, Chicago; William H. Rush, St. Louis, and J. J. Kyle, Indianapolis.

Dr. Hibbert W. Hill, Minneapolis, read a paper on "Acute Epidemic Anterior Poliomyelitis." Discussed by Drs. J. M. Allen, Liberty, Mo.; Hibbert W. Hill, Minneapolis; W. Forrest Dutton, Carnegie, Pa.; Julius Lingenfelder, West Point, Neb., and Seneca Egbert, Philadelphia.

Dr. W. H. Rennie, Washington, D. C., read a paper on "The Relation of Recruiting to Preventive Medicine." Discussed by Drs. Marshall Langton Price, Baltimore, and J. N. Hurty, Indianapolis.

Dr. Henry B. Hemenway, Evanston, Ill., read a paper on "Legal Aspects of Domestic Quarantine." Discussed by Drs. John H. White, New Orleans; B. Franklin Royer, Harrisburg, Pa.; W. A. Evans, Chicago; W. F. Snow, Sacramento, Cal., and Henry B. Hemenway, Evanston, Ill.

The Chairman, with assent of the Section, arranged to send a telegram of sympathy and regret to Dr. H. M. Bracken, Minneapolis, who was reported to be ill with typhoid fever.

Thursday, June 9—Afternoon

Dr. Hyman Cohen, Chicago, read a paper on "House Quarantine." Discussed by Drs. B. Franklin Royer, Harrisburg, Pa.; Seneca Egbert, Philadelphia; I. D. Rawlings, Chicago, and Hyman Cohen, Chicago.

A paper by Dr. John H. White, New Orleans, on "The Permanent Elimination of Yellow Fever from the Earth," was read by Dr. Henry B. Hemenway, Evanston, Ill. No discussion.

Dr. Charles W. Stiles, Washington, D. C., exhibited two models of privies, describing details of construction and choice of color of paint to be applied, stating that flies were attracted by light colors, mosquitoes by dark colors; and further, that he had succeeded in placing privy construction on the manual training curricula of some schools. Discussed by Drs. J. N. Hurty, Indianapolis; Seneca Egbert, Philadelphia, and H. W. Hill, Minneapolis.

Dr. D. T. Quigley, North Platte, Neb., read a paper on "The Work of Prevention in Nebraska." Discussed by Dr. J. N. Hurty, Indianapolis.

Dr. W. A. Evans, Chicago, read a paper on "The Ventilation of School Buildings." Discussed by Drs. Henry B. Hemenway, Evanston, Ill.; Seneca Egbert, Philadelphia; J. N. Hurty, Indianapolis, and W. A. Evans, Chicago.

Dr. Gottfried Koehler, Chicago, read a paper by himself, and Dr. C. St. Clair Drake, Chicago, on "The Prevention of Infant Mortality." No discussion.

Dr. Fred O. Tonney, Chicago, read a paper on "Tuberculosis in the Raw Milk-Supply of Chicago." Discussed by Drs. W. A. Evans, Chicago, and Fred O. Tonney, Chicago.

Dr. B. L. Arms, Boston, read a paper on "The Strauss Reaction for the Diagnosis of Glanders." Discussed by Drs. H. W. Hill, Minneapolis, and B. L. Arms, Boston.

Installation of the officers-elect then followed, and the Section adjourned for 1910.

SECTION ON STOMATOLOGY

Tuesday, June 7—Afternoon

The meeting was called to order by the Chairman, Dr. Thomas L. Gilmer, Chicago, at 2:30 p. m., in Small Hall, Y. M. C. A. Building.

The Chairman then read his address. Discussed by Drs. M. H. Fletcher, Cincinnati; Frederick B. Noyes, Chicago; James E. Power, Providence, R. I.; Eugene S. Talbot, Chicago.

The Chairman appointed the three following as members of the Executive Committee: Drs. William E. Fisher, New York; J. E. Power, Providence, R. I.; Frederick B. Noyes, Chicago.

Dr. Stewart L. McCurdy, Pittsburg, Pa., read a paper on "The Pathology and Treatment of Alveolar Abscess." Discussed by Drs. George V. I. Brown, Milwaukee, Wis.; J. E. Power, Providence, R. I.; William E. Fisher, New York; Eugene S. Talbot, Chicago; Frederick Noyes, Chicago, and C. W. Harned, Iowa City, Iowa.

Dr. Frederick B. Noyes, Chicago, read a paper on "The Relation of the Teeth to the Development of the Jaws and the Face." Discussed by Drs. M. H. Fletcher, Cincinnati; B. E. Lischer, St. Louis; J. Porter Farm, Ardmore, Okla.; Stewart L. McCurdy, Pittsburg, Pa., and Eugene S. Talbot, Chicago.

Dr. Nelson M. Black, Milwaukee, Wis., read a paper on "Improvement in the General Health of Children Having an Inclination toward Nasal Stenosis by Widening the Nasal Arch." Discussed by Drs. J. Porter Farm, Ardmore, Okla.; Richard Summa, St. Louis; Frederick B. Noyes, Chicago; George V. I. Brown, Milwaukee, Wis., and Eugene S. Talbot, Chicago.

Wednesday, June 8—Morning

A Committee on Nominations was appointed as follows: Drs. M. H. Fletcher, Cincinnati; L. P. Bethel, Columbus, Ohio, and J. E. Power, Providence, R. I.

A symposium was presented on "How Shall the Stomatologist be Educated," by Drs. Eugene S. Talbot, Chicago; James E. Power, Providence, R. I.; M. H. Cryer, Philadelphia.

These three papers were discussed by Drs. J. N. Farrar, New York; Arthur R. Dray, Philadelphia; Eugene H. Smith, Boston; M. H. Fletcher, Cincinnati; Stewart L. McCurdy, Pittsburg, Pa.; J. P. Gray, Nashville, Tenn.; N. P. Colwell, Chicago; Arthur Dean Bevan, Chicago; John M. Dodson, Chicago; Frederick B. Noyes, Chicago; G. V. I. Brown, Milwaukee; Fred C. Zapffe, Chicago; H. A. Potts, Chicago; J. M. Matthews, Liberty, Mo.; T. W. Brophy, Chicago.

On recommendation of the Secretary the following resolution was passed:

> *Resolved*, That a committee of three be appointed by the chairman to confer with the Association of American Medical Colleges and the Council on Medical Education of the American Medical Association and with such other bodies and individuals as may be necessary to bring about harmonious results in stomatologic education.

Wednesday, June 8—Afternoon

Dr. M. H. Fletcher, Cincinnati, read a paper entitled "A Study of the Repair of the Cementum." Discussed by Drs. Frederick Noyes, Chicago; G. V. I. Brown, Milwaukee, Wis.; T. W. Brophy, Chicago; Eugene S. Talbot, Chicago; William E. Fisher, New York, and Frederick B. Noyes, Chicago.

Dr. Henry R. Harrower, Chicago, read a paper on "Metabolism and Mouth Disease." Discussed by Drs. Eugene S. Talbot, Chicago, and G. V. I. Brown, Milwaukee, Wis.

Dr. Herbert A. Potts, Chicago, read a paper on "The Teeth as a Factor in Pathogenesis."

Dr. Frederick B. Moorehead, Chicago, read a paper on "The Teeth and Alveolar Processes as Points of Entrance for the Tubercle Bacillus."

These two papers were discussed by Drs. James E. Power, Providence, R. I.; M. H. Fletcher, Cincinnati; T. W. Brophy, Chicago; Eugene S. Talbot, Chicago; William E. Fisher, New York; V. P. Blair, St. Louis; Stewart L. McCurdy, Pittsburg, Pa.; H. A. Potts and F. B. Moorehead, Chicago.

The Chairman appointed a Committee on Stomatologic Education, as specified above, as follows: Chairman, Dr. Eugene S. Talbot, Chicago; Dr. H. E. Potts, Chicago, and Dr. Frederick B. Moorehead, Chicago.

Thursday, June 9—Morning

On recommendation of the Nominating Committee, the following officers were elected for the ensuing year: Chairman, Dr. S. L. McCurdy, Pittsburg; Vice Chairman, Dr. Virgil Loeb, St. Louis; Secretary, Dr. Eugene S. Talbot, Chicago; Delegate, Dr. G. V. I. Brown, Milwaukee, Wis.; Alternate, Dr. M. H. Fletcher, Cincinnati.

Dr. Lee Wallace Dean, Iowa City, Iowa, read a paper on "The Influence on the Nose of Widening the Palatal Arch." Discussed by Drs. G. V. I. Brown, Milwaukee, Wis.; Eugene S. Talbot, Chicago; Stewart L. McCurdy, Pittsburg, Pa.; L. P. Bethel, Columbus, Ohio, and M. H. Fletcher, Cincinnati.

Dr. James E. Power, Providence, R. I., read a paper on "The Value of Vaccines in Oral Surgery." Discussed by Drs. G. V. I. Brown, Milwaukee, Wis.; Stewart L. McCurdy, Pittsburg, Pa.; W. E. Fisher, New York; M. H. Fletcher, Cincinnati; L. W. Dean, Iowa City, Iowa, and Eugene S. Talbot, Chicago.

Dr. G. V. I. Brown, Milwaukee, Wis., read a paper on "The Surgical Principles of Hair Lip Operations." Discussed by Drs. Stewart L. McCurdy, Pittsburg, Pa., and M. H. Fletcher, Cincinnati.

Dr. Bertha E. Bush, Chicago, read a paper on "The Close Relations between the Physician and the Dentist." Discussed by Dr. Lee Wallace Dean.

Dr. Charles M. Whitney, Boston, read a paper on "The Mouth Lesions of Syphilis and the Dangers Arising Therefrom." Discussed by Dr. Stewart L. McCurdy, Pittsburg, Pa.

Dr. Vida A. Latham, Chicago, read a paper on "Systemic Conditions in Relation to Oral Symptoms; Pain, Fetor and Sepsis." Discussed by Drs. G. V. I. Brown, Milwaukee, Wis., and M. H. Fletcher, Cincinnati.

SECTION ON DISEASES OF CHILDREN

Tuesday, June 7—Afternoon

The meeting was called to order at 2 p. m., in Grand Avenue Presbyterian Church, by the Chairman, Dr. William J. Butler, Chicago, who then read his address entitled, "Enteroptosis in Children."

Drs. Samuel M. Hamill and Kenneth D. Blackfan, Philadelphia, presented a paper on "The Diagnosis and Treatment of Chronic Intestinal Indigestion in Children." Discussed by Drs. H. B. Coit, Newark, N. J.; C. G. Kerley, New York; L. T. Royster, Norfolk, Va.; H. M. McClanahan, Omaha, Neb.; E. E. Graham, Philadelphia; John Lovett Morse, Boston; F. B. Talbot, Boston, and S. M. Hamill.

Dr. Thomas D. Parke, Birmingham, Ala., read a paper on "Further Report of Cases with Complicating Ileocolitis and Probably Due to Acidosis." Discussed by Drs. John Zahorsky, St. Louis; Isaac A. Abt, Chicago, and T. D. Parke, Birmingham, Ala.

Dr. C. Gilmore Kerley, New York, read a paper on "Atypical Scarlet Fever." Discussed by Drs. O. T. Moore, St. Louis; S. E. Munson, Springfield, Ill.; Kepler, Michigan, and C. G. Kerley, New York.

Dr. H. M. Folkes, Biloxi, Miss., read a paper on "Infectious Diseases in Negro Children." Discussed by Drs. L. T. Royster, Norfolk, Va., and H. M. Folkes, Biloxi, Miss.

Dr. John Lovett Morse, Boston, read a paper on "Agar-Agar in the Treatment of Constipation in Childhood." Discussed by Drs. Alfred Friedlander, Cincinnati; C. G. Kerley, New York; Godfrey R. Pisek, New York, and J. L. Morse, Boston.

The Secretary read a letter from Trustees of the American Medical Association concerning the establishment of a pediatric journal, and moved that the Section endorse the proposition and that the matter be referred to the Executive Committee of the Section with power to act. Discussed by Drs. William Butler, Chicago; C. G. Kerley, New York; J. M. Dodson, Chicago; A. C. Cotton, Chicago; D. W. Graham, Chicago; F. S. Churchill, Chicago; G. H. E. Rosamond, Memphis; and J. W. Van Derslice, Chicago.

Wednesday, June 8—Morning

Drs. Jerome S. Leopold, New York, and I. Rosenstern, Berlin, presented a paper on "The Significance of Tuberculides in the Diagnosis of Tuberculosis in Infants." Discussed by Drs. F. C. Neff, Kansas City, Mo.; Frank Gengenbach, Denver; W. D. Hoskins, Indianapolis; C. F. Wahrer, Fort Madison, Iowa; C. G. Kerley, New York, and J. S. Leopold, New York.

Theodore J. Elterich, Pittsburg, Pa., read a paper on "A Clinical Study of a Case of Pseudoleucemic Anemia of Infancy." Discussed by Drs. J. B. Hultgen, Chicago; C. F. Wahrer, Fort Madison, Iowa, and T. J. Elterich, Pittsburg, Pa.

Dr. A. D. Bevan, Chicago, read a paper on "The Surgical Treatment of Congenital Pyloric Stenosis." Discussed by Drs. H. M. McClanahan, Omaha; John Lovett Morse, Boston; Isaac A. Abt, Chicago; E. J. Porteous, Atlantic City, N. J.; C. G. Kerley, New York; H. Stern, New York; Katherine B. Richardson, Kansas City, Mo.; F. B. Talbot, Boston; F. S. Churchill, Chicago; Frank Gengenbach, Denver; H. L. Coit, Newark, N. J.; William Butler, Chicago, and A. D. Bevan, Chicago.

Dr. H. M. McClanahan, Omaha, Neb., read a paper entitled, "A Brief History of the Nebraska Epidemic of Poliomyelitis." Discussed by Drs. C. A. Anderson, Stromsburg, Neb.; E. H. Bartley, New York, and H. M. McClanahan, Omaha, Neb.

Dr. J. W. Van Derslice, Chicago, read a paper on "Rachitis." No discussion.

Dr. Heinrich Stern, New York, read a paper on "Blood-Letting in Children." Discussed by Drs. E. M. Sill, New York; A Jacobi, New York; William Butler, Chicago, and H. Stern, New York.

Dr. H. L. Coit, Newark N. J., presented an instrument for determining temperature in sterilization of milk.

Wednesday, June 8—Afternoon

The following four papers were discussed together:

Dr. A. C. Cotton, Chicago, "Disturbances of Lactation."

Dr. Charles Douglas, Detroit, "Feeding of Fats to Infants and Difficulties Encountered in Feeding Them."

Dr. F. B. Talbot, Boston, "The Digestion of Fat in Infancy."

Dr. Thomas S. Southworth, New York, "Complemental Feeding of the Infant as an Effective Aid in Maintaining Maternal Nursing."

These four papers were discussed by Drs. John Zahorsky, St. Louis; Ella Davis, Chicago; J. P. Sedgwick, Minneapolis; John Lovett Morse, Boston; C. F. Wahrer, Fort Madison, Iowa; Jules M. Brady, St. Louis; C. G. Kerley, New York; A. C. Cotton, Chicago; Charles Douglas, Detroit; F. B. Talbot, Boston, and T. S. Southworth, New York.

Drs. Jerome Alexander and Jesse G. M. Bullowa, New York, presented a paper on "The Influence of Colloidal Protection on Milk." Discussed by Drs. F. S. Churchill, Chicago; E. H. Bartley, New York; Thomas S. Southworth, New York, and Jerome Alexander, New York.

Dr. J. P. Sedgwick, Minneapolis, read a paper on "Creatinin and Creatin Metabolism in Children." No discussion.

Dr. E. H. Bartley, New York, offered the following resolution, which was carried:

> *Resolved*, That the Chairman of this section appoint a committee of three members to be known as the Committee on Hygiene and Publicity to act in conjunction with or under the direction of the proposed Committee on Health and Public Instruction of the American Medical Association.

The Chairman appointed the following on that committee: Drs. E. H. Bartley, New York; A. C. Cotton, Chicago, and Dr. C. G. Kerley, New York.

Thursday, June 9—Morning

Dr. Isaac A. Abt, Chicago, read a paper on "A Case of Amaurotic Family Idiocy with Autopsy and Histologic Report." Discussed by Drs. John Lovett Morse, Boston, and I. A. Abt, Chicago.

Dr. C. C. Rogers, Chicago, read a paper on "Intracranial Surgical Lesions in Children." Discussed by Drs. E. H. Abbott, Elgin, Ill.; C. G. Kerley, New York, and C. C. Rogers, Chicago.

Dr. Samuel Lloyd, New York, read a paper on "Surgical Treatment of Empyema." Discussed by Drs. E. E. Graham, Philadelphia; I. A. Abt, Chicago; C. C. Rogers, Chicago, and Samuel Lloyd, New York.

Dr. J. Ross Snyder, Birmingham, Ala., presented the report of the Nominating Committee, recommending the election of the following officers: Chairman, Dr. Samuel M. Hamill, Philadelphia; Vice-Chairman, Dr. Thomas D. Parke, Birmingham, Ala.; Secretary, Dr. L. T. Royster, Norfolk, Va.; Delegate, Dr. A. C. Cotton, Chicago.

The report as read was adopted and the officers were elected.

Dr. Snyder presented the report of the Executive Committee as follows:

> In compliance with a motion adopted in the Section on the day previous, your Executive Committee held a meeting at 8:30 a. m., June 8, 1910, to take action on the proposed establishment of a special journal devoted to the diseases of children. After unanimously voting approval of the recommendation to the Board of Trustees for the publication of a journal of this nature, the Executive Committee adjourned to meet a committee appointed some time ago by the Board of Trustees to consider the desirability of such a journal, its name, its purposes and scope, manner of publication, etc. At this joint committee meeting it was voted to recommend to the Trustees that the proposed journal be called the *American Journal of the Diseases of Children*. The following recommendations were also adopted: that it should contain original articles and abstracts; that it should contain an occasional complete review, compiled by men appointed by the executive board; that it should begin as a bimonthly of approximately 64 pages in each issue; that it should be of smaller size than the *Archives of Internal Medicine*; that the editors should elect their own chairman; and that the subscription price be determined by the Trustees.
>
> The Russell Sage Foundation, Department of Child-Helping, asks that the Section lend its endorsement to the particular kind of work that this department is carrying on. A feature of this work is the placing of infants from foundling asylums, the training of social workers, etc. Several members of your committee are familiar with the nature and character of this work. The work has been endorsed by the American Pediatric Society. Therefore, the committee would recommend that the Section lend its approval to the work of the Department of Child-Helping, Russell Sage Foundation.

It was moved by Dr. G. R. Pisek, New York, seconded and carried, that the report as read be adopted.

Dr. Samuel W. Kelley, Cleveland, read a paper on "Surgical Mistakes in Practice on Infants and Children." Discussed by Drs. Frank Gengenbach, Denver; John Zahorsky, St. Louis, and S. W. Kelley, St. Louis.

Dr. E. Mather Sill, New York, read a paper entitled "Dietary Studies of Undernourished School Children in New York City." Discussed by Drs. N. R. Coleman, Columbus, Ohio; C. F. Wahrer, Fort Madison, Iowa; C. G. Kerley, New York; S. W. Kelley, Cleveland; G. M. Cattermole, Colorado.

President William H. Welch addressed the Section.

Thursday, June 9—Afternoon

Dr. S. G. Gant, New York, read a paper on "Treatment of Some Colonic, Sigmoidal, Rectal and Anal Affections Common to Infancy and Childhood." Discussed by Drs. L. J. Hirschman, Detroit; C. F. Wahrer, Fort Madison, Iowa; G. S. Hanes, Louisville, Ky.; E. H. Thrailkill, Kansas City, Mo., and S. G. Gant, New York.

Drs. Louis A. Levison and Harry Dachtler, Toledo, Ohio, read a paper on "A Clinical and Roentgenographic Study of the Essential Differences Between the Physical Findings in Childhood and Adult Life." Discussed by Dr. F. Smithies, Ann Arbor, Mich.

Dr. C. F. Wahrer, Fort Madison, Iowa, read a paper on ‘Foibles in Specialism." No discussion.

Drs. Eli Long and E. Caldwell, New York, presented a paper on "A Study of the Anatomic Index in Children." Discussed by Drs. Cattermole, Colorado, and Eli Long, New York.

Dr. L. T. Royster, Norfolk, Va., read a paper on "The Prevention of Infant Mortality from an Educational Point of View." Discussed by Dr. S. W. Kelley, Cleveland.

Dr. H. W. Cheney, Chicago, read a paper on "Subnormal Temperature in Infancy." Discussed by Drs. J. S. Leopold, New York; Godfrey R. Pisek, New York; William Batler, Chicago; Frank Gengenbach, Denver, and H. W. Cheney, Chicago.

SECTION ON DERMATOLOGY

TUESDAY, JUNE 7—AFTERNOON

The Section was called to order at 2 p. m. in Odeon Recital Hall by the Chairman, Dr. Grover W. Wende, Buffalo, who delivered an address on "Dermatology in General Practice."

Dr. Frank Crozer Knowles, Philadelphia, read a paper on "Purpura Caused by the Ingestion of the Iodids." Discussed by Drs. Howard Fox, New York; J. A. Fordyce, New York, and F. C. Knowles, Philadelphia.

Dr. Alfred Schalek, Omaha, Neb., read a paper on "Pemphigus Foliaceus. Report of a Case." Discussed by Drs. M. McMahon, Palmyra, Ill.; H. H. Hazen, Washington, D. C.; E. S. Lain, Oklahoma City, and A. Schalek, Omaha, Neb.

Dr. Charles J. White, Boston, read a paper on "Alopecia." Discussed by Drs. William O. Roop, Dayton; Frank C. Knowles, Philadelphia; J. M. King, Nashville; Alfred Schalek, Omaha; J. B. Kessler, Iowa City; Isadore Dyer, New Orleans; M. L. Heidingsfeld, Cincinnati; William Frick, Kansas City; William A. Pusey, Chicago; J. Grindon, St. Louis; J. B. Kessler, Iowa City, Iowa; Frances Rowley, Galveston, Tex., and C. J. White, Boston.

Dr. William Frick, Kansas City, Mo., read a paper on "Dermatitis Exfoliativa." Discussed by Dr. Frank C. Knowles, Philadelphia.

Drs. William T. Corlett and Harold Newton Cole, Cleveland, presented "A Report of Three Epidemics of Anomalous Scarlet Fever." Discussed by Dr. W. L. Baum, Chicago.

The Chairman named the following Nominating Committee: Drs. Charles J. White, W. L. Baum and Howard Fox.

WEDNESDAY, JUNE 8—MORNING

This was a clinical meeting.

Dr. R. P. Price, Nevada, Mo., presented two cases of pellagra from the Missouri State Hospital, No. 3. These cases were discussed by Drs. A. Ravogli, Cincinnati; James W. Babcock, Columbia, S. C.; William T. Corlett, Cleveland; J. W. King, Nashville, Tenn., and John D. Long, United States Marine and Public Health Hospital Service, Washington, D. C.

WEDNESDAY, JUNE 8—AFTERNOON

The following five papers were read and discussed as a Symposium on Cancer:

Dr. Leo Loeb, Philadelphia: "The Present Status of the Etiology of Malignant Growths of the Skin."

Dr. John A. Fordyce, New York: "Pathology of the Malignant Growths of Epithelial Tissue," with lantern-slide demonstrations.

Dr. F. B. Mallory, Boston: "Pathology of Malignant Diseases of Non-Epithelial Formation," with lantern-slide demonstrations.

Dr. Joseph C. Bloodgood, Baltimore: "Surgical Treatment of Cutaneous Malignant Growths."

Dr. William Allen Pusey, Chicago: "Treatment of Malignant Growths of the Skin from a Dermatologic Standpoint."

These five papers were discussed by Drs. E. R. LeCount, Chicago; G. W. Jobling, Chicago; F. B. Mallory, Boston; J. W. Vaughan, Detroit; Willy Meyer, New York; William T. Corlett, Cleveland; A. Ravogli, Cincinnati; J. A. Fordyce, New York; J. C. Bloodgood, Baltimore, and W. A. Pusey, Chicago.

On motion of Dr. Corlett, a vote of thanks was extended to those who had participated in this symposium, and especially to those who were not members of the Section.

On motion the election of officers, scheduled for Thursday morning, was postponed until the afternoon session.

THURSDAY, JUNE 9—MORNING

This was a clinical session.

Dr. George A. Zeller, Superintendent of the State Hospital at Peoria, Ill., presented a number of pellagra cases. Discussed by Drs. James W. Babcock, Columbia, S. C.; Marcus Haase, Memphis, Tenn.; [illegible]; Oliver S. Ormsby, Chicago; Howard Fox, New York; Isadore Dyer, New Orleans, and A. J. [illegible], [illegible], Ala.

On motion of Dr. William A. Pusey, Chicago, seconded by Dr. M. L. Heidingsfeld, Cincinnati, a vote of thanks was unanimously extended to the Board of Administration of the State of Illinois and to the Board of Managers of the Missouri State Hospital No. 3, at Nevada, Mo., for their kindness and interest in sending a number of pellagra patients to this meeting, where they had afforded unusual opportunity for the study and investigation of this very important subject; also to Drs. Zeller, Lamson, Price and Babcock and others, who had assisted in this valuable presentation.

THURSDAY, JUNE 9—AFTERNOON

Dr. James N. Hyde, Chicago, presented a paper on the "Results of Experience with the Noguchi Modification of the Wassermann Serodiagnosis Test for Syphilis," which was read by Dr. J. F. Waugh, Chicago.

Dr. B. C. Corbus, Chicago, read a paper entitled "Two Years' Experience with the Wassermann Reaction in Practice, being a Preliminary Report on Fifty-seven Cases Treated from the Standpoint of the Wassermann Reaction."

These two papers were discussed by Drs. J. Grindon, St. Louis; M. L. Heidingsfeld, Cincinnati; J. A. Fordyce, New York; William Litterer, Nashville, Tenn.; W. T. Corlett, Cleveland; Alfred Schalek, Omaha; E. H. Martin, Hot Springs, Ark.; Edward Bowe, Jacksonville, Ill.; Oliver S. Ormsby, Chicago; V. J. Cohenour, Joliet, Ill.; J. F. Waugh, Chicago, and B. C. Corbus, Chicago.

On recommendation of the Nominating Committee the following officers were elected for the ensuing year: Chairman, James C. White, Boston, Vice-Chairman, Martin F. Engman, St. Louis; Secretary, H. R. Varney, Detroit; Delegate, J. A. Fordyce, New York.

Dr. O. H. Foerster, Milwaukee, read a paper on "Primula Dermatitis." No discussion.

Dr. Marcus Haase, Memphis, read a paper on "A Chronic Itching Papular Eruption of the Axilla, Pubes and Breast." Discussed by Dr. J. A. Fordyce, New York.

Drs. Isadore Dyer and Ralph Hopkins, New Orleans, presented a paper on "The Diagnosis of Leprosy." Discussed by Drs. J. Grindon, St. Louis; A. Ravogli, Cincinnati, Marcus Haase, Memphis; S. T. Darling, Ancon Hospital, Canal Zone; William Litterer, Nashville, and Isadore Dyer, New Orleans.

Dr. Oliver S. Ormsby, Chicago, read a paper on "Lichen Planus Atrophicus (Hallopeau)." No discussion.

Dr. M. L. Heidingsfeld, Cincinnati, presented a paper on "Hairy Tongue," with lantern-slide illustrations. No discussion.

Dr. Richard L. Sutton, Kansas City, Mo., read a paper on "Lichen Nitidus." Discussed by Drs. J. A. Fordyce, New York, and R. L. Sutton, Kansas City, Mo.

On motion of Dr. M. L. Heidingsfeld, Cincinnati, a vote of thanks was extended to the retiring Chairman and to the Secretary for their efficient services; also to the members of the Section living in St. Louis for their kind entertainment, and their efforts which had resulted in making this one of the most successful meetings in the history of this organization.

FRIDAY, JUNE 10—MORNING

This was a clinical meeting, devoted to the presentation of patients and specimens.

Dr. R. H. Davis, St. Louis, showed a case for diagnosis, possibly syphilis of the face. No discussion.

Dr. Davis also showed a case of bromid eruption of [illegible]. Discussed by Drs. Oliver S. Ormsby, Chicago; Frank C. Knowles, Philadelphia; J. M. King, Nashville; [illegible], Chicago; and R. H. Davis, St. Louis.

Dr. Martin F. Engman, St. Louis, showed a case of hypertrophic lupus in a negro boy. No discussion.

Dr. Engman showed a case of blastomycetic dermatitis. Discussed by Drs. A. Ravogli, Cincinnati; J. B. Kessler, Iowa City; John D. Seba, Bland, Mo.; J. M. King, Nashville, and Engman.

Dr. Engman showed a case of keratosis follicularis (Darier). Discussed by Dr. F. C. Knowles, Philadelphia.

Dr. Engman showed a case for diagnosis. Discussed by Drs. Alexander S. Wolf, St. Louis; William T. Cortlett, Cleveland; and H. H. Hazen, Washington.

Dr. Engman showed a case of mycosis fungoides. Discussed by Dr. Howard Fox, New York.

Dr. W. H. Mook, St. Louis, showed a case of epidermolysis bullosa and one of vitiligo. The latter was discussed by Dr. Frank C. Knowles, Philadelphia.

Dr. William W. Graves, St. Louis, showed a number of boys with scaphoid scapula and made some remarks on the subject. Discussed by Drs. A. Jacobi, New York; Ira C. Chase, Fort Worth; Alfred Saenger, Hamburg, Germany; A. Ravogli, Cincinnati; Julius Grinker, Chicago; Albert E. Sterne, Indianapolis; and W. W. Graves, St. Louis.

Dr. R. H. Davis, St. Louis, showed the specimen of a case of congenital ichthyosis.

Drs. Martin F. Engman and W. H. Mook, St. Louis, showed cases of onychia; scleroderma; multiple benign cystic epithelioma; mycosis fungoides; lymphangioma circumscriptum; xanthoma diabeticorum; mycosis fungoides; acne excoriativa; xanthoma planum; and a large papillomatous nevus treated with carbon dioxid snow.

On motion of Dr. William T. Cortlett, Cleveland, a unanimous vote of thanks was extended to the members of the local committee for collecting this valuable clinical material and for the energy shown by the officers of the Section, which had helped to bring this meeting to such a successful close.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Tuesday, June 7—Morning

The Chairman, Dr. David L. Edsall, Philadelphia, called the meeting to order at 2:30 p. m., in the Delmar Avenue Congregational Church.

Dr. Edsall delivered the Chairman's address, entitled "Some Reforms Accomplished and Others Needed in Pharmacotherapy." No discussion.

Prof. Joseph P. Remington, Philadelphia, delivered the address of Delegates of the American Pharmaceutical Association.

Dr. C. S. N. Hallberg, of Chicago, made a motion that the members of the American Pharmaceutical Association who were delegates and who might not be pharmaceutical members of the American Medical Association might have the privilege of the floor and be invited to participate with the Section of Pharmacology and Therapeutics in the discussion. Seconded and carried.

Reports of Standing Committees were then called for.

The Secretary, Dr. Murray G. Motter, Washington, read the report of the Executive Committee on Habit-Forming Drugs. The report was on motion transmitted to the House of Delegates with the recommendation that it be referred to the Committee on Legislation. [The House referred it to the new Council on Health and Public Instruction. The Journal, June 18, page 2077. The text of the report appears in The Journal, June 18, page 2072.]

Dr. Motter announced that the report of the Committee on United States Pharmacopeia had been published in the reports presented to the House of Delegates. [It appears in The Journal, June 18, page 2088.]

Dr. R. A. Hatcher, New York, Chairman of the Committee, submitted the report of the Committee on National Formulary. Discussed by Drs. F. E. Stewart, Philadelphia; C. S. N. Hallberg, Chicago; A. Jacobi, New York.

On motion action on the report was deferred until Dr. Hallberg read his paper.

Dr. Edsall, the Chairman, appointed the following substitutes to act as Executive Committee: Drs. R. A. Hatcher, New York; H. M. Whelpley, St. Louis, and W. C. Wescott, Atlantic City, N. J.

Dr. F. E. Stewart, Philadelphia, made a motion, which was seconded and carried, that papers whose authors were absent should be referred to the Executive Committee for recommendation as to whether or not they should be read to the Section.

Dr. C. S. N. Hallberg, Chicago, read a paper entitled "The National Formulary from the Pharmaceutical Standpoint."

Dr. F. E. Stewart, Philadelphia, made a motion that the report of the Committee on National Formulary be adopted and the committee continued provided the American Pharmaceutical Association Council having control of the Revision of the National Formulary were willing to abide by the rules of the Council on Pharmacy and Chemistry of the American Medical Association. Discussed by Drs. A. S. Loevenhart, Madison, Wis.; A. Jacobi, New York; A. T. Livingston, Jamestown, N. Y.; C. S. N. Hallberg, Chicago; R. A. Hatcher, New York.

A motion by Dr. A. Jacobi, that the report of the committee be accepted and the committee discharged was carried.

The paper of Mr. M. I. Wilbert, Washington, D. C., on "A Forecast of the U. S. P. IX.," was read by Dr. M. G. Motter, Washington, on recommendation of the Executive Committee. Discussed by Drs. A. S. Loevenhart, Madison, Wis.; C. S. N. Hallberg, Chicago, and F. E. Stewart, Philadelphia.

Wednesday, June 8—Morning

The Section held a joint meeting with the Section on Practice of Medicine at the Third Baptist Church.

The Chairman of the Section on Practice of Medicine, Dr. George Blumer, New Haven, Conn., called the meeting to order at 9:30 a. m.

The following four papers were read and discussed as a Symposium on the Circulatory Disorders in Acute Infectious Diseases:

Dr. W. G. MacCallum, New York: "Pathologic Physiology of the Circulatory Failure of Acute Infectious Disease."

Dr. George Dock, New Orleans: "Treatment of the Circulatory Failure of Acute Infectious Diseases with Drugs Other than Alcohol."

Dr. Joseph L. Miller, Chicago: "The Physiologic Action, Uses and Abuses of Alcohol in the Circulatory Disturbances of Acute Infection."

Dr. A. N. Richards, Chicago: "The Action of Alcohol on the Mammalian Heart."

These four papers were discussed by Drs. A. S. Loevenhart, Madison, Wis.; R. C. Cabot, Boston; DeLancey Rochester, Buffalo, N. Y.; J. A. Lichty, Pittsburg; Haven Emerson, New York; G. C. Smith, Boston; A. T. Livingston, Jamestown, N. Y.; G. W. McCaskey, Fort Wayne, Ind.; C. F. Hoover, Cleveland; A. Jacobi, New York; Lawrence Litchfield, Pittsburg; Frank A. Jones, Memphis, Tenn.; B. C. Walt, Little Rock, Ark.; George Dock, New Orleans, and J. L. Miller, Chicago.

This ended the joint meeting.

Dr. Lewis A. Conner, New York, read a paper entitled, "The Visceral Anesthesias of Tabes Dorsalis in Relation to the Diagnosis of Acute Inflammatory Conditions in the Abdomen, with an Illustrative Case." Discussed by Drs. L. Litchfield, Pittsburg; J. H. Musser, Philadelphia; C. F. Hoover, Cleveland and Lewis A. Conner.

Wednesday, June 8—Afternoon

The Section held a joint meeting with the Section on Pathology and Physiology for the consideration of a Symposium on Recent Advances in the Knowledge of Diabetes and its Treatment.

For the minutes see the report of the Section on Pathology and Physiology, which appear on the following page.

Thursday, June 9—Morning

Dr. R. A. Hatcher, New York, presented the report of the Nominating Committee recommending for election the following: Chairman, Dr. Lawrence Litchfield, Pittsburg, Pa.; Vice-Chairman: Dr. George B. Wallace, New York; Secretary, Mr. M. I. Wilbert, Washington, D. C.; Delegate, Dr. Reid Hunt, Washington, D. C.

The report of the Nominating Committee was accepted and the Secretary, Dr. M. G. Motter, was authorized to cast the ballot for the election of the nominees.

Dr. C. S. N. Hallberg, Delegate, reported that he had presented the names of William H. Glover, Lawrence, Mass., and Leonard A. Seltzer, Detroit, for pharmaceutical members of this Section and that both applications had been acted on favorably.

In accordance with instructions, Dr. Hallberg said that he had presented the Report of the Executive Committee to which had been referred the Habit forming Drugs Legislation and that this report was referred as recommended to the Committee on National Legislation of the A. M. A. He said that when the report of the Reference Committee on National Legislation was made it recommended that the A. M. A. recommend to the states that the state drug laws be made or changed to conform with the federal Food and Drugs Act. Dr. Hallberg, feeling that it was a very serious thing for the Association to go on record as favoring the patterning of the state laws after the federal act, stated that the federal act was a compromise measure which permitted any kind of drugs to be sold, provided that the ingredients were named on the label. At the suggestion of President Welch this recommendation had been amended so that it provided that the Association recommended that drugs must conform with the requirements of the United Pharmacopeia and the National Formulary.

It was moved and carried that the report of the Delegate be accepted.

The following papers were read as a Symposium on Extrapharmacal Methods:

The paper prepared by Dr. C. S. Potts, Philadelphia, on "The Practical Uses of Electricity in Medicine," was read by the Secretary, in conformity with a motion made following the recommendation of the Executive Committee. Discussed by Drs. G. Betton Massey, Philadelphia; David Paulson, Hinsdale, Ill.; A. T. Livingston, Jamestown, N. Y.; H. M. Whelpley, St. Louis, and Haven Emerson, New York.

The paper of Dr. Thomas McCrae, Baltimore, "The Principles of Hydrotherapy," was read by the Secretary. Discussed by Drs. David Paulson, Hinsdale, Ill., and H. M. Whelpley, St. Louis.

On recommendation of the Executive Committee, it was moved, seconded and carried that a paper by Dr. Alfred T. Livingstone, Jamestown, N. Y., not appearing on the program, be read. Dr. A. T. Livingston then read his paper on "The Physiologic Test and Standardization of Ergot." Discussed by Drs. Haven Emerson, New York, and A. T. Livingston, Jamestown, N. Y.

Thursday, June 9—Afternoon

The meeting was called to order in the Delmar Avenue Congregational Church by Dr. Lawrence Litchfield, Pittsburg, Pa., the Chairman-Elect, at 2:09 p. m.

Dr. R. A. Hatcher, New York, read a paper written by himself and Dr. Harold C. Bailey, New York, on "The Clinical Use of Strophanthus." Discussed by Drs. J. L. Miller, Chicago; M. Rosewater, Cleveland; L. Litchfield, Pittsburg; H. C. Bailey, New York, and R. A. Hatcher, New York.

Dr. Haven Emerson, New York, read a paper on "Blood Pressure in Tuberculosis." Discussed by Drs. M. Rosewater, Cleveland; J. L. Miller, Chicago; J. M. Bessey, Toledo, Ohio, and Haven Emerson, New York.

In the absence of Dr. James M. Anders, Philadelphia, the Secretary, Dr. M. G. Motter, Washington, D. C., read Dr. Anders' paper on "Vaccines in Typhoid Fever." No discussion.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 7—Afternoon

The meeting was called to order at 2:10 p. m., in the Lecture Hall of Y. M. C. A. Building, by the Chairman, Dr. H. Gideon Wells, Chicago.

Applications for associate membership in the Section having been received from Professors P. B. Hawk, University of Illinois; A. J. Carlson, University of Chicago; Leo Loeb, University of Pennsylvania, and Graham Lusk, Cornell University Medical School, their names were recommended for presentation to the House of Delegates.

Dr. Carl J. Wiggers, Ann Arbor, Mich., read a paper on "The Prognostic Significance of Pulse Pressure Changes During Hemorrhage." Discussed by Dr. Yandell Henderson, New Haven, Conn.

Dr. Arthur D. Hirschfelder, Baltimore, read a paper on "The Functional Disturbances in Paroxysmal Tachycardia." Discussed by Drs. S. A. Matthews, Chicago, and A. D. Hirschfelder, Baltimore.

Dr. Robert B. Gibson, Columbia, Mo., read a paper on "The Action of Adrenalin on the Mammalian Heart." Discussed by Drs. C. J. Wiggers, Ann Arbor, Mich.; S. A. Matthews, Chicago; and R. B. Gibson, Columbia, Mo.

Dr. Clyde Brooks, Chicago, read a paper on "The Action of Alcohol on the Normal, Intact, Unanesthetized Animal." Discussed by Drs. Yandell Henderson, New Haven, Conn.; Ida H. Hyde, Lawrence, Kan.; and Clyde Brooks, Chicago.

Dr. C. C. Guthrie, Pittsburg, Pa., read a paper on "Survival of Engrafted Blood-Vessels." No discussion.

Ida H. Hyde, Lawrence, Kan., read a paper on "The Inhibitory Effects of Magnesium Sulphate, and the Nature of the Impulses in the Phrenic Nerves." Discussed by Dr. Louise G. Robinovitch, New York City.

Dr. Angus McLean, Detroit, Mich., read a paper on "Gangrene Following Carbon Monoxid (Coal-Gas) Poisoning." Discussed by Dr. H. G. Wells, Chicago.

The Chairman appointed the following as members of the Nominating Committee: Drs. A. D. Hirschfelder, Baltimore; Henry Albert, Iowa City, Iowa; and E. P. Lyon, St. Louis.

Wednesday, June 8—Morning

Dr. A. S. Warthin, Ann Arbor, Mich., read a paper on "The Reaction of the Hemolymph Nodes to [illegible]." No discussion.

Dr. Henry Albert, Iowa City, Iowa, read a paper on "Diffuse Hypertrophy of the Mammary Glands of the Female." Discussed by Drs. A. S. Warthin, Ann Arbor, Mich.; [illegible] Terrill, Galveston, Tex.; Greer Baughman, Richmond, Va., and Henry Albert, Iowa City, Iowa.

Dr. Arthur E. Hertzler, Kansas City, Mo., read a paper on "The Pathogenesis of Cancer." No discussion.

Dr. Louise G. Robinovitch, New York, read a paper on "Electric Anesthesia and Electric Resuscitation After Heart Failure Under Chloroform or Electrocution." No discussion.

Drs. H. E. Robertson and A. J. Chesley, Minneapolis, presented a paper on "Pathology and Bacteriology of Acute Poliomyelitis," which was read by Dr. Robertson. Discussed by Drs. W. H. Welch, Baltimore; and H. E. Robertson, Minneapolis.

Wednesday, June 8—Afternoon

This was a joint meeting with the Section on Pharmacology and Therapeutics.

The following five papers were read and discussed as a Symposium on Recent Advances in Knowledge of Diabetes and Its Treatment:

Dr. Graham Lusk, New York, "Metabolism in Diabetes."

Dr. J. J. R. MacLeod, Cleveland, "Various Forms of Experimental Diabetes and Their Significance for Diabetes Mellitus."

Dr. Joseph H. Pratt, Boston, "The Relation of the Pancreas to Diabetes."

Dr. R. T. Woodyatt, Chicago, "The Action of Glycol Aldehyd and Glycerin in Diabetes, and the Nature of Antiketogenesis."

Dr. George B. Wallace, New York, "Therapy and Dietetics of Diabetes."

These five papers were discussed by Drs. J. M. Allen, Liberty, Mo.; George C. Smith, Boston; J. A. Lichty, Pittsburg, Pa.; J. P. Matthews, Carlinville, Ill.; H. A. Freund, Detroit; Graham Lusk, New York; J. J. R. MacLeod, Cleveland; and R. T. Woodyatt, Chicago.

Thursday, June 9—Morning

The report of the Nominating Committee recommended the election of the following officers: Chairman, Dr. Yandell Henderson, New Haven, Conn.; Secretary, Dr. Leo Loeb, Philadelphia; Delegate, Dr. Walter L. Bierring, Iowa City, Iowa; Alternate, Dr. M. J. Rosenau, Boston. The report of the Nominating Committee was accepted and the Secretary was instructed to cast a ballot for the election of the nominees.

Dr. J. F. Hultgen, Chicago, read a paper on "Influence of Alcohol on the Kidneys." Discussed by Drs. A. S. Warthin, Ann Arbor, Mich.; H. G. Wells, Chicago; Daniel N. Eisendrath, Chicago; and J. F. Hultgen, Chicago.

Drs. Daniel N. Eisendrath and David C. Strauss, Chicago, presented a paper on "Effects of Compression of Its Vessels on the Parenchyma of the Kidney," which was read by Dr. Strauss. Discussed by Drs. V. C. Lespinasse, Chicago; D. N. Eisendrath, Chicago; Yandell Henderson, New Haven, Conn.; H. G. Wells, Chicago; and D. C. Strauss, Chicago.

Dr. Winfield S. Hall, Chicago, read a paper on "The Influence of Diet on the Cycle." Discussed by Drs. J. F. [illegible], Chicago; and W. S. Hall, Chicago.

Dr. S. A. Matthews, Chicago, read a paper on "[illegible] Functions of the Duodenum." Discussed by Drs. [illegible], Lawrence, Kan.; W. C. McCarty, Rochester, Minn.; [illegible], Chicago; W. G. MacCallum, New York; [illegible], Rochester, Minn.; and S. A. Matthews, Chicago.

Dr. William Carpenter McCarty, Rochester, Minn., read a paper on "[illegible] of Appendicitis, [illegible] Chronic Appendicitis to [illegible] of 5,000 Specimens Removed at Operation." Discussed by Drs. J. F. Hultgen, Chicago; H. G. Wells, Chicago, and W. C. McCarty, Rochester, Minn.

Thursday, June 9—Afternoon

The following five papers were read and discussed as a Symposium on the Progress in the [illegible] of Cancer:

Dr. Leo Loeb, Philadelphia, "Recent Progress and Present Status of Experimental Research in Cancer."

Dr. E. E. Tyzzer, Boston, "The Relation of Heredity to Cancer."

Dr. Richard Weil, New York, "The Biochemical Investigations of Cancer, and Its Diagnostic Applications."

Dr. F. B. Mallory, Boston, "Recent Progress in the Microscopic Anatomy and Differentiation of Cancer."

Dr. J. C. Bloodgood, Baltimore, "Recent Progress in Surgical Treatment of Malignant Growths."

These five papers were discussed by Drs. Louis B. Wilson, Rochester, Minn.; F. B. Mallory, Boston; and H. Gideon Wells, Chicago.

THE ST. LOUIS REGISTRATION

List of Members Who Registered at the St. Louis Session, June, 1910

The total registration at the St. Louis session was 4,084, an increase of 812 over last year's registration at Atlantic City. This is the third session in point of size.

In addition to the names of members given below, a number registered whose names are not given. These have not yet completed their membership, many having been subscribers only and some of them claiming membership without making application, as is required by the Constitution and By-Laws.

Below are given two summaries, one by sections and one by states.

REGISTRATION BY SECTIONS

Practice of Medicine	1,389
Obstetrics and Diseases of Women	296
Surgery	1,124
Ophthalmology	275
Laryngology and Otology	167
Nervous and Mental Diseases	110
Preventive Medicine and Public Health	95
Stomatology	55
Diseases of Children	157
Dermatology	84
Pharmacology and Therapeutics	42
Pathology and Physiology	66
Registered without specifying any one section	105

REGISTRATION BY STATES

Alabama	22	Nebraska	37
Arizona	2	New Hampshire	3
Arkansas	97	New Jersey	20
California	38	New Mexico	6
Canal Zone	3	New York	149
Colorado	38	North Carolina	11
Connecticut	11	North Dakota	3
District of Columbia	25	Ohio	169
Florida	1	Oklahoma	68
Georgia	11	Oregon	9
Idaho	2	Pennsylvania	133
Illinois	828	Rhode Island	3
Indiana	197	South Carolina	11
Iowa	147	South Dakota	12
Kansas	102	Tennessee	96
Kentucky	99	Texas	79
Louisiana	35	Utah	7
Maine	2	Vermont	1
Maryland	33	Virginia	22
Massachusetts	49	Washington	10
Michigan	84	West Virginia	25
Minnesota	92	Wisconsin	52
Mississippi	15	Wyoming	1
Missouri	1,088	Foreign (including Canada)	10
Montana	8		

Practice of Medicine

Aaron, Charles D., Detroit.
Abbott, Clarence, Otwell, Ind.
Abbott, Edward H., [illegible], Ill.
Adair, T. W., Archie, Mo.
A[illegible], E. M., Gridley, Ill.
Adams, J. W., Carrollton, Ill.
A[illegible], M., Du Quoin, Ill.
A[illegible]erman, [illegible] C., Sedalia, Mo.
A[illegible], R. Lee, Vandalia, Mo.
A[illegible], Warren L., Eldon, Mo.
A[illegible], W. S., [illegible], Mo.
Allen, E. W., [illegible], Mo.
Allen, L. M., Philadelphia.
Allen, W[illegible], West Newton, Ind.
Allen, Walter H., Waverly, Ill.
A[illegible], [illegible] C., Metz, Mo.
A[illegible], Carl S., [illegible], Mo.
A[illegible], E. C., Keil, Ill.
A[illegible], J. H., St. Louis.
A[illegible], [illegible], Ky.
A[illegible], H. B., [illegible], Okla.
A[illegible], [illegible], Garland, Kan.
A[illegible], J. C., [illegible], Iowa.
A[illegible], J. Howard, M[illegible]town, W. Va.
A[illegible], R. B., S[illegible], Texas.
A[illegible], W[illegible], [illegible], Elm[illegible]e, Va.
Andrews, John, Grant City, Mo.
Andrews, J. P., Ma[illegible]ville, Mo.
Andrews, Jr., Neil, Oshkosh, Wis.
Applewhite, Lee D., East St. Louis, Ill.
Arbuthnot, Thomas S., Pittsburgh, Pa.
Armstrong, C. L., Webster Grove, Mo.
Arnold, Horace D., Boston.
Arthur, Sylvester Irvin, Patoka, Ind.
Atkins, W. A., Rogersville, Mo.
Atkinson, Jas. A., Morehouse, Mo.
Aufderheide, Wm. H., St. Louis.
Austin, R. E., San Diego, Cal.
Austin, M. B., Brunswick, Mo.
Austin, Sedgwick E., Auburn, N. Y.
Baar, Gustav, Portland, Ore.
Baird, R. W., Dallas, Texas.
Baker, J. H. P., Salisbury, Mo.
Ba[illegible]ke, W. A., Cropsey, Ill.
Baldwin, Paul, Kennett, Mo.
Ball, Otho F., St. Louis.
B[illegible]head, J. J., Clarksville, Mo.
Barger, J. Nelson, Albany, Mo.
Barnes, Sr., A. S., St. Louis.
Ba[illegible], P. C., St. Louis.
Barnhart, H. A., Huntsville, Mo.
Barr, Clarence M., St. Louis.
Barringer, B. M., Emden, Ill.
Bartlett, Ezekiel M., Clarksville, Mo.
Baskett, J. N., Hannibal, Mo.
Bass, C. C., New Orleans.
Bassett, Sam T., St. Louis.
Bauer, Chas. E., St. Louis.
Baumgarten, Walter, St. Louis.
Bate, R. Alexander, Louisville, Ky.
Battle, J. T. J., Greensboro, N. C.
Baysinger, S. L., Rolla, Mo.
Beall, K. H., Fort Worth, Tex.
Beard, I. J., Godfrey, Ill.
Beatie, William R., Marshfield, Mo.
Beavers, C. E., Barry, Ill.
Beck, Harvey G., Baltimore, Md.
Beckner, Ernest J., Selden, Kans.
Beeson, John P., Southwest City, Mo.
Behrens, Louis H., St. Louis.
Bell, Alfred, Brooklyn, N. Y.
Bell, John M., St. Joseph, Mo.
Bell, Seaborn B., Ozark, Ala.
Bell, William H., Decatur, Ill.
Benedict, A. L., Buffalo, N. Y.
Benker, O. H., St. Louis, Mo.
Bennett, Basil T., Trenton, Tenn.
Bennett, F. W., St. Louis, Mo.
Benson, B. G. St. Louis, Mo.
Berghausen, Oscar, Cincinnati.
Berrey, Isaac Somers, Balchtown, Ill.
Bessey, J. M., Toledo, Ohio.
Beveridge, J. W., Oregon, Ill.
Bewig, H. N., St. Louis.
Bierring, Walter L., Iowa City, Ia.
Biggs, Orvis E., Hot Springs, Ark.
Biggs, Vincent A., Martin, Tenn.
Billings, Frank, Chicago.
Bing, Elbert A., Altamont, Ill.
Birkofer, W. J., Gothenburg, Neb.
Bishop, A. M., Chicago.
Black, G. C., Table Grove, Ill.
Blackburn, Wm. R., Breeds, Ill.
Blackstone, G. R., Macomb, Ill.
Blake, W. H., Sheffield, Ala.
Blakely, James Thomas, Mt. Erie, Ill.
Blakey, Thomas W., Hopkinsville, Ky.
Blattner, Fredk. O., St. Louis.
Bland, Curtis, Greensburg, Ind.
Bland, Warren W., Vandalia, Mo.
Blankenhorn, H., Orrville, Ohio.
Blanton, Marvin A., Union City, Tenn.
Bley, George, Jr., Beardstown, Ill.
Blim, Charles, Crete, Ill.
Blumer, George, New Haven, Conn.
Blythe, Vernon, Paducah, Ky.
Bobb, C. S., Mitchell, S. Dak.
Boggess, Walter F., Louisville, Ky.
Bogle, Herman H., Pittsburg, Kan.
Bohan, Peter Thomas, Kansas City, Mo.
Bohannan, H. R., Jerseyville, Ill.
Bohling, C., Sedalia, Mo.
Boulhuiere, Louis C., St. Louis.
Boles, Dallas S., Herrin, Ill.
Bond, L. L., Denison, Iowa.
Bond, S. B., Baltimore.
Bonham, Vaughan Q., Fayette, Mo.
Boogher, J. Leland, St. Louis.
Bostick, Will, St. Louis.
Bosworth, D. D., Knoxville, Tenn.
Bottom, E. H., East St. Louis, Ill.
Bouland, I. N., Equality, Ill.
Bourland, O. M., Van Buren, Ark.
Bowcock, C. M., Springfield, Ill.
Bowers, H. C., Scircleville, Ind.
Bowling, John W., Shawneetown, Ill.
Boyd, F. Robert, St. Louis.
Boyd, H. B., Cambridge City, Ind.
Boyd, R. L., Pembroke, Ky.
Boyers, James S., Decatur, Ind.
Bradford, Kenneth, Staunton, Va.
Bradley, M. M., Chatham, Ill.
Bradley, Robert H., Marshall, Ill.
Bradley, Will P., Windsor, Mo.
Bradshaw, John T., Shawnee, Okla.
B[illegible], R. Edward, Marmaduke, Ark.
Bray, Charles, Parsons, Kan.
Brainerd, B. F., Martin City, Mo.
Brandenburger, Louis A., St. Louis.
Brannan, Charles S., Albion, Ill.
Breeding, W. J., Ravenscroft, Tenn.
Bressler, A. H., Nickerson, Kan.
Brett, R. E., Newburg, Mo.
Brewer, F. M., Rantoul, Ill.
Br[illegible], William Hayes, St. James, Mo.
Brody, Robert C., Peoria, Ill.
Br[illegible], C. F., Belmont, Ill.
Br[illegible], J. R., St. Francisville, Ill.
Br[illegible], J. R., Kahoka, Mo.
B[illegible], Albert L., Athens, Ill.
Br[illegible], Frank, Oshkosh, Wis.
B[illegible], H. S., St. Louis.
Brockhart, H. H., Scammon, Kan.
Brook, Frederick C., St. Louis.
Brown, Harry R., Davkin, Neb.
Brown, Allen C., Moselle, Mo.
Brown, Charles H., Fair Play, Mo.
Brown, Everett J., Decatur, Ill.
Brown, G. L., Sherman, Tex.
Brown, George S., Edina, Mo.
Brown, J. C., Lewistown, Mo.
Brown, Orville Harry, St. Louis.
Brown, Tinsley, Hamilton, Mo.
Broyles, F. H., Bethany, Mo.
Brudi, G. G., New Haven, Ind.
Brumwall, J. D., Salisbury, Mo.
Brundage, N. E., Delphi, Ohio.
Brush, Frederic, New York.
Bruton, J. W., Ozark, Mo.
Bruton, Tyrrel S., Seymour, Mo.
Bryan, E. M., Fulton, Mo.
Bryan, Joseph Lyman, Xenia, Ill.
Bryan, B. Shepard, St. Louis.
Bryant, J. B., Lawrenceville, Ill.
Buck, E. M., Montrose, Iowa.
Buck, G. M., Burrows, Ind.
Bucklin, G. W., Muncie, Ind.
Buettner, John J., Syracuse, N. Y.
Burke, C. O., Atlanta, Ill.
Bushart, R. L., Fulton, Ky.
Butler, H. T., Union City, Tenn.
Butler, James H., Hartsburg, Ill.
Buxton, W. E., West Salem, Ill.
Cables, Henry A., E. St. Louis, Ill.
Cabot, Richard C., Boston.
Caldwell, Chas. W., Chelsea, Okla.
Calvert, W. J., Dallas, Tex.
Cameron, William H., Pittsburg, Pa.
Camp, F. K., Oklahoma City, Okla.
Campbell, Oliver H., St. Louis.
Cannady, E. W., E. St. Louis, Ill.
Cannon, Geo. Emmett, Hope, Ark.
Capel, A. B., Shawneetown, Ill.
Capps, Joseph A., Chicago.
Carbaugh, Eugene, Kansas City, Mo.
Carey, J. W., Whitesboro, Tex.
Carman, B. D., St. Louis.
Carriere, Theodore L., St. Louis.
Carson, Frank H., Benton, Ohio.
Carson, L. O., New Augusta, Ind.
Carson, S. L., Lincoln City, Ind.
Carter, A. R., Murphysboro, Ill.
Carter, Howard, Webster Groves, Mo.
Carthrae, Lewis, Corder, Mo.
Caruthers, C. K., Pine Bluff, Ark.
Cashurn, Alfred Leslie, Ferris, Ill.
Cassel, Herman F., St. Louis.
Caton, J. H., Breckenridge, Tex.
Causey, G. A., Swifton, Ark.
Cave, E. S., Mexico, Mo.
Cave, J. W., Wichita, Kan.
Chambers, H. L., Lawrence, Kan.
Chandler, J. J., Lutesville, Mo.
Chapin, H. A., White Hall, Ill.
Chapman, A. W., Charleston, Mo.
Chapman, F. A., Sigel, Ill.
Chapman, R. R., Bridgewater, Iowa.
Chapman, S. T., Halls, Tenn.
Chapman, William Day, Silvis, Ill.
Chapman, W. Earle, Sheboygan, Mich.
Chappell, Ralph S., Indianapolis.
Charles, Etta, Summitville, Ind.
Chastain, C. H., Weston, Mo.
Chastain, E. N., Butler, Mo.
Child, Scott P., Kansas City Mo.
Chilgren, G. A., Burlington, Iowa.
Chilton, J. A., Van Buren, Mo.
Chittum, J. D., Sorento, Ill.
Christian, Chas. H., New Bloomfield, Mo.
Christofferson, P. J., Waupaca, Wis.
Claiborn, E. G., Decaturville, Mo.
Clark, John Wheeler, Carterville, Mo.
Clark, O. P., Russell, Ky.
Clark, W. A., Jefferson City, Mo.
Clark, William J., Maysville, Mo.
Clarke, George W., Roseville, Ill.
Clarke, H. L., La Cygne, Kan.
Claytor, Thomas A., Washington, D. C.
Cleland, James, Jr., Detroit.
Cleland, Jas. S., Swanwick, Ill.
Clendening, Logan, Kansas City, Mo.
Cl[illegible], Wm., Tell City, Ind.
Cochran, Athol, Iuka, Kan.
Cochran, T. U., Trenton, Tenn.
Cohenour, V. J., Joliet, Ill.
Cole, Paul L., Mexico, Mo.
Coleman, Nathaniel R., Columbus, Ohio.
Coleman, Thomas D., Augusta, Ga.
Collins, J. S., Carlinville, Ill.
Condon, A. S., Ogden, Utah.
Congdon, William O., Cuba, N. Y.
Conner, Frank Howard, Nevada, Ia.
Conner, Lewis A., New York.
Connell, James Eddington, Lawrenceville, Ill.
Conover, C. C., Kansas City, Mo.
Cook, Jerome E., St. Louis.
Cook, J. H., Terre Haute, Ind.
Cooley, Halsey L., Angelica, N. Y.
Coombs, J. W., Camden, Ohio.
Coons, Jacob Jones, Columbus, O.
Corley, H. N., St. Paul, M[illegible]
Cottral, George H., Hanover, Ill.
Covington, E. D., Hardin, Ky.
Cox, Leo, Springfield, Mo.
Craig, T. B. M., Nevada, Mo.
Crandall, George Clinton, St. Louis.

Crane, A. W., Kalamazoo, Mich.
Crawford, R. O., Eldorado Springs, Mo.
Crockett, James A., Stanberry, Mo.
Crockett, Sidney S., Nashville, Tenn.
Croftan, A. C., Chicago.
Cross, John Grosvenor, Minneapolis.
Crosthwaite, Geo. W., Florence, Tenn.
Croston, G. C., Sapulpa, Okla.
Crouch, H. T., Bardwell, Ky.
Crow, Oliver Lee, Assumption, Ill.
Cruse, Carl V., Iola, Ill.
Culp, A. H., Beggs, Okla.
Cummings, Harry J., St. Louis.
Custer, D. D., Philadelphia.
Daland, Judson, Philadelphia.
Dale, Chas. F., Lexington, Ky.
Dalgleish, G. D., Rockville, Mo.
Daniel, Sam G., Marshall, Ark.
Daniells, Ralph P., Toledo, Ohio.
Daniels, E. O., La Fontaine, Ind.
Davis, Albert W., Kansas City, Mo.
Davis, Homer W., Alton, Ill.
Davis, James D., Louisiana, Mo.
Davis, James H., Carlinville, Ill.
Davis, Louis H., St. Louis.
Davis, Thomas D., Pittsburg, Pa.
Davis, Wheeler, St. Louis.
Davis, W. V., Booneville, Miss.
Davidson, Albert A., Augusta, Ga.
Davidson, W. E., Kingston, Ill.
Dawson, John L., Charleston, S. C.
Dawson, N. B., Sterling, Ohio.
Deaderick, William H., Helena, Ark.
Deal, John, Riverton, Ill.
Denby, J. P., Carlinville, Ill.
DeVilbiss, Frank, Eugene, Mo.
Dew, W. A., Belleville, Ill.
DeWitt, J. P., Canton, Ohio.
Dice, Henry F., Ridge Farm, Ill.
Dickerson, G. D., Conway, Ark.
Dicks, T. A., Broadlands, Ill.
Diehl, Christian Herman, St. Louis.
Dielman, F. C., Fulton, Ind.
Dierker, Frank H., West Point, Ia.
Dierking, A. W., Oolitic, Ind.
Dillingham, Wm. Roy, Morland, Kan.
Dinges, H. A., Red Beed, Ill.
Dinsmore, Walter H., Kramer, Ind.
Dixon, Chas. H., Holliday, Mo.
Dixon, William Allen, Decatur, Ill.
Dixon, W. C., Nashville, Tenn.
Dock, George, New Orleans.
Doerr, John E., Mt. Vernon, Ind.
Donaldson, Jno. B., Canonsburg, Pa.
Donnell, R. E., De Soto, Mo.
Dorris, Thos. B., Grapevine, Tex.
Doty, E. A., Oxford, Iowa.
Douglas, James T., Ferguson, Mo.
Dow, Wm. S., Indianapolis.
Drennen, C. T., Hot Springs, Ark.
Dreyfus, J. W., Louisiana, Mo.
Driskell, C. R., Farmersville, Ill.
Drummond, R. M., Russellville, Ark.
Dryden, U. C., Purdin, Mo.
Duane, J. F., Peoria, Ill.
Duchein, C. F., Baton Rouge, La.
Doey, D. R., Belleville, Ill.
Duffield, Henry T., Pittsfield, Ill.
DuFour, Walter G., Chenoa, Ill.
Dugan, Thomas J., Indianapolis.
Duncan, J. M., Pawnee, Ill.
Dunham, John Dudley, Columbus, O.
Donigan, Jas. P., Sullivan, Mo.
Dupree, M. W., Bethel, Tenn.
Durand, Jay I., Atlantic City, N. J.
Dusenbury, C. T., Monett, Mo.
Dyer, D. P., Sedalia, Mo.
Dyer, John H., Warrenton, Mo.
Eggleston, E. L., Battle Creek, Mich.
Epler, Blanch N., Kalamazoo, Mich.
Eyermann, Edward H., St. Louis.
Eagan, R. E., Springhill, Kan.
Eberspacher, F. J., Pana, Ill.
Edgell, O. K., Eolia, Mo.
Edmonds, O. R., Tina, Mo.
Edwards, A. R., Chicago.
Edwards, F. M., Fairland, Okla.
Einhorn, Max, New York.
Elfrink, B. F., Chenoa, Ill.
Elkins, C. Bryant, Springfield, Mo.
Ellinger, T. J., Philadelphia.
Elliott, Charles A., Chicago.
Elliott, Edward W., Fort Morgan, Colo.
Elliott, John C., Guilford, Ind.
Ellis, Frank B., Garden City, Mo.
Elmer, Warren P., St. Louis.
Elrod, Stephen B., Henryville, Ind.
Emerson, Charles P., Clifton Springs, N. Y.
Enberg, Andrew, McPherson, Kan.
Engelbach, Theodore, Grand Isle, La.
Engelbach, William, St. Louis.
Engelman, Oscar B., St. Louis.
English, J. N., Gillespie, Ill.
Epperly, R. G., Prairie Hill, Mo.
Evans, Charles A., Bluffs, Ill.
Evans, D. J., Galesburg, Ill.
Evans, Edwin E., Columbia, Mo.
E[illegible], Florence L., East St. Louis, Ill.

Fairbanks, J. R., Amsterdam, N. Y.
Falk, John C., St. Louis.
Farmer, W. S., Cookville, Tenn.
Fassett, Charles Wood, St. Joseph, Mo.
Fancett, J. T., Trenton, Tenn.
Faulk, Lem, Emory, Tex.
Fear, R. C., Gardner, Kan.
Feinstein, Leon A., St. Louis.
Ferriss, J. H., Henrietta, Tex.
Fewel, R. B., Montrose, Mo.
Fiegenbaum, E. W., Edwardsville, Ill.
Fienup, Theo. F., St. Louis.
Fihe, C. C., Cincinnati.
Fildes, V. S., Parkersburg, Ill.
Firson, Charles M., Piggott, Ark.
Fischel, Walter, St. Louis.
Fischel, Washington E., St. Louis.
Fisher, C. R. P., Bound Brook, N. J.
Fittro, E. B., Salem, W. Va.
Fleischaker, Frank W., Louisville, Ky.
Fleming, C. R., Farmington, Mo.
Flentje, Robert, Buffalo, Ill.
Fletcher, F. D., Chatham, Ill.
Fletcher, H. H., Winchester, Ill.
Flint, O. J., Princeton, Ill.
Floyd, R. G., Eureka Springs, Ark.
Fontaine, Bryce W., Memphis, Tenn.
Forbes, D. M., Okmulgee, Okla.
Ford, Charles, Waggoner, Ill.
Ford, Karl Bernard, Wichita, Kan.
Foreman, C. B., Kane, Ill.
Foreman, C. O., Warrenton, Mo.
Forsyth, Robert C., Kirkwood, Mo.
Fortney, F. D., Newburg, W. Va.
Foster, T. W., Butler, Mo.
Foster, W. S., Pittsburg, Pa.
Fountain, J. H., Chapin, Ill.
Foxworthy, Frank W., Indianapolis.
Frantz, D. W., Metcalf, Ill.
Frazer, Thompson, Asheville, N. C.
Freeman, Elmer B., Baltimore, Md.
Freeman, Edward D., Osgood, Ind.
Freund, Hugo A., Detroit, Mich.
Frick, Anders, Chicago.
Friedemann, Paul, Stillwater, Okla.
Friedenwald, Julius, Baltimore.
Fries, William A., St. Louis.
Frizzell, Thomas D., Quanah, Tex.
Fronske, Martin G., St. Louis.
Frost, E. L., Buffalo, N. Y.
Fulbright, J. H., Springfield, Mo.
Fuller, J. A., Lane, Kan.
Fulton, Arthur Leonard, St. Louis.
Fulton, Frank H., Plattsburg, Mo.
Funk, David S., Harrisburg, Pa.
Gaertner, C. Walter, St. Louis.
Gailey, Darwin S., Ashland, Ill.
Gaines, J. R., Musselfork, Mo.
Galbreth, W. H., Rockfield, Ind.
Gallagher, J. C., Valley Park, Mo.
Gapen, Clarke, Madison, Wis.
Gaston, J. Irwin, Kingston, Okla.
Geier, Otto P., Cincinnati.
Geitz, Henry A., St. Louis.
Gerhard, Samuel P., Philadelphia.
Gibson, A. Gilden, Morrisonville, Ill.
Gibson, Charles M., Franklin, Kan.
Gibson, Elijah T., Louisville, Ill.
Gibson, James P., Stewartsville, Ind.
Gibson, O. N., Eldorado, Ill.
Griffin, H. Z., Rochester, Minn.
Gilbert, A. J., Hillsboro, Tex.
Gillespie, J. F., Greencastle, Ind.
Gilleatt, O. E., Allendale, Ill.
Glahn, C. P., Palmyra, Mo.
Glasscock, E. N., Mill Shoals, Ill.
Glasgow, Edward A., Mulberry Grove, Ill.
Gleaves, O. G., St. Joseph, Mo.
Goar, C. S., Indianapolis.
Godfrey, George B., St. Louis.
Goebel, Arthur, St. Louis.
Goins, George W., Breckenridge, Mo.
Gooch, W. S., Mapleton, Kan.
Good, Clarence A., St. Joseph, Mo.
Goodier, Robert H., Hannibal, Mo.
Gordon, R. E., El Paso, Ill.
Gordon, W. P., Carlyle, Ill.
Gore, Charles P., Lawrenceville, Ill.
Gossow, A. A., St. Charles, Mo.
Gourley, W. W., Fulton, Ky.
Gove, Herman S., Linn, Mo.
Graber, F. J., Stockport, Iowa.
Grady, N. H., Monette, Ark.
Gray, R. Q., St. Louis.
Gray, S. T., Alfia, Iowa.
Green, D. E., Pleasanton, Kan.
Greensfelder, Harry, St. Louis.
Greer, E. O., St. Louis.
Gregory, Walter E., Dansville, N. Y.
Griffin, R. W., Tiptonville, Tenn.
Griffith, A. Comings, Kansas City, Mo.
Grimmer, C. Fred, Pekin, Ill.
Grosse, L. W., St. Louis.
Groves, J. E., Urichsville, Ohio.
Guhman, M. G., St. Louis.
Guibor, F. E., Maplewood, Mo.
Gunn, A. J., Versailles, Mo.
Guss, William C., Hannibal, Mo.
Guthrie, J. B., New Orleans.
Haass, E. W., Detroit.
Hahn, E., Leetonia, Ohio.
Hale, Jesse W., Greenville, Mo.

Hale, [illegible]
Haley, O., [illegible]
Hall, [illegible]
Hall, [illegible]
Hall, [illegible], Westfield, [illegible]
Hall, J. N., [illegible]
Hall, O. B., [illegible]
Hall, W. [illegible], St. Louis.
Halliburton, W. W., [illegible], Ill.
Halsey, Luther [illegible], [illegible], N. J.
Hamel, E. B., Hastings, Neb.
Hamilton, [illegible], Ill.
Hamilton, R. [illegible], [illegible], Mo.
Hamilton, [illegible] T., Philadelphia.
Hampton, J. R., Clinton, Mo.
Hanford, [illegible] W., R[illegible], Ill.
Hangen, W. [illegible], St. Louis.
Hardy, Joseph, St. Louis.
Hardy, J. J., [illegible]
Hardy, J. W., [illegible], Mo.
Hardman, W. B., [illegible], Ga.
Hargis, W. A., Hermitage, Tenn.
Harlan, L. O., Madison, Ill.
Harlan, W. L., St. Louis.
Harmsch, H. J., St. Louis.
Harris, B. W., Georgetown, Mo.
Harris, Seale, Mobile, Ala.
Harrison, J. F., Mexico, Mo.
Harrower, Henry R., Chicago.
Hartman, Frank T., Waterloo, Iowa.
Hartmann, J. A., St. Louis.
Hartwell, D. D., Marion, Ill.
Harvey, L. J., Gangesville, Ill.
Harwood, William S., [illegible], Mo.
Hastings, J. Barnard, Alton, Ill.
Hatchett, John A., El Reno, Okla.
Hauck, Eugene L., St. Louis.
Hauck, Louis, St. Louis.
Hauck, S. L., Ottumwa, Iowa.
Haw, [illegible] P., Benton, Mo.
Hawley, Thomas S., St. Louis.
Hayden, A., Shullsburg, Wis.
Haynes, Lee, Mendota, Mo.
Haynes, W. A., Sabetha, Kan.
Hays, Bernard W., Jackson, Mo.
Hays, T. A., Burns City, Ind.
Hays, Woodward, Albion, Ind.
Hearst, W. L., Cedar Falls, Iowa.
Heely, O. J., St. Libary, Ill.
Hegge, C. A., Austin, Minn.
Held, Henry W., Vincennes, Ind.
Hempelmann, L. H., St. Louis.
Henderson, A. G., Leonardville, Kan.
Henderson, Charles Forest, McCurtain, Okla.
Henderson, E. L., Louisville, Ky.
Hendricks, W. W., Bardolph, Ill.
Henke, A. F., St. Louis.
Henry, W. H., Hamden Junction, O.
Henske, Andrew C., St. Louis.
Henslin, A. E., Leroy, Minn.
Herbert, T. B., Lebanon, Mo.
Her[illegible], Louis C., St. Louis.
Herr, Henry, Washington, Ind.
Herrick, James B., Chicago.
Heumann, G. W., St. Louis.
Heyer, Chas., St. Louis.
Hick, John C., Eldorado, Ill.
Hickerson, Edwin R., Moberly, Mo.
Hickerson, J. C., Independence, Mo.
Hickerson, J. T., Centralia, Mo.
Hickin, Frank W., Cleveland.
Hicks, Grant S., Tacoma, Wash.
Hiestand, Clement V., Merrimac, Ky.
Higdon, E. E., Allenville, Mo.
Hill, Charles Edgar, E. St. Louis, Ill.
Hill, [illegible] L., Oswego, Kan.
Hill, I. F., Hannibal, Mo.
Hill, L. B., Seymour, Ind.
Hilliard, T. J., [illegible], Ill.
Hinch, F. F., Ste. Genevieve, Mo.
Hirsch, J. A., Edwardsville, Ill.
Hirsch, Wm. T., St. Louis.
Hoagland, Charles C., Veblen, S. Dak.
Hockdoerfer, D. A., St. Louis.
Hoefler, J. P., St. Louis.
Hoel, George L., Fort Collins, Colo.
Hoffman, Paul M., Tipton, Iowa.
Hogue, John A., Jr., [illegible], Mo.
Hohly, Chas. O., Chicago.
Holbrook, R. W., [illegible], Okla.
Holcomb, O. W., St. Paul, Minn.
Holdenried, Wm. L., St. Louis.
Holder, R. F., [illegible], Ind.
Holland, A. B., [illegible]
Holland, [illegible]
Hollis, Luther T., [illegible], Mo.
Holtgrewe, [illegible] W., [illegible]
Hoover, C. F., Cleveland.
Hopkins, Ross, St. Louis.
Hopkins, W. S., Bolivar, Mo.
Horner, Joseph S., Hot Springs, Ark.
Hornsby, John A., Chicago.
Hor[illegible], [illegible]
Horwitz, Maximilian R., St. Louis.
Horw[illegible], [illegible]
House, [illegible]
House, [illegible], O.
Howard, [illegible], Mo.
Howe, [illegible] H., [illegible], Okla.
Hoy, E. [illegible], Syracuse, Ind.

H[illegible], Charles C., [illegible], Ill.
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Isdell?, John, [illegible]
J[illegible], [illegible]
Jacob, Bernard, [illegible]
Jacobson, Jacob, St. Louis.
Jackson, J. B., [illegible]
Jackson, O. H., [illegible]
Jackson, T. J., [illegible], Mo.
Jackson, W. Z., [illegible], Ky.
James, [illegible] F., Springfield, [illegible]
James, J. J., [illegible], Ill.
James, Samuel C., [illegible]
Jemison, Robert J., [illegible]
J[illegible], [illegible]
Jester, [illegible] B., [illegible]
Je[illegible]nk, J. Jennink, [illegible], Kan.
J[illegible]tt, H. S., [illegible]
J[illegible], J. [illegible], [illegible], Ky.
Johnston, C. H., Lexington, [illegible]
Jones, Allen A., Buffalo, N. Y.
Jones, Clement R., Pittsburg, Pa.
Jones, Frank A., Memphis, Tenn.
Jones, I. D., Cincinnati.
Jones, [illegible] T., Salem, Ill.
Jones, Leroy, Hoopeston, Ill.
Jones, O. L., Newport, Ark.
Jordan, James C., Des Moines, Ia.
Joy, L. Fowler, [illegible], N. Y.
Jump, David W., Plainfield, Ill.
Jungblut, H. C., [illegible]
Kalbfleisch, A. H., Peru, Ind.
Kampschmidt, A. W., [illegible], Mo.
Ka[illegible], [illegible] P., [illegible]ville, Mich.
Kaylor, T. D., Barry, Ill.
Keen, L. O., Burkesville, Ky.
Keith, J. T., Sturgeon, Mo.
Keller, Alvin, [illegible], Ill.
Kelly, Joseph A., Philadelphia.
Kelly, P. M., L[illegible], Ill.
Kelso, R. S., Joplin, Mo.
Kemp, C. H., Lacon, Ill.
Kemper, G. W. H., Muncie, Ind.
Keogh, John V., Dubuque, Iowa.
Kern, J. H., St. Louis.
Kerr, E. D., Westervelt, Ill.
Kerr, H. L., Sparta, [illegible]
Kerr, W. B., [illegible], Mo.
Kerrick, C. L., [illegible], Ill.
Kerrick, H. C., B[illegible], Ill.
Kerrigan, John J., Michigan City, Ind.
Kesl, George M., St. Louis.
Kessler, E. H., St. Louis.
Kimberlin, A. C., Indianapolis.
Kincaid, J. W., [illegible], Ky.
K[illegible], Wm. G., [illegible]
Kirk, T. T., [illegible]
Kleckner, Ralph L., Mattoon, Ill.
K[illegible], Charles, St. Louis.
Knappenberger, T. G., Chicago.
Knight, [illegible] I., [illegible]
Knott, Isaiah, [illegible], Mo.
Knox, Andrew C., K[illegible], Mo.
Knox, W. T., Man[illegible], Ill.
K[illegible], Otto W., B[illegible], Mo.
Kotzelman, P. R., St. Louis.
Koontz, Carl J., St. Louis.
Krebs, F. J. V., St. Louis.
Krebs, Paul H., [illegible]
Kr[illegible], A. G., [illegible]
Kr[illegible], C. H., B[illegible], Ill.
Kr[illegible], George B., St. Louis.
Kr[illegible], Fred H., St. Louis.
K[illegible], Fred[illegible] C., [illegible]
[illegible]
L[illegible] S., [illegible], Ill.
L[illegible], W[illegible] R., [illegible]
L[illegible], J. G., [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
L[illegible], Red B[illegible]
Leslie, C. B., Meade, Kan.

Levison, Louis A., Toledo, Ohio.
Lewis, Chas., St. Louis.
Lewis, C. M., Bridgeport, Ill.
Lewis, H. Edwin, New York.
Lewis, J. B., Ripley, Tenn.
Lichty, John A., Pittsburg, Pa.
Lichty, M. J., Cleveland.
Lillie, C. W., East St. Louis, Ill.
Lindsay, John C., Chicago.
Lindsey, L. N., Forsyth, Ill.
Linvill, Swan, Columbia City, Ind.
Lippert, J., East St. Louis, Ill.
Lipsitz, S. T., St. Louis.
Liston, Joseph Bastic, Shipman, Ill.
Littlefield, Lawrence, Pittsburg, Pa.
Little, Homer M., East St. Louis, Ill.
Little, R. M., East St. Louis, Ill.
Little, Wilbur T., Canon City, Colo.
Little, W. T., Calvert City, Ky.
Lockwood, E. K., Virden, Ill.
Lomas, Willis A., Villisca, Iowa.
Long, Joseph M., St. Louis.
Long, L. S., St. Joseph, Mo.
Love, William S., Bertrand, Mo.
Lowery, Allen, Blackwell, Okla.
Luckett, Chas. D., English, Ind.
Lusemeyer, Edward G., Huntingburg, Ind.
Lunan, F. E., Baring, Mo.
Luton, L. S., St. Louis.
Lyles, A. R., Virginia, Ill.
Lyon, A. K., Pittsburg, Pa.
Lyon, George E., Moweaqua, Ill.
Lyon, Geo. E., St. Louis.
McKenzie, Wm. R., Chester, Ill.
Macon, R. B., Clarksville, Tenn.
MacQueen, D. K., Laurium, Mich.
MacRae, John, Calumet, Mich.
Madden, J. H., Colorado Springs, Colo.
Madry, A. H., Aurora, Mo.
Main, R. H., Barry, Ill.
Mandell, A. H., New Bedford, Mass.
Mangus, C. W., Moberly, Mo.
Mann, A. H., Oak Grove, Mo.
Manning, D. F., Marshall, Mo.
Manning, W. J., Cleveland.
Marder, J. L., St. Louis.
Mardorf, Wm. C., St. Louis.
Markley, H. W., Pennville, Ind.
Martin, E. H., Hot Springs, Ark.
Martin, F. A., Tower Hill, Ill.
Martin, Henry L., Kansas City, Mo.
Martin, J. A., Palestine, Ill.
Martin, W. F., Battle Creek, Mich.
Martin, W. T., Albany, Mo.
Marvel, Philip, Atlantic City, N. J.
Mason, J. S., Urbana, Ill.
Mason, Wm. M., Hazel, Ky.
Matlock, J. W., Frost, Tex.
Matthews, F. H., Liberty, Mo.
Matthews, J. C., Springfield, Mo.
Matthews, John Palmer, Carlinville, Ill.
Mattox, Ernest L., West Terre Haute, Ind.
Mattox, W. R., Terre Haute, Ind.
Maxwell, Allison, Indianapolis.
Maxwell, J. B., Mt. Carmel, Ill.
May, Leon J., Cobden, Ill.
Mayberry, F. E., Dorchester, Mass.
Mayes, J. F., St. Louis.
McAnally, J. T., Carbondale, Ill.
McBratney, E. W., St. Louis.
McCall, W. K., Worcester, Mo.
McCaskey, G. W., Fort Wayne, Ind.
McClure, E. C., Bussey, Iowa.
McClymonds, J. T., Lexington, Ky.
McC[illegible]m, James A., Uhrichsville, Ohio.
McComb, C. F., Duluth, Minn.
McCumber, C. M., Lathrop, Mo.
McCormick, Frank L., Huntsville, Al[illegible]
McC[illegible], John H., St. Joseph, Mo.
McC[illegible], Orville, Miamisburg, Ohio.
McC[illegible], F. M., Eddyville, Iowa.
McC[illegible], Jacob C., Cave City, Ky.
McC[illegible]mon, F. W., Butte, Mont.
McCullough, J. Y., Casey, Ill.
McC[illegible], W. T., Texarkana, Ark.
McDonald, [illegible] T., Mattoon, Ill.
McDonald, W. H., Clarksville, Tex.
McF[illegible], [illegible] B., Memphis, Tenn.
McF[illegible], Wm. D., Milton, Iowa.
McG[illegible], J. H., White Cloud, Kan.
McG[illegible], Charles N., Columbus, O.
McGrath, W. J., Elkader, Iowa.
McI[illegible], Thos. M., Peoria, Ill.
McKee, George E., Detroit.
McKenzie, R. E., [illegible], Io.
McM[illegible], M., Palmyra, Ill.
McM[illegible], Austin, Rockport, Mo.
McMichael, O. H., Vernon Center, [illegible]
McM[illegible], Marvin C., Paris, Mo.
McN[illegible], A. L., Pacific, Mo.
McN[illegible], I. N., Perry, Mo.
McN[illegible], W. B. A., Monroe City, Mo.
McVay, L. C., M[illegible], Ark.
[illegible], C., M[illegible], Conn.
M[illegible], W. L., Dixon, Tenn.
Mefford, W. T., Chicago.
Meinhard, J., St. Louis.
Meirink, B. J., Germantown, Ill.
Melton, W. A., Jr., Warrensburg, Ill.
Mehler, F. C., New London, Iowa.
Menefee, B. F., Jonesburg, Mo.
Mercer, William H., Pittsburg, Pa.
Meredith, A. L., Wooldridge, Mo.
Mershon, Glenn E., Mt. Carmel, Ill.
Merwin, Edgar G., Highland, Ill.
Merz, Adolph, St. Louis.
Mesker, Geo. H., Olivia, Minn.
Metcalf, H. L., Springfield, Ill.
Meyer, Grant, Lincolnville, Kan.
Meyer, Harry H., St. Louis.
Miles, Horine, Webster Groves, Mo.
Millar, R. C. M., Forestell, Mo.
Miller, A. B., Macon, Mo.
Miller, DeWitt Clinton R., Mason and Dixon, Pa.
Miller, G. D., Logansport, Ind.
Miller, John H., Pana, Ill.
Miller, John J., St. Louis.
Miller, Joseph S., Chicago.
Miller, R. M., Bogard, Mo.
Miller, Thomas C., Ash Grove, Mo.
Millhon, Homer B., Owaneco, Ill.
Mills, O. P. M., Grant City, Mo.
Mills, R. Walter, Webster Groves, Mo.
Milnamow, J. T., Chicago.
Milner, James, Winchester, Ill.
Mitchell, A. W., Humansville, Mo.
Mitchell, J. M., Oblong, Ill.
Mitchell, W. C., Bradford, Ill.
Moore, Charles, Advance, Mo.
Moon, Edward, Cape Girardeau, Mo.
Moore, G. W., Munger, Mich.
Moore, Harry M., St. Louis.
Moore, J. P., Yazoo City, Miss.
Moore, Roy Dudley, Olivette, Mo.
Moore, William G., St. Louis.
Moorhead, W. H., Stuttgart, Ark.
Montgomery, J. S., Milan, Mo.
Morgan, D. A., Nilwood, Ill.
Morgan, E. E., Fort Wayne, Ind.
Morgan, Thomas Wynn, Virden, Ill.
Morgner, Omar, St. Charles, Mo.
Morrell, M. P., St. Louis.
Morrison, D. A., Buffalo, N. Y.
Morrison, Hugh T., Jr., Springfield, Ill.
Morrison, Leon C., Hurricane, W. Va.
Morse, F. L., St. Louis.
Morrow, E. O., Canton, Ohio.
Morton, D. F., Taylorville, Ill.
Morton, R. J., Green, Kan.
Mosby, C. D., St. Louis.
Mosby, William L., Bardwell, Ky.
Mott, W. H., Farmington, Iowa.
Moyer, S. R., Monroe, Wis.
Mudgett, John H., Philadelphia.
Mueller, Ernst, St. Louis.
Mueller, George L., St. Louis.
Mulky, Carl, Knoxville, Iowa.
Mulligan, Wesley T., Rochester, N. Y.
Muns, George E., Montgomery City, Mo.
Munson, Samuel Edgar, Springfield, Ill.
Murfin, W. W., Patoka, Ill.
Murphy, Franklin E., Kansas City, Mo.
Murphy, F. T., Brinkley, Ark.
Murphy, R. Brent, St. Louis.
Murray, Warren G., Springfield, Ill.
Musser, Charles W., Metz, Mo.
Musser, John H., Philadelphia.
Myer, Jesse S., St. Louis.
Myers, G. T., Macks Creek, Mo.
Myers, Isaac N., Maples, Ind.
Myers, R. E., Kemp, Tex.
Myers, William T., Aldrich, Mo.
Nagle, P. L., Billings, Mo.
Neblett, L. L., Stanton, Tenn.
Neblett, S. L., Southside, Tenn.
Neff, Robert L., Joplin, Mo.
Nelson, C. S., Springfield, Ill.
Nelms, J. N., Taylorville, Ill.
Neuhoff, E., St. Louis.
Newcomb, Arthur T., Pasadena, Cal.
Newcomb, W. K., Champaign, Ill.
Newman, W. T., Independence, La.
Nichols, Fred C., El Paso, Ill.
Nickell, L. O., Maud, Mo.
Nickerson, L. H. A., Quincy, Ill.
Nicks, Harry G., St. Louis.
Niebruegge, H. F., St. Louis.
Niehuss, H. H., W[illegible]n, Ark.
Nifong, William, Fredericktown, Mo.
Nixon, Madison G., Columbia, Ill.
Noble, Harry S., St. Marys, Ohio.
No[illegible], N[illegible] S., Des Moines, Iowa.
N[illegible], Charles D., Buncombe, Ill.
Norfleet, Carl, Somerset, Ky.
Norment, Henry T., Henderson, Ky.
N[illegible]mann, A. J., Pagosa Springs, Colo.
Nyberg, Robert H., Harrisburg, Ill.
Obermeyer, A. E., Jacksonville, Ill.
O'Brien, Leo F., Sappington, Mo.
O[illegible], I. D., St. Louis.
O'Connor, Bernard J., Louisville, Ky.
O[illegible], A. J., Jacksonville, Ill.
Ohail, Joseph C., Pittsburg, Pa.
Oliver, L. B., Sigourney, Iowa.
Olmstead, D. S., Millersburg, Ohio.
Olmstead, Russel T., Milan, Ind.
Omer, Wm. J., Thomas, Okla.
O'Reilly, William, Glasgow, Ill.
Osborn, J. F., St. Joseph, Mo.
Osborn, Samuel, Lansing, Mich.
Otis, Frank J., Moline, Ill.
Owen, John R., Arlington, Ky.
Owens, Alfred E., Princeton, Ill.
Owens, Richard J., Mill Spring, Mo.
Owens, William T., Mount Clare, W. Va.
Packer, J. A., Selma, La.
Padberg, Louis R., St. Louis.
Page, A. C., Des Moines, Iowa.
Palmer, Elbert A., Saratoga Springs, N. Y.
Palmer, Marlin J., Beardstown, Ill.
Parish, O. F., Grinnell, Iowa.
Parker, William, Mount Sterling, Ill.
Parker, George, Peoria, Ill.
Parks, A. L., Beardstown, Ill.
Parsons, I. C., Malvern, Iowa.
Patek, Arthur J., Milwaukee, Wis.
Patterson, William R., Tipton, Mo.
Paul, E. W., Forest City, Ill.
Paulson, David, Hinsdale, Ill.
Payne, John E., Richland, Iowa.
Peacock, A. L., Grimes, Iowa.
Peacock, Sam B., Baylis, Ill.
Pearson, Donnell M., Louisiana, Mo.
Peck, John H., Iowa City, Iowa.
Pendergraft, William C., Hollis, Okla.
Perry, W. H., Carterville, Ill.
Peterman, A. L., Parker, S. Dak.
Peters, D. C., Greentown, Ind.
Peters, J. A., Oxford, Iowa.
Peters, M. L., Cameron, Mo.
Petty, Wallace S., Rutledge, Mo.
Pfeffer, Peter A., St. Louis.
Phillips, G. H., Pawnee, Okla.
Philp, W. H., St. Francis, Ark.
Pigman, S. C., Concordia, Kan.
Pihlblad, Arvid, Lindsborg, Kan.
Pile, O. F., Memphis, Mo.
Pinckard, J. A., Atwood, Ill.
Pipkin, Walter D., Excello, Mo.
Pitman, John, Kirkwood, Mo.
Pitner, T. J., Jacksonville, Ill.
Podlewski, S. J., Steubenville, Ohio.
Pohlmann, F. L., St. Louis.
Pollock, Avon S., Big Sandy, Tex.
Pomeroy, F. S., Chardon, Ohio.
Poole, A. R., Milan, Mo.
Poos, G. H., Summerfield, Ill.
Pope, C. H., St. Louis.
Pope, Rolla D., Du Quoin, Ill.
Porter, David R., Kansas City Mo.
Porter, H. L., Seneca, Mo.
Porter, James A., Ripley, Tenn.
Porter, John E., Knob Noster, Mo.
Porterfield, Elmo P., St. Louis.
Potterfield, William Lowrie, Chicago.
Posner, Edward R., Des Moines, Ia.
Potter, George B., Shelby, Neb.
Potter, Theodore, Indianapolis.
Potter, Will H., Niagara Falls, N. Y.
Powell, E. A., Cleveland.
Powell, J. T., Maysville, Ark.
Pratt, Joseph H., Boston.
Price, D. T., Booneville, Miss.
Price, Joseph, Columbus, Ohio.
Priestley, James Taggart, Des Moines, Iowa.
Pritchett, G. L., Fairbury, Neb.
Proctor, John M., Hot Springs, Ark.
Puryea, G. K., Wichita, Kan.
Rafter, James G., Huntsville, Mo.
Ragsdale, Thomas J., Lees Summit, Mo.
Raines, Robert F., Red Cloud, Neb.
Ramsbrok, C. R., Huntingburg, Ind.
Rankin, B. S., Tunnelton, W. Va.
Rathbun, Frank D., New Windsor, Ill.
Rawlings, C. L., New Harmony, Ind.
Ray, W. B., Glenshaw, Pa.
Rayhill, C. G., Belleville, Ill.
Rayner, H. W., What Cheer, Iowa.
Read, Frederick B., Osceola Mills, Pa.
Reagan, R. M., Marion, Ind.
Reagor, F. B., Shelbyville, Tenn.
Reber, Robert L., St. Louis.
Reed, John H., Logansport, Ind.
Rehfeldt, Charles Sixtus, St. Louis.
Reid, Charles T., Corning, Kan.
Reid, David W., Jacksonville, Ill.
Reid, John D., Pilger, Neb.
Reis, Henry, Jr., Belleville, Ill.
Rennie, Wesley H., Washington, D. C.
Replogle, J. A., Udell, Iowa.
Reynolds, D. M., Clayton, Ind.
Rhodes, O. M., Bloomington, Ill.
Rice, D. H., Colorado Springs, Colo.
Rice, Ollie W., Alderson, Okla.
Richards, A. I., Sparta, Tenn.
Richards, Raymond G., St. David, Ill.
Richardson, W. D., Centralia, Ill.
Richter, George, St. Louis.
Ridgway, William F., Atlantic City, N. J.
Riley, Lea A., Oklahoma City, Okla.
Ring, Frank, St. Louis.
Ristine, Warren H., Crawfordsville, Ind.
Ritter, John, Chicago.
Rivard, G. J., Assumption, Ill.
Roane, J. Q., Carlyle, Ill.
Robb, Winifred A. Yelton, Newton, Ill.
Roberts, Edwin E., Mount Erie, Ill.
Robertson, J. M., Bunceton, Mo.
Robinson, A. C., St. Louis.
Robinson, John L., Kansas City, Mo.
Robinson, S. T., Edwardsville, Ill.
Rochester, Delancey, Buffalo, N. Y.
Rockhill, C. S., Cincinnati.
Rodes, W. R., Mexico, Mo.
Rodman, Wm. E., Hodgenville, Ky.
Rohlfing, Arthur H., St. Louis.
Rohlfing, Charles G., St. Louis.
Rohlfing, Henry A. L., St. Louis.
Rosborough, J. L., Senatobia, Miss.
Roselle, Thos. A., Palmyra, Mo.
Rosenberger, F. E., Grandfield, Okla.
Rosenow, Edward C., Chicago.
Rosewater, Nathan, Cleveland.
Ross, Charles C., Clarion, Pa.
Ross, H. R., Sterling, Kan.
Rothwell, C. A., Mexico, Mo.
Rothwell, John H., Liberty, Mo.
Rouse, W. L., Painterville, Ohio.
Rowe, H. J., Willow Springs, Mo.
Roy, Frank K., Clarence, Mo.
Roy, Philip S., Washington, D. C.
von Ruck, Silvio, Asheville, N. C.
Rucker, Marvin Pierce, Manchester, Va.
Runyon, F. J., Clarksville, Tenn.
Ruppert, G. F., Elgin, Ill.
Rush, Andrew W., Greenville, O.
Rush, Jno. A., Gray Summit, Mo.
Russell, J. J., Deepwater, Mo.
Russell, R. L., Humansville, Mo.
Rutherford, Leslie, Peoria, Ill.
Ruyle, Henry J., Springfield, Mo.
Ryall, George N., Wooster, Ohio.
Ryan, Granville N., Des Moines, Ia.
Sale, Llewellyn, St. Louis.
Salter, John C., St. Louis.
Sample, John Thomas, Saginaw, Mich.
Sanders, Claude J., Ashley, Ill.
Sanders, Jno. F., Blytheville, Ark.
Sanders, S. F., Holdrege, Neb.
Sanders, W. E., Alta, Iowa.
Sargent, Oscar F. L., Lawrence, Mass.
Sawhill, Wm. F., Concordia, Kan.
Sawyer, John P., Cleveland.
Schaub, Chas. W., St. Louis.
Schisler, Edwin, St. Louis.
Schneck, S. W., Mt. Carmel, Ill.
Scholz, Phil, St. Louis.
von Schrader, A., St. Louis.
Schrader, J. F., Bridgeport, Ill.
Schnaeder, S. P., Nashville, Ill.
Schreifels, Leonard, Granite City, Ill.
Scheve, Elmer F., Mascoutah, Ill.
Schuchat, W. Louis, St. Louis.
Schulz, F. M., Wauwatosa, Wis.
Schuman, O. V., Columbia City, Ind.
Scott, Frank C., Adrian, Ill.
Scott, John Nesbit, Kansas City, Mo.
Scott, Ralph B., Venice, Ill.
Scott, Walter E., Adel, Iowa.
Scruggs, J. P., Lenox, Iowa.
Salter, Allen, Lena, Ill.
Seats, Chas. L., Wallace, Idaho.
Seely, Wm. J., Red Bud, Ill.
Server, Albert E., St. Louis.
Sewing, Arthur H., St. Louis.
Shafer, Frank M., Edgerton, Mo.
Shaffer, Carl J., Carson, Iowa.
Shallenberger, W. E., Canton, Ill.
Shanklin, Benjamin, St. Louis.
Shannon, J. D., Greenfield, Tenn.
Sharp, W. L., Slater, Mo.
Shattinger, Charles, St. Louis.
Shattuck, George Cheever, Boston.
Shaw, J. W., St. Louis.
Sheahan, E. L., St. Louis.
Sheets, M. E., St. Louis.
Sheldon, Charles Stuart, Madison, Wis.
Sherman, Paul, Shawneetown, Ill.
Shirley, H. W., Shoals, Ind.
Shoaf, F. A., Veedersburg, Ind.
Shobe, H. G., Jefferson City, Mo.
Shore, John Paul Jones, Sailor Springs, Ill.
Shuttee, H. C., West Plains, Mo.
Sieving, H. J. C., St. Louis.
Sifford, W. R., Nashville, Tenn.
Silcox, J. Evart D., Rio, Ill.
Simon, Sidney K., New Orleans.
Simonton, Thomas Grier, Pittsburg, Pa.
Sims, J. Morgan, Collinsville, Ill.
Sisson, E. R., Greenfield, Ind.
Skaggs, Charles S., East St. Louis, Ill.
Slaughter, A. W., Green Bay, Wis.

Sloan, Arthur N., Sioux City, Iowa.
Sloan, Robert T., Kansas City, Mo.
Sloss, Herbert J., Meade, Kan.
Smiley, Thomas B., Mt. Vernon, S. Dak.
Smith, Arthur B., Wellington, O.
Smith, C. G., Red Bud, Ill.
Smith, William H., Boston.
Smith, C. J., Pendleton, Ore.
Smith, Edward, Jr., St. Louis.
Smith, E. Franklin, New York.
Smith, Geo. S., Liberal, Kan.
Smith, Henry S., Ishpeming, Mich.
Smith, J. Atkinson, St. Louis.
Smith, J. D., Shelbina, Mo.
Smith, John Kirby, Fredericktown, Mo.
Smith, Louis J., Percy, Ill.
Smith, L. T., Newton, Kan.
Smith, R. O., Pittsburg, Ill.
Smith, Samuel A., Annapolis, Ill.
Smith, William Hale, Hondo, Tex.
Smith, Wm. M., Springfield, Mo.
Smith, Webster S., Dayton, Ohio.
Smithies, Frank, Ann Arbor, Mich.
Snyder, S. J., Courtland, Kan.
Sogge, Ludwig, Windom, Minn.
Solliday, M. H., Taylorville, Iowa.
Somes, Joseph F., Vincennes, Ind.
Sorrells, C. C., Royse City, Tex.
Soule, C. E., Beardstown, Ill.
Southard, Daniel B., Mt. Vernon, Ky.
Sowder, Chas. R., Indianapolis.
Späch, A. B., Chicago.
Sparks, J. E., Crossett, Ark.
Sprecher, Daniel B., Sykesville, Md.
Sprowls, J. N., Claysville, Pa.
Stacy, George Herbert, Jacksonville, Ill.
Stahl, S. S., Franklin, Ohio.
Standly, Edmond D., Brookfield, Mo.
Standly, Z. T., Laclede, Mo.
Staneff, D., Chicago.
Stanger, G. H., Boone, Iowa.
Stanley, A. C., Tillar, Ark.
Stanley, J. B., Memphis, Tenn.
Stanton, T. P., Chariton, Iowa.
Statler, Will K., Oakridge, Mo.
Stearns, Melvin J., Ogdensburg, N. Y.
Stedman, S. M., Versailles, Ky.
Steele, Andrew D., Chester, Ill.
Steele, R. G., Melmore, Ohio.
Steele, W. E., Carthage, Mo.
Steely, Geo. W., Louisville, Ill.
Stein, Chas., Glasco, Kan.
Stericker, George F., Springfield, Ill.
Stern, Heinrich, New York.
Stewart, J. C., Anna, Ill.
Stewart, John H., Jr., Exeter, Ill.
Stewart, W. Blair, Atlantic City, N. J.
Stickney, Victor H., Dickinson, N. Dak.
Stiers, Fred L., East Peoria, Ill.
Stocking, L. C., St. Louis.
Stocks, Chester L., Bushong, Kan.
Stockton, Chas. G., Buffalo, N. Y.
Stockwell, Benjamin E., St. Louis.
Stone, Chas. E., Shoals, Ind.
Stone, Willard E., Toledo, Ohio.
Stoops, P. H., Ipava, Ill.
Stover, Chas., Amsterdam, N. Y.
Stowell, James H., Chicago.
Strode, Robt. C., Mexico, Mo.
Stroud, C. G., Erbacon, W. Va.
Strouss, U. S., Beaver, Pa.
Stubbins, S. G., Birmingham, Ala.
Stucky, Thomas H., Louisville, Ky.
Stultz, Benj. F., Moweaqua, Ill.
Stumm, T. W., St. Paul, Minn.
Sturgis, W. E., Kennett, Mo.
Sullivan, J. H., Charlotte, N. Y.
Summers, J. S., Jefferson City, Mo.
Swan, John M., Watkins, N. Y.
Swan, W. S., Harrisburg, Ill.
Swaney, A. G., Lee's Summit, Mo.
Swartsel, S. C., Cincinnati.
Swope, Opie W., Holly, Colo.
Talbot, Ambrose, Kansas City, Mo.
Tatum, Harry E., Brunswick, Mo.
Taugher, J. P., Milwaukee, Wis.
Taussig, Albert E., St. Louis.
Taussig, Arnold S., Denver.
Taylor, E. P., Fairfax, Mo.
Taylor, J. E., Leopold, Ind.
Taylor, T. M., New York.
Taylor, W. R., Ft. Recovery, Ohio.
Teas, James Joseph, Waverly, Tenn.
Teel, S. M., Prairie Home, Mo.
Temple, C. H., Glasgow, Mo.
Thackeray, W. T., Chicago.
Tharp, Royal, Benton, Ill.
Thiberge, Narcisse F., New Orleans.
Thielen, M. H., Grundy Center, Ia.
Thieme, G. C., Baltimore, Ind.
Thompson, A. W., Galt, Mo.
Thompson, C. W., Meadville, Pa.
Thornton, Joseph E., Columbia, Mo.
Thornton, William H., Buffalo, N. Y.
Thorpe, A. V., Jamestown, Mo.
Throckmorton, Tom M., Chariton, Iowa.
Thurnser, Lawrence, St. Louis.
Thurston, H. S., Indianapolis.
Tice, Frederick, Chicago.
Tidball, J., Pacific Beach, Cal.
Tileston, Wilder, New Haven, Conn.
Tiller, J. A., Bloomfield, Mo.
Tillotson, James R., Delphos, Ohio.
Timberman, J. H., Marston, Mo.
Toalson, Jas. J., Peoria, Ill.
Todd, William T., Thompson, Mo.
Toland, W. H., Mineral Springs, Ark.
Tollison, W. A., Eufaula, Okla.
Tompkins, Wm. W., Charleston, W. Va.
Toney, L. E., Piedmont, Mo.
Topping, M. H., Flat River, Mo.
Tout, B. B., Archie, Mo.
Townsend, W. H., St. Louis.
Trask, C. A., Kansas City, Mo.
Traubitz, Arnold, Neelyville, Mo.
Travis, D. J., Eddyville, Ky.
Travis, F. M., Gilbertsville, Ky.
Treat, David T., Adrian, Mich.
Treynor, V. L., Council Bluff, Ia.
Trotter, G. S., Dundas, Ill.
Trout, W. A., Atwater, Ill.
Troutman, R. E., Logansport, Ind.
Trueblood, R. R., Lawrenceville, Ill.
Tubbs, Geo. R., West Point, Ind.
Turck, Fenton B., Chicago.
Turner, A. F., Taylorville, Ill.
Tweedy, J. B., Oraville, Ill.
Tweedy, Walter B., Royalton, Ill.
Tyree, Cyrus E., Trenton, Tenn.
Ude, Waldemar, St. Louis.
Upham, J. H. J., Columbus, Ohio.
Urban, Robt. O., Evansville, Ill.
Vadakin, J. H., Bushong, Ill.
Vandervort, F. C., Bloomington, Ill.
Vandivort, A. H., St. Joseph, Mo.
Van Dyke, A. D., Marysville, Pa.
Van Gasken, Frances C., Philadelphia.
Van Hoefen, T., St. Louis.
Van Hoefen, Samuel, St. Louis.
Van Hoefen, Siegfried, St. Louis.
Van Hook, H. M., Mt. Pulaski, Ill.
Van Winkle, B. L., Belpre, Ohio.
Van Zwaluwenburg, Jas. G., Ann Arbor, Mich.
Vaughn, H. C., Shelbina, Mo.
Vertrees, C. M., Murrayville, Ill.
Vessells, Francis M., Perryville, Mo.
Viedt, Edw. J., St. Louis.
Vinyard, G. W., Jackson, Mo.
Vitt, Rudolph S., St. Louis.
Voris, H. M., East St. Louis, Ill.
Wadsworth, J. L. R., Collinsville, Ill.
Wagers, Arthur J., St. Louis.
Walker, Henry Owen, Newport, Ark.
Walker, H. W., Grantsburg, Ill.
Walker, James Hamilton, Effingham, Ill.
Walker, R. A., St. Louis.
Wallace, J. S., Brunswick, Mo.
Wallis, James C., Arkadelphia, Ark.
Wallis, J. R., Clinton, Mo.
Walt, D. C., Little Rock, Ark.
Ward, Edgar P., St. Louis.
Warren, G. A., Black Rock, Ark.
Washburn, George W., Peoria, Ill.
Washburn, Lawrence Lee, Heights, Ky.
Waterman, J. A., Jefferson City, Mo.
Waters, R. S., Brookport, Ill.
Waters, S. C., Middletown, Ind.
Waters, W. T., New London, Mo.
Watson, Walter, Mt. Vernon, Ill.
Wattleworth, James R., Yale, Ill.
Way, James P., Chicago.
Weber, Geo. H., Peoria, Ill.
Webster, Geo. W., Chicago.
Weir, S. W., Marshall, Ill.
Weis, J. W., Manchester, Ill.
Weiss, H. G., Bockport, Ind.
Weiss, Richard S., St. Louis.
Weiss, William, St. Louis.
Weitener, Herman L., St. Louis.
Welch, J. C., Bellevue, Pa.
Welch, William A., Callao, Mo.
Well, Wm., Versailles, Mo.
Wells, Russell P., Pleasant Hill, Ill.
Wesseler, F. W., St. Louis.
West, Wm. M., Monett, Mo.
Whaley, Lewis, Birmingham, Ala.
White, Chas. A., St. Louis.
White, E. C., West Brooklyn, Ill.
White, L. C., Adair, Okla.
White, S. Marx, Minneapolis.
White, Sam W., Franklin, Tenn.
Whited, D. F., Dahlgren, Ill.
Whitefort, A. R., St. Elmo, Ill.
Whitman, Wm. V., Tucson, Ariz.
Wickham, A. B., Detroit.
Wilcox, S. H., Shattuc, Ill.
Wilhelmy, A. F., Decatur, Ill.
Wilhoit, J. C., Manhattan, Kan.
Wilkes, B. A., St. Louis.
Wilkins, David R., Pocahontas, Ill.
Wilkinson, George E., Alton, Ill.
Williams, F. S., Villisca, Iowa.
Williams, Martha R., Cincinnati.
Williams, W. T., Mt. Carmel, Pa.
Williamson, W. H., M[illegible]ena, Mo.
Willingham, Edward B., Paducah, Ky.
Wilson, Dunning S., Louisville, Ky.
Wilson, E. H. G., Cape Girardeau, Mo.
Wilson, H. E., Centralia, Ill.
Wilson, J. F., B[illegible], Tenn.
Wilson, J. M., M[illegible], Ill.
Wilson, O[illegible] A. C., Paragould, Ark.
Wilson, Robert, Jr., Charleston, S. C.
Wilson, W. A., Willard, N. Mex.
Willson, Robert N., Philadelphia.
Winn, R. M., [illegible], Mo.
Winter, W[illegible], St. Louis.
Wire, G. W., W[illegible]n, Ohio.
Witherspoon, J. A., Nashville, Tenn.
Witmer, C. M., Mo[illegible] Hill, Mo.
Witt, W. H., Nashville, Tenn.
Witter, W. T. M., Milan, Mo.
Wolf, I. J., Kansas City, Mo.
Wolfe, Harlow M., Taylorville, Ill.
Wolfe, Samuel, Philadelphia.
Wood, A[illegible] M., Lentner, Mo.
Wood, Richard, Nashville, Tenn.
Woodson, L. M., Gallatin, Tenn.
Woodward, C. [illegible] D[illegible], Ill.
Woodward, H. [illegible]
Woolley, W. T., [illegible]
Wootton, W. T., Hot [illegible]
Wright, Lyman D., [illegible], Ill.
Wright, Nelson A., [illegible]
Wright, W. F., [illegible]
Wyer, H. G., K[illegible], Mo.
W[illegible], Frank B., [illegible]
Y[illegible], M[illegible], [illegible]
Y[illegible], W[illegible], [illegible] Ark.
Y[illegible], R[illegible] P., P[illegible], M[illegible]
Yates, H. P., M[illegible]
Y[illegible], M. W., [illegible]
Yo[illegible], L. A., W[illegible]
Y[illegible], John L., [illegible]
Yo[illegible], Margaret M., [illegible]
Young, J. G., P[illegible]
Youngreen? J. Ar[illegible], St. [illegible]
Youngqu[illegible], O. G., [illegible], M[illegible]
Yung, J. R., [illegible]
Zimmerman, Carl A. W., [illegible] St. Louis, Ill.
Zinninger, George F., C[illegible], O.
Zook, A. J., Adair, [illegible]

Obstetrics and Diseases of Women

Abrams, Edward T., Dollar Bay, Mich.
Aird, A. J., C[illegible]ville, Ill.
Altman, J. T., Nashville, Tenn.
Altman, Maurice, Springfield, Ill.
Anderson, W[illegible], San Francisco.
Andrews, Frank T., Chicago.
Angle, George K., Silver City, N. M.
Ayers, Treston R., St. Louis.
Bacon, Charles S., Chicago.
Baker, George W., Ogden, Utah.
Baker, Marshall, Webster Groves, Mo.
Baldy, John M., Philadelphia.
Ballard, C. N., Oklahoma City, Okla.
Bandler, Samuel Wyllis, New York.
Barbour, E. L., Peoria, Ill.
Barrett, Channing W., Chicago.
Bassett, C. W., St. Louis.
Beattie, T. J., Kansas City, Mo.
Bedal, Adelheid C., St. Louis.
Bell, J. F., Elgin, Ill.
Bell, John N., Detroit.
Benjamin, Arthur E., Minneapolis.
Bentele, Elizabeth, St. Louis.
Blender, William, Carthage, Ill.
Blocklinger, A. H., Dubuque, Iowa.
Boldt, H. J., New York.
Boswell, C. J., Mounds, Ill.
Boyd, D. H., Pittsburg, Pa.
Bradford, Walter C., Shawnee, Okla.
Bremmer, H. A., Ashton, Ill.
Brown, Columbus, Herrin, Ill.
Bullard, Rose T., Los Angeles.
Burkhardt, C. F., Effingham, Ill.
Burns, Howard, Carrollton, Ill.
Burns, T. Mitchell, Denver.
Byford, Henry T., Chicago.
Byrum, J. M., Shawnee, Okla.
Cadwallader, J. H., St. Louis.
Campbell, H. C., Jacksonville, Ill.
Cape, L. W., Maplewood, Mo.
Carley, Harry D., St. Louis.
Carson, Gib W., St. Louis.
Carstens, J. H., Detroit.
Chalfant, Sidney A., Pittsburg.
Chumbley, Charles A., Rocky, Okla.
Clark, John E., Philadelphia.
Clark, M. T., Temple, Okla.
Clegg, Joseph T., Siloam Springs, Ark.
Cook, Charles P., New Albany, Ind.
Cooper, St. Cloud, Fort Smith, Ark.
Copeland, M. A., Birmingham, Ala.
Crain, B. F., Carterville, Ill.
Crossen, H. S., St. Louis.
Culbertson, C[illegible], Chicago.
Curtis, A. N., St. [illegible]
Da[illegible], A. W., [illegible], Okla.
D[illegible]r, F., B[illegible], M[illegible]
D[illegible]n, O. H., [illegible], M[illegible]
Dav[illegible], F. C., Atlanta, Ga.
Dav[illegible], F. N., Little Rock, Ark.
Davis, J. D. S., Birmingham, Ala.
D[illegible], Otto H., S[illegible], Ill.
D[illegible], Harvey All[illegible], [illegible]
D[illegible], Philip S., [illegible]
D[illegible], T[illegible] J., C[illegible]
D[illegible], F. B., [illegible]
D[illegible], F. L., St. L[illegible]
D[illegible], W[illegible] P., [illegible]
D[illegible], Albert J., [illegible]
D[illegible], [illegible], St. [illegible]
D[illegible], M[illegible], [illegible]
D[illegible], [illegible]
E[illegible], H. [illegible]
E[illegible], W[illegible], St. [illegible]
E[illegible], C. A., [illegible]
E[illegible]
F[illegible], R. S., [illegible], Kan.
F[illegible], C. A., [illegible]
F[illegible], G. W., Delavan, Ill.
F[illegible], Philadelphia.
F[illegible], C. N., [illegible]
F[illegible], C[illegible] C., B[illegible]
F[illegible], T. O., Ma[illegible]
F[illegible], Herm[illegible], [illegible]
Fry, Henry D., Washington, D. C.
F[illegible], Walter H., St. L[illegible]
F[illegible], R[illegible], St. L[illegible]
Gardner, M. N., [illegible], Kan.
Garn[illegible], William S., B[illegible]
Gayler, W. C., St. Louis.
Gehrung, Eugene C., Denver.
Gellhorn, George, St. Louis.
Gilbert, William H., L[illegible]
Gilliam, D. Tod, C[illegible]
Gillmore, Robert T., C[illegible]
Glaser, Martin J., St. L[illegible]
Glasgow, Frank A., St. L[illegible]
G[illegible], Henry R., J[illegible], Ill.
Goffe, J. Riddle, New York.
Goldspohn, Albert, Chicago.
Gray, A. L., St. Joseph, [illegible]
Greer, Bertha A[illegible], [illegible], Iowa.
Hall, C. Lester, Kansas City, Mo.
Hamilton, M. F., M[illegible], W[illegible]
H[illegible]dley, W[illegible] E., St. L[illegible]
Hanna, M. A., Kansas City, Mo.
Hargrave, Edward T., Norfolk, Va.
Harmann, M. F., St. L[illegible]
Hartley, S. D., Ne[illegible], Mo.
Hartung, Henry, Chicago.
Ha[illegible], Herman A., St. Louis.
Hays, William H., Hannibal, Mo.
Herrington, Warner, Green City, Mo.
H[illegible], [illegible] L., San Antonio, T[illegible]
Hinchey, Fr[illegible], St. Louis.
Hipke, Gustav A., Milwaukee, Wis.
Hodges, D[illegible] M., East Prairie, Mo.
Hoffman, C. S., Keyser, W. Va.
Holland, S. Z., Paducah, Ky.
Holt, E. E., St. Louis.
Hopkins, M. J., St. Louis.
Howard, Charles E., B[illegible], Ky.
Hull, Edw. T., New York.
Huggins, Raleigh R., Pittsburg, Pa.
Hy[illegible], B. M., St. Louis.
Ja[illegible]n, Henry, St. Louis.
Jackson, J. H., T[illegible], [illegible]
J[illegible], Charles, Br[illegible]
J[illegible]n, [illegible] P., St. L[illegible]
J[illegible]n, George A., M[illegible], M[illegible]
J[illegible], Helen L. [illegible], Washington, D. C.
J[illegible], J. A[illegible], [illegible]
K[illegible], Maurice, Chicago.
K[illegible], W. C., Fort M[illegible], [illegible]
K[illegible], G. A., St. [illegible]
K[illegible], F. W., [illegible]
K[illegible] H[illegible] W[illegible], O.
K[illegible], B[illegible]
K[illegible], R. R[illegible]
K[illegible]
K[illegible] W[illegible], R[illegible]
K[illegible], W. S. [illegible]
K[illegible], W[illegible] L., St. [illegible]
K[illegible]
K[illegible], J. [illegible] W[illegible]
L[illegible], [illegible] Y.
L[illegible]
L[illegible] M.
L[illegible]
L[illegible]
L[illegible], F. B[illegible], N. Y.
L[illegible], S. M., [illegible]
L[illegible] R[illegible], Ill.
M[illegible], A. N., [illegible]
M[illegible], W. P., De[illegible]
M[illegible], J., Ca[illegible]
M[illegible], Harry O., B[illegible]
M[illegible], C. Jr., P[illegible]
M[illegible], Ella, St. Louis.
M[illegible], G. Bett[illegible], Ph[illegible]

Max, C. O. C., St. Louis.
Mayes, J. A., Denison, Tex.
McAlexander, R. O., Indianapolis.
McCallin, A. E., Hancock, Wis.
McCarroll, Horace R., Walnut Ridge, Ark.
McCullough, G. T., Missoula, Mont.
McEwen, Mary Galruth, Evanston, Ill.
McGann, Peter J., Wellston, Mo.
McGowen, T. J., Vincennes, Ind.
McGuire, M. F., Montpelier, Vt.
McKee, E. S., Cincinnati.
McLean, Mary H., St. Louis.
McMurray, R. J., St. Francisville, Ill.
McMurtry, Lewis S., Louisville, Ky.
McNutt, Julia G., Albany, N. Y.
McNutt, Sarah J., New York.
McPherson, Ross, New York.
McRoberts, W. J., Hot Springs, S. D.
Meek, Edward, Little Rock, Ark.
Miller, C. Jeff, New Orleans.
Miner, Elizabeth R., Macomb, Ill.
Missmore, L. E., St. Louis.
Mitchell, John H., Mount Vernon, Ill.
Montgomery, Edward B., Quincy, Ill.
Montgomery, E. E., Philadelphia.
Moore, B. W., St. Louis.
Moon, Phoebia Gean, Mannington, W. Va.
Morris, L., Stockport, Iowa.
Mosher, Eliza M., Brooklyn.
Murphy, John C., St. Louis.
Myers, J. F., Decatur, Ala.
Neff, G. R., Farmington, Iowa
Newman, Henry Parker, San Diego, Cal.
Newman, J. W., New Orleans, La.
Newman, Percy, St. Louis.
Noble, Sarah A., Clearwater, Kan.
Novak, Emil, Baltimore, Md.
Ogle, Alvin L., St. Louis.
Oliver, A. H., Edwardsville, Ill.
Olson, S. H., Milaca, Minn.
Oyler, H. S., Lincoln, Ill.
Pantzer, H. O., Indianapolis, Ind.
Parman, David R., St. Louis.
Parrish, George, Portland, Ore.
Paschall, J. B., Fulton, Ky.
Patton, Chas. L., Springfield, Ill.
Peck, George A., New Rochelle, N. Y.
Peterson, Reuben, Ann Arbor, Mich.
Potter, Irving W., Buffalo, N. Y.
Potter, Marjory J., Niagara Falls, N. Y.
Potts, F. T., Toluca, Ill.
Powell, Ignatius W., St. Louis.
Raab, Ernst P., Belleville, Ill.
Randle, H. T., Clayton, Mo.
Rice, Dell Frank, St. Louis.
Reis, Emil, Chicago.
Ritter, Caleb A., Kansas City, Mo.
Robbie, Mary King, San Antonio, Tex.
Rodman, W. W., Pierce City, Mo.
Rogier, Henry G., Mason City, Ill.
Rothrock, J. L., St. Paul, Minn.
Rosenthal, Max, New York, N. Y.
Ritter, Charles F., St. Louis, Mo.
Rock, Elizabeth, St. Louis, Mo.
Russell, Rose A., Granite City, Ill.
[illegible], C. T., Lexington, Mo.
[illegible], Otto L., St. Louis.
[illegible], John A., Albany, N. Y.
[illegible], T. E., Battle Creek, Mich.
Sanes, K. I., Pittsburg, Pa.
Scheel, A. M., Belleville, Ill.
Schlossstein, A. G., St. Louis.
Schmeling, A. F., Columbus, Wis.
Schoenberg, Albert J., Chicago.
Schulz, Edward, St. Louis.
Schwarz, Henry, St. Louis.
Scott, James M., St. Louis.
Shafer, H. O., Chicago.
Shafer, Winfield S., Rochester, Ind.
Shawl, J. L., Onarga, Ill.
Shlenker, Milton A., New Orleans.
Shoemaker, G. Erety, Philadelphia.
Short, R. B., Union Mills, Ind.
Sigmond, Harvey W., Crawfordsville, Ind.
Simpson, F. F., Pittsburg.
Singer, Jacob Jesse, St. Louis.
Smith, Frederick LeRoy, Chatfield, Minn.
Smith, H. W., Roadhouse, Ill.
Smith, L. S., Gypsy, W. Va.
Smith, Richard R., Grand Rapids, Mich.
Spain, Kate E., St. Louis.
Strange, J. W., Loogootee, Ind.
Starring, Anna M. F., Detroit, Mich.
Storrs, Henry John, St. Louis.
Sullivan, Walter G., Providence, R. I.
Sutton, H. T., Zanesville, Ohio.
Swahlen, Percy H., St. Louis.
Sweringen, Budd Van, Ft. Wayne, Ind.
Taussig, Fred. J., St. Louis.
Teter, D. P., Chicago.
Thompson, Logan M., Macon, Mo.
Thompson, Wm. H., Winamac, Ind.
Threadgill, Jesse M., New Douglas, Ill.
Tinney, R. M., Kerwin, Kan.
Tobin, John R., Elgin, Ill.
Toombs, Percy W., Memphis Tenn.
Trigg, J. M., Shawnee, Okla.
Tucker, R. O., Nashville, Tenn.
Tuholske, Morris C., St. Louis.
Urban, E. T., St. Louis.
Vandervoort, Louis E., Battle Creek, Mich.
Vogt, William H., St. Louis.
Walker, Edwin, Evansville, Ind.
Walker, J. A., Shawnee, Okla.
Wallace, G. R., Bertrand, Mo.
Walton, John E., Medora, Ill.
Weeks, L. C., Detroit, Minn.
Weinsberg, Julius H., St. Louis.
Welch, John E., New York.
Wentker, B. P., St. Charles, Mo.
Werder, X. O., Pittsburg, Pa.
Wetherill, Horace G., Denver.
Whetstone, Mary S., Minneapolis.
White, Marion L., Dixon, Ill.
Wickstrom, A. M., Chicago.
Wickstrom, Emma M., Chicago.
Willeford, Geo. W., Washington, Ind.
Wilson, Dora Greene, Kansas City, Mo.
Wilson, Roy E., LaBelle, Mo.
Winter, H. A., Saybrook, Ill.
Wobus, R. E., St. Louis.
Woodul, T. W., Pine Bluff, Ark.
Wright, Louisa V., Camas, Wash.
Yerkes, T. P., Upper Alton, Ill.
Yost, Walter B., St. Louis.
Zimmermann, Ernst, Quincy, Ill.
Zinke, E. Gustav, Cincinnati, Ohio.

Surgery

Abbe, Robert, New York.
Abbe, Truman, Washington, D. C.
Abbott, C. A., Oskaloosa, Ia.
Abbott, George K., Loma Linda, Cal.
Abelmann, Henry W., Chicago.
Abramson, Louis, Shreveport, La.
Ader, Lewis H., Jr., Philadelphia.
[illegible], Franklin H., St. Louis.
[illegible], M. E., Russellville, Ky.
Alexander, R. D., St. Louis.
Alexander, R. J., Waco, Tex.
[illegible], John E., Rockford, Ill.
Allen, Carroll W., New Orleans.
Allen, L. G., Litchfield, Ill.
Allen, William L., Davenport, Ia.
Allison, Nathaniel, St. Louis.
Anderson, Olney A., St. Louis.
[illegible], Robert E., St. Louis.
Anderson, C. L., Nashville, Tenn.
Anderson, H. B., Newark, O.
Anderson, Hartley J., Pittsburg, Pa.
Andrews, E. Wyllys, Chicago.
[illegible], W. A., Washington, D. C.
Armstrong, Guy L., Taylorville, Ill.
Armstrong, John H., St. Louis.
Asman, Bernard, Louisville, Ky.
[illegible], Joseph T., St. Louis.
Axtell, J. T., Newton, Kan.
[illegible], Douglas, Fort [illegible], N. Y.
[illegible], Kansas City, Mo.
[illegible], Edmund A., St. Louis.
[illegible] B., [illegible], Ill.
[illegible], Fred W., St. Louis.
Bam, Frank D., Kenton, O.
Baird, Ben D., Galesburg, Ill.
Baker, A. E., Charleston, S. C.
Baker, W. M., St. Louis.
Ball, W. A., Wanette, Okla.
Ballenger, Edgar G., Atlanta, Ga.
Ballin, Max, Detroit.
[illegible], J. J., St. Joseph, Mo.
Barcus, Paul J., Crawfordsville, Ind.
Barker, F. Dale, Dayton, O.
[illegible], R. E., Edwardsville, Ill.
Barnett, Charles E., Fort Wayne, Ind.
Barney, Rollin H., St. Louis.
Barney, Reuben, Chillicothe, Mo.
Bartels, Leo G., St. Louis.
Bartlett, Willard, St. Louis.
[illegible], H. M., Ottawa, Ill.
[illegible], D. W., Wichita, Kan.
Bath, Thomas W., Bloomington, Ill.
Battey, William W., Jr., Augusta, Ga.
Beach, William M., Pittsburg, Pa.
Beck, Carl, Chicago, Ill.
Beck, Emil G., Chicago.
Beck, H. L., Moline, Ill.
Becker, W. H., St. Louis.
[illegible], L. J., Goshen, Ind.
[illegible], J. P., Greenville, Tex.
[illegible], S. C., David City, Neb.
[illegible], Gordon A., Kansas City, Mo.
Bell, [illegible] T., Columbia, Mo.
[illegible], John L., San Jose, Cal.
Bennett, H. F., Litchfield, Ill.
Bennett, R. M., Mound Valley, Kan.
Bentley, Edwin, Little Rock, Ark.
Besley, Frederic A., Chicago.
Bevan, Arthur Dean, Chicago.
Bigelow, Isaac S., Dubuque, Ia.
Biggs, M. O., Bowling Green, Mo.
Biles, Lee E., Augusta, Ark.
Billington, R. Wallace, Nashville, Tenn.
Binney, R. W., Granite City, Ill.
Binnie, J. F., Kansas City, Mo.
Bishop, William T., Harrisburg, Pa.
Bispham, W. N., Washington, D. C.
Bisson, W. C., Abingdon, Ill.
Black, Carl E., Jacksonville, Ill.
Black, William Thomas, Memphis Tenn.
Blackburn, John H., Bowling Green, Ky.
Blain, Alexander W., Detroit.
Blake, C. D., Ellis, Kan.
Blake, John Bapst, Boston.
Blesh, A. L., Oklahoma City, Okla.
Bloodgood, Joseph L. Colt, Baltimore.
Bobb, B. A., Mitchell, S. Dak.
Bock, A. F., St. Louis.
Boehm, Joseph L., St. Louis.
Boor, Myron A., Terre Haute, Ind.
Borck, Edw., St. Louis.
Bosher, Lewis C., Richmond, Va.
Bottomley, John T., Boston.
Boulware, T. C., Butler, Mo.
Bounds, Edward H., Hannibal, Mo.
Bourn, John J., Hannibal, Mo.
Bowen, A. B., Maquoketa, Iowa.
Bowers, Charles F., Wichita, Kan.
Bowers, L. G., Dayton, O.
Boyd, D. T., Ector, Tex.
Boyd, Frank, Paducah, Ky.
Boyle, G. A., Enid, Okla.
Braasch, W. F., Rochester, Minn.
Braecklein, W. A., Higginsville, Mo.
Brandau, John W., Clarksville, Tenn.
Bray, Charles W., Biwabik, Minn.
Bremerman, Lewis Wine, Chicago.
Bromberg, Perry, Nashville, Tenn.
Brooks, John G., Paducah, Ky.
Broome, G. Wiley, St. Louis.
Bronner, Walter Brooks, New York.
Brown, Edward M., Chicago.
Brown F. H., Billings, Mo.
Brown, John Young, St. Louis.
Bruce, W. W., Casey, Ill.
Bryan, T. A., Mattoon, Ill.
Bryan, Thomas F., Dublin, Tex.
Buck, Ulysses G., Rothville, Mo.
Buckmaster, Frank, Effingham, Ill.
Bunce, Philip D., Hartford, Conn.
Bunch, Rodney J., St. Louis.
Burge, A. J., Iowa City, Ia.
Burford, C. E., St. Louis.
Burke, John P., California, Mo.
Burns, Robert J., St. Louis.
Burrows, T. W., Ottawa, Ill.
Burry, James, Chicago.
Busby, Charles D., Brooklyn, Ia.
Buser, John R., Mesaba, Minn.
Buswell, C. A., Chicago.
Byrne, John L., St. Joseph, Mo.
Cabot, Hugh, Boston.
Cadwell, Victor, Poplar Bluff, Mo.
Cahill, L. L., Springer, N. Mex.
Calbreath, C. B., Lineville, Iowa.
Cale, George W., Jr., St. Louis.
Calkins, Irving R., Springfield, Mass.
Campbell, A. J., Syracuse, N. Y.
Campbell, O. Beverly, St. Joseph, Mo.
Campbell, R. L., East St. Louis, Ill.
Cantrell, C. E., Greenville, Tex.
Cargile, Charles H., Bentonville, Ark.
Carlaw, C. M., Minneapolis.
Carmany, Harry S., Philadelphia.
Carriere, V. A., Litchfield, Ill.
Carson, George T., Chatsworth, Ill.
Carson, N. B., St. Louis.
Carter, W. J., Mattoon, Ill.
Carter, M., Louisville, Ky.
Castle, Stanley, Springfield, Ill.
Chase, Ira Carlton, Fort Worth, Tex.
Chassaignac, Charles, New Orleans.
Chenoweth, L. C., Webb City, Mo.
Cherry, T. Ewing, Cowden, Ill.
[illegible], Matt E., Marshalltown, Ia.
Cheyne, Walter, Sumter, S. C.
Childress, M., Oskaloosa, Ia.
Childs, Samuel B., Denver.
Chilton, James C., Hannibal, Mo.
Chowning, Thomas, Hannibal, Mo.
Christie, G. R., Long Prairie, Minn.
Christie, R. J., Quincy, Ill.
Chute, Arthur L., Boston.
[illegible], J. M., Rockwood, Tenn.
Clapper, W. L., St. Louis.
[illegible], B. W., St. Louis.
Clark, Dwight, Evanston, Ill.
Clarke, James Fred, Fairfield, Ia.
[illegible], Stanley A., South Bend, Ind.
Clay, A. J., Hoopeston, Ill.
[illegible], E. Jay, Aberdeen, S. Dak.
Cline, C. M., Idaho Falls, Ida.
Clopton, Malvern B., St. Louis.
Coffey, R. C., Portland, Ore.
Cokenower, James W., Des Moines, Ia.
Colbert, John William, Albuquerque, N. Mex.
Colcord, A. W., Clairton, Pa.
Cole, Paul F., Steffenville, Mo.
Coleman, J. E., Canton, Ill.
Collins, Clifford N., Peoria, Ill.
Colt, John D., Litchfield, Ill.
Combs, George W., Indianapolis.
Comstock, A. E., St. Paul, Minn.
Condon, A. P., Omaha, Neb.
Conley, T. J., Chicago.
Connell, F. Gregory, Oshkosh, Wis.
Conner, Milton C., Middletown, N. Y.
Conway, W. Q., Tulsa, Okla.
Cook, George J., Indianapolis.
Cooke, A. B., Nashville, Tenn.
Coon, W. F., Caney, Kan.
Copeland, Charles C., North Madison, Ind.
Corbus, B. C., Chicago.
Cordier, A. H., Kansas City, Mo.
Cottam, G. G., Rock Rapids, Ia.
Coulter, John H., Summitville, Ia.
Cowen, Lewis C., Rising Sun, Ind.
Cox, Allen E., Helena, Ark.
Cox, David A., Howell, Ind.
Cox, Edgar, Kokomo, Ind.
Cram, F. W., Sheldon, Ia.
Crawford, W. W., Hattiesburg, Miss.
Cremer, M. H., Red Wing, Minn.
Crile, G. W., Cleveland.
Crisler, Carlton G., Cincinnati.
Crisler, J. A., Memphis, Tenn.
Crooks, Jere L., Jackson, Tenn.
Crosby, I. F., Stuart, Ia.
Crowley, D. D., Oakland, Cal.
Cubbins, William R., Chicago.
Culbertson, N. W., Massillon, O.
Cullen, Thomas S., Baltimore.
Cunningham, W. M., Corona, Ala.
Cuppaidge, G. O., Moberly, Mo.
Curtis, Arthur H., Chicago.
Dale, George L. A., Chicago.
Dalton, H. C., St. Louis.
Danzis, Mat, Newark, N. J.
Darling, Cyrenus G., Ann Arbor, Mich.
Darrow, Daniel C., Moorehead, Minn.
Daugherty, C. A., South Bend, Ind.
Davey, Benten M., Lansing, Mich.
David, V. C., Chicago.
Davidson, W. P., Sullivan, Ill.
Davis, B. B., Omaha, Neb.
Davis, Frank L., St. Louis.
Davis, George G., Chicago.
Davis, John B., Denver.
Davison, Charles, Chicago.
Deal, Don W., Springfield, Ill.
Dean, John McH., St. Louis.
Deaver, H. C., Philadelphia.
Deaver, John B., Philadelphia.
Deering, Albert B., Boone, Ia.
Deutsch, William S., St. Louis.
Dick, Andrew J., Watertown, N. Y.
Dicken, William E., Oklahoma City, Okla.
Dickinson, G. K., Jersey City, N. J.
Dickson, Paul L., Paragould, Ark.
Dillman, J. A., Louisville, Ill.
Dissinger, Hiram, Canal Fulton, O.
Dixon, Charles H., St. Louis.
Dodds, E. F., Missoula, Mont.
Dodds, J. C., Champaign, Ill.
Dodson, J. E., Jr., Vernon, Tex.
Doege, Karl, Mansfield, Wis.
Donaldson, Walter F., Pittsburg, Pa.
Donkle, L. B., Chicago.
Donnelly, James, Toledo, O.
Doolittle, H. M., Dallas, Tex.
Dorr, E. E., Des Moines, Ia.
Doty, C. M., Mason, Ill.
Downing, W. L., Moulton, Ia.
Doyle, John M., St. Joseph, Mo.
Doyle, William J., St. Louis.
Dreisbach, Norman, Minneapolis.
Dudley, Clifton R., St. Louis.
Dugan, R. C., Eyota, Minn.
Dunavant, Buford N., Memphis, Tenn.
Duncan, James A., Toledo, O.
Duncan, W. P., Jacksonville, Ill.
Dunham, Frank, Robinson, Ill.
Dunlop, H. E., Canton, Mo.
Dunsmoor, F. A., Minneapolis.
Dupuy, Charles M., Riley, Ind.
Duringer, W. A., Fort Worth, Tex.
Dutzi, August, St. Louis.
Earhart, T. W., Mulberry, Ind.
Earle, Curran B., Greenville, S. C.
Eberlein, E. W., St. Louis.
Eckelman, Metina M., Elkhart, Ind.
Edmonson, George S., Clinton, Ill.
Edmunds, Page, Baltimore.
Ehrenmann, J. J., Carrollton, Ill.
Eisendrath, Daniel N., Chicago.
Eitel, G. G., Minneapolis.
Elam, W. T., St. Joseph, Mo.
Elbrecht, O. H., St. Louis.
Elkins, W. H., Crystal City, Mo.
Ely, Leonard W., New York.
Engelbrectsen, Ferd, Chicago.
English, C. H., Fort Wayne, Ind.
Epler, Crum, Pueblo, Colo.
Epperson, J. C., Kansas, Ill.
Epstein, Meyer J., St. Louis.
Eschbach, H. C., Albia, Ia.
Eskey, Leonard, Wheeling, W. Va.
Eskridge, Belle C., Houston, Tex.
Evans, George R., Dayton, Ohio.
Evans, John L., Wichita, Kan.

Evans, O. E., Gowrie, Ia.
Ewing, F. W., Terral, Okla.
Fairbrother, H. C., East St. Louis, Ill.
Fairchild, D. S., Clinton, Ia.
Fall, C. P., Beatrice, Neb.
Farr, Robert Emmett, Minneapolis.
Fay, Oliver J., Des Moines, Ia.
Fell, George Edward, Buffalo, N. Y.
Ferguson, Alex. Hugh, Chicago.
Ferguson, E. C., Edwardsville, Ill.
Ferguson, Robert Henry, East Orange, N. J.
Ferguson, Wilson J., Sedalia, Mo.
Finney, W. H., Clintonvile, Wis.
Fisher, Elbert E., Salem, Ore.
Fisher, V. L., Mount Vernon, O.
Fisher, Waldo, Alton, Ill.
Fite, Francis B., Muskogee, Okla.
Fitts, Alston, Tuscaloosa, Ala.
Fitzpatrick, D. F., Iowa City, Ia.
Fitzpatrick, M. W., Decatur, Ill.
Fochtman, F. W., Cumberland, Md.
Ford, J. H., Indianapolis.
Forney, Charles D., Wichita, Kan.
Fortner, Benj. F., Springfield, Ill.
Foster, J. P., Lacrosse, Mo.
Fowler, J. V., Chicago, Ill.
Fox, Frank E., Fulton, N. Y.
Fox, Ralph D., Bloomington, Ill.
Fox, Sylvester D., St. Louis, Mo.
Franke, W. E., Newton, Ill.
Frankenthal, Maurice A., St. Louis.
Freund, Newton M., St. Louis.
Frick, W. J., Kansas City, Mo.
Friedlaender, Bernhard, Sebewaing, Mich.
Fulgham, J. H., East St. Louis, Ill.
Fuller, T. E., Texarkana, Tex.
Fuller, William, Chicago.
Funkhouser, Robert M., St. Louis.
Gage, Homer, Worcester, Mass.
Gallwey, John, San Francisco
Gant, Samuel G., New York.
Garrison, C. W., Fort Smith, Ark.
Garwood, A., New Braunfels, Tex.
Gaub, Otto C., Pittsburg, Pa.
Gavin, S. E., Fond du Lac, Wis.
Gettys, Henry B., St. Louis.
Giannini, B. E., Coalmont, Ky.
Gibson, L. P., Little Rock, Ark.
Gile, E. E., Shawnee, Okla.
Gillette, Arthur J., St. Paul, Minn.
Gillette, William J., Toledo, O.
Gillis, Frank P., Du Quoin, Ill.
Gilmore, W. H., Mount Vernon, Ill.
Glennon, William P., St. Louis.
Glidden, Stephen C., Danville, Ill.
Godfrey, Henry T., Galena, Ill.
Goode, Rhett, Mobile, Ala.
Goodloe, Hart, Canon City, Colo.
Goodrich, R. H., Chamberlain, S. Dak.
Gorin, M. George, St. Louis.
Graessle, George G., Seymour, Ind.
Graham, Alois B., Indianapolis.
Graham, David W., Chicago.
Graham, J. A., Chicago.
Grant, W. W., Denver.
Graul, Robert E., St. Louis.
Graves, Spencer C., St. Louis.
Gray, W. L., Champaign, Ill.
Grayston, Wallace S., Huntington, Ind.
Greaves, Walter W., La Salle, Ill.
Green, Frederick R., Chicago.
Green, G. W., Chicago.
Greensfelder, Louis A., Chicago.
Griffin, Fred, Mexico, Mo.
Griffin, John Morse, Sulphur Springs, Ark.
Griffith, D. M., Owensboro, Ky.
Griffith, J. D., Kansas City, Mo.
G[illegible]nn, E. C., Kirksville, Mo.
Grimm, P. G., Edgar, Neb.
Grinstead, W. F., Cairo, Ill.
Guerry, Le Grand, Columbia, S. C.
Guhman, Charles N., St. Louis.
Guhman, John O., St. Louis.
Gundlach, Arthur, St. Louis.
Guthrie, George W., Wilkes-Barre, Pa.
Guthrie, W. A., Franklin, Ky.
Guthrie, William E., Bloomington, Ill.
Hacker, Christian G., Albany, N. Y.
Haeberlin, John B., Chicago.
Haecker, L. E., Hampton, Ia.
Haessly, S. B., Red Wing, Minn.
Haffner, E. L., Hermann, Mo.
Hagerty, Thomas, East St. Louis, Ill.
Hagerty, Meade E., St. Louis.
Haggard, W. D., Nashville, Tenn.
Hagner, Francis R., Washington, D. C.
Hahn, L. A., Guthrie, Okla.
Haines, W. D., Cincinnati.
Hairgrove, J. W., Jacksonville, Ill.
Hall, Andy, Mount Vernon, Ill.
Hall, Thomas H., Gillespie, Ill.
Hallam, J. C., St. Louis.
Hamel, A. H., St. Louis.
Hamilton, J. W., Mount Vernon, Ill.
Hamilton, S. S., Punxsutawney, Pa.
Hamilton, W. D., Columbus, O.
Hamlin, Oliver D., Oakland, Cal.
Hanes, Granville, S., Louisville, Ky.
Haning, H. C., Dayton, O.
Hanna, Robert A., Peoria, Ill.
Harpole, Charles B., Evansville, Ind.
Harrell, H. J., St. Louis.
Harrelson, N. O., Kansas City, Mo.
Harris, Charles Grant, Festus, Mo.
Harris, Charles H., Fort Worth, Tex.
Harris, H. W., Winchester, Mo.
Harris, M. L., Chicago.
Harris, Rufus C., St. Louis.
Harry, Charles Rees, Stockton, Cal.
Harsha, William M., Chicago.
Hawkins, A. H., Cumberland, Md.
Hawkins, G. W., Salisbury, Mo
Hawkins, John A., Pittsburg, Pa.
Hayden, A. M., Evansville, Ind.
Hayden, John Gardner, Kansas City, Mo.
Hayes, D. J., Milwaukee, Wis.
Hayes, Harry M., Peoria, Ill.
Heath, Horace, Denver.
Hebb, Arthur, Baltimore.
Hector, William S., Chicago.
Heddens, James Weir, St. Joseph, Mo.
Hederick, Austin R., Boonville, Ark.
Hedges, Harry Slicer, Brunswick, Md.
Heflin, H. Nelson, Kewanee, Ill.
Heilman, E. S., Ida Grove, Iowa.
Henderson, E. E., Chicago.
Hendon, George A., Louisville, Ky.
Hendrick, J. A., Shreveport, La.
Hennerich, Joseph P., St. Louis.
Hepburn, Thomas N., Hartford, Conn.
Herbst, Robert H., Chicago.
Hertel, Garfield E., Belleville, Ill.
Hertzler, Arthur E., Kansas City, Mo.
Hewitt, Walter R., St. Louis.
Hicks, H. M., Amsterdam, N. Y.
Highsmith, J. F., Fayetteville, N. C.
Hilgard, George E., Belleville, Ill.
Hill, James C., Newton, Iowa.
Hill, L. H., Greenway, Ark.
Hill, Roland, St. Louis.
Hill, T. Chittenden, Boston.
Hirschman, Louis J., Detroit.
Hoberecht, C. A., St. Louis.
Hobson, J. A., Flushing, Ohio.
Hocker, Robert T., Arlington, Ky.
Hodgson, Fred G., Atlanta, Ga.
Hoffman, Gideon H., Kewanee, Ill.
Hoffmann, Philip H., St. Louis.
Hogan, Edgar P., Birmingham, Ala.
Hogeboom, R. W., Springfield, Mo.
Hollowbush, J. R., Rock Island, Ill.
Holman, Carl J., Mankato, Minn.
Holt, Charles S., Fort Smith, Ark.
Hoover, Delbert E., Warren, Ohio.
Hopkins, John R., Denver.
Hopkins, Thomas A., St. Louis.
Horsley, J. Shelton, Richmond, Va.
Horst, Otto Carl, St. Louis.
Horwitz, Alexander E., St. Louis.
Hough, Frank S., Sibley, Iowa.
Hough, Garry de N., New Bedford, Mass.
House, A. F., Cleveland.
Howard, A. Philo, Houston, Tex.
Howard, F. A., Slater, Mo.
Howells, James O., Bridgeport, Ohio.
Howton, Oleander, Osceola, Ark.
Hubbell, William B., Elyria, Ohio.
Huffman, Logan H., Hobart, Okla.
Hughes, J. C., Walnut Ridge, Ark.
Hulen, F. P., Pond Creek, Okla.
Hume, Arthur M., Owosso, Mich.
Humiston, Ray, Worthington, Minn.
Hungate, James B., Weeping Water, Neb.
Hupp, Frank Le Moine, Wheeling, W. Va.
Hutto, O. D., Kokomo, Ind.
Hyndman, Charles E., St. Louis.
Irwin, Cyrus H., Sesser, Ill.
Jackson, Jabez N., Kansas City, Mo.
Jackson, Ralph W., Fall River, Mass.
Jaeger, Charles, Denver.
James, Charles S., Centerville, Iowa.
James, R. M., Joplin, Mo.
Jameson, C. H., St. Louis.
Janes, Vincil, Cameron, Mo.
Jarvis, E. T., Macomb, Ill.
Jayne, W. A., Denver.
Jelks, John, Memphis, Tenn.
Jepson, W., Sioux City, Iowa.
Jenner, Albert George, Milwaukee.
Jerome, J. N., Evansville, Ind.
Jerome, M. A., Toledo, Ohio.
Joesting, F. C., Alton, Ill.
Johnson, Arthur H., Portland, Ore.
Johnson E. Horace, St. Louis.
Johnson, G. C., Evansville, Ind.
Johnson, H. M., St. Louis.
Johnson Wm. D., Batavia, N. Y.
Jonas, A. F., Omaha, Neb.
Jonas, Ernst, St. Louis.
Jones, C. C., Comfort, Texas.
Jones, D. N., Gaylord, Minn.
Jones, J. L., Jonesburg, Mo.
Jones, W. D., Devils Lake, N. Dak.
Jordan, W. M., Birmingham, Ala.
Judd, E. S., Rochester, Minn.
Jurgens, H. J., Edina, Mo.
Kahler, J. Frank, Canton, Ohio.
Kahn, Lee, Louisville, Ky.
Kalbaugh, Alex. B., Westernport, Md.
Kalbaugh, Z. T., Piedmont, W. Va.
Kane, R. Emmet, St. Louis.
Kee, A. L., Cambridge, Neb.
Keith, F. L., Flat River, Mo.
Keller, John G., Toledo, Ohio
Keller, Lester, Ironton, Ohio
Kelleher, T. F., Des Moines, Iowa
Kelly, William D., St. Paul, Minn.
Kennedy, T. C., Indianapolis, Ind.
Kennedy, W[illegible] C., St. Louis
Kerr, Archibald A., Salt Lake City.
Kern, Albert G., Knoxville, Tenn.
Kerr, Norman, Chicago
Kessler, Samuel Fritts, St. Joseph, Mo.
Ketchersid, J. W., Hope, Kans
Kilburn, Frank, Presque Isle, Me
King, B. H., Granite City, Ill
Kirby, Leonidas, Harrison, Ark
Ki[illegible]ner, Walter C. G., St. Louis
Kirkpatrick, H. L., Dalton, Mo.
Kn[illegible], G. W., Frazee, Minn
Kiser, Chas. R., Madison, Ill
Kieffer, Alonzo R., St. Louis, Mo.
Kleinhans, M. A., Milwaukee, Wis.
Klinefelter, M. L., St. Louis.
Knewitz, O. W., E. St. Louis, Ill.
Knott, Van Buren, Sioux City, Iowa.
Koenig, George W., St. Louis.
Kotron, Joseph A., Cleveland.
Korsell, C. L. P., Chicago.
Kramps, A. F., Chicago.
Kreider, G. N., Springfield, Ill.
Kreissl, F., Chicago.
Krouse, Louis J., Cincinnati.
Kuhn, B. F., Elkhart, Ind.
Kurtz, R. L., Neoga, Ill.
Kurtzeborn, E. E., St. Louis
La Force, W. B., Keokuk, Iowa.
Lambeth, G. S., Moran, Ky
Larew, John T., St. Louis.
Larimore, Frank C., Mount Vernon.
Latham, H. W., Latham, Mo
Latta, Samuel W., Philadelphia.
Lawler, T. A., Taylorville, Ill.
Lawrence, Wm. S., St. Louis
Laws, William V., Hot Springs, Ark.
Lawrence, W. B., Batesville, Ark.
Leahy, Maurice, Tiffin, O.
Lee, Jr., Elbert J., St. Louis.
Leighton, William Elston, St. Louis.
Lemon, Charles H., Milwaukee, Wis.
Lescher, Edwin R., Mt. Carmel, Ill.
Lesemann, Frederick J., Chicago.
Lespinasse, Victor D., Chicago.
Lessenger, W. S., Mt. Pleasant, Iowa.
Lewin, S., Chicago
Lewis, Bransford, St. Louis.
Lewis, C. B., St. Cloud, Minn.
Lewis, Charles F., Austin, Minn.
Lewis, Dean, Chicago.
Lewis Robt. C. M., Marion, O.
Lightfoot, J. A., Texarkana, Ark.
Link, J. Joseph, St. Louis.
Littig, L. W., Iowa City, Iowa.
Little, J. Warren, Minneapolis.
Lloyd, Samuel, New York.
Lockhart, Chas. H., Witt, Ill.
Lockwood, Chas. D., Pasadena, Cal
Long, Dock, Duncan, Okla.
Long, John W., Greensboro, N. C.
Lord, John Prentiss, Omaha.
Lowman, J. B., Johnstown, Pa.
Lucid, M. M., Cortland, N. Y.
Luckey, H. R., Seymour, Ind.
Lund, Herluf G., St. Louis.
Luttrell, Walter, Knoxville, Tenn.
Lutz, Frank J., St. Louis.
Lydston, G. Frank, Chicago
Lynch, Jerome M., New York.
Lyon, Hartwell N., St. Louis.
MacDonald, Jr., Jos., East Orange, N. J.
Macdonald, John W., St. Louis.
MacGowan, Granville, Los Angeles.
Mackenzie, Robert Gordon, Ann Arbor, Mich
MacLeod, Geo. D., Cleveland.
Macrae, Jr., Donald, Council Bluffs, Iowa.
Madill, Grant, Ogdensburg, N. Y.
Maes, Urban, New Orleans.
Mahoney, Stephen A., Holyoke, Mass.
M[illegible]nkopf, B. L., New Haven, Mo.
Mann, Arthur T., Minneapolis
Manson, F. M., Worthington, Minn
Ma[illegible]ey, Jr., Henry O., Boston.
Mackl[illegible]y, P. L., Rockford, Ill.
Marks, Heine, St. Louis.
Marsh, F. L., Mount Pleasant, Pa.
Marshall, Frank B., M[illegible]gon, Mich.
Marshall, J. A., Pontiac, Ill
Martin, C[illegible]er F., Philadelphia.
Martin, Jos. D., New Orleans, La.
Martin, L. H., Hattiesburg, Miss.
Marxmiller, Harry G., Los Angeles, Cal.
Mason, Francis M., R[illegible]ville, Ill.
Mason, Will, Murray, Ky
Masters, George B., R[illegible], Pa
Mathews, Joseph M., Louisville, Ky
Matlock, Granville E., Wilkes-Barre, Pa.
M[illegible], F[illegible] C. F., P[illegible], Cal.
M[illegible]on, James A., M[illegible], [illegible]
Ma[illegible]er, A. A., LaC[illegible], W[illegible]
Ma[illegible], J. W., Dr[illegible], New York.
Maxedon, Tho[illegible] H., Vincennes, Ind.
Ma[illegible], Albert, C[illegible]ersville, Ind.
Ma[illegible], C. H., Rochester, Minn.
May[illegible], William J., R[illegible], M[illegible]
McA[illegible], L. C., St. Louis.
McArthur, A[illegible] W., Kansas City, Mo.
McCabe, W. M., Nashville, Tenn.
McC[illegible], W. A., St. Louis.
McCarty, T. L., Dodge City, Kans.
McCord, Robt. C., L[illegible], K[illegible]
McCall, H. B., Kansas City, Mo.
McClendon, A. A., Marion, [illegible]
McClintock, John C., T[illegible], K[illegible]
McClure, F. F., Detroit.
McCoy, Ambrose, Ja[illegible], Tenn.
McCoy, G. C., St. Louis, Mo.
McCoy, P. A., Evansville, Ind.
McCuiston, L. P., Paris, Tex.
McCully, Chas. H., Logansport, Ind.
McDonald, J. W., Fairmont, W. Va.
McElhaney, Clarence W., Greenville, Pa.
McGill, W. F., St. Joseph, Mo.
McGraw, Henry R., Denver, Colo.
McK[illegible], C. H., Vicksburg, Miss.
McKay, H. S., St. Louis, Mo.
McKee, J. F., Johnston City, Ill.
McKim, H. W., LaBelle, Mo.
McKinney, F. J., Gifford, Ill.
McKinnie, L. H., Colorado Springs, Colo.
McKitrick, Austin S., Kenton, O.
McLaren, J. L., Oakland, Cal.
McLaughlin, A. W., Chicago, Ill.
McLain, W. H., Wheeling, W. Va.
McLean, Angus, Detroit.
McLandress, J. A., St. Charles, Mo.
McMullen, Charles G., Schenectady, N. Y.
McNamara, W. E., Trimountain, Mich.
McNees, A. Jackson, Canton, Mo.
McNemer, G. H., Cairo, Ill
McOscar, Edward J., Ft. Wayne, Ind.
McQuillan, Albert B., East St. Louis, Ill.
McRae, Floyd W., Atlanta, Ga.
Means, W. J., Columbus, O.
Mecray, Paul M., Camden, N. J.
Meisenbach, A. Edward, St. Louis.
Meisenbach, A. H., St. Louis.
Menestrina, Jules F., St. Louis.
Meyer, Willy, New York, N. Y.
Millard, Henry A., M[illegible]nk, [illegible]
Miller, J. Est[illegible], Pittsfield, Ill.
Miller, J. F., Palmer, Ill.
Miller, R. B., Hinton, W. Va.
Miller, S. H., Joplin, Mo.
Miller, S. M., Peoria, Ill.
Miller, S. R., Knoxville, Tenn.
Mills, W. P., Missoula, Mont.
Milton, Joseph L., Oakland, Cal.
Minassian, H. A., Des Moines, Iowa.
Mitchell, A. R., Lincoln, Nebr.
Mitchell, H. C., Carbondale, Ill.
Moe, Anton J., Heron Lake, Minn.
Molz, Chas., Murphysboro, Ill.
Monahan, J. J., Encampment, Wyo.
Montgomery, C. C., Lincoln, Ill.
Montgomery, J. T., Charleston, Ill.
Moore, H. A., Indianapolis.
Moore, James E., Minneapolis.
Moore, J. G., Mexico, Mo.
Moore, John T., Houston, Texas.
Moore, J. W., St. Louis.
Moore, M. G., Vincennes, Ind.
Moore, R. W., Arcadia, Kans.
Moore, Sherwood, St. Louis.
Moore, Wm. L., Truxton, Mo.
Moots, Charles W., Toledo, O.
Mo[illegible], C. W., Eveleth, Minn.
Morehouse, H., Danville, Ill.
Morris, C. C., St. Louis.
Morrow, Nelson C., [illegible], K[illegible]
Morrow, W. F., Kansas City, Mo.
M[illegible], A. W., San F[illegible]
Mor[illegible], Dan[illegible], St. Joseph, Mo.
Moss, W. F., M[illegible], C[illegible]
Motter, Thomas Ira, Chicago.
Mudd, Harvey G., St. Louis.
M[illegible]r, D. T., Allen, K[illegible]
Mumford, James G., Boston.
M[illegible]ng[illegible], L. H., W[illegible]
Munn, I. O., Topeka, Kans.
Munson, A. P., St. Louis, Mo.
[illegible], J. S., S[illegible], Kans.
M[illegible], Robert I., A[illegible], S. Dak.
M[illegible], James B., M[illegible], Tenn.
Murphy, F. S., Dixon, Ill.
Murphy, John B., Chicago.
Murray, Dwight H., Syracuse, N. Y.
Murtagh, S. A., Holden, Mo.
M[illegible]nan, J. T., Paris, Ill.
Myer, Max W., St. Louis.
My[illegible]ck, Albert E., St. Louis, Mo.
Nash, Geo. A., Maryville, Mo.

Nave, Henry H., Kansas City, Kan.
Neal, J. R., Springfield, Ill.
Neel, John M., Dallas, Tex
Neer, E. D., St. Louis.
Nelken, A., New Orleans.
Neville, Eugene J., St. Louis.
Neville, F. A., Meredosia, Ill.
Newcomer, Irving, Petersburg, Ill.
Newman, Samuel E., St. Louis.
Nichols, Schuyler, Herington, Kan.
Nicholson, C. M., St. Louis.
Nicholson, Joseph L., Camden, N. J.
Niedringhaus, Ralph E., Granite City, Ill.
Nietert, H. L., St. Louis.
Nifong, Frank G., Columbia, Mo.
N[illegible]ser, W. M., Hagerstown, Md
Noble, Robert A., Bloomington, Ill
Noome, A. J., Wheeling, W. Va.
North, Emmett P., St. Louis.
Norton, M. M., Sunnyside, Ark.
Noyes, A. A., Mason City, Iowa.
Nuzum, Thomas Walter, Janesville, Wis.
Oates, T. K., Martinsburg, W. Va.
Oatman, Louis J., St Louis.
Ochsner, A. J., Chicago
Ochsner, Edward H., Chicago.
Oehler, E. F., St. Louis.
Ogden, Chester R., Clarksburg, W Va
O'Hara, Fred S., Springfield, Ill.
O'Keefe, John E., Waterloo, Iowa.
Oldham, J. E., Wichita, Kan.
Oliver, John Chadwick, Cincinnati.
Oliver, John H., Kewanee, Ill.
Oliver, John H., Indianapolis.
O'Neil, Richard F., Boston.
O'Reilly, James Archer, St. Louis.
Osborn, J. W., Des Moines, Iowa.
Otrich, G. Cleveland, Belleville, Ill.
Ottis, D. M., Springfield, Ill
Outten, W. B., St Louis.
Oven, T. P., Brookfield, Mo
Owre, Oscar, Minneapolis.
Owsley, Paul O., Evanston, Ill
Page, Hugh N., University, Miss.
Palmer, W. L., Albert Lea, Minn.
Park, Geo. M., St Louis
Parmeter, Rolland, Detroit, Mich.
Parrish, J. C., Vandalia, Mo.
Parrish, M. P., Decatur, Ill.
Parsons, H. J., Mansfield, La.
Paschal, Frank, San Antonio, Tex.
Patterson, John, Frankfort, Ky
Paul, Thomas M., St Joseph, Mo.
Paxon, C. E., Hannibal, Mo.
Payne, Geo. W., Bardwell, Ky.
Pearse, Herman E., Kansas City, Mo
Pedersen, James, New York.
Pedersen, Victor C., New York.
Pelton, O. L., Elgin, Ill.
Pennington, J. R., Chicago.
Percy, J. F., Galesburg, Ill.
Peters, R. A., Tipton, Iowa.
Pettit, J. A., Portland, Ore.
Peyton, David C., Jeffersonville, Ind.
Phelan, J. B., Oklahoma City, Okla.
Phillips, Chas. L., Canal Zone.
Philipps, G. M., St Louis.
Pierce, F. E., Chicago.
Pierce, Harry M., St Louis.
Pitzman, Marsh, St Louis
Plendke, F. J., St. Paul, Minn
Plummer, H. S., Rochester, Minn.
Pohlmann, L. P., St Louis
Pohlmann, Walter H., St Louis.
Pomerene, B. F., Canton, Ohio.
Pond, Manson M., Dubuque, Iowa
Poole, William S., Henderson, Ky
Poorman, Bert S., Kansas City, Mo
Porter, Allen L., Kansas City, Mo
Porter, Miles F., Ft Wayne, Ind.
Poston, H. P., Bonne Terre, Mo
Potter, G. E., Detroit, Mich
Potter, T. F., St Joseph, Mo
Potter, W. W., Westbourne, Tenn
Powell, E. Willard, Omaha, Neb
Pr[illegible], Chas. F., Wheeling, W. Va.
[illegible], Howard L., Byron, N. Y.
Q[illegible], L. P., Bismarck, N. Dak.
R[illegible], W. J., Portland, Me.
R[illegible], Geo. S., Salem, Ill
R[illegible], Douglas C., Mt Vernon, Ind.
R[illegible], John P., Vincennes, Ind
R[illegible], Howard J., St Helena, Cal
R[illegible], [illegible], St Louis
Ra[illegible]newaar, C. H. van, Boonville, Mo.
R[illegible], J. F., Suffolk, Va
R[illegible], J. W., St Louis, Mo.
R[illegible], F., St Louis, Mo.
Reed, Charles A. L., Cincinnati.
Re[illegible], Elizabeth Ba[illegible], St Louis.
Re[illegible], G. P., Dav[illegible] City, Iowa
Re[illegible], Robert J., Wheeling, W. Va
Re[illegible], W. H., P[illegible], Kan.
R[illegible], Ma[illegible], Chicago.
R[illegible], H., Milwaukee, Wis.
R[illegible], J. W., East St Louis, Ill
R[illegible], C. P., Belleville, Ill.
R[illegible], A. Lester, Peter[illegible], Ill.
R[illegible], [illegible] P., A[illegible], [illegible]
R[illegible], C. H., H[illegible], Kan.
Rhodes, Walter, Toledo, Ill.
Rice, Spencer M., Terre Haute, Ind.
Rich, Charles O'Neill, Omaha, Neb.
Richardson, Maurice H., Boston.
Richardson, W. E., Slayton, Minn.
Richter, H. M., Chicago.
Riddell, John D., Enterprise, Kan.
Rietz, Paul C., Evansville, Ind.
Rigdon, R. L., San Francisco, Cal.
Rinedollar, U., Mt. Carroll, Ill.
Risdon, James Waldo, Leavenworth, Kan.
Risley, C. Howard, Cameron, Mo.
Robbins, Frederick, Detroit.
Robertson, W. M., St. Louis.
Robinson, Fred W., Sturgis, Mich
Robinson, Samuel, Boston.
Rockafellow, John C., Des Moines, Iowa.
Rockey, A. P., Assumption, Ill.
Rogers, Cassius C., Chicago.
Rogers, Mack, Birmingham, Ala.
Roope, A. P., Columbus, Ind.
Rosenthal, Maurice I., Ft. Wayne, Ind.
Ross, Daniel, Denison, Tex.
Rothrock, M. W., Howell, Ind.
Royster, Hubert A., Raleigh, N. C.
Ruddell, G. W., St. Louis.
Ruffin, Kirkland, Norfolk, Va.
Runyan, J. P., Little Rock, Ark.
Runyan, J. R., Ada, Okla.
Russ, W. B., San Antonio, Tex.
Russell, C. W., Lamar, Colo.
Russler, Jacob J., St. Louis.
Rutledge, John E., Festus, Mo.
Ryan, Lawrence, Chicago.
Sadlier, James E., Poughkeepsie, N. Y.
Safford, W. G., Tarkio, Mo.
St. John, Hugh Roberts, Alton, Kan.
Sala, E. M., Rock Island, Ill.
Sample, C. B., Saginaw, Mich.
Sampson, F. E., Creston, Iowa.
Sanders, E. M., Nashville, Tenn.
Sanders, St. Elmo, Kansas City, Mo.
Sanders, W. H., Montgomery, Ala.
Sandperl, Harry, St. Louis.
Sarles, W. T., Sparta, Wis.
Sawyer, Alfred D., Fort Fairfield, Me.
Sayle, R. G., Milwaukee, Wis.
Schaefer, Charles N., Pittsburg, Pa.
Schaeffer, Chas. D., Allentown, Pa.
Scheele, M. H., St. Louis.
Scherck, Henry J., St. Louis.
Schery, Chas. Wm., St. Louis.
Schmauss, L. F., Alexandria, Ind.
Schmidt, Richard, Victoria, Mo
Sch[illegible]or, Edward, Garden City, Mo.
Schowengerdt, W. E., Champaign, Ill.
Schultz, G. B., Cape Girardeau, Mo
Schurmeier, F. C., Elgin, Ill.
Schwab, B. C., Sapulpa, Okla.
Schweer, Theodore J., Beardstown, Ill.
Scott, Julien W., Venice, Ill.
Scott, R. G., Geneva, Ill.
Seba, John D., Bland, Mo.
Seelig, M. G., St. Louis.
Se[illegible]lery, A. C., Long Beach, Cal.
Senn, Wm. N., Chicago.
Seviet, B., Richmond, Mo.
Shaff, J. N., Alton, Ill.
Shankland, James W., St. Louis.
Shannon, L. W., Hiawatha, Kan.
Shaw, Joseph, B., Trenton, N. J.
Sherk, Henry H., Pasadena, Cal.
Sherman, Harry M., San Francisco
Sherwood, Marcel Wesley, Temple, Texas.
Shirley, W. M., Waterloo, Iowa.
Short, John L., Rolla, Mo.
Shutt, Cleveland H., St. Louis
Shy, D. E., Knobnoster, Mo.
Siegel, John H., Collinsville, Ill
Silver, David, Pittsburgh, Pa.
Silver, Harry, Middletown, Ohio
Simpson, Albert R[illegible], Corning, Ark
Simpson, J., Mer[illegible]ville, Ill
Simpson, Jesse P., Palmer, Ill.
Simpson, T. P., Beaver Falls, Pa
Singer, Frederic, Pueblo, Colo
Skinner, Edward Holman, Kansas City, Mo.
Slaughter, Chas. H. P., Philadelphia.
Slayden, John L., Dexter, Mo
[illegible]n, Edwin P., Bloomington, Ill
Sloan, H. L., Cincinnati, O
Sloan, Orville J., Neosho, Mo.
Small, A. B., Dallas, Tex
Smedal, Greggar, La Crosse, Wis.
Smith, Albert, Parsons, Kan.
Smith, Glen, Clovis, N. Mex
Smith, Carroll, St. Louis.
Smith, C. A., Texarkana, Texas
Smith, F. O., Cincinnati, Ohio
Smith, Franklin Buchanan, Frederick, Md.
Smith, Harvey S., East St. Louis, Ill
Smith, James Walter, Hot Springs, Ark.
Smith, Louis W., Wabash, Ind
Smith, Oliver C., Hartford, Conn
Smith, Ralph V., Guthrie, Okla.
Smith, W. F., Clarksville, Ark.
Smoot, J. B., Dallas, Texas.
Smrha, V. V., Milligan, Neb.
Southern, Chas. T., Cincinnati.
Sparling, A. M., Sailor Springs, Ill.
Speed, Kellogg, Chicago.
Speer, N. C., Osawatomie, Kans.
Spencer, Floyd H., St. Joseph, Mo.
Spigler, Otto R., Terre Haute, Md.
Spilman, S. A., Ottumwa, Iowa.
Spitzley, Wm. A., Detroit.
Squier, J. Bentley, New York City.
Stamm, M., Fremont, O.
Stanton, B. F., East St. Louis, Ill.
Starkel, Chas. H., Belleville, Ill.
Stauffer, G. W., Akron, O.
Stauffer, William H., St. Louis.
Stealy, J. H., Freeport, Ill.
Steele, A. J., St. Louis.
Steele, D. A. K., Chicago.
Steely, J. B., Chattanooga, Tenn.
Steelsmith, Simon, Abilene, Kans.
Steely, George, Danville, Ill.
Steffenson, O. M., Chicago.
Stetson, H. G., Greenfield, Mass.
Stevens, A. B., Scranton, Pa.
Stevens, Chas. Dillon, St. Louis.
Stewart, Floyd, St. Louis.
Stewart, J. Clark, Minneapolis.
Stiehl, E. P., Floraville, Ill.
Stigers, P. Elwood, Hancock, Md.
Stokes, Arthur C., Omaha, Neb.
Stoner, A. P., Des Moines, Iowa.
Stratton, Chas. D., Bothville, Mo.
Straus, David C., Chicago.
Strauss, D. Leon, St. Louis.
Stremmel, S. C., Macomb, Ill.
Strother, S. P., Altus, Okla.
Sullivan, Arthur G., Madison, Wis.
Sullivan, E. A., Amboy, Ill.
Summa, Henry H., St. Louis.
Summers, A. T., Mattoon, Ill.
Summers, Edmund, Mattoon, Ill.
Summers, John E., Omaha, Neb.
Sumpter, Wm. D., Nashville, Tenn.
Suttner, C. N., Walla Walla, Wash.
Sutton, W. S., Kansas City, Kans.
Swartz, Thomas B., Chicago.
Sweetser, H. B., Minneapolis.
Swenson, Carl G., Chicago.
Syms, Parker, New York.
Tainter, Frank Joseph, St. Charles, Mo.
Tainter, L. K., Fredericksburg, Texas.
Talbott, E. F., Grinnell, Iowa.
Talbott, Hudson, St. Louis.
Talley, D. F., Birmingham, Ala.
Tanguary, J. H., St. Louis.
Taylor, A. Miles, San Francisco.
Temm, Louis N., St. Louis.
Terry, N. F., Springfield, Mo.
Thrailkill, E. H., Kansas City, Mo.
Thomas, Coughlin William, St. Louis.
Thomas, G. F., Peebles, O.
Thompson, Claude A., Muskogee, Mo.
Thompson, Solomon H., Kansas City, Kans.
Tinker, Martin B., Ithaca, N. Y.
Titterington, M. B., Jerseyville, Ill.
Todd, D. C., St. Louis.
Todd, L. A., St. Joseph, Mo.
Torrance, Loyal B., St Louis.
Townsend, James Arthur, Union, Mo.
Townsend, Misner R., New York.
Townsend, Terry M., New York.
Trueheart, Marion, Sterling, Kans.
Tuckerman, J. E., Cleveland.
Tuholske, H., St. Louis.
Tull, G. A., Clay Center, Kan.
Tupper, P. Y., St Louis.
Turner, R. L., Meridian, Miss.
Tuttle, H. H., Springfield, Ill.
U[illegible]an, Benjamin F., Kankakee, Ill.
Valentine, Julius John, New York.
Vanatta, H. B., Lerna, Ill.
Vance, A. J., Harrison, Ark
Vanderveer, Edgar A., Albany, N. Y.
Vanderventer, Vivian H., Ishpeming, Mich.
Van Meter, B. F., Lexington, Ky
V[illegible]ble, W. M., Jeffersonville, Ind
V[illegible]ner, G. W., Evansville, Ind.
V[illegible]sterling, Paul F., St Louis.
Vaughan, John W., St Louis.
Vaughn, J. Walter, Detroit
V[illegible], V. E., Moorhead, Minn
V[illegible], Carl G., Evansville, Ind.
V[illegible]sard, Paul, St. Louis.
V[illegible]burgh, C. A., St. Louis.
Voyer, Emile Oswald, Minneapolis.
Waechter, Adolph, New York.
Waldner, John Louis, Parkston, S. Dak.
Walker, Alonzo B., Canton, Ohio.
Walker Henry O., Detroit.
Walker, Robert A., Menominee, Mich.
Walker, Robert S., Toledo, O.
Wall, A. S., Champaign, Ill.
Wall, Jr. Otto Augustus, St. Louis.
Wallace, C. H., St. Joseph, Mo.
Walters, Chas. E., Dexter, Mo.
Warfield, Ridgely B., Baltimore, Md.
Warner, Frank, Columbus, O.
Warren, L. P., Wichita, Kans.
Waterworth, S. J., Clearfield, Pa.
Wathen, J. R., Louisville, Ky.
Wathen, William H., Louisville, Ky.
Watson, F. W., Union City, Tenn.
Watson, J. B., Litchfield, Ill.
Weber, Frank J., Olney, Ill.
Weber J. C., Olney, Ill.
Weems, Marcus A., Columbia, Texas.
Weems, Jr., M. L., Brazoria, Texas.
Weidner, M. B., Dalton, Ill.
Weis, Edmund W., Ottawa, Ill.
Wenger, E. S., Lincoln, Nebr.
Wenger, Oliver C., St. Louis.
Werden Van, W., Des Moines, Iowa.
West, Levin, Brunswick, Md.
Wheeler, Carl Lewis, Lexington, Ky.
Wheeler, Herbert, Grant Park, Ill.
Whitacre, Horace J., Cincinnati, O.
White Herman A., Clinton, Iowa.
White, B. R., Temple, Texas.
White, Wilford W., Ravenna, O.
Whitmore, W. S., Mt. Sidney, Va.
Whitten, H. H., Peoria, Ill.
Wiatt, William S., East St. Louis, Ill.
Widner, A. W., Newtown, Mo.
Wiedemann, Frank E., Terre Haute, Ind.
Wiggins, J. L., East St. Louis, Ill.
Wilhelmj, Charles F., East St. Louis, Ill.
Will, Arthur A., Oklahoma, Okla.
Will, S. J., Jefferson Barracks, Mo.
Williams, B. G., Oskaloosa, Iowa.
Williams, E. C., Collinsville, Texas.
Williams, Fred S., Wichita, Kans.
Williams, T. J., Hiteman, Iowa.
Williams, W. W., Quincy, Ill.
Williamson, G. L., Danville, Ill.
Willis, James C., Shreveport, La.
Willson, George C., Nevada, Mo.
Wilson, John B., Ottumwa, Iowa.
Wilson Jefferson H., Beaver, Pa.
Wilson Robert Edward, St. Louis.
Wilson, S. W., Lindsay, Okla.
Winslow, Randolph, Baltimore, Md.
Wishard, Wm. N., Indianapolis, Ind.
Wisner, W. O., Spokane, Wash.
Witherspoon, T. C., Butte, Mont.
Wolbarst, Abraham Leo, New York.
Wolfe, S. N., Wilkes-Barre, Pa.
Wood, E. A., Sedalia, Mo.
Wood, H. D., Fayetteville, Ark.
Wood, W. C., Decatur, Ill.
Woods, Edmund F., Janesville, Wis.
Woods, William P., Evansville, Ind.
Woodside, E. E., Johnston City, Ill.
Woodward, Wm. C., Washington, D. C.
Woolford, J. S. B., Chattanooga, Tenn.
Woolsey, R. A., St. Louis, Mo.
Work, Jr., James A., Elkhart, Ind.
Worsham, Ludson, Evansville, Ind.
Worthington, Union, Salt Lake City.
Wight, Arthur L., Carroll, Iowa.
Wright, J. B., Trenton, Mo.
Wright, Leo S., Lowry City, Mo
Wyman, Walter, Washington, D. C.
Yancey, E. F., Sedalia, Mo.
Yarbrough, L. A., Covington, Tenn.
Yates, John L., Milwaukee, Mo.
Yocum, M. G., Mentone, Ind.
Young, Anthony O., St. Louis.
Young, F. B., Springdale, Ark.
Young, Hugh H., Baltimore, Md.
Young, W. A., Springfield, Ill
Young, W. G., Grand Rapids, Mich.
Zapffe, Fred C., Chicago.
Zinke, Stanley Gustav, Leavenworth, Kans.
Zinser, Harley A., Washington, Ill.
Zobel, Alfred J., San Francisco.
Zoller, C. H., Granite City, Ill.

Ophthalmology

Adams, A. L., Jacksonville, Ill.
Adams, George C., East St. Louis, Ill
Alt, Adolph, St. Louis, Mo
Archer, Minnie C., Houston, Tex
A[illegible]res, S. C., Cincinnati
Backenstoe, M. J., Emaus, Pa.
Ball, James M[illegible], St. Louis.
B[illegible], C. W., Greensboro, N. C.
B[illegible], Carl, St. Louis
B[illegible], J. H., Enid, Okla.
Barnett, Mattylee Curl, St. Louis.
Bedell, Arthur J., Albany, N. Y.
Bell, J. Wallace, Kansas City, Mo.
Bell, James Hall, San Antonio, Tex.
Bellows, G. E., Kansas City, Mo.
Bennett, Arthur G., Buffalo, N. Y.
Ben[illegible]n, Geo. E., Minneapolis.
Black, Nelson M., Milwaukee
B[illegible]ley, T. S., Kansas City, Mo.
Bordley, Jr., James, Baltimore.

Bosse, Edwin H., St. Louis.
Bossidy, John C., Boston.
Bradley, E. H., Peoria, Ill.
Briggs, H. H., Asheville, N. C.
Brobst, C. H., Peoria, Ill.
Brown, E. V. L., Chicago.
Brown, Felix Manning, Hopkinsville, Ky.
Bullard, Robt. L., Springfield, Ill.
Bullitt, James B., University, Miss.
Bulson, Jr., Albert E., Fort Wayne, Ind.
Burroughs, Geo. M., Danielson, Conn.
Campbell, Wm. H., Cincinnati.
Carroll, James J., Baltimore.
Cary, Edward H., Dallas, Texas.
Chamberlin, J. W., St. Paul, Minn.
Charles, Joseph W., St. Louis.
Cline, W., Appleton City, Mo.
Collasowitz, A., St. Louis.
Connor, Leartus, Detroit.
Connor, Ray, Detroit.
Coultas, R. J., Mattoon, Ill.
Curdy, Robert J., Kansas City, Mo.
Davis, A. E., New York.
Dean, Frank W., Council Bluffs, Ia.
Dennis, David, Erie, Pa.
Dickson, J. F., Portland, Ore.
Dodd, Oscar, Chicago.
Donovan, John A., Butte, Mont.
Dorsay, J. G., Wichita, Kans.
Dotson, Walter S., Gallatin, Tenn.
Dowling, Oscar, Shreveport, La.
Duncan, Capt. Wm. A. Vancouver Barracks, Wash.
Dunlap, H. M., Battle Creek, Mich.
Dunn, Jas. W., Cairo, Ill.
Dutton, Chas. King, Moberly, Mo.
Edwards, W. A., La Crosse, Wis.
Ehrhardt, R. T., St. Louis.
Ellis, H. Bert, Los Angeles, Cal.
Ellett, E. C., Memphis, Tenn.
Emerson, Linn, Orange, N. J.
Esterly, Daniel E., Topeka, Kan.
Eure, J. B., Brookfield, Mo.
Ewing, Arthur E., St. Louis.
Faith, Thomas, Chicago.
Feingold, M., New Orleans.
Fischer, Waldermar E., St. Louis.
Fisk, Frank F., Price, Utah.
Forgrave, L. R., St. Joseph, Mo.
Fox, L. Webster, Philadelphia.
Francis, Lee M., Buffalo, N. Y.
Frank, Mortimer, Chicago.
Frantz, Charles P., Burlington, Iowa.
Fridenberg, Percy, New York.
Frisch, Frederick, Buffalo.
Gailey, W. W., Bloomington, Ill.
Gamble, William E., Chicago.
Gibson, Robert D., Youngstown, O.
Gifford, H., Omaha.
Gillum, J. Randolph, Terre Haute, Ind.
Godfrey, F. H., Bloomington, Ill.
Gesney, Charles W., Kansas City, Mo.
Gradle, Henry, Chicago.
Green, Jr., John, St. Louis.
Greene, Louis S., Washington, D. C.
Greenwood, Allen, Boston, Mass.
Gross, Julius H., St. Louis.
Grove, Wm. T., Eureka, Kan.
Gsell, J. F., Wichita, Kan.
Gunn, John C., Belleville, Ill.
Guthrie, Fred A., La Salle, Ill.
Hadley, James W., Frankfort, Ind.
Hagler, Arthur Lee, Springfield, Ill.
Hägler, Elmer E., Springfield, Mo.
Haley, Robert, Brookfield, Mo.
Hall, Sidney S., Ripon, Wis.
Hanna, J. J., Quanah, Tex.
Hardy, W. F., St. Louis.
Haughey, Wilfrid, Battle Creek, Mich.
Hayden, A. A., Chicago.
Heitger, Joseph Daniel, Bedford, Ind.
Henderson, Frank L., St. Louis.
Harron, J. T., Jackson, Tenn.
Hill, Hermon C., Benton Harbor, Mich.
Hogsett, C. Y., Ft. Worth, Texas.
Hooss, Albert, St. Louis.
Hornback, E. T., Hannibal, Mo.
Howard, W. L., Greenville, Miss.
Howe, Lucien, Buffalo.
Huffman, D. W., Crane, Mo.
Hughes, Harry S., St. Louis.
Hulen, Vard H., Houston, Texas.
Irwin, V. J., Springfield, Mass.
Jackson, Edward, Denver, Colo.
Jay, M. T., Portland, Ind.
Jennings, J. Ellis, St. Louis.
Jervey, J. W., Greenville, S. C.
Johns, W. A., Corinth, Miss.
Jones, E. L., Cumberland, Md.
Kelly, J. C., Mitchell, Ind.
Kelly, Sam G., Sedalia, Mo.
Kenney, W. L., St. Joe, Mo.
Knapp, Arnold, New York.
Knapp, George, Vincennes, Ind.
Knapp, H. C., Huntingburg, Ind.

Kimberlin, J. W., Kansas City, Mo.
Kipp, Charles J., Newark, N. J.
La Force, B. D., Ottumwa, Iowa.
La Force, E. Frank, Burlington, Iowa.
Lapsley, Robt. M., Keokuk, Iowa.
Leach, W. J., New Albany, Ind.
Ledbetter, S. L., Birmingham, Ala.
Leonard, P. I., St. Joseph, Mo.
Lesage, Charles A. E., Dixon, Ill.
Lewis, E. J., Sauk Center, Minn.
Lewis, F. Park, Buffalo.
Lichtenberg, Jus. S., Kansas City, Mo.
Lightner, C. R., St. Louis.
Loeb, Clarence, St. Louis.
Louchery, D. C., Clarksburg, W. Va.
Love, Frank W., Buffalo, N. Y.
Luedde, William H., St. Louis.
Lynch, J. L., Winona, Minn.
Magoon, Frank L., St. Louis.
Magruder, A. C., Colorado Springs, Colo.
Mann, R. H. T., Texarkana, Ark.
March, Clara A., Buffalo, N. Y.
Marsden, Henry, L., Somerset, Pa.
Martin, H. H., Savannah, Ga.
Maser, G. W., Parsons, Kans.
Matheny, R. C., Galesburg, Ill.
May, James W., Kansas City, Kan.
McAlester, Jr., A. W., Kansas City, Mo.
McBride, W. O., Joliet, Ill.
McClelland, Clarence E., Decatur, Ill.
McDavitt, Thos., St. Paul, Minn.
McGirt, John L., Beatrice, Mo.
McIntire, Charles, Easton, Pa.
McLemore, T., Nevada, Mo.
Meanor, William C., Beaver, Pa.
Meyer, J. H. Wm., La Porte, Ind.
Middleton, A. B., Pontiac, Ill.
Miller, Chas. E., Muncie, Ind.
Miller, R. F., St. Louis, Mo.
Miller, Robert W., Los Angeles.
Minor, Charles L., Springfield, Ohio.
Moore, Thos. W., Huntington, W. Va.
Morris, Robt. H., Linneus, Mo.
Morrison, Frank A., Indianapolis.
Morse, H. Beach, Bay City, Mich.
Moulton, Herbert, Fort Smith, Ark.
Muetze, Henry, St. Louis.
Nance, Willis O., Chicago.
Norris, Edwin J., St. Louis, Mo.
Noyes, Guy L., Columbia, Mo.
Orendorff, Otis, Canon City, Colo.
Owen, W. C., St. Louis.
Paine, George F., St. Louis, Mo.
Parker, Frederick P., St. Louis.
Parker, Walter R., Detroit.
Parrish, E. E., Memphis, Mo.
Penn, Benj. S., Humboldt, Tenn.
Pfingst, Adolph O., Louisville, Ky.
Posey, Wm. Campbell, Philadelphia.
Post, M. H., St. Louis.
Powers, Everett, Carthage, Mo.
Pratt, John A., Aurora, Ill.
Prince, A. E., Springfield, Ill.
Pusey, Brown, Chicago.
Ramsey, J. Wilson, Jonesboro, Ark.
Randolph, R. L., Baltimore, Md.
Ranly, John, Cincinnati.
Ray, J. M., Louisville, Ky.
Reber, Wendell, Philadelphia.
Reding, H., Lawrence, Kans.
Reed W. M., Kansas City, Mo.
Rein, Hugo, St. Louis.
Rinehart, H. D., Dayton, Ohio.
Rogers, G. M. F., Austin, Minn.
Rowley, Frances, Galveston, Texas.
Sanders, Frank L., Kansas City, Mo.
Sanderson, Hermon H., Detroit.
Savage, G. C., Nashville, Tenn.
Savage, H. G. Savage, Warsaw, Mo.
Saxl Ernst, St. Louis.
Scales, J. W., Pine Bluff, Ark.
Schneider, G. J., Elgin, Ill.
Schultz, N. H., Kansas City, Mo.
Semple, N. M., St. Louis.
Shahan, William Ewing, St. Louis.
Shannon, C. E. G., Philadelphia, Pa.
Shastid, Wm. E., Pittsfield, Ill.
Shelton, J. C., Chillicothe, Mo.
Shoemaker, J. F., St. Louis.
Shoemaker, W. A., St. Louis.
Shore, F. E. V., Des Moines, Iowa.
Simpson, John D., Minneapolis.
Sites, J. McKee, Martinsburg, W. Va.
Smith, J. Whitefield, Bloomington, Ill.
Smith, Owen A., Farmington, Mo.
Smith, L. S., Hannibal, Mo.
Snyder, Walter H., Toledo, Ohio.
Spitze, Edward C., East St. Louis, Ill.
Stevens, Cyrus Lee, Athens, Pa.
Stevenson, David W., Richmond, Ind.
Stevenson, Mark D., Akron, Ohio.
Stillson, J. O., Indianapolis.
Stilwill, Hiram R., Denver.
Summers, J. W., Walla Walla, Wash.
Swan, C. J., Chicago.

Tarun, Wm., Baltimore, Md.
Taugher, A. J., Milwaukee.
Taylor, Lewis H., Wilkes-Barre, Pa.
Thompson, J. L., Indianapolis.
Thomson, Edgar S., New York.
Therington, James, Philadelphia.
Thorpe, Lewis S., Los Angeles.
Tiffany, Flavel B., Kansas City, Mo.
Todd, Frank C., Minneapolis.
Todd, S. Gordon, Neenah, Wis.
Tydings, O., Chicago.
Vail, Derrick T., Cincinnati.
Vanderhoof, Don A., Rockford, Ill.
Van Slyke, F. W., St. Paul, Minn.
Vinsonhaler, Frank, Little Rock, Ark.
Voight, C. B., Mattoon, Ill.
Vollmer, Karl, Davenport, Iowa.
Walter, Will, Chicago.
Weed, Harry M., Buffalo.
Weeks, John E., New York.
Wescott, Cassius D., Chicago.
Weyer, John S., Kansas City, Mo.
White, Joseph A., Richmond, Va.
Wilder, William H., Chicago.
W[illegible], M[illegible], St. L[illegible]
Williams, Charles H., Boston.
W[illegible]nson, L[illegible], St. Louis.
Wolfenstein, Leo, Cleveland.
Wolfner, Henry L., St. Louis.
Wood, Casey A., Chicago.
W[illegible]ff, [illegible] F., St. Louis.
Woodruff, Thomas A., Chicago.
Woods, Hiram, Baltimore.
W[illegible]man, R. A., W[illegible]
W[illegible], John W., C[illegible]
W[illegible], Sherman E., Marinette, Wis.
Wyatt, William Walter, Peoria, Ill.
Wyler, Jesse S., Cincinnati.
Yereman, O. H., Kansas City, Kan.
Young, H. C., Bloomfield, Iowa.
Yount, W. E., Cape Girardeau, Mo.
Z[illegible], W. H., Queen City, Mo.
Ziegler, S. Lewis, Philadelphia.
Zentmayer, William, Philadelphia.
Zerger, Annie L., Champaign, Ill.
Zugg, Clarence L., Kansas City, Kans.

Laryngology and Otology

Ahlers, O. C., Sherman, Texas.
Anderson, W. B., Brownwood, Tex.
Anderson, Willis S., Detroit, Mich.
Andrews, Albert H., Chicago.
Alway, R. D., Aberdeen, S. Dak.
Auten, Frank E., Belleville, Ill.
Ballinger, William Lincoln, Chicago.
Barclay, Robert, St. Louis.
Bardenheier, F. G. A., St. Louis.
Barnes, Algernon S., Jr., St. Louis.
Bartholomew, A. C., S. Bend, Ind.
Beck, Joseph C., Chicago.
Biewend, E. F., St. Louis.
Black, William D., St. Louis.
Boot, G. W., Evanston, Ill.
Boyd, Frank D., Ft. Worth, Texas.
Bradley, Arthur H., St. Louis.
Brodrick, F. W., Sterling, Ill.
Brose, Louis D., Evansville, Ind.
Brown, Clayton M., Buffalo, N. Y.
Brown, Frederick L., Chicago.
Bryan, Wm. M. C., St. Louis.
Bryant, W. Sohier, New York.
Burke, Chas. L., Kansas City, Mo.
Caldwell, Robert, Little Rock, Ark.
Canfield, R. B., Ann Arbor, Mich.
Caplan, L., St. Louis.
Casselberry, W. E., Chicago.
Cott, Geo. F., Buffalo, N. Y.
Craig, Alex R., Philadelphia, Pa.
Creveling, H. Clay, St. Louis.
Cushman, M. L., Lansing, Mich.
Dames, Alphonse F., St. Louis.
Davis, Chas. L., Robinson, Ill.
Davis, George E., New York.
Dean, Lee Wallace, Iowa City, Ia.
Decherd, Henry B., Dallas, Texas.
Dench, Edward Bradford, New York.
Devilbiss, Allen, Toledo, Ohio.
Duel, Arthur B., New York.
Emerson, Francis P., Boston.
Farrell, P. J. H., Chicago.
Fletcher, J. R., Chicago.
Foreman, J. M., Jonesburg, Mo.
Foster, John H., Houston, Texas.
Fowler, Samuel R., St. Louis.
Freer, Otto T., Chicago.
Garraghan, Edward F., Chicago.
Geiger, Arthur H., Chicago.
Gillespie, G. B., Covington, Tenn.
Glogau, Otto, New York.
Goldstein, Max A., St. Louis.
Good, R. H., Chicago.
Goodman, Daniel Carson, St. Louis.
Greene, Joseph B., Asheville, N. C.
Griffith, D. M., Owensboro, Ky.
Grubbs, S. B., San Juan, Porto Rico.
Guggenheim, L. K., St. Louis.
Hall, D. Walton, Kansas City, Mo.
Hall, Gaylord C., Louisville, Ky.
Hall, H. R., St. Louis.
Hall, W. T., Tarentum, Pa.
Higgins, Samuel G., Milwaukee, Wis.
Hill, H. B., Logansport, Ind.
Hitz, Henry B., Milwaukee, Wis.
Hogue, Dallas W., S[illegible], O[illegible]
Horn, Henry, San Francisco, Cal.
Howell, John S., Hannibal, Mo.
Huey, Thomas F., Anniston, Al.
Ingals, E. Fletcher, Chicago.
Jackson, Chevalier, Pittsburg, Pa.
James, John A., St. Louis.
Johnson, H. R., Fairmont, W. Va.
Johnson, W. L., St. Louis.
Kalar, Sara Bl[illegible], B[illegible], Neb.
Kelley, L. D., Jr., St. Louis.
Kelly, M. B., Wheeling, W. Va.
Kempff, Louis A., St. Louis.
Kepke, John, Brooklyn, N. Y.
Kimball, Z. A., [illegible], Ill.
Klokke, W. Emil, St. Louis.
Koetter, Albert F., St. Louis.
Kyle, D. Braden, Philadelphia.
Kyle, John J., Indianapolis, Ind.
Lave, Frank L., Iowa City, Iowa.
Layman, Daniel W., Indianapolis.
Leavy, C. A., St. Louis.
Lee, Daniel R., Arcadia, Neb.
Lemere, Henry B., Omaha, Neb.
Lester, Harry S., Streator, Ill.
Levy, Robert, Denver.
L[illegible], Eugene R., Dubuque, Iowa.
L[illegible], John V., Davenport, Iowa.
Loeb, Hanau W., St. Louis.
Logan, James E., Kansas City, Mo.
Lyman, H. W., St. Louis.
Magee, R. S., Topeka, Kan.
Marquis, George Paull, Chicago.
Matthews, Justus, Rochester, Minn.
Mason, William B., Washington, D.C.
McAllister, J. C., Ridgway, Pa.
McDonald, W. B., New Augusta, Ind.
McKinney, Richmond, Memphis, Tenn.
Menge, Frederick, Chicago.
Miller, Clifton M., Richmond, Va.
Miller, H. Edward, St. Louis.
Millette, J. W., Dayton, Ohio.
Miner, Stanley G., Detroit, Mich.
Mithoefer, Wm., Cincinnati.
Murphy, John W., Cincinnati.
Murray, Wm. R., Minneapolis.
N[illegible]m, Daniel S., D[illegible]
Newhart, Horace, Minneapolis.
Odell, Anna, Detroit, [illegible]
O'Kelley, J. P., N[illegible]
Oren, Samuel A., Lewistown, Ill.
Osgood, C. F., Ogden, Utah.
Page, LaFayette, Indianapolis, Ind.
P[illegible]n, Wm. W., Des Moines, Iowa.
Pfingsten, C. F., St. Louis.
Pierce, Norval H., Chicago.
Purcell, C. F., Paducah, Ky.
Pyles, Howard F., N[illegible], Pa.
Re[illegible], J. N., Baltimore, Md.
Reynolds, H. G., Paducah, Ky.
Rhodes, John Edwin, Chicago.
Roe, John O., Rochester, N. Y.
R[illegible], Dunbar, Atlanta, Ga.
Sanders, C. C., Pittsburg, Pa.
Sauer, William E., St. Louis.
Sawtell, J. L., Kansas City, Kan.
S[illegible], Ray Ph., St. Louis.
S[illegible], W. G., Pittsburg, Pa.
S[illegible]lough, George E., Chicago.
S[illegible], J. B., St. Louis.
S[illegible], J. Z., North Conway, N. H.
S[illegible], Bryan D., New York.
S[illegible], O. C., Independence, M[illegible]
S[illegible], George W[illegible], [illegible]n, N. Y.
S[illegible], Z. N., Hot Springs, [illegible]
S[illegible], D. L., Kansas City, M[illegible]
Shurly, Burt Russell, Detroit, Mich.
S[illegible], F. C., St. Louis.
S[illegible]n, Ross Hall, Philadelphia.
S[illegible], Greenfield, St. Louis.
S[illegible], J. C[illegible], St. Louis.
S[illegible], S. M[illegible], Philadelphia.
S[illegible], H. N., St. L[illegible]
S[illegible], St. L[illegible]
S[illegible] C[illegible], L[illegible]
S[illegible]
S[illegible], J. A., L[illegible]
T[illegible], S. [illegible], D[illegible]
T[illegible], W. J., [illegible] K[illegible]
T[illegible], A. B., [illegible], O[illegible]
T[illegible]
T[illegible], Wm. S., Indianapolis, Ind.
T[illegible], George A., Chicago.
T[illegible], Herbert, Kansas City, M[illegible]
V[illegible], G. L., C[illegible], Ill.
V[illegible], Sheridan, Elmira, N. Y.
V[illegible]an, O. L., St. Louis.
W[illegible], Cullen F., San Francisco.
Wheeler, W. S., Kansas City, M[illegible]
Wilson, Charles A., St. Louis.
Wintermute, G. P., Oakland, Cal.
Wyche, Charles, St. Louis.

Nervous and Mental Diseases

Anderson, C. H., [illegible], Ill.
Anderson, Frank M., Decatur, Ill.
Apton, Floyd W., Wauwatosa, Wis.
Babcock, James W., Columbia, S. C.
B[illegible], James M., Council Bluffs, Ia.
Bassoe, Peter, Chicago.
Beebe, Brooks F., Cincinnati.
B[illegible], G. H., Chester, W. Va.
Bliss, M. A., St. Louis.
Booth, David S., St. Louis.
Bowe, Edward, Jacksonville, Ill.
Bra[illegible]m, B. P., Lincoln, Ill.
Br[illegible]y, J. M., St. Louis.
Brady, F. J., Kalamazoo, Mich.
Briggs, L. Vernon, Boston.
Brown, Arthur E., St. Louis.
Brown, Sanger, Chicago.
Burnett, S. Grover, Kansas City, Mo.
B[illegible], A. F., Mason City, Ill.
Caldwell, C. B., Lincoln, Ill.
Campbell, Given, St. Louis.
C[illegible]well, Mac H. Whitney, Portland, Ore.
Chavigny, C. U., New Orleans.
Church, Archibald, Chicago.
Collins, Joseph, New York.
C[illegible], Henry C., Princeton, Minn.
Courtney, J. Elvin, Denver.
C[illegible], Farnie W., Hot Springs, Ark.
Dana, Charles L., New York.
Darling, Ulysses Grant, Chicago.
Diller, Theodore, Pittsburg.
D[illegible]tle, John C., Des Moines, Ia.
Edwards, G. F., Nashville, Tenn.
Fairchild, Statella F., St. Louis.
F[illegible]er, Percy J., St. Louis.
F[illegible]es, H. M., Biloxi, Miss.
Fry, Frank R., St. Louis.
Goddard, C. C., Leavenworth, Kan.
Graves, William W., St. Louis.
Grinker, Julius, Chicago.
Hall, George W., Chicago.
Hamilton, Arthur S., Minneapolis.
Hart, B. G., Lincoln, Ill.
Haywood, Charles W., Elkhart, Ind.
Hazen, Charles M., Bon Air, Va.
Hecht, D'Orsay, Chicago.
Hermann, H. W., St. Louis.
Hoffman, Geo. E., Logansport, Ind.
Hoge, M. W., St. Louis, Mo.
Hoppe, Hermann H., Cincinnati.
Hughes, Chas. H., St. Louis.
H[illegible], Mar[illegible] Ray, St. L[illegible]
Hummel, E. M., New Orleans.
Ives, A. W., Detroit, Mich.
Johnson, C. W., Litchfield, Ill.
Jones, W. A., Minneapolis.
Kempker, J. F., Davenport, Iowa.
Lane, E. H., East St. Louis, Ill.
Langdon, F. W., Cincinnati.
Leonard, M. W., Akron, Ohio.
Lichty, Daniel, Rockford, Ill.
Lindsay, W. S., Topeka, Kan.
Mason, Lewis D., Brooklyn, N. Y.
Mayer, Edward E., Pittsburg, Pa.
McBride, James H., Pasadena, Cal.
McCready, E. B., Pittsburg, Pa.
Mettler, L. Harrison, Chicago.
Moleen, Geo. A., Denver.
Moody, G. H., San Antonio, Tex.
Moore, Richard C., Omaha, Neb.
Moren, Jno. J., Louisville, Ky.
M[illegible]s, Zenelle E., Stockport, Ia.
Moyer, Harold N., Chicago.
Norbury, Frank P., Kankakee, Ill.
Parsonnet, Victor, Newark, N. J.
Perry, M. L., Parsons, Kan.
Pettey, Geo. E., Memphis, Tenn.
Punton, John, Kansas City, Mo.
R[illegible]n, J. F., Nevada, Mo.
Rodenbaugh, H. A., Columbus, O.
Rucker, S. T., Memphis, Tenn.
St. Clair, F. E. E., Hampton, Ia.
Sanders, C. A., Marble Hill, Mo.
S[illegible]lers, Karl D., Jonesboro, Ill.
Schwab, Sidney I., St. Louis.
Sherman, E. Amelia, McGregor, Ia.
Singer, H. Douglas, Kankakee, Ill.
Skoog, A. L., Kansas City, Mo.
Sneve, Haldor, St. Paul, Minn.
Spink, Urbana, Indianapolis, Ind.
Stephenson, Frank H., Syracuse, N. Y.
Sterne, Albert E., Indianapolis, Ind.
Stevens, Frank T., Mt. Pleasant, Ia.
Sweeney, Arthur, St. Paul, Minn.
Taylor, Lewis C., Springfield, Ill.
Thierry, Charles W., St. Louis.
Todd, Frank L., Pittsburg, Pa.
Treadway, Walter L., Jacksonville, Ill.
Trusler, Leslie S., Oakland City, Ind.
Turner, B. F., Memphis, Tenn.
Turner, Jno. S., Dallas, Tex.
Twohey, John J., Buffalo, N. Y.
Uhls, L. L., Osawatomie, Kan.
Voldeng, M. N., Cherokee, Iowa.
Wallace, B. R., Alton, Ill.
Wallace, L. S., Bunker Hill, Ind.
Webster, Edgar M., Chicago.
Wingerter, C. A., Wheeling, W. Va.
Woodson, C. R., St. Joseph, Mo.
Work, Hubert, Pueblo, Colo.
Zenner, Philip, Cincinnati.

Preventive Medicine and Public Health

A[illegible]berger, [illegible], Wa[illegible], Ill.
A[illegible]rley, A. W., Milwaukee, Wis.
A[illegible], B. L., Boston.
Bag[illegible], B. B., West Point, Va.
Barr[illegible], [illegible] L., Chicago.
Batt, William R., Harrisburg, Pa.
B[illegible], J. H., Freeport, Ill.
B[illegible]p, Fr[illegible] L., St. Louis.
B[illegible], H. W., St. L[illegible].
B[illegible]ard, Pierre M., Maplewood, Mo.
C[illegible]n, S[illegible]n, St. L[illegible].
C[illegible], J. W., Columbus, Ohio.
C[illegible], H[illegible]n, Chicago.
C[illegible], N. P., Chicago.
Crothers, T. D., Hartford, Conn.
Crowder, Thomas R., Chicago.
D[illegible], [illegible], Chicago.
D[illegible], H[illegible]k, Kansas City, Mo.
D[illegible], William T. S., Indianapolis.
[illegible], [illegible], [illegible], N. C.
D[illegible], W. [illegible], [illegible], Pa.
[illegible], [illegible] A., [illegible], Ill.
[illegible]
[illegible]
[illegible], F. C., [illegible]g, N. J.
[illegible], J. H., H[illegible]
[illegible], [illegible] W., Richmond, Va.
[illegible], [illegible], New York.
[illegible]
[illegible], [illegible] S., Jr., [illegible], N. Y.
[illegible], [illegible] J., St. L[illegible].
Gorgas, W. C., Ancon, Canal Zone, Panama.
[illegible], W. [illegible], [illegible], Ky.
[illegible], [illegible], B[illegible]k[illegible], N. Y.
[illegible], T. [illegible] D., [illegible], Ill.
[illegible], Henry B., [illegible], Ill.
[illegible], R. [illegible]
[illegible], [illegible] W., Minneapolis.
[illegible], [illegible] A. P[illegible], [illegible], Pa.
[illegible], J. W., [illegible], N. Y.
[illegible]
[illegible], [illegible], D. C.
[illegible]
[illegible]
[illegible], M[illegible]
[illegible], M[illegible]
[illegible]
Jones, Philip Mills, San Francisco.
Kerr, J. W., Washington, D. C.
King, J. E., Richmond, Ind.
Kirk, J. W., Oblong, Ill.
Koehler, Gottfried, Chicago.
K[illegible]m, Louis, Guntown, Miss.
Leathers, Walter S., University, Miss.
Langenfelder, Julius, St. Louis.
Long, John D., Washington, D. C.
MacLaren, J. D., Norman, Okla.
Magruder, G. Lloyd, Washington, D. C.
Marnell, F. S., Nebraska City, Neb.
Marner, G. P., Marion, Kan.
Martin, Elizabeth L., Pittsburg, Pa.
Montgomery, Liston Homer, Chicago.
M[illegible]t, John C., St. Louis.
Morrow, Prince A., New York.
Morton, Rosalie Slaughter, New York.
M[illegible], J. A., Snyder, Okla.
Overholser, M. P., Harrisonville, Mo.
Porter, William, St. Louis.
Price, Marshall Langton, Baltimore.
Quigley, D. T., North Platte, Neb.
R[illegible], [illegible]k, Madison, Wis.
Raw[illegible], I. D., Chicago.
R[illegible], W., Plattsburg, Mo.
R[illegible], Arthur R., Chicago.
R[illegible], W. W., C[illegible]n, Ky.
R[illegible], J[illegible], O[illegible], Wis.
Royer, B. Franklin, Harrisburg, Pa.
S[illegible], [illegible] Brown, Colfax, I[illegible]
S[illegible], William F., Stanford University, Cal.
S[illegible], Major Henry D., St. Louis.
[illegible], [illegible] Cecil, Chicago.
T[illegible], C. [illegible], Philadelphia.
T[illegible]r, H[illegible], Fort Worth, Tex.
T[illegible], C. W., Dalhart, Tex.
T[illegible], F. O., Chicago.
T[illegible], Pauline M[illegible], M[illegible]town, Iowa.
T[illegible], R. G., Nashville, Tenn.
T[illegible], T. D., Helena, Mont.
W[illegible], Jos. Bruce, Georgetown, D. C.
W[illegible], Benjamin S., St. Louis.
W[illegible], Joseph H., New Orleans.
W[illegible], [illegible] B., [illegible], Ill.
W[illegible], W., [illegible], Tenn.
[illegible], [illegible] P., [illegible]
Young, Jas. W., Grenada, Miss.

Stomatology

Adair, Joseph M., C[illegible]l, Ky.
Alcorn, Edward, Hustonville, Ky.
Allen, John M., Liberty, Mo.
Anderson, Albert, Raleigh, N. C.
Ba[illegible]r, Moses B., Flat River, Mo.
Be[illegible]l, L. P., Columbus, Ohio.
Brophy, Truman W., Chicago.
Brown, George V. I., Milwaukee, Wis.
Carter, Joseph J., Weston, Mo.
Cook, George, Concord, N. H.
Crum, John R., Ashbyburg, Ky.
Creel, Milton P., Central City, Ky.
Davis, J. S., East Prairie, Mo.
Fisher, William C., New York.
Fletcher, M. H., Cincinnati.
Fowler, Wm., Alderson, Okla.
Garrabrant, Clarence, Atlantic City, N. J.
Geary, H. Logan, Seattle, Wash.
Gilmer, Thos. L., Chicago.
Gray, J. P., Nashville, Tenn.
Griffin, P. Henry, St. Louis.
Harrison, A. M., Lee's Summit, Mo.
Hanson, H., Des Peres, Mo.
Hunt, Chas., Clinton, Ky.
Lischer, B. E., St. Louis.
Loeb, Virgil, St. Louis.
Long, Jesse, Minneapolis.
Marchman, Oscar M., Dallas, Tex.
Mais[illegible]e, August F., Manchester, Mo.
McClanahan, J. M., Guilford, Mo.
McCurdy, Stewart L., Pittsburg.
McRee, W. C., Trenton, Tenn.
McTate, Joseph C., Meadville, Pa.
Moore, P. A., Jordan, Ky.
Moorehead, F. B., Chicago.
Munson, C. L., St. Louis.
Neumann, Wm. H., Lewiston, Minn.
Noyes, Frederick B., Chicago.
Potts, Herbert A., Chicago.
Power, James E., Providence, R. I.
Presnell, C. C., Desoto, Mo.
Prinz, Hermann, St. Louis.
Reid, H. L., Charleston, Mo.
Reedy, James A., Monongah, W. Va.
Schmalhorst, D. E., St. Louis.
Smith, G. C., Boston.
Smith, W. B., Fairland, Okla.
Soper, H. W., St. Louis.
Stiff, F. W., Richmond, Va.
Talbot, Eugene S., Chicago.
Thomas, J. Smith, Pleasant Hill, Ill.
Thorpe, Burton Lee, St. Louis.
Trewyn, Wm. Thos., Peoria, Ill.
White, Geo. W., Oakland, Ky.

Diseases of Children

Abt, Isaac, A., Chicago.
Alexander, J. D., Tiptonville, Tenn.
Allin, Frank W., Chicago.
Anderson, C. A., Stromsburg, Neb.
Andrews, Leila E., Oklahoma City, Okla.
Barker, William Shirmer, St. Louis.
Bartlett, Elmer E., Lamar, Colo.
Bartley, E. H., Brooklyn.
Bebb, Walter S., Downers Grove, Ill.
Bernheim, Louis, Butte, Mont.
Black, Robt. A., Chicago.
Blair, B. H., Lebanon, Ohio.
Bleyer, A. S., St. Louis.
Bolt, Richard A., Cleveland.
Brady, John M., St. Louis.
Bridger, James D., Memphis, Tenn.
Brown, Alice Barlow, Chicago.
Brown, Orland J., North Adams, Mass.
Brucker, Charles M., Tell City, Ind.
Butler, William J., Chicago.
Caldwell, John C., East St. Louis, Ill.
Campbell, J. A., Wheeling, W. Va.
Cattermole, Geo. H., Boulder, Colo.
Cheney, H. W., Chicago.
Churchill, Frank S., Chicago.
Clemens, James Ross, St. Louis.
Coit, Henry L., Newark, N. J.
Cornell, C. W., Knoxville, Iowa.
Cook, E. A., Upper Alton, Ill.
Cooksey, William P., Atlanta, Ark.
Cotton, Alfred C., Chicago.
Davis, Clara M., Lansing, Mich.
DeBuys, L. R., New Orleans.
De[illegible]el, Godfrey, Minneapolis.
Dodson, John Milton, Chicago.
Douglas, Chas., Detroit.
Earle, Clarence A., Des Plaines, Ill.
Edwards, Ogden M., Jr., Pittsburg, Pa.
Edwards, Wm., Bowdle, S. Dak.
Elterich, Theodore J., Pittsburg, Pa.
Ford, Alice Porter, New Haven, Conn.
Forgrave, Harrison S., St. Joseph, Mo.
Friedlander, Alfred, Cincinnati.
Ga[illegible]house, Orestes L., Iola, Kan.
G[illegible]enbach, Frank P., Denver, Colo.
G[illegible]n, F. N., St. Louis.
Graham, Edwin E., Philadelphia.
Gray, Isabel, St. Louis.
G[illegible], Wm. I. H., St. Louis.
Hall, Elizabeth, Carthage, Mo.
Hamill, S. McC., Philadelphia.
H[illegible], William [illegible], Kansas City, Mo.
H[illegible]al, W. [illegible], St. Louis.
Howard, Will D., St. Albans, W. Va.
H[illegible], Edgar A., Seneca, S. C.
H[illegible]man, B. F., Sumner, Ill.
Holmes, Arthur D., Detroit.
H[illegible], W. D., Indianapolis.
H[illegible], Charles Pinckney, Jefferson City, Mo.
Houston, R. E., Greenville, S. C.
Howland, John, New York.
Hughes, W. E., Indiana Harbor, Ind.
Humphrey, J. H., St. Louis.
Jackson, John B., Kalamazoo, Mich.
Jacobi, Abraham, New York.
J[illegible]ne, Mary M. S., Chicago.
Jones, Arch D., Wichita, Kan.
Jones, Eleanor C., Philadelphia.
Jones, R. P., Clinton, La.
Ju[illegible]d, Arthur H., St. Louis.
Kelley, Samuel W., Cleveland.
Kerley, Charles Gilmore, New York.
King, Jesse A., Victoria, Ill.
Klein, Sebastian, St. Louis.
Kopfstein, F. T., Cleveland.
Kuhn, Daniel, St. Louis.
Lacey, J. H., Albion, Ill.
Lackner, Ernest, Chicago.
Lamb, Frank H., Cincinnati.
Lenty, J. D., Farmington, Wash.
Leopold, Jerome S., New York.
Levy, Aaron, St. Louis.
Lippe, Meyer J., St. Louis.
Lippmann, G., St. Louis.
Lock, James S., Barboursville, Ky.
Lowenstein, H. M., St. Louis.
Long, Eli, New York.
Martin, Charles P., St. Louis.
Martin, Tilly A., St. Louis.
McClanahan, Harry M., Omaha, Neb.
McNeill, H. L., Newman, Ill.
McVea, Charles, Baton Rouge, La.
Meng, Edwin R., St. Louis.
Merrill, Julia D., Chicago.
Merriman, C. S., Kansas City, Mo.
Miller, W. H., Macon, Mo.
Milligan, Josephine, Jacksonville, Ill.
Mitchell, Esther, Shawnee, Okla.
Moore, J. M., Cleveland.
Moore, O. T., St. Louis.
Morse, John Lovett, Boston.
Myers, Albert William, Milwaukee, Wis.
Neff, Frank C., Kansas City, Mo.
Neece, Thos. C., Walnut Ridge, Ark.
Newkirk, Jessie Slavens, Kansas City, Kan.
Noonan, C. J., Brooklyn.
Parke, Thos. D., Birmingham, Ala.
Pierson, Allen, Spencer, Ind.
Pisek, Godfrey R., New York.
Pollock, Robert, Cleveland.
Porteous, Edward J., Atlantic City, N. J.
Redden, Thomas O., Jolietville, Ind.
Reich, J. L., Wagoner, Okla.
Richardson, Katharine B., Kansas City, Mo.
Rittenhouse, Walter, Lake Geneva, Wis.
Roberts, Roy B., Brimfield, Ill.
Robichaux, L. C., Excelsior Springs, Mo.
Rosamond, J. H. E., Memphis, Tenn.
Rottek, Julius, St. Louis.
Rowland, R. S., Detroit.
Royster, L. T., Norfolk, Va.
Russell, James M., Monett, Mo.
Sedgwick, J. P., Minneapolis.
Sennett, John S., Waterloo, Ill.
Shelean, Nellie S., Cambridge, Minn.
Shuler, Anne Mary, Davenport, Ia.
Sill, E. Mather, New York.
Smead, Herbert E., Toledo, Ohio.
Smith, F. S., Macon, Mo.
Smith, Morgan, Little Rock, Ark.
Snell, M. W., Litchfield, Ill.
Snyder, J. Ross, Birmingham, Ala.
Southworth, Thomas S., New York.
Sponzig, Felix, St. Louis.
Stevens, Corbin D., Magnolia, Ark.
Stewart, James, St. Louis.
Talbot, Fritz B., Boston.

Thomas, J. J., Cleveland.
Thompson, H. H., Noblesville, Ind.
Tooker, Charles W., St. Louis.
Townsend, H. S., Buffalo, N. Y.
Troutt, E. C., Birds, Ill.
Tuley, Henry Enos, Louisville, Ky.
Tuttle, George M., St. Louis.
Twitchell, B. E., Belleville, Ill.
Vores, C. Preston, Unionville, Mo.
Vander Bogert, Frank, Schenectady, N. Y.
Vanderslice, J. W., Oak Park, Ill.
VanWinkle, J. W., Chicago.
Wahrer, C. F., Fort Madison, Ia.
Walker, Alfred A., Birmingham, Ala.
Wells, J. W., Waltonville, Ill.
Wood, C. Martin, Decatur, Ill.
Work, James Anderson, Elkhart, Ind.
Wynkoop, Edward J., Syracuse, N. Y.
Young, Josephine E., Chicago.
Zahorsky, John, St. Louis.

Dermatology

Allen, Kotz, Memphis, Tenn.
Ankrim, L. F., Pittsburgh, Pa.
Baer, Clarence Allen, Milwaukee.
Bathhurst, Wm. R., Little Rock, Ark.
Baum, William L., Chicago.
Brayton, A. W., Indianapolis.
Brosius, William Lewis, Gallatin, Mo.
Brown, Geo. S., Conway, Ark.
Collings, Howard P., Hot Springs, Ark.
Conaway, Aaron C., Marshalltown, Ia.
Corlett, William Thomas, Cleveland.
Danielson, Karl A., Litchfield, Minn.
Davis, Geo. W., Kansas City, Mo.
Davis, Robert H., St. Louis.
Durr, R. C., Batesville, Ark.
Duncan, John H., St. Louis.
Dyer, Isadore, New Orleans.
Engman, Martin F., St. Louis.
Farrer, John T., Providence, R. I.
Field, Geo. J., Salt Lake City.
Fischkin, Edward A., Chicago.
Foerster, O. H., Milwaukee.
Fordyce, John A., New York.
Fox, Howard, New York.
Frick, Wm., Kansas City, Mo.
Gnichtel, A. L., New York.
Greiner, Theodore, St. Louis.
Grindon, Joseph, St. Louis.
Haase, Marcus, Memphis, Tenn.
Harris, Frederick G., Chicago.
Hay, Eugene C., Hot Springs, Ark.
Hays, John Edwin, Louisville, Ky.
Hazen, H. H., Washington, D. C.
Heidingsfeld, M. L., Cincinnati.
Hottinger, Erwin S., Chicago.
Houwink, J. J., St. Louis.
Hughes, N. J., Waverly, Ill.
Inge, James M., Denton, Texas.
Jelks, Frank W., Hot Springs, Ark.
Kessler, J. B., Iowa City, Iowa.
Kimbrough, John S., St. Louis.
King, J. M., Nashville, Tenn.
Knowles, Frank Crozer, Philadelphia.
Lain, E. S., Oklahoma City, Okla.
Lenahan, F. P., Wilkes-Barre, Pa.
Lyle, Halsey M., Kansas City, Mo.
McBride, William L., Kansas City, Mo.
McEwen, Ernest L., Evanston, Ill.
McGlasson, I. L., Waco, Texas.
Miller, W. Jackson, St. Louis, Mo.
Mook, William H., St. Louis.
Ormsby, Oliver S., Chicago.
Prentiss, H. S., Pleasant Hill, Mo.
Pusey, Wm. Allen, Chicago.
Quinn, Wm. A., Chicago.
Raithel, G. H., St. Louis.
Ravogli, A., Cincinnati.
Ravold, Amand, St. Louis.
Roop, William O., Dayton, Ohio.
Roussel, J. N., New Orleans.
Schalek, Alfred, Omaha, Neb.
Schaller, R. G., Alton, Ill.
Schmidt, Louis E., Chicago.
Scott, Cline D., St. Louis.
Spelmire, J. B., Dallas, Texas.
Shultz, Cameron, Danville, Pa.
Spink, T. F., Washington, Ind.
Suggatt, O. LeGrand, St. Louis.
Sumney, H. C., Omaha, Neb.
Sutton, Richard Lightburn, Kansas City, Mo.
Thompson, M. G., Hot Springs, Ark.
Tucker, E. D., Toledo, Ohio.
Vanderhorck, M. P., Minneapolis.
Varney, H. R., Detroit.
Waugh, J. F., Chicago.
Wende, Grover W., Buffalo.
Wendell, J. T., Louisville, Ky.
Weston, Robert A., Des Moines, Ia.
White, Charles J., Boston.
Wilhelmj, Walter, East St. Louis, Ill.
Williams, A. U., Hot Springs, Ark.
Williams, F. M., Hot Springs, Ark.
Wolf, Alexander S., St. Louis, Mo.
Zeller, Geo. A., Peoria, Ill.

Pharmacology and Therapeutics

Abbott, W. C., Chicago.
Adamson, H. K., Maysville, Ky.
Bailey, Harold C., New York.
Boos, William F., Boston.
Burdick, A. S., Chicago.
Butler, Geo. F., Wilmette, Ill.
Cramp, Arthur J., Chicago.
Dixon, James Thomas, Providence, Ky.
Downing, Ben R., Farmington, Mo.
Edsall, David L., Philadelphia.
Emerson, Haven, New York.
England, Joseph W., Philadelphia.
Friedman, Jacob, St. Louis.
Ford, Starr, Cincinnati.
Gee, H. L., Mount Vernon, Ill.
Habermaas, Albert, St. Louis, Mo.
Hall, E. N., Bowling Green, Ky.
Hallberg, Carl S. N., Chicago.
Haskell, Chas. C., Indianapolis.
Hatcher, Robert A., New York.
Hendrix, M. B., Caruthersville, Mo.
Houghton, E. M., Detroit.
Jenne, J. N., Burlington, Vt.
Kahlo, Geo. D., French Lick, Ind.
Livingston, Alfred T., Jamestown, N. Y.
Loevenhart, A. S., Madison, Wis.
Mason, Frederic S., New York.
McCormack, Arthur T., Bowling Green, Ky.
McCormack, J. N., Bowling Green, Ky.
Megrail, W. P., Wheeling, W. Va.
Motter, Murray Galt, Washington, D. C.
Oakman, C. S., Detroit.
Peters, LeRoy S., Silver City, N. Mex.
Remington, Joseph P., Philadelphia.
Riley, C. M., Alton, Ill
Seymour, W. H., Charles City, Ia.
Simmons, George H., Chicago.
South, Lillian H., Bowling Green, Ky.
Stewart, F. E., Philadelphia.
Thrush, M. Clayton, Philadelphia.
Wescott, W. C., Atlantic City, N. J.
Wheatley, F. G., N. Abington, Mass.
Whelpley, Henry Milton, St. Louis.

Pathology and Physiology

Albert, Henry, Iowa City Iowa.
Baughman, Greer, Richmond, Va.
Beates, Jr., Henry, Philadelphia.
Black, Stanley P., Pasadena, Cal.
Buhman, Rudolph, St. Louis.
Christian, Henry A., Boston.
Councilman, W. T., Boston.
Darling, Samuel T., Ancon, Canal Zone.
Dewey, Grace, Jacksonville, Ill.
Erlanger Joseph, Madison, Wis.
Evans, Newton, Nashville, Tenn.
Fisch, C., St. Louis.
Frazer, T. R., Commerce, Mo.
Gould, Charles W., St. Louis, Mo.
Gradwohl, R. B. H., St. Louis.
Greene, Marie A., Kansas City, Kans.
Guthrie, C. C., St. Louis.
Hall, Frank J., Kansas City, Mo.
Hall, Winfield S., Chicago.
Harris, D. L., St. Louis.
Henderson, Yandell, New Haven, Conn.
Herald, Arthur A., Shreveport, La.
Herrick, Harold C., St. Louis.
Hirschfelder, Arthur D., Baltimore.
Hodsdon, B. F., Guthrie, Okla.
Hultgen, J. F., Chicago.
Jackson, C. M., Columbia, Mo.
Jennings, M. Dwight, St. Louis.
Jones, R. L., Nashville, Tenn.
Kelly, Patrick H., Chillicothe, Ill.
Kennedy, J. J., Frankford, Mo.
Klenk, Charles L., St. Louis.
Le Count, E. R., Chicago.
Litterer, Wm., Nashville, Tenn.
Lusk, Graham, New York.
MacCallum, W. J., New York.
MacCarty, Wm. Carpenter, Rochester, Minn.
Mallory, Frank B., Boston.
Marchildon, John W., St. Louis.
McConnell, Guthrie, St. Louis.
McVey, Newton, Jefferson City, Mo.
Mullin, R. H., Minneapolis, Minn.
Opie, Eugene L., New York.
Orndoff, Benjamin H., Chicago.
Robertson, H. E., Minneapolis.
Robinovitch, Louise G., New York.
Seymour, Eleanor, Los Angeles.
Simonds, James P[illegible], Indianapolis.
Smith, [illegible] A., Atlanta, [illegible]
Southard, E. E., [illegible], Mass.
Stanley, [illegible] O., Urbana, Ill.
Stewart, Edward L., Kansas City, Mo.
Terrill, James J., [illegible], Texas.
Thompson, Ralph L., St. Louis.
Tiedemann, E. F., St. Louis.
Tozer, [illegible] L., [illegible]
Wallace, George B., New York.
Ward, Henry B., Urbana, Ill.
Warthin, Aldred Scott, Ann Arbor, Mich.
Watson, E. L., Newport, Ar[illegible]
Weil, Richard, New York.
Welch, William H., Baltimore, Md.
Wells, H. Gideon, Chicago.
Wiggers, Carl J., Ann Arbor, Mich.
Wilson, Louis B., Rochester, Minn.
Woodyatt, R. T., Chicago.

Miscellaneous

The following failed to indicate preference for any section, or marked more than one on the registration card.

Ball, John H., Crystal Falls, Tex.
Bardeen, Charles R., Madison, Wis.
Bean, J. W., Tacoma, Wash.
Blair, V. P., St. Louis, Mo.
Bolton, John W., Iola, Kan.
Bonnot, Edmond, St. Louis.
Bracy, Rolla, Wellston, Mo.
Braunwarth, Anna M., Chicago.
Brieglet, C. F., St. Clair, Mo.
Burlingame, D. E., Elgin, Ill.
Calhoun, J. G., St. Louis.
Cantrell, G. M. D., Little Rock, Ark.
Carter, William A., Trenton, Ill.
Causey, G. A., Swifton, Ark.
Clark, E. Spencer, St. Louis.
Cline, Harry X., Marion, Ill.
Clinton, Bertha L., Paris, Ill.
Corr, Lucinda H., Carlinville, Ill.
Craig, Capt. Chas. F., U. S. A. M. Corps, Washington, D. C.
Crouch, E. L., Jacksonville, Ill.
Dawson, J. W., El Dorado Springs, Mo.
Dunavant, H. C., Osceola, Ark.
Early, C. S., Camden, Ark.
Eddy, W. J., Shelbyville, Ill.
Erdhaus, H. B., St. Louis.
Esselbruegge, F. C., St. Louis.
Ewing, Fayette Clay, St. Louis.
Farnsworth, D. B., Springfield, Mo.
Ferguson, H. M., Morris, Ill.
Fishman, C. J., Chicago.
Frank, F. Kourar, St. Louis.
Frauenthal, Henry W., New York.
Goldberg, David D., St. Louis.
Goodman, Thos. B., Cobden, Ill.
Grear, D. Watson, Jonesboro, Ill.
Greene, D. W., Dayton, Ohio
Guthrie, J. R., Dubuque, Iowa.
Haas, Frederic J., Leavenworth, Kans.
Harris, J. E., Marshall, Mo.
Havens, A., New Philadelphia, Ill.
Hill, Charles L., Nashville, Tenn.
Hiller, Frank B., Jefferson City, Mo.
Hope, D. H., Cape Girardeau, Mo.
Huston, Edwin M., Dayton, Ohio.
Ihne, A. J., Fosterburg, Ill.
Jamison, Oscar A., Tuckerman, Ark.
Jefferson, H. A., Clintonville, Wis.
Jenkins, J. M., St. Peters, Mo.
Jungk, C. G. W., St. Louis.
Kane, David M., Sturgis, Mich.
Kuper, George H., St. Louis, Mo.
Leenheer, Cornelius A., Chicago.
LeWald, Capt. L. T., Washington, D. C.
Lynch, Albert, Fairbury, Neb.
Mabee, J. J., Capt. Med. Corps, U. S. Army, Jefferson Barracks, Mo.
MacLellan, Chas., Chicago.
McAninch, D. L., Lamartine, Pa.
McCallister, Wm. A., Centralia, Mo.
McCully, James, Dixon, Mo.
McGaughey, Hugh F., Winona, Minn.
McKeenan, R. B., Fort Wayne, Ind.
Magie, Wm. H., Duluth, Minn.
Martin, John H., Chicago.
Mercer, W. H., Raymond, Ill.
Mick, W. H., Omaha, Neb.
Moffitt, W. R., West Lafayette, Ind.
Morgan, William Gerry, Washington, D. C.
Morse, M. R., Harvey, Ill.
Moyer, M. L., Hillsboro, Ill.
Neff, I. H., Foxborough, Mass.
Noltman, H. C., Jacksonville, Ill.
O'Hara, W. J. A., Bridgeport, Conn.
O'Reilley, Robert J., St. Louis.
Orr, H. M., La Salle, Ill.
Parker, A. W., Shenandoah, Iowa.
Pfeiffenberger, I. Mather, Alton, Ill.
Pillsbury, Henry C., U. S. Army, Washington, D. C.
Potts, Jerome D., St. Louis.
Pratt, Fred J., Minneapolis.
Pryor, James C., Washington, D. C.
Renner, F. A., [illegible], Ill.
Riffey, J. H., Girard, Ill.
Robertson, Thomas, [illegible], Ill.
Salmon, Wm. T., Oklahoma City, Okla.
Sander, [illegible], St. Louis.
Sellers, Ira J., Birmingham, Ala.
Seybold, Ira W., Poplar Bluff, Mo.
Shi[illegible], G. M., Pittsburg, Pa.
Sh[illegible]er, Joseph, Rockville, Ind.
Sisk, James A., Knoxville, Tenn.
Sperry, H. C., Hull, Ill.
Thomas, Chas. Ramey, R[illegible], Ill.
Thompson, J. R., Bridgeport, Ill.
Tilly, W. T., Muskogee, Okla.
Timmons, James M., West Alexander, Pa.
Tompkins, Christopher, Richmond, Va.
Twitchell, James W., B[illegible], Ill.
Venters, J. M., [illegible]
W[illegible]n, Henry L., B[illegible], Ill.
W[illegible], A. A., B[illegible], Okla.
W[illegible]an, C. M., St. Louis.
W[illegible], W. R., Iowa City, Iowa.
W[illegible], A. J., West[illegible], W. Va.
Y[illegible], J. C., [illegible], Ky.

Simple Syrup in the Treatment of Wounds.—Renssen [illegible] that the workmen in sugar factories applied syrup in treatment of wounds, and this suggested that the syrup constituent might be responsible for the good effects of balsam of Peru in the treatment of wounds. He was confirmed in this impression by the fact that equally good results are obtained with pure and adulterated balsam. A letter from Holland in the *Wiener klin. Rundschau*, April 3, states that Renssen has applied the simple syrup in 60 cases of various injuries, including compound fractures and found that the lesions healed remarkably promptly and well. One very agreeable feature of the syrup treatment is that it can be washed off so readily.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 12. Chairman, Dr. W. H. Sanders.

Arizona: Phoenix, July 5-6. Sec., Dr. Ancil Martin.

Colorado: Denver, July 5. Sec., Dr. S. D. Van Meter, 1723 Tremont Street.

Connecticut: Regular, City Hall, New Haven, July 12-13. Sec., Dr. Charles A. Tuttle; Homeopathic, New Haven, July 12. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, New Haven, July 12. Sec., Dr. T. S. Hodge, 19 Main Street, Torrington.

District of Columbia: Washington, July 12-15. Sec., Dr. George C. Ober, 125 B Street, S. E.

Indiana: Room 120, State House, Indianapolis, July 12-14. Sec., Dr. W. T. Gott.

Kentucky: Louisville, July 5-7. Sec., Dr. J. N. McCormack, Bowling Green.

Maine: Augusta, July 19-20. Sec., Dr. F. W. Searle, Portland.

Massachusetts: State House, Boston, July 12-14. Sec., Dr. Edwin B. Harvey.

New Hampshire: Concord, July 6-7. Regent, Mr. H. C. Morrison.

North Dakota: Grand Forks, July 5-7. Sec., Dr. H. M. Wheeler.

Oklahoma: Ione Hotel, Guthrie, July 12. Sec., Dr. Frank P. Davis, Enid.

Rhode Island: State House, Providence, July 7-8. Sec., Dr. Gardner T. Swarts, 315 State House.

South Dakota: Lead, July 13-14. Sec., Dr. F. W. Freyberg, Mitchell.

Utah: Salt Lake City, July 4-5. Sec., Dr. G. F. Harding, 310 Templeton Building.

Vermont: Burlington, July 12-14. Sec., Dr. W. Scott Nay, Underhill.

Washington: Seattle, July 5. Sec., Dr. J. Clinton McFadden, Peoples Bank Building.

West Virginia: Capitol Bldg., Charleston, July 11-13. Sec., Dr. H. A. Barbee, Point Pleasant.

Wisconsin: Madison, July 12-15. Sec., Dr. John M. Beffel, 3200 Clybourn Street, Milwaukee.

Rhode Island April Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, April 7-8, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 9, of whom 4 passed and 5 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Yale Medical School	(1907)	91.7
College of Physicians and Surgeons, Baltimore	(1909)	80.0
Columbia University Coll. of Phys. and Surg.	(1908)	87.8
Albany Medical College	(1904)	91.8
FAILED		
Georgetown University	(1900)	71.9
Baltimore Medical College	(1909)	75.2
University College of Medicine, Richmond	(1907)	71.1
Laval University, Quebec	(1904) 55.4; (1909)	66.9

Arizona April Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, April 4-5, 1910. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed and 3 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1909)	81
University of Louisville	(1909)	75
Medico-Chirurgical College, Philadelphia	(1896)	81
Memphis Hospital Medical College	(1901)	79.2
FAILED		
Hospital College of Medicine, Louisville	(1897)	66.5
Omaha Medical College	(1896)	62.8
University of Tennessee	(1901)	56.8

Utah April Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, April 4-5, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 4, of whom 3 passed and 1 failed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Rush Medical College	(1907)	91.8
Northwestern University Medical School	(1909)	82.9
Woman's Medical College of Pennsylvania	(1907)	87.9
FAILED		
Keokuk Medical College, Coll. of Phys. and Surg.	(1905)	68.8

LICENSED THROUGH RECIPROCITY College	Year Grad.	Reciprocity with
Northwestern University Medical School	(1908)	Illinois

Maine March Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Portland, March 8-9, 1910. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 8, of whom 7 passed and 1 failed. One candidate was licensed through reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Baltimore Medical College	(1905)	83
Boston University	(1893)	75.6
Tufts College Medical School	(1907) 91.4; (1909)	78.6
Harvard University Medical School	(1899)	85
Laval University, Quebec	(1908) 75.5; (1909)	83.2
FAILED		
Laval University, Quebec	(1908)	70.8

LICENSED THROUGH RECIPROCITY College	Year Grad.	Reciprocity with
University of Michigan, College of Medicine	(1909)	Michigan

Massachusetts March Report

Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at the State House, Boston, March 8-10, 1910. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 74, of whom 37 passed, including 3 osteopaths and 36 failed, including 3 osteopaths and 10 non-graduates. One candidate did not complete the examination. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Medical School of Maine	(1884) 75; (1907)	79.7
College of Physicians and Surgeons, Baltimore	(1909)	76.6
College of Physicians and Surgeons, Boston	(1908)	80.2
Boston University	(1882) 79.3; (1909)	75
Harvard Medical School	(1907) 75; (1908) 78.4, 79.5; (1910)	75.9, 82.2.
Tufts College Medical School	(1905) 75.9; (1907) 78.4; (1908) 75, 75, 78.7; (1909) 75, 75, 75, 75, 78.9, 79.5, 80.2.	
Columbia Univ., Coll. of P. & S.	(1908) 84.2; (1909)	79.1
Dartmouth Medical School	(1909) 77.4, 78,	82.3
University of Pennsylvania	(1906)	83.1
University of Vermont	(1909) 77,	77.1
McGill University, Quebec	(1905) 83.6; (1909)	84
University of Athens, Greece	(1898)	75
FAILED		
Howard University	(1909)	66.4
Medical College of Georgia	(1901)	35
Maryland Medical College	(1909)	67.8
Baltimore University	(1906)	56.5
Baltimore Medical College	(1901)	59.2
College of Physicians and Surgeons, Baltimore	(1909)	70.3
Harvard Medical School	(1909)	67.8
College of Physicians and Surgeons, Boston	(1908) 58, 58.8, 59.2, 60.1, 60.5; (1909) 53.7, 63.9, 65.2, 67.2.	
Tufts College Medical School	(1909)	63.3
Leonard School of Medicine	(1908)	63.5
Eclectic Medical Institute, Cincinnati	(1879)	51.4
University College of Medicine, Richmond	(1907)	64.4
Laval University, Quebec	(1904) 59.7; (1909)	55
University of Naples, Italy	(1906)	64.4

Connecticut Eclectic March Report

Dr. Thomas S. Hodge, secretary of the Connecticut Eclectic Medical Examining Board, reports that at the meeting held at New Haven, March 8, 1910, one candidate, a graduate of the Eclectic Medical Institute, 1886, was licensed through reciprocity with Colorado.

Connecticut Homeopathic March Report

Dr. Edwin C. M. Hall, secretary of the Homeopathic Medical Examining Board of Connecticut, reports the written examination held in New Haven, March 8-9, 1910. The number of subjects examined in was 7; total number of questions asked

70; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent
PASSED		
Hahnemann Medical College and Hospital, Chicago.	(1909)	76.5, 79.9
Boston University	(1897) 85.4; (1905)	75.3
New York Homeopathic Medical College and Hosp.	(1903)	78.8
Hahnemann Med. Coll. and Hospital, Philadelphia.	(1904)	85.6
FAILED		
Atlantic Medical College	(1909)	69

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Opposition to a Department of Health

Last week, in the Correspondence Department, we published a letter sent to the newspapers by Prof. Irving Fisher, in behalf of the Committee of One Hundred on National Health. In that letter a reference was made to Bulletin 41 of the Committee of One Hundred. This bulletin is so good that we reproduce below the major portion of it:

COMMERCIAL INTERESTS OPPOSE NATIONAL DEPARTMENT OF HEALTH

Judge Lindsey, in his famous articles on "The Beast in the Jungle," has shown how human life and child welfare are ruthlessly sacrificed to commercial interests. The same is true on a far broader scale. One cannot touch the problem of public health at any point without encountering the opposition of commercial interests. The old efforts of the merchants of San Francisco to suppress the news of bubonic plague, and of the merchants in southern states to suppress the knowledge of yellow fever, are classical instances. But those who are familiar with health work run into such instances repeatedly. Dr. Wiley pointed out at the congressional hearing in favor of the Owen bill for a department of health that a health officer cannot develop properly unless he is in an environment in which health is the main interest. It is small wonder that the commercial interests do not want an independent department of health. They feel safer with a bureau of health, located in a department devoted to commercial interests. Our principal health bureau is now located in the Department of the Treasury, which is—as it should be—more devoted to financial than to hygienic considerations. Our next important health bureau is that which dispenses the Food and Drugs Act in the Department of Agriculture, which is another commercial department. The plans for transferring the health bureaus to any other of the existing departments, such as the Department of Commerce and Labor or the Department of the Interior, also have the weakness that these departments are dominated by commercial interests.

"THE BEAST IN THE JUNGLE"

Judge Lindsey is not the only one who has seen the "Beast in the Jungle." The advocates of the Owen Bill to establish a national department of health have suddenly encountered in their jungle a wolf in sheep's clothing. As in Judge Lindsey's article, at first the "beast" is not visible, but instead some very respectable, but misguided, people appear on the scene as officers of and sponsors for a so-called "National League for Medical Freedom."

This "League" has organized opposition to the establishment of a national department of health, large advertisements having recently appeared in New York, Washington, and other newspapers, although they have been taken as a joke in and out of Congress. The advertisement tries to create the impression that the movement is one of a "medical trust," attempting to control the practice of medicine. Mr. Charles W. Miller, an Iowa State representative, has been in Washington trying to bring influence to bear on congressmen. Mr. B. O. Flower, a Christian Scientist editor, is president of the League.

They seem to have overlooked the fact that the federal government has no power to regulate the practice of medicine, or to restrict medical freedom, even if this were intended, which it is not.

Previous to the appearance of this wide-spread and expensive advertising, Mr. Miller had been loudly stating that the movement for a department of health had no strength. Why, then, the need of so much effort to combat it? It is estimated that their advertisements are costing somebody $25,000 a day. At this rate, in two or three days they spend more than the American Health League, which has been a potent factor in the movement for the establishment of a national department of health, has spent in the three years of its existence. The same Mr. Miller has criticised the Committee of One Hundred on National Health, which forms the nucleus of the American Health League, for trying to raise a campaign fund, and for suggesting that the government should spend more money on public health. The expenditures of Mr. Miller's "League" not only greatly exceed ours, but include three items which we have never included among our expenditures; viz., for the purchase of newspaper space, for the purchase of articles, and for the purchase of the services of legal representatives to appear at the congressional hearings.

The league for "Medical Freedom" is said to consist of Christian Scientists, osteopathists, homeopathists, eclectics and antivivisectionists. The advertisements state that to join the league no fee is required. Yet they are able to carry on an immensely expensive campaign. Are they willing to state the sources of their income? Simultaneously with the formation of the league, health writers have been approached and offered large sums of money to write against the Owen Bill for establishing a department of health. One writer refused what he believed was an opportunity to make two thousand dollars in this way.

TAX PAYERS' LEAGUE

This attack from the "National League for Medical Freedom" has such a family resemblance to various other attacks, on a smaller scale, which have appeared during the last few years, that we have rummaged through our files for the sake of comparison.

Like Lindsey's "beast," ours seems to have made its first appearance in Denver. The first among our curiosities of "medical" literature was a venomous pamphlet by a notorious quack of Denver, and purporting to represent the "Colorado Medical Liberty League, an organization numbering 1,300 enrolled members who are tax-paying citizens."

This title bears a striking resemblance to the "National League for Medical Freedom" and its associated tax payers' leagues, which have at the same time, and within a few days of each other, been "organized" in a dozen or more states. while nominally written by a "drugless" doctor, this pamphlet singles out for attack those men and magazines, such as *Collier's* and the *Ladies' Home Journal*, that have fought quackery and the "patent-medicine" evil, and have championed the pure food law.

The following quotations show its animus against pure foods and drugs:

> *Question:* What is the attitude of the Committee of One Hundred in regard to the adulteration of food stuffs and the substitution of drugs as commonly practiced by many commercial concerns?
>
> *Answer:* It is against all concerns that do not give the [illegible] committee a rake-off.
>
> *Question:* What is the attitude of the Committee of One Hundred towards injurious "patent medicines?"
>
> *Answer:* It is dead set against all patents which do not contribute to the trust's pocket.
>
> *Question:* Do any members of the Committee of One Hundred receive salaries or other remuneration?
>
> *Answer:* Nay, nay, that would spoil our game. They will be taken care of later.
>
> *Question:* How can additional information, including printed matter issued by the Committee of One Hundred, be obtained?
>
> *Answer:* In car lots or less, F. O. B., New Haven, Conn.
>
> *Question:* What are the publications and pamphlets now or formerly distributed by the Committee of One Hundred?
>
> *Answer:* They are too numerous to mention, mostly devoted to "exposing" quacks. A quack is any one who is not orthodox according to the dictum of the medical trust.
>
> *Question:* Why must an organization of citizens be formed to protect the public health?
>
> *Answer:* Because that is the only way we can [illegible] into continuing to take patent medicines only as doctor's prescriptions.

This pamphlet refers to the American Medical Association as a "trust," and composed of "old school fanatics," takes sides with eclectics, osteopathists, spiritual healers, [illegible] with the following statement: "If the public [illegible] to be bulldozed by the medical trust, it will at once make its protest against a national bureau of medicine by writing individual letters to congressmen, promising to vote out at once all who vote for such a bureau."

In his speech before the Senate, May 25, Senator Owen said:

> I am informed that the sudden and surprising interest of the "taxpayers and voters" of the United States who are organized in this artificial manner and the active interest alleged or manifested of the "homeopaths" and of the "osteopaths" and of the "eclectics" and of the great variety of those who have special views with regard to the various methods of healing the sick has taken place

within seven days, and like a flash of lightning telegrams are coming in from Maine to California. The chairman of the Committee on Public Health and National Quarantine of the Senate received a very large number of them. Such sudden universality of disapproval of a department of public health on such an unsound theory is astounding; it is more, it is extremely suspicious; it is obviously artificial. It is perfectly apparent that somebody is spending a very large amount of money on this sudden propaganda; it can hardly be doubted that somebody, in gross error, is advising the "homeopaths," the "osteopaths," the "eclectics" that their right to practice medicine is about to be invaded by the federal government.

THE NATURE OF OUR OPPOSITION

Another pamphlet is entitled, "The Political Doctors' Slick Little Joke. On Congress, on the States, the Pure Food and Drugs Act, and the People." The writer attempted to establish the thesis that the Committee of One Hundred is the tool of the American Medical Association and of the Catholic Church! He quotes scripture to prove this. He distributed a sizeable booklet entitled "Roosevelt Steam-Rolled by the Bible." He shows that the Committee of One Hundred on National Health was prophesied in the Bible and that the "medical arm of papacy is really the pivot on which the old earth of error is to swing into the new heaven and new earth of revelation." In a letter in reference to his book he says, "You may be surprised to know that Taft can be identified in the Bible in more places than the place indicated in my book—the other places are not yet made public. The subleties of the science of medicine and of philosophy are to be confronted by the subleties of the Bible."

The author of these curious aberrations of mind adds in a postscript, "I want to say if you have any intention of getting me committed to the Government Hospital for Insane, you will be foiled."

This insane literature seems of a piece with the literature of the "National League for Medical Freedom." But now these people seem to have found a barrel of money with which they are "moulding" public opinion. It is easy to understand how quacks and nostrum vendors may object to the national pure food law which they are seeking by every means to undo; but it is sad to see reputable and earnest men unwittingly made tools of, and still sadder to see other reputable men sell their services as paid attorneys, and to see writers—unconsciously though it be—prostitute their abilities in the interest of those vampires who feed on illness and prey on the public health.

"LICENSE THEY MEAN, WHEN LIBERTY THEY CRY"

The New York *Times*, which made the mistake on May 17 of printing the advertisement of the "League for Medical Freedom," corrected it on the 18th by the following strong editorial:

> "MEDICAL FREEDOM"
>
> Makers of "patent medicines," adulterators of drugs, and practitioners of the cults of mental and osteopathic healing are up in arms. They have persuaded a few well-intentioned but misled individuals to join them, and have formed the "National League for Medical Freedom" to oppose the efforts of practically all the reputable physicians in the country to consolidate the agencies of public health at Washington into one efficient department or bureau.
>
> These efforts have been waxing stronger. The men of the American Medical Association and of the Committee of One Hundred on National Health, sanctioned by the Association for the Advancement of Science and headed by Prof. Irving Fisher of Yale, have won the approval of the entire press of the United States in urging the passage of their bill. In the various departments and bureaus of the federal government are lodged powers that cannot be wielded effectively until they shall be coordinated under one head. Once united, they can be used in a great propaganda for educating the people against the habit of self dosage and a resort to quack medicines for their ailments. By a campaign of prevention the bureau would break the prevalence of epidemics and infections between the states. It would work for the passage of laws that would guard the channels of interstate commerce against the admission of adulterated drugs, and for the establishment of standards of purity and strength that would be copied by the states and cities of the nation.
>
> The self-styled "League for Medical Freedom" quotes Professor Fisher accusingly as having said that the government might soon be appropriating millions yearly for the conduct of this bureau. If it should appropriate a million for every hundred thousand it now appropriates for the protection of the health of hogs and of cattle in the United States Professor Fisher's prophecy would be fulfilled, and no one would have cause for complaint but these friends of "freedom." Their cry is an old one and well understood.
>
> "License they mean when liberty they cry."

WHENCE COME THE FUNDS?

The opinion expressed in this editorial is general. It is fair to say that the well-intentioned leaders in this "League for Medical Freedom" doubtless do not realize the situation in which they are placed. They may be correct in their denial that their "League" is being financed by "patent medicine" interests, but they have not yet disclosed specifically the sources of their funds. Requests so to do have thus far been unanswered. From appearances they have spent more in one day than our committee has spent in a year.

Whatever the source of their funds there can be no doubt that a virtual alliance exists between this league and the purveyors of "patent-medicines" and the opponents of the pure food law.

On the advisory board of the new league is the editor of the organ of the National Association of Retail Druggists, controlled by the members of the "American Druggists' Syndicate" or the "drug trust," which has been so hand-in-glove with the quack medicine interests that many hundreds of its members resigned last fall in protest.

A congressman, on looking up the occupations of the signers of telegrams against the Owen Bill, found a liberal sprinkling of "patent-medicine" proprietors and vendors.

In this unholy and anomalous alliance between "Christian Scientists" and quack medicines are included the services of some newspapers that rely for revenue on quack advertising. (See our bulletin on "A Century's Criminal Alliance Between Quacks and Some Newspapers," by C. S. Andrews).

COINCIDENCES

It may be a coincidence, but simultaneously with the appearance of this "league" in Washington, the same lobbyists who had fought the pure food law also appeared, although not publicly. It may also be a coincidence that at about the same time a certain noted writer on health was offered a large sum of money to write articles to "kill the Owen Bill." Those who approached him for this purpose reluctantly admitted, after first alleging that they represented Christian Scientists, etc., that the "patent-medicine" interests were also behind them.

It may also be a coincidence that one of these afterward acted as an agent to place the advertisement of the "League for Medical Freedom."

It may also be a coincidence that this vigorous effort to prevent the creation of a department of health began immediately after the issue by the Department of Agriculture of a bulletin by Dr. Keber against nostrums, in which—for the first time in history—the names of the "remedies" to be avoided were printed. It would not be strange if the firms that were thus hit hard by the Department of Agriculture should not want to be hit harder, as they might be and ought to be, by a department of health.

It may be a coincidence that at this same time a newspaper now actively opposing a National Department of Health sent a reporter to one of the officers of the Committee of One Hundred to inquire what the committee expected the new department of health to do, and whether, perchance, the committee knew of the nostrum report just made.

It may also be a coincidence that a chemist, interested in food adulteration, came at almost the same time to ask almost the same question.

MISCONSTRUCTION OF FACTS TO MISLEAD READERS

The eagerness of those who construct these advertisements to mislead is illustrated in many ways. For instance, they have utilized a misprint in the report of one of the hearings as follows:

> *Question:* What is the Committee of One Hundred?
>
> *Answer:* One of its members, Hiram J. Messenger, when asked this question by Senator Crawford of South Dakota (Senate Hearing Owen Bill Page 30) stated, "The Committee of One Hundred is a committee that was appointed by the American Medical Association for the Advancement of Science."

The word "medical" was obviously a slip of the tongue or of the pen. No one ever pretended before that there was any connection between the American Medical Association and the American Association for the Advancement of Science!

MEDICAL CULTS

"The League for Medical Freedom" does not seem to really represent the leading members of the schools of medicine they claim to represent. The foremost members of these various cults have openly favored the Owen Bill. Dr. J. B. Gregg Custis, a homeopath who spoke in favor of the bill, is chairman of the Board of Medical Examiners of the District of Columbia and ex-president of the American Institute of Homeopathy as well as of the International Congress of Homeopathy. Mr. George H. Shibley, a prominent lawyer of Washington, whose wife is an Osteopathist practitioner and who is himself the attorney of this system of healing before committees of Congress, favored the bill and among other things said:

> As a citizen and a lawyer, I am deeply interested in the establishment of a national health department. Possibly I can help to dispel some of the fears of those who, in other ways, have come into conflict with the American Medical Association.
>
> There is no possible way whereby any medical sect can secure national health regulations that will interfere with the states'

control of the licensing of the competing schools of healing. It follows that the osteopathic physicians, the homeopathic physicians and the eclectic physicians are in no danger from a national health department.

REAL PURPOSE OF DEPARTMENT OF HEALTH

A department of health has really nothing to do with the medical art. It is really for the purpose of preventing diseases by preventing the pollution of streams, by preventing the adulteration of foods, by preventing the importation of bubonic plague and yellow fever, by investigating health conditions and disseminating information. It has been proved that there are over half a million premature deaths yearly in this country. The Owen Bill, if passed, would ultimately prevent a large proportion of these.

From Owen's Senate Speech: As the author of this bill I wish to say that I believe the more a man knows about the laws of health the less drugs he takes. I have employed homeopaths and osteopaths and allopaths as well to treat myself and the members of my family. I have studied the doctrine of suggestive therapeutics and of Christian Science with great interest and respect, and cordially indorse Horace Fletcher as the best doctor of them all. I stand firmly for medical freedom and for the right of the citizen to select his own medical or spiritual adviser.

THOSE WHO WANT A DEPARTMENT OF HEALTH

The principle of the Owen Bill, establishing a department of health, has been endorsed by the President of the United States, by the surgeon-generals of the Army, of the Navy, and of the Public Health and Marine-Hospital Service, by Dr. H. W. Wiley of the Bureau of Chemistry, by the governors of states, by the Conference of State and Territorial Boards of Health, by the American Medical Association, by the American Public Health Association, by the United Mine Workers of America, by the National Grange, by the Republican and Democratic platforms, and by numerous other organizations.

Life-insurance companies, who advocate this bill, certainly have no desire to limit medical freedom and repress any system which offers the chance of lengthening human life. They have no medical partisanship, and their sole interest is to lengthen life by whatever means possible. Their actuaries state specifically that they believe human life could and would be lengthened by the establishment of a health department.

GENERAL WYMAN FAVORS DEPARTMENT

At the May 19th hearing on the Owen Bill, General Walter Wyman, Surgeon-General of the Public Health and Marine-Hospital Service, came out strongly and firmly in favor of establishing a national department of health. General Wyman has hitherto been non-commital, and the opinion had been entertained generally that he was opposed to the measure.

THE "MEDICAL TRUST"

The American Medical Association has trod on many toes in its efforts to get state legislation enacted. It is natural that enemies thus made should strike back. But in attacking national legislation they are "barking up the wrong tree." Moreover, a great injustice is being done the American Medical Association. It is not a "trust." No one will deny that it includes in its membership the best and ablest men in the profession. It has tended to liberalize rather than to narrow medical ethics and practice. While it has aimed at restrictions, the object has been to prevent the vicious and harmful quack and charlatan from plying his nefarious trade. Naturally it is not infallible, and has doubtless made mistakes, but the present attack on it will be resented by the large public who appreciate the work of the medical profession, as well as by all who believe in fair play.

AMERICAN HEALTH LEAGUE MEMBERS SHOULD HELP

It is important that every member of the American Health League should know that a fight is on. Against us are arrayed the leagues of "freedom," the quack medicine interests, the newspapers allied (by advertising) therewith, and the able attorneys and editors they employ. On our side are President Taft, ex-President Roosevelt, political party platforms, medical, hygienic, scientific, educational, philanthropic, insurance, labor, and grange organizations. While intrinsically we have infinitely the stronger side, our enemies have the great advantage of money. The situation is as serious as in a political campaign in which the forces of evil and money so often triumph. It is another case of the people against the special interests. Each loyal member of our league, and each loyal citizen who reads these lines, should do his part, namely, contribute, if possible, to the expenses of conducting this campaign for establishing a national department of health, and write to congressmen urging their favorable consideration of the Owen Bill

Medicolegal

Requirements and Rights of Applicants for Examination—Power of State Board to Determine What Are Reputable Medical Colleges

The Supreme Court of Missouri says, in the case of State, on the relation of Abbott and others, vs. Adcock and others, constituting the State Board of Health (124 S. W. R. 1100), that a reading of Section 1 of an act approved April 4, 1907, shows that it requires three things of each applicant who desires to be examined touching his qualifications to practice medicine and surgery in Missouri: First, that he shall make application in writing to the secretary of the board 30 days before the meeting thereof; second, that he furnish to the board satisfactory evidence of his scholastic qualifications as therein provided for; and, third, that he shall also furnish to the board satisfactory evidence of having received a diploma from some reputable medical college of four years' requirements at the time of his graduation.

While the act mentioned does not undertake to state what medical colleges are or what are not reputable within the meaning thereof, by clear implication it leaves that question for the determination of the Board of Health. This is made manifest by the act requiring the proof of reputableness to be furnished to the board when the applicant presents himself for examination, and by withholding from the board the authority to issue the license until such satisfactory evidence is furnished. In the court's opinion the language of this act is susceptible of no other construction than that it placed the burden on the relators, when they presented themselves for examination before the board, to prove to its satisfaction by satisfactory evidence the reputableness of Barnes University, and especially the medical department thereof.

If the court correctly understands the position of counsel for the relators, they did not controvert the soundness of the conclusions above stated, but contended that, under the laws of Missouri, "the State Board of Health has no authority to adopt and promulgate fixed rules and regulations as the standard by which the various medical colleges of this state will be adjudged reputable or non-reputable within the meaning of the statute relating to the practice of medicine and surgery. The word 'reputable,' as applied to medical colleges, means reputation, and must be proved in the same way." But, in the court's opinion, counsel misconceived the meaning and object of the rules and regulations adopted by the Board of Health fixing the standards by which various medical colleges would be adjudged reputable within the meaning of the act under consideration. The rule simply provides that all medical colleges, wherever located (and not simply those situate in Missouri), which should, on or before Oct. 1, 1907, conform to the standards specified in the schedule of minimum requirements adopted by the board on July 11, 1907, "should be rated and classified as accredited and reputable, and whose students, after being graduated therefrom, should be admitted to the examination of the State Board of Health for licenses to practice medicine and surgery in the state of Missouri," without being required to furnish other proofs of reputableness, and thereby save each of them the time and expense of furnishing the proofs required of them by said act. In other words, the board, by such rules, undertook to require all medical colleges to adopt such standards as would establish and prove their reputableness in all cases, and thereby remove those burdens from each student who applied for a license, as provided by said act. But said rules of the board do not provide that no graduate from any medical college which has not conformed to those requirements shall not be examined touching his qualifications to practice said professions. This construction seems to have been adopted subsequent to the origin of this controversy. Neither rule nor board is responsible for it.

In the court's opinion, since the act left it to the board to pass on the reputableness of all medical colleges whose graduates applied to it for examination, and to determine the character of the evidence by which said fact was to be established, said rules were not only reasonable and just, but were also wise and proper. All medical colleges and their students were thereby notified in advance as to what would satisfy the board as to the reputableness of each college. The diploma alone from all colleges which had adopted those standards would entitle the holder thereof to take the examination without further ado. Otherwise many students might innocently be induced to attend colleges which were not, in fact, reputable, and consequently such students would thereby be prevented from establishing their reputableness. In all such cases a great hardship would be visited on all such graduates, but under these rules of the board no injustice could be done to any college or graduate thereof. And, beyond that, the adoption of said standards by the board, and the direct tendency thereof, if the colleges will only conform thereto, would be to uplift and better medical instruction, place her institutions of learning on a higher plane, and reduce the practice of medicine and surgery to a more perfect science, all of which would result in great good to suffering humanity.

But suppose, for argument's sake, that the court is in error in its views regarding the meaning and object of the rules of the board establishing said standards, and that it was the intention of the board to thereby notify, in advance, all persons who might present themselves for examination for licenses to practice medicine and surgery that it would examine no one except those who presented a diploma from some one of the medical colleges which had adopted said standards. That would not excuse the applicant for examination from tendering to the board such evidence as he might have tending to prove that his alma mater was a reputable school within the meaning of the statute. The rule would be illegal and void, and would constitute no legal bar to the applicant's right to stand the examination for his license. Nor could the adoption of such a rule be construed to mean that the board had thereby refused to examine a particular person for a license to practice medicine. The board might change its mind before the date fixed arrived, and before being called on to act. As long as a man or a body of men fill any official position, the law presumes he or they will perform his or their duties whenever any matter is legally presented for action, notwithstanding general declarations previously made to the contrary.

If the relators possess the necessary scholastic attainments and diplomas from some reputable college, and if they can produce before the Board of Health satisfactory evidence of the reputableness of said college, then doubtless the board will, on proper request, give them an examination, as provided for by the act of 1907, and, if found qualified, will presumably issue to them licenses. But if, after such showing, the board should unjustly and arbitrarily refuse to examine them, it would then be time enough to institute mandamus proceedings to compel it to act.

Validity of Note Given for Medical Services to Unlicensed Person

The Appellate Court of Indiana, Division No. 1, says, in Hill vs Ward (91 N. E. R. 38), a suit on a note made payable to one Doremus and transferred before maturity by indorsement, that a good defense was stated by allegations that the note was given for medical services rendered by a person who was not entitled to receive pay for such services. The Indiana statutes make it a misdemeanor for any person to practice medicine without a license duly issued under the laws prescribed. This being true, the act of Doremus in treating the defendant was an illegal act, and the receipt of the note for such services was a part of such illegal act. It is a well settled rule of law that business transactions in violation of law, or which involve the commission of a crime or misdemeanor, cannot be made the foundation of a valid contract, and any contract so made is void, and a recovery for services thereunder cannot be had. Cooper, Adm'r vs Griffin, 13 Ind. App. 212; Orr vs Meek, 111 Ind. 40. The cases cited apply the rule to the right to recover for services in the practice of medicine without a license. So the averment showing that the note was given as a part of an illegal contract was a sufficient answer to the complaint, and put the burden on the plaintiff to show his right to recover, notwithstanding the illegality in its execution.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

June 11

1 Natural Selection and our Viscera. R. G. Eccles, Brooklyn.
2 Errors in the Search for the Gonococcus in the Vaginitis of Children. I. Van Gieson, New York.
3 Therapeutic Possibilities of Direct Blood Transfusions. J. A. Hartwell, New York.
4 Benign Obstruction of the Pylorus. J. G. Wells, New York.
5 Cerebrospinal Meningitis of Fulminating Type. S. H. Brown, Philadelphia.
6 A New Gastroscope. M. Einhorn, New York.

Boston Medical and Surgical Journal

June 16

7 *Cardiac Syphilis. G. G. Sears, Boston.
8 *Treatment of Inebriety. I. H. Neff, Foxborough, Mass.
9 *Tuberculous Peritonitis. A. E. Stone, Boston.

7. **Cardiac Syphilis.**—Sears believes that a noteworthy percentage of the patients die suddenly without previous manifestations of ill health, and that numerous others are conscious of little or no cardiac disturbance until a period of overwork or possibly some special effort, which often seems no greater than what they have been accustomed to make without discomfort, leads to an upset of the cardiac balance, with a rapid development or even an immediate onset of urgent symptoms. This may be shown by an attack of which tachycardia accompanied by great anxiety and mental distress is the most striking symptom, or by the usual signs of myocardial insufficiency, dyspnea, precordial discomfort, etc., which may be soon followed by general passive congestion, edema and ascites. Severe headache and vomiting are not uncommon early symptoms. A striking peculiarity of many of these cases has been the lack of response to rest and cardiac stimulants in spite of the fact that one is dealing with the first breakdown. While a certain amount of relief may be obtained, results are often disappointing. Relapses easily occur from what seem inadequate causes.

8. **Treatment of Inebriety.**—Based on the examination of 700 cases of inebriety, Neff claims that inebriety is an expression of nervous weakness or nervous instability; used in its simplest sense it could be called a psychoneurosis, many cases showing symptoms which are found in neurasthenic states and allied conditions. Addiction to alcohol is a symptom of an unstable nervous system, and the contrary view expressed by the laity is not justified by clinical observation or experience. The exciting causes of inebriety, he says, are of physical and psychologic origin. Given a neurotic subject, crises may be precipitated by any marked departure from the ordinary routine (psychologic) or by any disturbance of organic nature (physical). Inebriety is prone to develop as a frank case at the critical epochs of life, namely, pubescence, adolescence and involution. Developing during involution, it is generally the effort of an individual to maintain his productive power by recourse to artificial stimulation. The frequent inception of inebriety at these periods suggests an analogy to the psychoneurosis. Inebriety, being an expression of neuropathy or psychopathy, may be preceded by or accompanied with a multiform nervous syndrome; thus each case is essentially different.

The heredity element in inebriety is considerable and is undoubtedly a powerful predisposing cause. A history of decided intemperance in the parents existed in over 40 per cent. of Neff's patients, while 15 per cent. gave a history of defective ancestry, insanity, neuropathy, drug addiction or tuberculosis being present on the maternal or paternal side. Approximately, 5 per cent. of the patients showed preexistent mental symptoms which could be differentiated. Some of these were distinct cases of psychasthenia, others were of the milder forms of manic depressive insanity. Neff feels warranted in corroborating the statement made by others that an inherited neurotic or psychic tendency is present in a considerable number of inebriates. Many of these individuals admit peculiarities during pubescence and adolescence, showing clearly neurotic or psychopathic conditions which have antedated the alcoholic manifestation.

9. **Tuberculous Peritonitis.**—Stone asks that we treat tuberculous peritonitis as respectfully as though one had found tuberculous infiltration in the lung top. The patient is infected with tuberculosis; treat him with the best hygienic surroundings that are possible; above all, rest and restraint at first, and then very gradually increasing exercise. If ascites is present, do not be in a great hurry for it to disappear. It may do so spontaneously. Great distention needs relief, of course, either with the aspirator or the aid of the surgeon. When the turn for the better comes, the patients begin to improve in a most remarkable manner. There is no reason why the patient should be withheld from any legitimate operation that may come up in the course of the disease. The disease is tuberculosis and the prognosis is favorable in the simple, uncomplicated cases of serous involvement. When the lung or other distant organ is also involved, the favorable prognosis rapidly diminishes. But in the true cases of tuberculous peritonitis in which no other focus can be demonstrated, the chances of ultimate arrest under properly conducted hygienic treatment are good. They are not enhanced by surgical intervention without distinct purpose, and any such operation must be treated not as itself curative, but as a step or incident of the "cure."

New York Medical Journal

June 18

10 Conditions Pertaining to the Safe Guarding of Early Life from a Pediatric Point of View. T. M. Rotch, Boston.
11 *Suprapubic Prostatectomy in Two Stages. H. Lilienthal, New York.
12 *Delayed Menopause. A. E. Gallant, New York.
13 The Teaching of Tuberculosis. A. P. Francine, Philadelphia.
14 The Nature of the Cancerous Process. O. Klotz, Pittsburg.
15 Field Operations Against Squirrel Plague in California. W. C. Rucker, Oakland.
16 Clinical Significance of Silent Fluids in the Thoracic Cavity. F. A. Jones, Memphis, Tenn.
17 *Malnutrition in Infancy and its Relation to Gastric Digestion. I. J. Tint and L. Breskman, Philadelphia.
18 Infection with *Balantidium Coli.* I. W. Brewer, Samar, P. I.

11. **Suprapubic Prostatectomy.**—In 16 cases, Lilienthal performed the operation of suprapubic prostatectomy in two stages. The average age of these patients was 71, the youngest was 52 years old, and the oldest 77. All except one left the hospital either entirely healed or with a superficial granulating wound. All were well so far as urination was concerned, and all who were questioned concerning sexual ability reported potency, most of them increased potency. In several cases a bacteriuria persisted for weeks or months after the operation, but it disappeared under long-continued hexamethylenamin medication. In this list of 16 cases the longest interval between the 2 stages was 20 days and the shortest was 2 days, average about 8 days. The average period of hospital treatment from the primary operation to the day of discharge was 38 days in the non-malignant cases.

12. Abstracted in THE JOURNAL, May 28, 1910, p. 1811.

17. **Malnutrition in Infancy.**—The examination by Tint and Breskman of the gastric contents of eleven children, mostly under 1 year of age, without vomiting or green stools, showed a constant presence of free hydrochloric acid, rennin and pepsin. Examination of the gastric contents of twenty children under 1 year of age, with green stools, vomiting, and gradual loss of weight, showed an absence of free hydrochloric acid, rennin, and pepsin. In well developed cases of malnutrition, such an absence of gastric activity was constant and persisted throughout the course of the affection.

The authors believe that the stomach very early in life plays an important rôle in digestion through its peptic and rennin activities. Free hydrochloric acid is normally present. With the onset of green stools in artificially fed and breast-fed children, there is an absence of free hydrochloric acid. The absence of gastric activity is relatively constant in children suffering from malnutrition. The milk should be carefully examined for the fat percentage, when such is taken into consideration in making up feedings, particularly in asylums for children.

Lancet-Clinic, Cincinnati

May 28

19 Sewage Disposal in Cincinnati. A. E. Osmond, Cincinnati.
20 Exercise and Health. I. O. Allen, Richmond, Ind.
21 Osteosarcoma of Fourth Cervical Vertebra Treated by Coley's Serum. F. H. Miketta, Cincinnati.
22 Value of Laboratory Methods to the Medical Student. W. B. Wherry, Cincinnati.

June 4

23 Neurotic Lithemia. R. R. Hopkins, Richmond, Ind.
24 Diagnosis and Management of Uterine Fibro[illegible]. S. H. Smith, Cincinnati.
25 Rheumatism in Children. W. H. Hawley, College Corner, Ohio.
26 Importance of Greater Thoroughness in the Teaching of Materia Medica and Pharmacology in Medical Schools. C. L. Graber, Cleveland, Ohio.

June 11

27 Conditions Simulating Gall Stones. J. C. Sexton, R[illegible], Ind.
28 Aids in Didactic Teaching. J. H. Jacobson, Toledo, Ohio.
29 The Etiology of Cataract. L. Strickler, Cincinnati.
30 Sociology and Eyestrain. G. M. Gould, Ithaca, N. Y.

Northwestern Lancet, Minneapolis

June 1

31 Serodiagnosis and Serum Treatment of Tuberculosis. R. Earl, St. Paul.
32 Surgical Tuberculosis. E. M. Lundholm, St. Paul.
33 Goiter: Special Reference to Borderline Cases of Hyperthyroidism. M. M. Ghent, St. Paul.
34 The Conservation of Human Resources: Special Consideration of Milk Investigation. J. L. Coulter, Minneapolis.
35 Symptoms and Treatment of Acute Anterior Poliomyelitis. T. Hatch, Owatonna, Minn.

Medical Fortnightly, St. Louis

May 25

36 Touring the Lands where Medical Science Evolved (continued). R. G. Eccles, Brooklyn.
37 Old Age. W. F. Waugh, Chicago.

Virginia Medical Semi-Monthly, Richmond

May 27

38 Fractures of the Base of the Skull. H. S. MacLean, Richmond.
39 Points in Bacterial Therapy. F. E. Stewart, Philadelphia.
40 Management of Fractures, Especially Compound Fractures. J. S. Rardin, Portsmouth, Ohio.
41 Prevention in General Practice: A Plea for More Attention to Detail. R. K. Flannagan, Charlottesville.

June

42 Fracture Dislocation of the Shoulder Joint. A. R. Shands, Washington, D. C.
43 Treatment of Fractures After Reduction. C. S. White, Washington, D. C.
44 Early Mobilization in Treatment of Fractures. H. H. Kerr, Washington.
45 *Congenital Absence of the Rectum. W. H. Saunders, Roanoke.
46 Conditions Justifying Induction of Premature Labor. C. H. Kinnear, Tacoma, Wash.
47 Diagnosis of Gastric Ulcer. A. G. Coumbe, Vienna.
48 Are We Dying Out? J. G. B. Bulloch, Washington, D. C.

45. **Congenital Absence of Rectum.**—The diagnosis in this case of absence of rectum with sigmoid connecting by a small opening with the urethra at about the juncture of the membranous with the prostatic divisions was made from the following points: A discharge of bowel contents through the urethra; a normal penis, scrotum and perineum; absence of bulging of anus on pressure of the abdomen, first urine cloudy, the last and greater part clear, and the great amount of dissecting necessary to reach the bowel, which was found near the level of the promontory of the sacrum.

American Journal of the Medical Sciences, Philadelphia

June

49 Treatment of Intestinal Indigestion in Children on the Basis of the Examination of the Stools and Caloric Values. J. L. Morse and F. B. Talbot, Boston.
50 Treatment of Hemorrhage from Gastric Ulcer. J. K[illegible], New York.
51 *Normal Human Blood Serum as a Curative Agent in Hemophilia Neonatorum. J. E. Welch, New York.
52 *Metabolism of Myasthenia Gravis with Suggestion Regarding Treatment. R. Pemberton, Philadelphia.
53 Treatment of Spasticity and Athetosis by Resection of the Posterior Spinal Roots. W. G. Spiller, Philadelphia.
54 Pathogenesis of the Toxemia of Pregnancy. J. [illegible], New York.
55 Chronic Family Jaundice. W. T[illegible], New Haven, Conn., and W. A. G[illegible], Sharon, [illegible].
56 *Murmurs in Pulmonary Tuberculosis. C. M. M[illegible], Philadelphia.
57 Solitary False Neuroma [illegible] N[illegible] M[illegible]. [illegible] M. Foote, New York.

51. **Hemophilia Neonatorum.**—Under this name [illegible] reports a series of cases which includes a number of [illegible] babies, in which the etiology of the hemorrhages is unknown. In none of the cases was the hemorrhage due to traumatism. Welch found post mortem that the principal hemorrhage may be either in the brain with extensive [illegible], or in the liver, in which case the capsule may be almost entirely dissected from the surface of the organ; hemorrhagic spots in other internal organs and effusions of blood in the various serous

cavities may be found. In some instances he found the spinal canal filled with fluid blood.

CASE 1: The child was 3 or 4 days old when the bleeding began. Within 24 hours the body was black and blue from subcutaneous hemorrhages; there was a large hematoma occupying one-third of the scalp on one side of the head, and bleeding from the mouth and bowel. The case was thought hopeless. It was at this time Welch made the first injection of normal blood serum; 10 c.c. was administered subcutaneously three times during the first day and once each on the following two days. Within a few hours a decided improvement was noted in the condition of the baby, in that the hemorrhages ceased, the old ones began to fade, and strength returned to the child in a very noticeable way. Within three days the hematoma of the scalp was entirely absorbed, and it was evident that the child was out of danger.

CASE 2: On the fifth day blood was found oozing from the vulva. During the sixth and seventh days bleeding was continuous. On the ninth day there was slight oozing from the umbilicus. There was no bleeding after the ninth day. Normal human serum was administered subcutaneously. This baby left the hospital in due time in a normal condition.

CASE 3: The child showed no bleeding until the seventh day. Then a dorsal division of the prepuce was made for phimosis. During the next four days bleeding recurred about every 4 hours, often profuse and difficult to control. There was profuse bleeding from the stump of the cord on the seventh day, which continued on the eighth and ninth days, when the stump was invaginated. On the eighth and ninth days there was bleeding from the lips and gums, and on the tenth day subcutaneous hemorrhages appeared on the face. Normal human blood serum was injected subcutaneously and the child recovered.

CASE 4: On the second day there was slight bleeding from the nose and mouth and small hemorrhagic spots appeared on the arms and back. On the third day the hemorrhagic spots increased in size. On the fourth day profuse bleeding from the gums and from the bowels occurred. On the fifth day there was more bleeding from the mouth and rectum and more subcutaneous hemorrhages. On the seventh day more subcutaneous hemorrhages in three places on the body. Subcutaneous injections of normal human blood serum were begun. On the fifty-sixth day the baby died, and autopsy showed the cause to be persistent atelectasis of the lungs involving their posterior half. None of the tissues showed signs of hemorrhage.

CASE 5: On the third day blood began oozing from the cord at its junction with the skin, and also from the foreskin, and there was copious bleeding from the nose. The stools were black, showing altered blood. A single injection of 10 c.c of normal human serum was given, and within 6 hours the bleeding ceased and the stools on the following day were normal.

CASE 6: On the second day the child began bleeding from the nose. On the third day it bled from nose and cord, and a large hematoma appeared on the back of the head and neck, extending from ear to ear. On the fourth day there was bleeding from the nose and gums and blood was passed in the stools. On the fifth day there was slight bleeding from the nose; one spot was noticed on the right knee and left elbow. Normal human serum was injected. There was no more bleeding after the fifth day and the child was discharged normal 13 days after.

CASE 7: Bleeding from the cord and rectum began on the fourth day. On the fifth day bleeding from the vagina and rectum, and two subcutaneous hemorrhages appeared on the left side of the thorax. On the ninth day there was vomiting of blood and slight bleeding from the rectum. On the tenth day there was profuse bleeding from the cord, vomiting of blood, and bleeding from the rectum, two subcutaneous hemorrhages on the right side of the thorax, and others on the elbows and on the back. Normal human blood serum was administered subcutaneously. The child recovered.

CASE 8: On the third day the child began bleeding from the mouth and rectum, and under the skin covering the left scapula. On the fifth day bleeding continued; there was no bleeding on the sixth day. On the seventh day there was bleeding from the rectum. Normal human blood serum was injected subcutaneously. The child recovered.

CASE 9: The child had severe hemorrhage from bowel and stomach, but recovered after serum injection.

52. **Myasthenia Gravis.**—Pemberton found that in myasthenia gravis there may be marked loss of calcium by the tissues even under circumstances of marked nitrogen retention. The creatinin output in myasthenia gravis may be reduced to a point below normal; the output of creatinin nitrogen expressed in percentage of the total urinary nitrogen may be almost as low as that seen in conditions of true muscular wasting. These facts taken together form a reasonable basis for the belief that myasthenia gravis is a disease of deranged muscular metabolism, and that one, at least, of these two factors (that is, the loss of calcium) may stand in such a causal relationship as to indicate the therapeutic administration of that element.

56. **Murmurs in Pulmonary Tuberculosis.**—Murmurs over the chest not demonstrably dependent on cardiac or vascular disease when listened for carefully under favorable circumstances and repeated examinations are found frequently in tuberculosis. They were heard by Montgomery in nearly three-fourths of the advanced cases. These murmurs are usually systolic in time and faint in intensity, in Montgomery's cases three-fourths being faint. They are generally soft and whiff-like in character, though they may be rather loud and harsh. In the majority of cases these murmurs are heard repeatedly and usually intermit only temporarily. The areas where they are most commonly heard and where their maximum intensity most often occurs, are at the base of the heart, chiefly to the left of the median line at the cardiac apex (a little over half as often as at the base), and at the inferior scapular angles posteriorly, more often on the left side. These murmurs are more frequent over the front of the chest than the back; they are more frequent and more widely distributed over the left side in front than the right. They are heard in a relatively small number of cases in the axillæ. They may be very limited in extent or may cover the entire chest. In Montgomery's cases the murmurs were usually heard best during the quietest part of the respiratory act, that is, during expiration or the respiratory pause, and during suspended respiration; less often they were limited to the end of inspiration and beginning of expiration, and rarely they were heard during inspiration only. These murmurs are modified at times, by position, more often by excitement and exertion. With the possible exception of the left side in front, murmurs in advanced cases are heard more frequently over normal or hyperfunctionating tissue than diseased tissue, this being particularly noticeable at the bases posteriorly. The etiology of these murmurs is usually obscure, and causes probably responsible in a certain proportion of all cases are hard to establish in individual cases. In about 7 per cent. of the cases with murmurs, mitral regurgitation dependent on weakness of the heart muscles was diagnosticated. For prognosis and treatment little is gained from these murmurs of undetermined origin. Even when they seem to depend on the advance of the tuberculous process they furnish little information unobtainable in other ways.

Out of 171 cases of pulmonary tuberculosis (over one-half being far advanced cases, and nearly three-fourths of the patients being females), a diagnosis of endocarditis was made in 2 cases (mitral regurgitation once, and mitral regurgitation and stenosis once), and a diagnosis of probable endocarditis (mitral regurgitation) was made in a third case. That is, endocarditis was diagnosticated in 2 or 3 of 171 cases. In none of these cases was a diagnosis of disease of the pericardium or of the aorta made. Myocarditis is not infrequently demonstrated microscopically in hearts from persons dying of tuberculosis, and its occurrence is often suggested clinically. The diagnosis, in individual cases of tuberculosis, however, is usually very difficult, first, because of the frequent absence of important signs, for instance, certain types of arrhythmia; and second, because many of the symptoms of myocarditis may also be produced by tuberculosis. Heart disease with failing compensation, Montgomery has never seen in very far-advanced tuberculosis.

Journal South Carolina Medical Association, Florence

April

58 *Need of Better Education in the Preparation for the Study of Medicine. J. L. Dawson, Charleston.
59 Present Status of Bacterial Immunization. A. M. Brailsford, Mullins.
60 A Plea for More General Use of Cholecyst-Enterostomy in Certain Cases of Pancreatitis. LeG. Guerry, Columbia, S. C.
61 The Religious Press and Quackery. R. E. Hughes, Laurens.
62 Duty of the Physician to the Public. C. F. Williams, Columbia.

58. Abstracted in THE JOURNAL, May 28, 1910, p. 184.

Journal Arkansas Medical Society, Little Rock

May

63 Dermatitis Exfoliativa. W. R. Bathurst, Little Rock.
64 Medical Association of the Southwest. J. A. Foltz, Fort Smith.
65 Plea for Medical Inspection in the Public Schools. F. D. Boyd, Fort Worth.

American Journal of Physiology, Boston

June

66 *Reactions of the Vasomotor Center to Sciatic Stimulation and to Curare. T. Sollmann and J. D. Pilcher, Cleveland, Ohio.
67 *Acapnia and Shock. Acapnia as a Factor in the Dangers of Anesthesia. Y. Henderson and M. McR. Scarbrough, New Haven, Conn.
68 Adrenalectomy and Glycosuria. H. McGuigan, St. Louis.

66. **The Reactions of the Vasomotor Center.**—Sollmann and Pilcher describe a method for studying the reactions of the vasomotor center by which the complicating factors of the force of the heart's action and the influence of peripheral vasomotor action can be obviated. The method consists in isolating an organ, the spleen usually, from its connection with the central vascular system, but retaining its vasomotor ner-

vous connections and perfusing it with Locke's fluid. They usually curarized the animals and found that curare alone slightly stimulated the vasomotor center after a temporary fall of pressure due to peripheral action. During the brief vasomotor action of curare, there is a considerable peripheral block to weak and moderate vasomotor impulses. This may be completely overcome by strong vasomotor stimulation (if the quantity of curare is not too large). Maximal stimulation of the central stump of the sciatic nerve stimulates the vasomotor center so as to decrease the spleen flow by 20 per cent., on an average (the blood pressure rising 30 mm. to 25 per cent.). The result is not affected by previous section of the vagi. The absolute rise of the pressure is the same for blood pressures ranging between 70 and 160 mm. The percentile rise therefor varies inversely to the level of the blood pressure. The response of the vasomotor center does not bear any simple relation to the blood pressure. The response of the vasomotor center to sciatic stimulation is only about one-third as powerful as is its response to asphyxia. The absolute change of the blood pressure appears to be a more correct index of degree of vasomotor response than the percentile change.

67. **Acapnia and Shock.**—Henderson and Scarbrough continue their discussion of the acapnia theory of shock and endeavor to show the importance of an undue loss of carbon dioxid in producing fatal apnea in the course of administration of anesthetics.

Anesthetics tend to prevent shock because they diminish the rapid breathing due to pain and thus obviate the development of acapnia (absence of carbon dioxid from the blood).

Respiratory excitement during the initial stages of anesthesia diminishes the carbon-dioxid content of the blood and thus tends to induce a subsequent failure of respiration. Similarly ether, unless neutralized by morphin, in dogs often causes hyperpnea, acapnia, and consequently fatal apnea.

Morphin raises the threshold for carbon dioxid more than it does the afferent threshold of the respiratory center. Chloroform elevates the latter threshold more than the former, that is, morphin lessens the sensitiveness of the respiratory center to carbon dioxid more than it does the sensitiveness to external irritation. Chloroform produces an opposite effect. Ether in quantities short of profound anesthesia exerts a respiratory stimulant influence which lowers the threshold for carbon dioxid and thus tends to induce acapnia.

Apnea in anesthesia depends, in the same manner as to normal life, on the relation of the level of the threshold of the respiratory center for carbon dioxid to the quantity of carbon dioxid in the blood and tissues. Whenever the former is above the latter, spontaneous breathing ceases, that is, the less sensitive the respiratory center is and the less carbon dioxid in the blood, the more likelihood of a cessation of the breathing.

Under anesthesia the threshold for carbon dioxid (that is the point at which carbon dioxid will excite breathing) may be elevated 50 per cent. above normal, or depressed 50 per cent. below normal. Such a depression of the threshold causes vigorous hyperpnea. If long continued, it results in intense acapnia, that is, the excessive breathing removes the carbon dioxid from the blood.

Chloroform apnea may be regarded as merely a form of apnea vera.

Experiments show that ether-hyperpnea is as effective as pain hyperpnea as a means of inducing a subsequent fatal apnea vera. For instance, administration of ether in such a manner that rapid breathing is occasioned is as likely to induce shock as intense pain.

In normal subjects under chloroform, respiration always fails before the heart. Patients who have passed through a period of sickness and suffering; or their experimental equivalents, are hypersusceptible to the toxic influences of chloroform. In such cases the circulation fails first, or simultaneously with the respiration.

Hypercapnia during anesthesia may be the factor which determines the development of chloroform necrosis.

Skillful anesthesia consists in maintaining the threshold of the respiratory center for carbon dioxid at a nearly normal level and in avoiding the development of either acapnia or hypercapnia.

Long Island Medical Journal, Brooklyn

May

69 Surgery of Blood Transfusion. J. E. Jennings, Brooklyn.
70 Indications for Exploratory Incision in Gastric Diseases. A. Bassler, New York.
71 Chronic Cholecystitis. J. R. Taylor, Brooklyn.
72 Syphilitic Strictures of the Rectum. J. P. Murphy, Brooklyn.

American Journal Obstetrics and Diseases of Women and Children, York, Pa.

June

73 *American Gynecology. E. P. Davis, Philadelphia.
74 *Postoperative Cystitis. J. T. Johnson, Washington, D. C.
75 *Treatment of Eclampsia by Continuous Sugar-Water Instillation. S. D. Jacobson, New York.
76 Metrorrhagia and Uterine Fibrosis. A. Sturmdorf, New York.
77 Mary Putnam Jacobi. J. Walter, New York.
78 *Mechanism of the Third Stage of Labor. P. T. Harper, Albany.
79 *Extrauterine Pregnancy at Full Term. G. D. Nutt, Williamsport, Pa.
80 *Fibroid Tumor Complicating Pregnancy and Rendering a Continuance of Gestation Dangerous and Natural Delivery Impossible. B. F. Baer, Philadelphia.
81 Treatment of Ante-Uterine Pelvic Abscess by Sequestration and Drainage. H. A. Kelly, Baltimore.
82 Vaginal Cysts and Their Histology. G. F. Murray, New York.
83 Rôle of Waldeyer's Lymphatic Chain in the Economy of Health and the Dissemination of Disease. [illegible], Brooklyn.
84 Diphtheria in Children. E. M. Sill, New York.
85 Education of the Atypical Child. The Unusual Child. S. P. Goodhart, New York.
86 Congenital Symbol Amblyopia. J. H. Claiborne, New York.
87 Oral Defects a Great Hindrance in the Proper Development of Children; The State's Duty to Cope with these Conditions. A. Zentler, New York.

73. Abstracted in The Journal, May 28, 1910, p. 1813.

74. Abstracted in The Journal, May 14, 1910, p. 1630.

75. **Treatment of Eclampsia.**—The desideratum, according to Jacobsen, was to find a substance which mixed with the water to be administered shall be harmless and will not increase the molecular concentration and specific gravity of the blood, which are already too high. It seemed to him that pure water created irritation of the bowel. The usual physiologic saline solution was rejected as dangerous and illogical. If the patient is dying from a retention of salts in the blood it would be worse than folly to administer more salt in solution. After going over the field carefully, Jacobsen decided that a solution of sugar would meet all indications. Sugar was decided on because of its high molecular weight. The weight of a molecule of sugar is stated to be 342, while that of salt is 58. It is clear that many more of the lighter or smaller salt molecules will go into a given volume of water, than the many times heavier or larger sugar molecule. Therefore, the molecular concentration of the blood would be speedily reduced by diluting it with sugar water, whereas it would remain the same or be increased by administering salt solution.

This seemed rational and was done in several cases, two of which are briefly reported. While under the sugar-water instillation treatment, the specific gravity of the patient's blood was observed by Hammerschlag's method and recorded. It was found that remarkable improvement took place in the condition of the patients under the continuous rectal administration of sugar water by the drop method (Murphy) and that the specific gravity of the blood fell to 1052 from 1060. Both patients made a good recovery. In addition to the sugar-water instillation only water was given by mouth for three days and the usual treatment in these cases carried out, namely, veratrum viride hypodermically, patient wrapped in blankets surrounded by hot-water bottles to induce perspiration, catharsis, later salt-free diet. Jacobsen says that it was astonishing to see the large quantities of sugar water that were absorbed by these patients, and how the quantity of urine and perspiration increased, bringing about improvement in the patients' condition from the start.

78. **Mechanism of Third Stage of Labor.**—Harper says that the placenta is commonly delivered as an inverted cone, the fetal surface presenting; the membranes follow, reversed. This may be called the normal mechanism because it occurs in the majority of cases; it may be explained by the action of the uterine forces on the placenta in its common position in the upper uterine segment, and it is attended by expulsion of the membranes more often intact. Uncommonly, the placenta is delivered as a cylinder, the edge or the edge and maternal surface presenting; the membranes follow, their anatomic relations preserved. This may be termed the abnormal mechanism because it occurs in the minority of cases; it may be explained by the action of the uterine forces on the placenta in its uncommon position in or encroaching on the lower uterine segment; and it is attended by the expulsion of the membranes often incomplete and detached to a greater or less degree.

79. **Extrauterine Pregnancy at Full Term.**—The two cases reported by Nutt were tubal pregnancies at full term with very little departure from normal pregnancy in so far as the mothers' symptoms and feelings were concerned. In each case at the end of the gestation period labor pains were experiences which subsided with the death of the child.

80. Abstracted in The Journal, June 18, 1910, p. 2090.

Colorado Medicine, Denver

May

88 Lung Surgery. F. W. Bancroft, Denver.
89 Electrotherapeutics. B. B. Grover, Colorado Springs.
90 Iconoclastic Revision of a Classical Case of Diverticulum of the Esophagus. C. D. Spivak, Denver.
91 Multiple Gummata of the Liver. O. M. Shere, Denver.

Medical Herald, St. Joseph

May

92 *Local Anesthesia in General Surgery. L. Freeman, Denver.
93 Expert Medical Evidence at One Dollar a Day. T. W. Schaefer and A. M. Wilson, Kansas City, Mo.
94 Cactin. H. H. Redfield, Chicago.

92. Abstracted in The Journal, April 2, 1910, p. 1159.

Laryngoscope, St. Louis

May

95 The Comparative Merits of the Methods Employed in the Various Mastoid Operations. J. C. Beck, Chicago.
96 Aural Manifestations of Myxedema. S. M. Smith, Philadelphia.
97 The Cytology of Chronic Middle-Ear Discharges. E. H. White and O. Klotz, Montreal.
98 *A New Vestibular Symptom in Diseases of the Cerebellum. R. Barany, Vienna.
99 In Situ Antrum Trocar. T. A. Dickson, Mobile, Ala.
100 Retropharyngeal Abscess. E. W. Carpenter, Greenville, S. C.

98. **Vestibular Symptoms in Diseases of the Cerebellum.**—When the Romberg test is applied in cases of left-sided rotary nystagmus of vestibular origin, the patient falls to the right. When the head is turned 90 degrees to the right, the patient falls backward; when turned 90 degrees to the left, he falls forward. This occurs in accordance with the law discovered by Barany that in disturbances of equilibrium of the vestibular apparatus, the direction of the fall is influenced by changing the position of the head.

Washington Medical Annals

May

101 Vasomotor Disturbances of the Upper Respiratory Tract. C. W. Richardson, Washington.
102 Addison's Disease. E. W. Reisinger, Washington, D. C.
103 The X-Ray Method of Diagnosis. A. H. Staples, Washington, D. C.
104 The Written Law in Reference to the Unborn Child. M. Parsons, Washington.
105 Epithelioma of Esophagus. W. Van Swearingen, Washington, D. C.
106 Sarcoma of Liver and Stomach. W. Van Swearingen, Washington, D. C.
107 Pneumonia: An Analysis of Forty Consecutive Cases. H. P. Parker, Washington, D. C.
108 Hypernephroma of the Kidney. I. W. Blackburn, Washington, D. C.

American Medicine, New York

May

109 Diet in Typhoid. G. R. Hall, Brooklyn.
110 Tuberculosis of the Genitourinary Organs. A. E. Isaacs, New York.
111 The Proper Attitude of the General Practitioner Toward the Venereal Diseases. A. L. Wolbarst, New York.
112 *The Musical External Ear. A. O'Malley, Philadelphia.
113 The Treatment of Hay Fever. G. A. Leitner, Piermont, N. Y.
114 *Deciduoma Malignum. A. M. Judd, Brooklyn.

112. **The Musical External Ear.**—There is, says O'Malley, a peculiar conformation of the external ear in musicians, first observed by J. J. Kinyoun, of Washington, but never reported, which is constant and readily perceptible. The shape of the concha (a shell) is the special phenomenon observable in musicians' ears. In these persons the concha is (1) large; (2) deep; (3) rectangular. The lowest border is horizontal and at right angles with the helix, which makes the outer border of the concha. In singers, even the noted artists, the lowest border of the concha is not seldom out of the horizontal line as this border goes back from the intertragic notch; thus forming a slightly obtuse angle with the antitragus, but this obtuse angle is not found in the instrumentalists. In some singers the lowest border is horizontal, but the antihelix slopes backward slightly.

Ordinarily in musicians the lowest border of the concha is rounded slightly as it joins the antihelix. It is noteworthy also that the lowest border of the lobule in musicians is commonly almost parallel to the lowest border of the concha, but this formation is not invariable. The only marked exception to this shape of the lobule O'Malley could find is in Joachim's ear. It is a curious coincidence also that musicians almost without exception have large noses.

When, on the contrary, the ear lines are vertical, and the concha is narrow, with little or no lower border, and the lobule is large and pendant, the person, no matter how intelligent he may be, lacks the musical sense, is tone-deaf. If a child has vertical ear-lines, it is useless to attempt to teach him music. Again, when a person with vertical ear-lines asks a musician to play an instrument the request is merely an act of patient courtesy, and the final applause is wilful mendacity or a sign of relief.

114. **Deciduoma Malignum.**—Appended to Judd's article is a splendid bibliography which is sufficiently valuable to demand attention and praise. Judd reviews the clinical history of this affection and reports one case.

Journal of Biological Chemistry, Baltimore

May

115 Determination of Small Quantities of Iodin, with Special Reference to the Iodin Content of the Thyroid Gland. A. Hunter, Ithaca, N. Y.
116 Relative Magnitude of the Parts Played by the Proteins and by the Bicarbonates in the Maintenance of the Neutrality of the Blood. T. B. Roberston, Berkeley, Cal.
117 Refractive Indices of Solutions of Certain Proteins. T. B. Robertson, Berkeley, Cal.
118 Origin of the Brown Pigment in the Integuments of the Larva of *Tenebrio Molitor*. R. A. Gortner, Washington, D. C.
119 Autolysis of Fertilized and Unfertilized Echinoderm Eggs. E. P. Lyon and L. F. Shackell, St. Louis.
120 Influence of Various Dietary Conditions on Physiologic Resistance. N. B. Foster, New York.

Montreal Medical Journal

May

121 The Early Hospitals of Canada. M. L. Meiklejohn.
122 Typhoid Fever Treated in the Montreal Hospital in 1909. A. H. MacCordick and R. E. Powell, Montreal.
123 European Hookworm Disease—Ankylostoma Duodenale. R. E. Powell, Montreal.
124 Climacteric Hemorrhages. J. R. Goodall, Montreal.
125 Things New and Old. A. M. Forbes, Montreal.

June

126 *Experimental Intrathoracic Surgery. E. M. von Eberts and W. H. P. Hill, Montreal.
127 A New Forceps for the Removal of the Anterior Lens Capsule. F. Tooke, Montreal.
128 *A New Operation for the Treatment of Anterior Metatarsalgia Including Morton's Disease. A. M. Forbes, Montreal.
129 Amebic Dysentery with Abscess of the Liver, Originating in Montreal. F. G. Finley and S. B. Wolbach, Montreal.

176. **Experimental Intrathoracic Surgery.**—The authors carried out successfully two experiments in which, after dissection and retraction of the left vagus, amputation of the whole lung was effected through the primary bronchial division. No reflex disturbances were encountered in these two experiments, and although the animals eventually succumbed some days after operation (10 and 4 days, respectively) from infection of the pleura, the bronchial closures effectually withstood pressures of 20 to 30 mm. of mercury without evidence of leakage.

128. **New Operation for Anterior Metatarsalgia.**—Forbes' patient was suffering from anterior metatarsalgia. For 10 months he tried all forms of non-operative treatment without getting any relief. Finally Forbes operated, performing a new and original operation. This operation is planned on the supposition that the secondary symptom of this affection, viz., spasm of the extensor, causing hyperextension of the affected toe, acts to depress the head of the metatarsal bone and thus increases the pain and pain-giving deformity. The procedure, then, is to detach this tendon from the hyperextended toe and to transplant it to the head of the metatarsal bone in the expectation of being able to convert what was a power for evil into a power for good. This operation was performed some months ago; the patient is free from both pain on lateral pressure on the anterior arch and tenderness under the head of the affected metatarsal, and he is cured.

West Virginia Medical Journal, Wheeling

May

130 Chronic Rheumatism. T. McCrae, Baltimore.
131 Serotherapy. H. W. Daniels, Elkins.
132 Relations of the Dental and Medical Professions. O. Tolles, Parkersburg.
133 Fractures of the Elbow; Diagnosis and Treatment. K. M. Jarrell, Clear Creek.

June

134 Amebic Dysentery: Its Prevalence, Etiology and Treatment. J. A. Nydegger, Pittsburg.
135 Placenta Previa: Its Pathology and Treatment. W. H. Sharp, Parkersburg.
136 Prognosis in Tabes Dorsalis. T. A. Williams, Washington, D. C.
137 Calculus in Bladder. W. W. Stonestreet, Morgantown.
138 *Aspirin Poisoning. J. E. Cooper, Cameron.

138. **Aspirin Poisoning.**—Following the administration of 7½ grains of aspirin, every 30 minutes, for 8 doses, Cooper's patient had considerable general cyanosis, extremities cold, heart's action was 70 and very weak, intermitting every third or fourth beat. The skin was rather harsh and dry. The mind was perfectly clear. There was some nausea, with vomiting at intervals. Cooper removed the stomach contents at once by means of stomach tube; the stomach washings consisted of nothing more than some mucus and biliary coloring matter. He applied external heat to the back and extremities, and gave strychnin gr. 1/30 hypodermically. The patient began to rally after 2 hours and made an uneventful recovery.

Journal Kansas Medical Society, Kansas City

May

139 Louis Pasteur. M. T. Sudler, Lawrence.
140 Impetigo. H. W. Manning, Eureka.
141 Peculiar Case of Poisoning by Mercury Bichlorid. E. W. Boardman, Parsons.

Bulletin Lying-in Hospital, New York

December, 1909

142 Sixty Thousand Labors Occurring in the Service of the Society of the Lying-In Hospital of the City of New York. J. W. Markoe, New York.
143 Lacerations of the Cervix During Labor, Based on a Study of 1,000 Cases in Primiparæ. E. S. Gushee, New York.
144 Two Hundred and Fifty Cases of Eclampsia. R. McPherson, New York.
145 Care of the Breasts During the Puerperium. H. E. Lindemann, New York.
146 Morbid Anatomy of the Toxemias of Pregnancy. J. E. Welch, New York.

Proctologist, St. Louis

June

147 *What Relation has Bile to Normal Defecation. L. J. Hirschman, Detroit.
148 The Less Common Rectal Diseases. D. C. Hawley, Burlington, Vt.
149 Perirectal Abscess. C. J. Drueck, Chicago.

147. **Relation of Bile to Normal Defecation.**—Hirschman claims that while the non-excretion of bile is a very serious matter to the general economy on account of the cholic toxemia which it produces, as far as peristalsis is concerned, one could get along very nicely without any bile at all, as is illustrated in those patients who suffer from permanent fistulas.

New Mexico Medical Journal, East Las Vegas

May

150 Pneumonia. C. W. Fulton, Raton.
151 Indications and Contraindications for Curettage. C. M. Yater, Roswell.
152 Pepsin and Its Digestive Powers. P. Worley, Clovis.
153 The Sanitary Needs of Santa Fe. J. A. Rolls, Santa Fe.

Chicago Medical Recorder

May

154 Tuberculous Peritonitis. F. G. Dyas, Chicago.
155 Systemic Blastomycosis. O. F. Scott, Summitt, Ill.
156 Diagnosis and Treatment of the Exudative Diathesis. A. H. Roler, Berlin, Germany.
157 Relation of Anaphylaxis to Immunization. F. P. Gay, Boston.
158 Acute Dilatation of the Stomach. A. M. Miller, Danville, Ill.

Yale Medical Journal, New Haven

May

159 *Gout. N. B. Foster, New York.
160 *New Apparatus for the Administration of Rectal and Pharyngeal Anesthesia. H. K. Thoms, New Haven.
161 Functional Ear Tests. C. Weidner, Hartford, Conn.

159. **Gout.**—Foster emphasizes particularly that the treatment of gout by means of drugs must take a minor place. No drug is known to have any influence on uric-acid metabolism, much less the power of dissolving the deposits of sodium urates in the joints. The claims made for some drugs, such for example, as piperazin and quinic acid, rest on test-tube experiments that are not borne out when applied to living tissues. The use of alkalies, first advocated by Boerhaave, has not now the repute it formerly held. Von Noorden asserts that alkalies cause a retention of uric acid and precipitate attacks. The salts of lithium are entirely useless. The only drugs which Foster considers to possess any value are the salicylates, which are occasionally given to relieve pain, and the iodids. It cannot be too emphatically stated, however, he says, that no effect can be expected from drugs when they are used without regard to the important consideration—diet.

160. **New Apparatus for Anesthesia.** The advantages claimed by Thoms for his apparatus are the following: (1) Uniform heat to the water bath, which maintains a constant saturation of the vehicle with ether; (2) a pressure regulation by means of which any desired pressure may be obtained in the intestine and evenly maintained; (3) a continuous fresh supply of ether to the intestine, thus insuring a more uniform anesthesia; (4) a means of rapidly replacing the ether laden vehicle in the intestine with unsaturated vehicle, without disconnecting the apparatus or decreasing the distention; (5) a means of preventing so far as possible, the stoppage of the current by feces; (6) a means of preventing the condensation of any liquid ether in the colon which might cause local irritation; (7) it is equally serviceable for the administration of ether through the intubation of the nasopharynx.

Woman's Medical Journal, Cincinnati

May

162 Value of Early Diagnosis and Treatment of Adenoids. G. P. Vankauer, New York.
163 Idem. W. C. Phillips, New York.
164 Anteflexion of the Uterus. M. C. Potter, Rochester, N. Y.
165 Care of the Health During the Menstrual Period. E. D. Barringer, New York.
166 Open Air Treatment in the Sick Room. J. Walter, New York.
167 Hygiene and Prophylaxis of Mental Defectives. M. S. Macy, New York.
168 Medical Women Needed in India. I. Baksh, Buffalo, N. Y.

Vermont Medical Monthly, Burlington

May

169 Management of Normal Labor. D. J. Evans, Montreal.
170 Inflammation. J. P. Gifford, Randolph.
171 Examination of and Through the Rectum of Children. G. R. Pisek, New York.

Journal of Advanced Therapeutics, New York

May

172 Intensification of Nature's Agents a Specific for Tuberculosis. J. D. Gibson, Denver.
173 Galvanism: Some Uses and Methods. A. T. Livingston, Jamestown, N. Y.
174 Electro-thermic Penetration. F. H. Humphris, London.
175 Ozone in Medicine. S. St. J. Wright, Akron, Ohio.
176 Junod's Blood Derivations. G. Werber, Washington, D. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

June 5

1 *Diagnosis in States of Depression. B. Pierce.
2 *The Rightward Edge of Cardiac Dulness. W. Gordon.
3 The State Civil Medical Services. J. Griffiths.
4 The Nationalization of Medical Service. B. Moore.
5 Gastrostaxis. W. H. White.
6 *The Differential Cutaneous Reaction in Tuberculous Diseases. H. Clarke and C. E. P. Forsyth.
7 Sterilization of the Skin of Operation Areas. J. L. Streeton.

1. **Diagnosis in States of Depression.**—In 200 cases discussed by Pierce the relative frequency of occurrence of the various mental disorders was as follows: General paralysis, 8; dementia præcox, 19; psychasthenia, 26; the confusional group, 17; inhibitory, 45; intrinsic, 42; involutional, 27; and unclassified, 18.

2. **Rightward Edge of Cardiac Dulness.**—Emphasis is laid by Gordon on the fact that in so many cardiac conditions an estimate of the state of the right ventricle and auricle is an important factor in our judgment alike of prospects and of progress. It is surely only common sense to believe that these differences are matters not of curiosity, but of great practical importance. In the recumbent position we get, in many cases of cardiac disease, a quite misleading idea of the condition of the right heart which is often then percussionally almost invisible. In the upright position we have usually the great advantage of having much more of the right heart percussionally in view.

6. **Differential Cutaneous Reaction in Tuberculous Disease.**—Acting on the suggestion of Detre that by applying bovine and human tuberculin simultaneously it would be possible not only to determine the presence or absence of tuberculosis, but

also to determine whether the bacillus present was of the human or bovine variety, Clarke and Forsythe have been using this method for about 18 months, and now record the results in 250 consecutive cases. The technic is simple. A 25 per cent. solution of old tuberculin is made up with a diluent consisting of 1 part of 1 in 20 phenol-glycerin and 2 parts of normal saline solution. The solutions are kept in 3 pipette stoppered bottles containing, respectively, the diluent for control, bovine and human tuberculin.

On the right forearm is placed a drop of the diluent, and at some distance a drop of human tuberculin, and the skin is scarified through each drop with a straight Hagedorn needle. The left arm is similarly treated with bovine tuberculin. A different needle, which is kept in alcohol, is used for each solution.

If a reaction occur, a small red papule appears in 24 hours, increases in size for three or four days, and then gradually fades in about a week, leaving in some cases a slight desquamation or pigmentation. In a few cases the papule becomes vesicular, and in still fewer the reaction is delayed until the fifth or sixth day. The control should show no reaction on the third day. In every one of the first 250, there was some reason to suspect the presence of tuberculosis. Seventy-nine cases were certainly tuberculous, in 42 the diagnosis of tuberculosis was highly probable, and in 129 there was no evidence of tuberculosis other than the reaction when present.

All cases certainly tuberculous gave one or both reactions, with one exception, namely, a case of tuberculous meningitis in which tubercle bacilli were found in the cerebrospinal fluid. This patient died. Of cases probably tuberculous, one or both reactions were present more frequently where the probability was greater than where the probability was less. In cases suspected of tuberculosis, where there were no definite diagnostic signs, one or both reactions were present, more frequently after the age of 15 years and most frequently in patients over 45 years of age. It is obvious, however, that the probability of any individual being tuberculous increases with his age. In the pulmonary cases, of those certainly tuberculous, 2 gave a bovine reaction, and 22 gave both reactions. Of those almost certainly tuberculous, 2 gave a human reaction, 1 a bovine, and 39 gave both reactions. In these two groups of 66 patients examined, 61 gave both reactions, which in 28 cases were equal, in 17, the human, in 16 the bovine being the greater; 2 gave the human reaction only, and 3 the bovine. In all cases some reaction occurred.

Lancet, London

June 4

8 Aneurismal Varix in the Leg of a Child, aged 7 Years. H. Morris.
9 Relation of Fibrosis to Tuberculosis. C. T. Williams.
10 *Pathology of Rheumatic Fever. F. J. Poynton and A. Paine.
11 Nephrectomy. E. A. Stoney.
12 Volvulus Associated with the Reduction of a Hernia. G. Taylor.
13 Pulmonary Tuberculosis in Children. M. H. Williams.
14 Encapsulated Cerebral Abscess. J. A. C. Macewen.
15 Early Degeneration of Arterial Hypertension. L. T. Thorne.

10. **Rheumatic Fever.**—Poynton and Paine hold that no elucidation of acute rheumatism can compare with that which attributes it to an infection with a diplococcus of the streptococcal group.

Medical Press and Circular, London

May 11

16 Suppurative Diseases of the Maxillary Antrum. C. Nourse.
17 Our Responsibilities in the Prevention of Inherited Syphilis. S. [illegible]
18 Treatment in the Severer Forms of Diabetes Mellitus. W. B. Warrington.
19 Respiratory Exchanges and the Maximum Expiration in the Phthisical. A. Bolon.

Clinical Journal, London

May 11

20 Chronic Ascites with Cirrhosis of the Liver. W. P. Herringham.
21 Sympathetic Ophthalmia. A. Ormond.

Practitioner, London

May

22 Prevention of Constipation in Women and Children. J. Byers.
23 Constipation in Women. G. E. Herman.
24 *Constipation in Childhood. F. J. Poynton.
25 *Constipation in Infants. E. Pritchard.
26 Constipation in Adults. W. H. White.
27 *Habitual Constipation Mainly from the Standpoint of its Effects. W. Russell.
28 Secondary Constipation. A. P. Beddard.
29 Diet and Constipation. E. I. Spriggs.
30 Drugs in Constipation. W. C. Wilkinson.
31 *Agar-agar Treatment of Chronic Constipation. L. M. Gompertz.
32 *Use of Sour Milk in the Treatment of Constipation. T. D. Lake.
33 The Spa Treatment of Chronic Constipation. L. Williams.
34 The Cutaneous Manifestations of Constipation. A. J. Whiting.
35 The Operative Treatment of Chronic Constipation. W. A. Lane.
36 Appendicostomy in the Treatment of Chronic Constipation. P. L. Mummery.
37 The Investigation of Constipation by the *X*-Rays. A. F. Herz.
38 Mechano-therapeutics for Constipation. T. S. Dowse.

24. **Constipation in Childhood.**—To combat constipation in infancy, Poynton says it may be quite sufficient to use manna, which should be dissolved in hot water and strained through muslin. This remedy, no doubt, often fails, but it is very satisfactory when effectual, and for this reason worthy of trial. Some light massage along the colon will help these cases. Salines are most valuable remedies. The secret of the successful use of salines lies in their regular employment, in sufficient dosage to produce a thorough relief of the bowels. The initial dose must be an experiment, but, once ascertained, it should be persisted with until a regular habit had been established and then should be diminished cautiously. If too little is given, griping pains and distention may result, and if too much, the motions will become unduly frequent and liquid.

A likely prescription for a child 2 years of age would be:

R	gm. or cc.	
Magnesii carbonatis	66	gr. x
Sp. chloroformi	13	mii
Syrupi	1	mxv
Aquæ	8	3ij

To be taken twice a day after meals.

It would be necessary, if there has been constipation of some standing, to give a dose of calomel or grey powder before commencing the saline treatment. Castor oil is well known as a very safe aperient, but has the disadvantage of intensifying the constipation if used in occasional doses. In spite of this it is invaluable when it is necessary to clear away curds in milk dyspepsia, and it can then be followed by mild salines. If a small and delicate infant has to be treated, the castor oil can be given with an equal part of pure olive oil. Castor oil has another useful function in young children, when there is irregularity of action of the bowels. In this particular class of case there is at one time constipation, at another diarrhea. Small doses of this drug given once, twice or thrice a day will often correct either of these irregularities. Five minims given in a mixture with a carminative twice a day is an average dose for a child of 12 months.

When the constipation is associated with deficient hepatic action, indicated by pallor of the stools, grey powder is a useful remedy, and this may be combined with powdered rhubarb as follows:

	gm. or cc.	
Pulv. hydrargyri cum creta.	06	gr. i.
Pulv. cinnamomi	03	gr. ss.
Pulv. rhei	2	gr. iii.

Fiat pulv.

To be given at night.

Poynton has used phenolphthalein in a considerable number of cases of constipation in mentally deficient infants and children, and he has found it sometimes very convenient and efficacious in these cases in doses from $^3/_4$ of a grain to 2 grains.

25. **Constipation in Infants.**—The more important of the many causes of constipation are classified by Pritchard as follows:

A. ORGANIC IMPEDIMENTS TO PERISTALSIS:
- (1) Congenital malformations:
  - (a) Atresia recti.
  - (b) Imperforate anus.
  - (c) Dilated colon (Hirschsprung's disease).
- (2) Acquired structural alterations:
  - (a) Dilated, convoluted or lengthened colon from overfeeding, or flatulent distention;

(b) Inflammatory conditions of (i) peritoneum (peritonitis); (ii) bowel wall (results of long standing colitis or dysenteric diarrhea); (iii) mucous membrane (inspissated mucus in chronic colitis).

B. INTERFERENCE WITH NERVOUS MECHANISM OF PERISTALSIS AND DEFECATION:

(1) Organic (meningitis, hydrocephalus, tumors of brain and spinal cord):
(2) Toxic conditions:
  (a) specific infections (fevers, etc.):
  (b) specific poisoning due to drugs (opium, lead, excess of lime water, etc.);
  (c) intestinal toxemias due to decomposition of food in the bowel.
(3) Exhaustion of nerve centers due to over stimulation by:
  (a) diarrheas;
  (b) purgative drugs.
(4) Interference with the peripheral nervous mechanism by:
  (a) Hypersensitiveness of anal sphincter (fissure of anus),
  (b) Anesthesia of sensitive zone of rectum (by enemata suppositories, presence of foreign bodies, etc.).

C. FAULTS IN THE INTESTINAL CONTENTS:

(1) Insufficient food (starvation, vomiting),
(2) Deficiency of fluid (dehydration of tissues by fevers, loss of blood, want of bile and intestinal secretions).

The treatment of constipation in infants is summarized by Pritchard as follows:

(1) In all cases the exciting cause, such as deficiency or excess of food, or qualitative faults, must be treated by appropriate means; (2) the motions may be softened by—(a) free doses of petroleum emulsion, and (b) in aggravated cases by small doses of drugs which promote intestinal secretion and the outflow of bile; (3) inertia of the bowel may be treated by —(a) massage, or massage combined with electricity, and (b) in aggravated cases by cascara sagrada and nux vomica; (4) in cases in which a chronic colitis complicates the condition, a preliminary course of irrigation (Plombières method) may be employed; (5) in cases in which the motions are light colored and offensive, liquor pancreaticus may be added to the petroleum; (6) in all cases regularity of habit must be enforced by careful and systematic training.

27. **Habitual Constipation.**—It can often be found out from a patient, says Russell, that certain exercises, some simple dietetic measure, or the drinking of water the last thing at night or first thing in the morning, are sufficient to cause bowel action; whenever this is the case these measures ought to be persevered with. Bowel action is favored in many persons by regularity of practical suggestion. The smell of castor oil is said to be sufficient for some. Minute doses of common aperients are ample for others, so minute in fact, that some people insist that the action is by suggestion. Whatever it be, the remedy that acts so is the ideal one for the individual. If a laxative drug has to be taken regularly, perhaps daily, the drug which in smallest quantity ensures movement is the ideal one for the individual, and can often only be found by experience.

31. **Agar-agar Treatment of Constipation.**—The constant or daily use of agar-agar, according to Gompertz, brings about normal evacuations. It is a helpful and harmless remedy that may be used indefinitely without the diminishing and aggravating effects of drug-treatment. The fact that it produces a condition which approximates natural functions, affording necessary relief without interfering with other medical treatment, should entitle agar-agar to professional consideration, and overthrow any objection against its use.

32. **Sour Milk in Constipation.**—Luke outlines his practice as follows: Patients usually take their first glass at breakfast in the place of porridge. It is convenient to turn the glass out into a cold pudding plate and sprinkle the curd with sugar, or with a mixture of cinnamon—powdered with sugar. Some patients enjoy the slightly acid, sharp taste, and find it more agreeable and appetizing without any added sugar. A brown meal biscuit goes well with it. At lunch the patient takes the curd instead of soup, and at dinner to replace any sweet pudding or pastry by the curd. This makes a convenient distribution and prevents the patient feeling that the extra bulk of food is embarrassing.

Some patients, who are on a purin-free diet and do not take afternoon tea, find a glass of curd nice at 4 p. m., especially in hot summer weather. Luke has never found patients to suffer any material inconvenience or digestive discomfort which was traceable to this diet. If any flatulence or discomfort is experienced for a day or two, the amount of milk taken should be reduced and gradually increased once more as the patient gets accustomed to it. The time for which the milk is taken should be never less than six weeks, if it agrees at all, and it may be quite well continued for six months, and afterward taken occasionally as an article of daily diet

Journal of Laryngology, Rhinology and Otology, London

May

39 Pathologic Anatomy of Deaf-Mutism. A. A. Gray.
40 Acquired Deaf-Mutism due to Congenital Syphilis. M. Yearsley.
41 Tuberculous Disease of the Trachea Leading to Cartilage Necrosis and Involving the Thyroid Gland. T. Guthrie.
42 Paresis of the Third Nerve and Diseases of the Sphenoidal Sinus. C. Zeim.

Journal of Obstetrics and Gynecology of the British Empire, London

May

43 *After-results of Abdominal Operations on the Pelvic Organs in 1,000 Consecutive Operations. A. E. Giles.
44 *Menstruation in Europeans, Eurasians and East Indians in India. J. C. H. Leicester.

43. **After-results of Abdominal Operations.**—As the result of his study, Giles claims that the general health after myomectomy is very good, 85 per cent. of patients being in quite good health, or at least better than before the operation. The likelihood of recurrence of fibroids is relatively small, the cases of recurrence amounting to under 10 per cent.; 90 per cent. were free from recurrence after periods varying from 1 to 7 years. The menstrual loss is moderate or scanty in about 85 per cent. of cases, many of the patients stating that the loss was less than before the operation. The uterus from which fibroids have been removed may be serviceable for child bearing, 3 out of 15 married women under 45 having become pregnant subsequent to the operation; the uterus bears the strain of pregnancy and labor without difficulty.

44. **Menstruation in Europeans, Eurasians and East Indians.**—Leicester found on investigation that menstruation begins at a later period among the Europeans than among those of mixed extraction; and that, furthermore, the more the dark element predominates the earlier is the age of onset. Among the East Indians, 53.73 per cent. begin to menstruate before the age of 14 years; of Eurasians, 48.22 per cent.; and of Europeans 39.37 per cent.; while in this latter class of those who had been borne and bred in India, 39.81 per cent. commenced to menstruate before the age of 14, and 38.98 per cent. of those who had not been borne in India. This would seem to show that the onset is slightly earlier among those Europeans who are born and bred in this country than among those who come out here at a later age; but the difference is so slight that in the absence of further figures no stress can be laid on this point.

The average age of commencement works out at 14.3[illegible] years in Europeans, 14.15 years in Eurasians, and 13.86 years in East Indians. From these figures it would appear that the age of commencement of menstruation among Europeans in the Tropics is perhaps slightly earlier than it is in temperate climates, this point being somewhat more marked among those who have been born and bred in India, the difference is, however, so slight that it certainly seems as if [illegible] had been unduly exaggerated by certain writers, the question of race apparently being of far more importance in this matter.

The average periodicity of the flow appears to be more regular in Europeans than in those races of mixed extraction. The average duration of the period is probably practically the same in all these races with the possible exception that it is of slightly shorter duration in Europeans coming to India than in those of other classes. The commonest type of menstrual pain among all classes seems to be that occurring during the period only, and the least common that occurring only before the onset of the flow. The effect of the Indian climate on the periods of Europeans coming out to the country for the first time after the establishment of menstruation is nil in nearly two-thirds of the cases, and in less than one-third is there any increase in the amount lost. The effect of climate, both as to the onset of menstruation and also as to the amount lost at the periods, has probably been overestimated. Race would seem to have far greater influence on onset than climate.

Annales des Maladies des Org. Génito-Urinaires, Paris

April 15, XXVIII, No. 8, pp. 673-768

45 Multiple Calculi in the Pelvic Ureter in a Little Girl. Eynard and Ratin.
46 Improved Apparatus for Urethroscopy and Electrolysis. Abadie.
47 Graphic Registration of the Renal Secretion and Its Ejaculation from the Ureter Mouths. (Urorythmographie.) R. Dos Santos.
48 Technic for Electrolysis of the Urethra. P. C. Petit.
49 Systematic Study of Pain, Hematuria, Micturition and Character of Urine Jet. (La méthode dans l'urologie.) S. Galatzi.
50 Improved Technic for Drainage of the Bladder. (Modification aux procédés actuels de drainage de la vessie.) J. and P. Fiolle.

Annales de Médecine et de Chirurgie Infantiles, Paris

March 1, XIV, No. 5, pp. 145-180

51 *Epidural Injections in Treatment of Enuresis or Essential Incontinence of Urine. G. Sisto.
52 Two New Cases of Bacterial Meningitis Without Cellular Reaction. E. Lesné and L. G. Simon.

April 1, No. 7, pp. 217-252

53 Arthropathies of Tuberculous Origin Accompanying Valvular Cardiac Lesions. H. Barbier.
54 The Radioscopic Triangle in the Axilla in Pneumonia in Children. E. Weill and G. Mouriquand.
55 Three Cases of Laryngostomy for Cricotracheal Cicatricial Stenosis. G. Guisez.

May 1, No. 9, pp. 289-320

56 *Differentiation of Tuberculous Peritonitis Without Ascites. P. F. Armand-Delille.
57 Children's Plays. (Les jeux des enfants. De leur influence en hygiène.) Delobel.

51. **Epidural Injections in Treatment of Incontinence of Urine.**—Sisto says that the epidural space is a favorable route for absorption of a drug on account of the abundance of veins in the region, permitting much more rapid and extensive absorption than by the subcutaneous or gastric route. It is the ideal method, he declares, for anesthetizing the spinal roots while it is free from the dangers of the lumbar injection into the subarachnoid space and from the inconveniences and perils of intravenous injections. He reports a case in which injection of less than 5 c.c. of physiologic salt solution at blood temperature cured completely life-long nocturnal incontinence in a girl of 14, otherwise healthy. There has been no recurrence during the more than two years since. He followed Cathelin's directions in every point, and commends the epidural injection, after failure of all other measures, citing Zubizarreta's favorable experience with 12 cases. The latter noticed a neuropathic tendency in all his patients and states that the epidural injection in one case was made in the ward where there were four others. The child screamed while the injection was being made, and none of the children was incontinent thereafter for several nights. Bordot has recently reported that he cured 5 out of 11 children with incontinence by the epidural injection, and Sisto has not found the method invariably effectual.

56. **Tuberculous Peritonitis without Ascites.**—In the case reported a 2 year old boy developed symptoms suggesting recurring acute appendicitis, except that McBurney's point was not tender, and the child was kept on a light vegetable diet for a few months. An attack of pain in the kidney region at one time was assumed at first to be due to nephritis, but the urine persisted comparatively normal. The recurring abdominal pain at last compelled a laparotomy, when the appendix was found sound but the peritoneum proved to be studded with tubercles without any tendency to ascites. The child was sent at once to a seashore sanatorium and now, a few months later, seems to have entirely recovered. Delille comments on the error that months were wasted with the light vegetable diet when the child should have been given general treatment for the tuberculosis; the tuberculin skin reaction would probably have cleared up the diagnosis, but no one thought of this as there was absolutely nothing in the family or environment to suggest possible tuberculosis.

Archives Générales de Chirurgie, Paris

April, IV, No. 4, pp. 331-440

58 *Tuberculosis of the Adnexa. (Tuberculose des annexes de l'utérus.) A. Rives.
59 Multiple Fracture of the Arm. (Fractures simultanées du radius et du massif épicondylien de l'humérus avec luxation du coude en arrière.) Vandenbossche.

58. **Tuberculosis of the Adnexa.**—Rives has compiled 250 cases of a tuberculous process in the adnexa, published in the last decade. Although the years between 15 and 25 are most affected yet the list of cases includes all ages from infancy to old age. A predisposition is evidently afforded by congenital deformities, stunted development and neoplasms, especially ovarian cysts, and gonorrheal lesions, fully one-tenth of the cases occurring in virgins. Treatment should be the general measures for tuberculosis, and severe lesions may retrogress under this alone. Surgical measures are indicated only in case of vital indications and a primary focus or to remove absolutely useless organs. In a number of cases on record the lesions subsided and menstruation and conception followed. Operative treatment does not seem to give permanent cures; a survival of more than a year is recorded in only 38 out of 275 cases in which it was attempted. The number of survivals after minor, conservative operations is as large as after more radical measures. The rarity of a primary localization also tends to discredit the latter. The summaries of 12 cases from the Montpellier hospitals are appended. Three patients are in good health to date, from 4 to 7 years after abdominal or vaginal panhysterectomy; in the other cases the operation is comparatively recent. Differentiation is generally difficult.

Archives des Maladies de l'App. Digestif, Paris

April, IV, No. 4, pp. 177-240

60 *Foreign Bodies in the Esophagus. (Corps étrangers de l'oesophage.) G. Guisez.
61 *Digestive Disturbances and Intercostal Neuralgia. M. Loeper.
62 *Normal Toxicity of the Food. G. Linossier and G. H. Lemoine.

60. **Foreign Bodies in the Esophagus.**—Guisez tabulates the details of 49 cases from his experience and discusses them from the standpoints of esophagoscopy, clinical observation and treatment. The mucosa tolerates bodies with round edges, such as a coin; only slight superficial lesions of the mucosa were evident in any such cases even when the foreign bodies had been impacted for several days up to four years. The foreign body was a chunk of meat in one case and in some others bismuth, taken for Roentgen ray examination, had packed into a lump from spasm of the cardia or cancerous obstruction.

61. **Digestive Disturbances and Intercostal Neuralgia.**—Loeper has encountered a number of cases in which gastric dyspepsia, pain and oppression in the stomach and retarded evacuation followed typical intercostal neuralgia with or without zona and zones of hyperesthesia, the digestive disturbances developing only after the neuralgia, of which they were thus evidently a complication, a visceral manifestation of a superficial neuralgia, which, as the patients said, "settled in the stomach." In some similar cases on record the visceral manifestations were more in the intestines. Diarrhea followed zona in Bouver's case. The data to date seem to indicate, Loeper thinks, that the primary trouble is in the spinal roots, and the relief from lumbar puncture in some cases seems to sustain this view. Otherwise treatment is only that for neuralgia in general; with a suspicion of syphilis, specific treatment may give brilliant results as in one of the cases reported.

62. **Normal Toxicity of the Food.**—Subcutaneous injection into animals of various albuminoid substances of animal origin showed that all had a decided and constant toxic action, unless they had been previously treated with gastric juice; this seemed to annul their toxicity completely. Heating the substances beforehand also annulled their toxicity for the kidneys. It is evident, Linossier and Lemoine remark, that the least irregularity in the natural defences in the gastrointes-

tinal tract leaves the toxicity unannulled. They add that life is an uninterrupted struggle, inevitably terminating in defeat, and it is curious to learn that included among the enemies which the organism has to contend with are meat and milk, supposed to be its most potent allies. Digestion is the battle, and the conquerors make slaves of the conquered. But years of this struggle finally wear out the organism even if it has been constantly victorious.

Archives de Médecine des Enfants, Paris

May, XIII, No. 5, pp. 321-400

63 Changes in the Liver of Children with Surgical Tuberculosis. (Les altérations fonctionelles et anatomiques du foie des enfants dans la tuberculose chirurgicale.) V. Brun and G. Bongioannini.
64 Analysis of 3,750 Cases of Surgical Tuberculosis. (Statistique des enfants traités dans le service du Dr. Broca pour tuberculose chirurgicale.) C. Claeys.

Bulletin de l'Académie de Médecine, Paris

May 10, LXXIV, No. 18, pp. 385-404

65 *Primary Tumor of the Liver. (L'hépatome.) Rénon and Others.
66 *Differential Importance of Serodiagnosis of Actinomycosis. F. Widal.

May 17, No. 19, pp. 405-434

67 Localized Black Sweat; Melanephidrosis. (Nouveaux faits concernant la chromidrose.) R. Blanchard.

65. **Primary Tumor of the Liver.** Rénon and his coworkers explain primary hepatoma as an aberrant embryonal tumor resulting from the revivification of the normal embryonal process later in life.

66. **Serodiagnosis of Actinomycosis.** Widal was able to differentiate actinomycosis by the seroreaction in 8 cases, the only negative reaction being in a case in which the cure had been complete for over four years. The specific reaction is both by agglutination and by fixation of complement by means of the spores of the sporotrichum. Actinomyces cultures can not be used for the tests, but the generic reaction with sporothrix spores is constant and lively. It is specific for actinomycosis, sporotrichosis and thrush, but these can be readily distinguished. Sporotrichum cultures can be preserved indefinitely, he says, by sterilizing with formalin.

Lyon Médical, Lyons

April 17, XLII, No. 16, pp. 853-904

68 Radiotherapy of Suppurating Adenitis, Ulcerations and Fistulas of Glandular Origin. F. Barjou.

April 24, No. 17, pp. 905-948

69 Treatment of Congenital Inguinal Hernia in Adults by Simple Resection of the Ligated Sac. Véron.

Obstétrique, Paris

May, III, New Series, No. 5, pp. 385-560

70 Importance of Blood Picture and Bacteriologic Examination of the Blood in Puerperal Infection. (Valeur de l'ensemencement du sang et de la méthode d'Arneth-Wolff dans le pronostic de l'infection puerpérale.) V. Cathala and P. Guéniot.
71 Experimental Research on the Kidney of Gravid and Suckling Bitches. (Evolution de la graisse dans le rein de la chienne gravide et nourrice.) J. L. Chirié.
72 *The Glycolytic Power during Uncontrollable Vomiting of Pregnancy. (Recherches sur le pouvoir glycolytique chez la femme enceinte atteinte de vomissements incoercibles.) P. Lequeux.
73 Experimental Research on Tranfusion of Blood During Pregnancy. P. Delmas.
74 Enlargement of the Transverse Diameter of the Pelvic Outlet by the Lithotomy Position plus Extension of the Legs. (L'agrandissement du diamètre bis-ischiatique par la position de la taille complétée par l'extension des jambes.) L. Devraigne and P. Descomps.
75 *Tabes and the Puerperium. (Tabes et puerpéralité.) Gaussel-Ziegelmann.

72. **The Limit of Assimilation of Sugar in Uncontrollable Vomiting of Pregnancy.**—Lequeux calls attention to the important information to be derived from digestive *glycosuria e saccharo* for estimation of the gravity of the condition in uncontrollable vomiting of pregnancy. Pinard has recently declared that the pulse is the infallible index of the condition, regarding a pulse of over 100 as an indication for immediate interruption of the pregnancy. But he has encountered one case at least with fatal coma with a pulse not over 80, and Lequeux here reports three cases in which the pulse was never high although the condition was extremely serious. He tested the power of assimilation for sugar and found that it was materially lowered in these severe cases; it paralleled the general condition so closely that he is convinced that the glycolytic power is the most reliable index of the condition of the liver and hence of the approach of danger. He gives the patients from 20 to 50 gm. of cane sugar and his experience has shown that when the power of assimilation is below 1 gm. per kilogram of body weight, the prognosis is very grave and the pregnancy should be terminated at once. The lower glycolytic power may persist for some time, indicating that the woman should be regarded as having pronounced liver trouble and should be treated accordingly until conditions return to normal.

75. **Tabes and Pregnancy.** The history of tabes in connection with childbirth shows that the chances are all in favor of the delivery and puerperium being normal. The mother does not seem to incur any special danger from the coexistence of the tabes, and the children are viable and healthy in a large proportion of the cases. In a series of 68 cases on record of pregnancy in the course of tabes, two-thirds of the 27 children were living at last accounts and one-third of the 41 children of mothers whose tabes developed after the onset of the pregnancy. The tabes itself does not seem to affect the children; the relatively high mortality is due to the preexisting syphilis. Delivery is liable to be exceptionally brief on account of the lack of tone in the muscles, but otherwise the obstetrician should deal with the tabetic as with the healthy parturient. If the syphilis is of recent date or there is a history of preceding abortions, mercurial treatment during pregnancy is indicated on behalf of the child.

Presse Médicale, Paris

May 21, XVIII, No. 41, pp. 377-392

76 Median Reenforcement of Abdominal Suture. (Cicatrices [illegible] continues et renforcement médian dans les laparotomies longitudinales médianes.) L. Chevrier.
77 The Virus of Acute Epidemic Poliomyelitis. C. Levaditi.
78 Colon Bacillus Septicemia. (Étude des septicémies [illegible]laires.) H. De Bessé.
79 *The Gases in Stomach Disturbances and Treatment based Thereon. (Recherches sur les gaz de l'estomac.) M. Hulmann.

May 25, No. 42, pp. 393-400

80 Serotherapy of Anthrax. (La sérothérapie anticharbonneuse.) L. Boidin.
81 Repose and Exercise in Treatment of Pulmonary Tuberculosis. A. Martinet.

79. **Gases in Treatment of Gastric Disturbances.** Hulmann has been studying the gases generated in the stomach in the course of digestion, for which he has devised a simple apparatus, using a branching Faucher tube. In treatment of pathologic conditions he utilized the information thus derived, injecting a mixture of air and carbon dioxid in two patients with acid dyspepsia, air and oxygen in a patient with glandular atony, pure nitrogen in a case of nervous atony and pure oxygen in a case of dilatation of the stomach and autointoxication. The results he regards as encouraging, and he is now experimenting to learn whether injection of some gas before meals may not be able to stimulate the gastric secretions and promote digestion. Mere evacuation of the gases generated in the stomach gave great relief in three other cases.

Revue de Gynécologie, Paris

May, XIV, No. 5, pp. 417-[illegible]

82 Modifications in the Hymen from Diseases of the Genital Apparatus. F. Jayle.
83 Results of Various Operations done for [illegible] and [illegible]ceal Tuberculosis in 469 Cases [illegible]. P. [illegible].

Semaine Médicale, Paris

June 1, XXX, No. 22, pp. [illegible]

84 *Estimation of Gastric Acidity by Effervescence on Ingestion of an Alkali. (Une nouvelle méthode d'examen fonctionnel de l'estomac.) E. Fuld.

84. **Estimation of Gastric Acidity by Effervescence on Ingestion of an Alkali.** Fuld has the patient drink a solution of sodium bicarbonate and then applies the stethoscope to the stomach and estimates the amount of hydrochloric acid present by auscultating the effervescence that follows the contact of the alkali with the acid [illegible] of the stomach content. When the formation of bubbles can no longer be heard, percussion will reveal the amount of gas generated and radioscopy will confirm the degree of distention of the stomach. The acid naturally in the stomach takes the place of the tartaric acid

used for the usual effervescence inflation test. He declares that when it is impossible to withdraw the stomach content for direct inspection, this sodium bicarbonate test is superior to all other measures on account of its simplicity, ease and precision, this intragastric acidimetry by saturation, corresponding to titrametry in chemistry, permitting the determination of the total amount of free acid in the stomach at a given moment. The degree of concentration is expressed by the rapidity with which the phenomena of crepitation occur. He adds that if in the normal stomach one hour after a test meal the stomach content may be assumed to average 250 c.c. with a free acidity of 30, the neutralizing dose of sodium bicarbonate would be 0.63 gm. and the carbon dioxid generated would amount to 0.33 gm. which would fill a space of 187 c.c. After cessation of the effervescence following ingestion of this dose, if a new dose is ingested and effervescence follows anew, this shows, he says, that there is an excess of acid present. In conclusion he remarks that the special value of this test may prove to be in revealing anachlorhydria, pointing to gastric cancer.

Berliner klinische Wochenschrift

May 16, XLVII, No. 20, pp. 913-956

85 Historical Address at Bicentennial of Berlin Charité Hospital. O. Scheibe.
86 Clinical Methods and Instruction in the Past and Present. (Klinischer Betrieb und klinischer Unterricht einst und jetzt.) F. Kraus.
87 *Serotherapy plus Vaccine Therapy in Treatment of Scarlet Fever. (Neuere Gesichtspunkte der Scharlachbehandlung.) G. Jochmann and G. Michaelis.
88 Operative Cure of Cortical Epilepsy. (Fall von operativ behandelter Rindenepilepsie.) A. Franz.
89 Sensitized Tubercle Bacilli Emulsion. (Tuberkulose-Sero-Vaccin.) F. Meyer.
90 Free Hemolytic Fat Acids in the Liver with Acute Yellow Atrophy and Phosphorus Poisoning. (Ueber hämolytisch wirkende, freie Fettsäuren in der Leber bei akuter gelber Atrophie und Phosphorvergiftung.) G. Joannovics and E. P. Pick.
91 Comparative Experimental Research on Retention of Kissingen Mineral Waters in the Stomach. (Verweildauer der Kissinger Mineralwässer im Vergleich zu anderen Flüssigkeiten im Magen.) F. Meyer.
92 Nursing and Therapy: Importance of Training Medical Students in the Care of the Sick. (Bedeutung der Krankenpflege für die Therapie.) R. Salzwedel.

87. **Treatment of Scarlet Fever.**—Although the streptococcus is not regarded as the causal agent of scarlet fever, yet its cooperation is what seems to make the disease so murderous, according to the opinion of Jochmann and Michaelis. They have obtained good results in treatment by combining antistreptococcus serum with vaccine therapy; neither alone gave such good results. The method was applied only in the severer cases; that is, in 52 out of 400; 14 of the patients died and 38 recovered, all without complications of any kind. The absence of nephritis they regard as more than a mere coincidence. In their previous experience scarcely any of the patients recovered from whose blood during life streptococci could be cultivated, but among those who recovered under the combined treatment there were a number in this category.

Deutsche medizinische Wochenschrift, Berlin

May 19, XXXVI, No. 20, pp. 921-968

93 *Treatment of Pericarditis. N. Ortner.
94 *Puncture of the Brain. (Zur Hirnpunktion.) K. Pollack.
95 Origin of Cirrhosis of the Liver. (Zur Genese der Leberzirrhose.) O. Warschauer.
96 *Diabetes Mellitus. (Diätregelung und Heilung bei Diabetes mellitus.) A. Lenné.
97 Determination of Tubercle Bacilli when they are very Scanty. (Nachweis sehr spärlicher Mengen von Tuberkelbazillen.) T. Hozelka.
98 Simplified India Ink Technic for Determination of Spirochetes. (Nachweis der Spirochaeta pallida durch ein vereinfachtes Tuscheverfahren.) J. Berg.
99 Three Cases of Hemoglobinuric Nephritis with Pneumonia. W. [illegible].
100 Bilharzia Disease of the Bladder. E. R. W. Frank.
101 Diagnosis and Treatment of Bladder Stones in Children. (Blasensteine beim Kinde.) G. Berg.
102 Parenchymatous Keratitis a Genuine Syphilitic Disease. J. Igersheimer.
103 To Prevent the Hair from Falling Out: Keep the Scalp Clean. (Zur Verhütung des Haarausfalls.) E. Kromayer.

93. **Treatment of Pericarditis.**—Ortner emphasizes the importance of a history of syphilis or rheumatism as a guide to treatment; the salicylates rarely prove effectual in rheumatic pericarditis but they should always be given a trial. He remarks that pericarditis may occur in an encapsulated form; there may even be multiple encapsulated foci, some serous, others with purulent contents. Absolute repose should be continued until the last trace of effusion and of friction sounds has vanished and the heart action is entirely normal. In case of local disturbances he applies cold in the form of an ice bag suspended over the heart, or heat from hot compresses; the latter aid in relieving pain while they have an unmistakable curative action and strengthen the heart. Dry cupping may also prove useful; morphin, he continues, should be given without hesitation in case of excessive pain and restlessness. When there is a concomitant pleural effusion he taps the latter first as this may make it unnecessary to tap the pericardium. The latter measure, however, may render important service even with a purely hemorrhagic pericardial effusion; in two recent cases of hemorrhagic effusion with pericarditis, accompanying scorbutus, the puncture proved a life-saving measure. It should be made only in the side regions of the pericardium.

94. **Puncture of the Brain.**—Pollack comments on the diagnostic and therapeutic importance of puncture of the brain, not only for acquired hydrocephalus but for cysts and effusions in the meninges or brain, dural hematomas and abscesses in the brain. In a number of cases reported in detail of hydrocephalus, circumscribed meningeal effusions, uncomplicated cysts and dural hematomas the result was a definite cure. The best technic is puncture of the scalp, a small hole bored in the skull with a fine blunt smooth drill and introduction of a fine hollow needle attached to a Pravaz syringe. Larger sized instruments are liable to injure vessels which the fine ones push to one side. Among the instructive cases described in detail is one of an assumed abscess in the brain of a girl of 17; puncture of the right frontal lobe gave issue to 18 c.c. of fluid and a little normal brain tissue, after which the intense headache subsided. A week later the left cerebellum was punctured and fluid spurted, about 60 c.c. being evacuated this time, followed by entire recovery. Neither in this nor in some similar cases were there any pathologic findings in the fundus of the eye or other signs of hydrocephalus. Acute or subacute hydrocephalus in adults is frequently diagnosed as migraine, and a rapidly fatal termination may be averted by prompt puncture, as also in cases of a superficial local intracranial collection of fluid. He adds that especially in the diagnosis and treatment of extradural and intradural hematomas puncture has rendered most valuable service. In some of these cases the limpid fluid found showed that the bleeding had entirely stopped, and the patients recovered at once after escape of the fluid. The most instructive sign in such cases is the violent circumscribed pain experienced at the site of the old trauma when the region is struck; the puncture shows that the trouble is a serous effusion at the site of the injury. In the last case described a young man of a hysteric-neuropathic temperament had a frontal sinusitis after scarlet fever, which healed on evacuation of the focus. Symptoms developed later suggesting possible hysteria or an intracranial process, the former being finally accepted. Puncture however brought pus.

96. **Diabetes Mellitus.**—Lenné declares that the diet should be individualized for the patient and the special phase of the disease more than is generally done. It has been his experience that the way in which the carbohydrates are prepared for the table is of the greatest importance for their tolerance by the diabetic. They are tolerated best in the form which takes the longest time for their absorption and which passes most slowly into the blood, such as coarse, tough, moist bread rather than fine, dry and toasted bread, Saratoga potatoes instead of soft mashed potato, etc. The behavior of the albumin metabolism is the criterion of the severity of the case and of the permanence of recovery. It is possible, he says, to conceive of a functional diabetes in which the centers regulating carbohydrate metabolism do not functionate normally because the internal secretions of the organs involved do not reach them physiologically, owing to lack of development of the organs or to toxic influences or other causes. As the young organism grows into harmonious physiologic proportions, things right themselves. This assumption would explain Heiter's case of apparently complete recovery from severe

diabetes in a girl of 10. Lenné also reports a case of apparently complete cure of a young man of 20 who two years ago presented severe acetonuria and other symptoms of grave diabetes, so that the prognosis was regarded as distinctly unfavorable. What no medical measures had been able to accomplish was realized naturally, probably, by the further development of the organs or centers or both involved.

Fortschritte der Medizin, Leipsic

April 28, XXVIII, No. 17, pp. 513-544

104 Etiology, Localization and Early Diagnosis of Apical Tuberculosis. (Entstehung, Lokalisation und frühzeitige Erkennung der Lungenspitzentuberkulose.) H. Beschorner. Commenced in No. 16.

May 12, No. 19, pp. 577-608

105 *Tuberculosis and Chlorosis. G. Zickgraf.
106 Modern Treatment of Gastrointestinal Disease. (Die moderne Therapie der Magen-Darmkrankheiten.) I. Lipowski. Commenced in No. 18.

105. **Tuberculosis in relation to Chlorosis.**—Zickgraf makes a practice of applying the tuberculin test in every case of persisting chlorosis, and states that a positive response was obtained in 74.8 per cent. of 55 cases in which there was nothing otherwise to suggest the existence of tuberculosis. This finding confirms his assumption that tuberculosis is responsible for the chlorosis in a surprisingly large number of cases. The reaction was obtained with 5 mg. or less in all but 5 of the patients. In 48 other cases the chlorosis accompanied manifest signs of tuberculosis. In the tuberculous cases in which the chlorosis was the first or one of the first manifestations of the infection, the patients reacted to the tuberculin test with smaller dosage and in a larger percentage than the rest of the tuberculosis suspects, and the percentage of negative responses was less. Sanatorium treatment was indicated for only 56.9 per cent. of the whole number of suspects while it was indicated for 70.7 per cent. of the whole number of chlorotics with or without suspicion of existing tuberculous infection. The general practitioner, he remarks, should examine the lungs with particular care in every case of chlorosis, and if the chlorosis proves refractory to the usual measures he should not hesitate to apply the tuberculin test as tuberculosis may be lurking beneath.

Jahrbuch für Kinderheilkunde, Berlin

May, LXXI, No. 5, pp. 525-650

107 *"Albumin Milk" in Infant Feeding. (Ueber "Eiweissmilch." Ein Beitrag zum Problem der künstlichen Ernährung.) H. Finkelstein and L. F. Meyer.
108 Study of Epidemic of Rubeola. (Röteln.) O. Schey.
109 Relations of Cretinism with Myxedema and Cachexia Strumipriva. (Familiärer Kretinismus in Wien.) R. Ellar.
110 Study of the Metabolism During the First Two Weeks in Infants Born at Term or Before. (Beitrag zur Kenntnis der Stoffwechselvorgänge in den ersten vierzehn Lebenstagen normaler und frühgeborener Säuglinge.) L. Langstein and A. Niemann.

107. **Sugar-Poor Mixture for Infant Feeding.**—Finkelstein is convinced that serious disturbances are kept up in sick infants by the fermentation and acids generated by even small amounts of milk sugar in the food. When the food is given entirely free from sugar, "fat diarrhea" stops at once, showing that the latter is not primary. Measures to prevent and cure dyspeptic fermentations should include reduction of the amount of sugar in the food and dilution of the salts, with increased proportions of casein and fat, and, as the child improves, larger amounts of easily assimilable carbohydrates. These requirements he meets with a food made by coagulating a liter of whole milk with a little liquid rennet, keeping the milk for 30 minutes at a temperature of 42 C. in the water bath, and then pouring the whole into a linen bag hung up to drip for an hour. The clotted casein is then stirred into a half liter of water and the whole worked through a hair sieve twice at least. The mixture then looks like milk; a half liter of buttermilk is then stirred into it. Buttermilk answers the purpose on account of the small content in milk sugar, the stimulating action of the lactic acid and the comparative durability of the mixture thus prepared. He calls it *Eiweissmilch*, albumin milk, and states that it contains 3 per cent. albumin; 2.5 per cent. fat; 1.5 per cent. sugar and 0.5 per cent. ash; the proportion of ash is thus higher than in ordinary cow's milk, the artificial clotting increasing the amount naturally retained in the clot. The benefit from the food is emphasized as observed in various gastrointestinal disorders, the groups being classified and analyzed in turn. The article is continued.

Medizinische Klinik, Berlin

May 15, VI, No. 20, pp. 771-810

111 Operative Treatment of Ptosis of the Eyelids. A. E[illegible]
112 *Etiology of Eclampsia. A. Bauereisen.
113 *Transplantation of Glands. (Transplantation und [illegible]körperchen.) W. Danielsen and F. Landois. Commenced in No. 19.
114 Localization of Incipient Pulmonary Tuberculosis in the Röentgen Picture. H. Gran.
115 *The Salt Poor Diet. (Zur Praxis der kochsalzarmen Ernährung.) J. Leva.
116 The Nitroprussid Reaction in the Urine. (Ueber die Ar[illegible]sche Reaktion.) E. Herzfeld and N. Buss.
117 *Experiences with Douche Massage in Treatment of Brain and Spinal Cord Disease. (Erfahrungen mit kombinierter Duschemassage bei Gehirn- und Rückenmarkserkrankungen.) R. Schuster.
118 Tuberculin Treatment of Chronic Tuberculosis in the Rabbit. (Behandlung der chronischen Tuberkulose des Kaninchens mit Alttuberkulin.) R. Stumpf.

112. **Eclampsia.**—Bauereisen reviews the various theories that have been advanced to explain eclampsia, all sustaining the assumption that the disease is the result of an intoxication from disturbances of the metabolism in consequence of the pregnancy. He advises frequent examination of the urine and regulation of the diet if kidney troubles threaten, with considerable reliance on vegetable alkalies. After the onset, delivery can be hastened and the poison got rid of by venesection, promotion of kidney and skin functioning and intake of alkaline fluids. Narcotics should be avoided, he says, as they reduce the oxidizing power of the cells and do direct harm to vital organs. If all these measures fail, decapsulation of the kidney is in order. Experience to date has shown that treatment along these lines is successful and the results are better, the earlier it is instituted. The exact nature of the toxin may be still a mystery, but the struggle against the disease is no longer hopeless.

113. **Transplantation of Glands.**—Danielsen and Landois conclude this long study of what has been accomplished to date in transplanting glandular organs by stating that the results are very meager in comparison to the expectations and the labor expended. Experience has shown that the results are poorer the more highly organized the tissue transplanted. This applies especially to brain and spinal cord tissue and to the suprarenals. In contrast to these are the good results with purely epithelial glands like the mamma, ovaries, thyroid and parathyroids. The transplantation of ovaries and parathyroids has given especially fine results, but each advance in these lines opens up new problems for solution. Further research is urgently needed, they remark, on the functioning of the thymus, the hypophysis and the suprarenals.

115. **Salt-poor Diet.**—Leva recapitulates the findings of his recent research on the salt content of various foods, based on 360 analyses. He then discusses the menus that can be made up from the foods containing naturally only small amounts of salt, declaring that custom is responsible for our eating so much salt, and that no harm results from abstention; many primitive races take no salt at all. Meat is the one article that seems to require more salt to render it palatable, especially beef, veal and pork, soups and meat extracts. The bread should be made without salt and vegetables avoided that contain a large proportion, such as celery, spinach and cauliflower. But other vegetables, cereals, beverages, unsalted butter and cream, eggs, etc., form a liberal diet. Canned foods should be excluded as they usually contain a considerable amount of salt, as also mineral table waters. He adds that horseradish, mixed pickles or mustard can supply the lack of salt.

117. **Douche-Massage in Brain and Spinal Cord Disease.**—Schuster has the massage applied with one hand while the other plays the douche on the patient. This method of applying the Aachen thermal water has been found to be especially useful in chronic myelitis, tabes and cerebral syphilis, spinal and progressive paralysis as well as in [illegible] and neurasthenia. With two exceptions all the patients were benefited.

Münchener medizinische Wochenschrift

May 17, LVII, No 20, pp. 1057-1104

119 *Treatment of Post-Partum Hemorrhage. (Zur Therapie der Nachgeburtsblutungen.) F. Weber.
120 Nature and Mode of Distribution of Virus of Epidemic Poliomyelitis. (Zur Natur und Verbreitungsweise des Poliomyelitisvirus.) P. H. Römer and K. Joseph.
121 *Tuberculous Meningitis. O. Fischer.
122 *Explanation of Briefly Transient Cerebral Hemiplegia. G. Reibold.
123 Technic for Differentiation of Iodin, Indican and Skatol with the Jaffé Indican Reaction. B. Spiethoff.
124 *Cosmetic and Therapeutic Application of Paraffin in Rhinology. M. Wassermann.
125 Vacuum Bottles as Aid in Bacteriologic and Serologic Work. (Verwendung von Thermosgefässen zu bakteriologischen und serologischen Arbeiten.) P. Sommerfeld.

119. **Treatment of Post-Partum Hemorrhage.**—Weber analyzes the experiences at the university women's clinic at Munich in charge of Döderlein, a total of 508 cases of atony of the uterus in the course of nine years among 14,273 parturients. The Momburg belt constriction was applied in 11 cases in which the hemorrhage continued with retained placenta. The clinical picture changed at once after the rubber tube had been wound around the waist; the bleeding stopped at once, the uterus became like stone and the placenta was expelled in less than 15 minutes without further hemorrhage. Equally favorable results were obtained in 32 other cases in which the atony developed after expulsion of the placenta. In 4 other cases the belt constriction permitted separation of the placenta with the hand without loss of blood, and in 15 cases it much facilitated suture of bleeding tears in the cervix. In 5 other cases the constriction was applied until the femoral pulse became imperceptible and yet the hemorrhage continued, so that uterovaginal tamponing, according to Dührssen, had to be applied; possibly in these cases the stomach and intestine had been too full for successful constriction or the aorta may have slipped aside.

121. **Tuberculous Meningitis.**—Fischer discusses the experiences at the Leipsic university clinic with 260 cases of tuberculous meningitis during the last 20 years; all the patients except 33 were adults. Headache and depression were the first symptoms, sometimes with diarrhea, sometimes with chills; in about 10 per cent. the acute phase developed suddenly. Retention of urine was almost constant; rigidity of the neck was rare and Kernig's sign was often absent. An alternation of clonic and tonic spasms was sometimes observed. In some of the cases the temperature was extremely low, lower than in any other conditions, except freezing. In 7 cases the disease proved fatal in less than a week after the first prodrome; in others it lasted for months. The clinical picture suggested typhoid in some, senile dementia or apoplexy, myelitis, epilepsy or psychosis in others. None of the patients recovered but the subjective symptoms were much improved by lumbar puncture in 25; in one case the distended bladder was involuntarily voided immediately after the lumbar puncture, which throws light on the causes of the retention of urine. In another case a man of 44 presented all the typical symptoms of meningitis but the brain was apparently normal at autopsy, the lesions found being only extensive processes in the lungs and intestines.

122. **Transient Cerebral Hemiplegias.**—Riebold concludes from study of 2 or 3 cases that mechanical obstruction of the blood supply of the brain may occur from some slight local alteration of some vessel in the brain, but that a compensating blood supply soon develops, rapidly dispelling the resulting symptoms. Even with embolism or thrombosis of minute vessels the development of a collateral route may rapidly relieve the results of the obstruction. His cases suggest the possibility that an anastomosis may develop between the branches of the precerebral artery, after which severe cerebral hemiplegia from obstruction of the main trunk of an artery may rapidly retrogress.

124. **Paraffin in Rhinology.**—Wassermann gives illustrations of the fine results of injection of cold paraffin to correct saddle nose, the patients having been under observation for nine years. In 30 other cases he applied the injection in treatment of ozena. In 10 of these cases two years have passed and the excellent results have persisted. This method of treatment of ozena by injection of paraffin under the mucosa is indicated only when the mucosa is comparatively stout; if extremely atrophied it is unable to retain the paraffin.

Therapie der Gegenwart, Berlin

May, LI, No. 5, pp. 193-240

126 *Heart Irregularities During Childhood and Puberty. (Herzstörungen im Kindes- und Pubertätsalter.) C. Hirsch.
127 Medical Reprints and the Advertising of Proprietaries. (Ueber Reklame durch Sonderdrücke.) G. Klemperer.

126. **Heart Irregularities in the Young.**—Hirsch has found comparative hypertrophy of the artery walls not an uncommon discovery in older children and at puberty but the blood pressure with it is not materially increased, although there may be palpitations and a sense of oppression in the chest. The cause is a "growth hypertrophy" as a rule, although excessive masturbation may induce a similar syndrome. The lack of dilatation of the heart, of murmurs, the normal size of the liver, the good health otherwise and absence of aggravation of the symptoms by physical exercise render an organic lesion improbable. Children are particularly prone to arrhythmia on the slightest excuse, and the harmless arrhythmia is distinguished by the full and powerful pulse beat; the diastole alone varies in length. This form of arrhythmia also subsides if the heart action becomes accelerated, as then the abnormally long diastoles are shortened. This infantile type of harmless arrhythmia may persist beyond puberty and give grounds for alarm if casually discovered first in a young pregnant woman. Arrhythmia due to actual organic disease is generally the result of extrasystoles. Extrasystoles may be accepted as suspicious of a genuine organic heart lesion; at the same time they may occur solely from some nervous affection and may even be the first manifestation of an organic nervous disease. No one to date has succeeded, he says, in inducing extrasystoles by irritation of the heart nerves. The arrhythmia in tuberculous meningitis is of the infantile type; that is, it seems to be due exclusively to diastoles of varying length. Heart murmurs may also be observed without organic lesions, he adds; Lüthje found systolic murmurs in 623 out of 854 children examined, but only 2 per cent. of the total number had certain signs of valvular disease. Beyer detected a systolic murmur in 352 of 830 school children examined, most frequently in girls. In 253 cases the murmur was audible during repose; in the others only after gymnastic exercises. The murmurs did not parallel findings of anemia and in only 14 cases were concomitant signs of a heart defect to be detected. Hirsch explains these accidental murmurs as due merely to certain physiologic and anatomic peculiarities of the circulation in children, differing possibly in the various cases, such as a more rapid flow of blood in the anemic, or a slight, transient, muscular mitral insufficiency.

Wiener klinische Wochenschrift, Vienna

May 19, XXIII, No. 20, pp. 723-762

128 *Indications for and Results of Tuberculin Treatment of Tuberculosis in Children. T. Escherich.
129 Pyloric Insufficiency and Flora with Gastric Achylia. (Pylorusinsuffizienz und Koliflora im Magen bei Achylia gastrica.) R. Fleckseder.
130 Topography of the Fat Metabolism. (Ueber den Weg der Fetteilchen im Blute.) S. Bondi and A. Neumann.
131 Action of Mercury on the Wassermann Reaction? (Hat das Sublimat eine Wirkung auf die Wassermannsche Reaktion?) G. Tatta and A. Donati.

128. **Tuberculin Treatment of Children.**—Escherich gives an extensive description of the mode of action of tuberculin in treatment of tuberculosis in children and adults and his experience with it in a large number of cases in children under 14. The conditions are different, he remarks, in children and in adults; in the former the more intense skin reaction shows a capacity for more active production of anaphylaxin. In adults the main feature of tuberculin treatment is the production of antibodies similar to the curative process in diphtheria. In children the aim is to increase the anaphylactic body and the accompanying focal reaction, imitating in this way the process of spontaneous healing in children. He calls the first the "immunizing" and the other the "anaphylizing" method. The latter is especially indicated for ailing, pale children, with languid appetite, slight tendency to fever at times and night sweats, possibly enlarged glands in the neck

and a slight tendency to changes in the dulness over the lung and breathing sounds, explained by the Roentgen rays as the result of enlarged bronchial glands or a thickening in the hilus. These children have a latent tuberculous infection located in the bronchial glands, and the toxic action from it is evident throughout. Iron and arsenic seem to do no good but injection of minute doses of tuberculin at considerable intervals seems to rouse the tissues from their torpid condition and stimulate rapid repair. The children feel better in a week or two, the appetite returns and the tendency to fever and night sweats subsides, while the physical changes cease to be manifest in the course of two or three months. The production of toxin from the latent focus is paralyzed or overcompensated by the protecting substance of the organism (anaphylaxin). The substance provided by the small amount of tuberculin stimulates the production of anaphylaxin, and the natural healing process is given a powerful impetus. These courses of minute amounts should be repeated from time to time. This method of treatment has not only a curative but a prophylactic action against recurrences later. It requires the child to be in a relatively good condition as it depends for its success on the reacting power of the organism. It should be supplemented with the usual general measures for tuberculosis, but is proving useful even for ambulant treatment in an unfavorable environment.

Zentralblatt für Chirurgie, Leipsic

May 21, XXXVII, No. 21, pp. 737-768

132 *Iodin in Sterilization of the Skin. (Zu meinem Desinfektionsverfahren der Haut des Operationsfeldes mittels Jodtinktur.) A. Grossich.
133 *Prophylactic Hemostasis. (Die prophylaktische Blutstillung bei Operationen.) R. von den Velden
134 *Utilizing the Appendix Stump to Stimulate Peristalsis. (Die Anregung der Peristaltik nach Laparotomie wegen Appendicitis mit freier Peritonitis.) R. Lampe.

132. Iodin Sterilization of the Skin.—Grossich remarks that his and others' experience with tincture of iodin in thousands of cases has confirmed the efficacy of this method of treating accidental wounds and for surgical sterilization. All attempts to modify it have only needlessly complicated the technic. He always uses the official (Italian) 10 per cent. tincture and is now preparing a monograph on the subject and urges those who are using his method to let him know their results.

133. Prophylactic Hemostasis at Operations.—Salt taken by the mouth or injected into a vein disturbs the osmotic balance between the blood and the tissues, and the result is that thrombokinase is washed out into the vascular system, thus increasing the coagulating property of the blood for the time being. This fact is utilized by von den Velden to prevent hemorrhage, his clinical and experimental experience confirming the efficacy of intravenous infusion of 3 or 5 c.c. of a 5 per cent. salt solution, as increasing materially the coagulating power for from 30 to 50 minutes. He has applied this measure during the last two years in the clinic with the best results before operations in which parenchymatous hemorrhage is feared or when the blood coagulates less readily than normal. He advises this measure in prophylaxis or during the operation, repeating it every half hour as needed, its absolute harmlessness having been abundantly established.

134. Utilizing the Appendix Stump to Stimulate Peristalsis.—Lampe severs the appendix and then inserts a catheter into the stump fastening it to form a Witzel fistula and injecting water into the intestine through it. He has found that this stimulates the peristalsis better than any other means he has ever tried, and the fistula heals readily when no longer needed.

Zentralblatt für Gynäkologie, Leipsic

May 21, XXXIV, No. 21, pp. 689-720

135 Physiology and Pathology of the Puerperium. F. Ahlfeld.
136 The Transverse Pfannenstiel Incision Gives as Good Results as Other Technics in the Non-Aseptic Obstetric Cases. (Ist der suprasymphysäre Fascienquerschnitt nach Pfannenstiel für vermutlich nicht aseptische Operationen geeignet?) R. Klotz.
137 *Importance of Isolated Local Anesthesia of the Pudendal Nerve in Operations on Scrotum, Perineum and Anal Region. (Ueber Nervus pudendus-Anästhesie.) W. Ilmer.

137. Isolated Anesthesia of the Pudendal Nerve.—Ilmer states that operations on the scrotum, perineal and anal regions, as well as gynecologic operations, can be performed without pain under isolated local anesthesia of the pudendal nerve. He gives an illustration of the course of the nerve and the mode of access. The needle is inserted at the rear of the tuberosity of the ischium; the nerves pass along the posterior surface of the ischium below the sacroiliac ligament, consequently the needle must be pointed towards the sacrosciatic foramen. In 50 obstetric and gynecologic cases he used 1 c.c. of a 5 per cent. solution of cocain with 5 c.c. of salt solution, pushing the needle in quite deep. The method is especially useful for suture of tears in the perineum and cervix.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 19, XXXI, No. 60, pp. 633-640

138 *Modern Treatment of Tetanus. G. Bongioannini

May 22, No. 61, pp. 641-656

139 Physico-chemical Hypotheses in Regard to the Pharmacodynamic and Toxic Action of Alcohol. (Dell'alcool.) L. Sabbatani.
140 *General Anesthesia with Part of Circulation Shut Off. (Narcosi generale con circolo ridotto.) C. G. Berri.

138. Treatment of Tetanus.—Bongioannini advocates antitetanic serum supplemented by subcutaneous injection of 1 or 2 c.c. of a 2 or 3 per cent. solution of phenol—the Baccelli method. He adds that Baccelli's dosage has been doubled and tripled in some cases without harm resulting.

140. General Anesthesia with Part of Circulation Shut Off.—Berri reports 63 cases in which an Esmarch bandage was applied to the legs or arms or both to exclude these members from the general circulation. The amount of chloroform necessary for major operations thereafter was much less than with other technics, thus lessening materially the toxic action of the anesthetic. The first phase of anesthesia was shortened, the nerve centers feeling the effect of the anesthetic remarkably early, and the patients rousing afterward much quicker. No by-effects were observed. In one case there was paralysis of one limb afterward but this happened to be in a limb to which the constriction had not been applied.

Policlinico, Rome

May 15, XVII, No. 20, pp. 611-642

141 Polycythemia with Enlargement of the Spleen and Cyanosis. (Poliglobulia con splenomegalia e cianosi.) T. Sandesky.
142 Pellagra Ascribed to Parasite in Drinking Water. (Nuove ricerche sulla etiologia della pellagra.) G. Alessandrini.

May, Medical Section, No. 5, pp. 193-[illegible]

143 Pathologic Anatomy of Myasthenia Gravis. A. Nazari
144 Respiratory Mechanics of Pneumothorax. S. La Franca and U. Campese.
145 Isolation of the Cholera Germ. (Sull'isolamento del vibrion colerico.) M. Pergola.
146 Influence of Alien Aggressins on Experimental Malta Fever. (Influenza di alcune aggressine eterologhe sulla infezione sperimentale da micrococco di Bruce.) S. Maggiore.

Riforma Medica, Naples

May 9, XXVI, No. 19, pp. 505-532

147 *Intermittent Pneumonia. (Sulla polmonite intermittente.) R. Cianri.
148 Kala-Azar in Italy. A. Visentini.
149 *Joint Disease in Tabes. (Sulle artropatie tabetiche.) E. Cedrangolo.

May 16, No. 20, pp. 533-560

150 Present Status of Treatment of Pulmonary Tuberculosis by Artificially Induced Pneumothorax. (Terapia pneumotoracica nella tisi polmonare.) C. Forlanini
151 Chemotherapy in Protozoan Diseases. (Dove s'indovano i tripanosomi nel periodo di latenza dell' infezione sperimentale.) G. Fusco.
152 Constriction Hyperemia in Therapeutics. (La iperemia da stasi come metodo di cura.) C. Salvetti

147. Intermittent Pneumonia.—A young man developed pneumonia but the temperature curve was of the quotidian malarial type, the fever subsiding to normal for 12 hours in the intervals.

149. Tabetic Joint Disturbances.—In Cedrangolo's five cases the course of the joint affection was acute, slow or chronic; the knee was the seat of the trouble in every instance—both knees in one case. These tabetic arthropathies are seldom accompanied by pain or local redness; the absence of pain when the leg is twisted is an important differentiating sign of the tabetic origin. The joint swells and there is more or less effusion, the process being an osteoarthritis liable to involve all the tissues of the joint and vicinity. Mercurial treatment seemed to benefit in some cases but aggravated the symptoms in others.

Norsk Magazin for Lægevidenskaben, Christiania

May, LXXI, No. 5, pp. 449-568

153 *Action of Electric Current on Human Body and its Importance for Accident Insurance and Forensic Medicine. (Om indvirkningen af elektrisk strøm paa det menneskelige legeme og betydningen heraf i ulykkesforsikringen og i retsmedicinen.) F. Harbitz.
154 Action of Exlusive Meat Diet, Especially on the Thyroid. (Om virkningen af ensidig kjødernæring, særlig paa glandula thyreoidea.) A. Tanberg.
155 Circular Suture of Brachial Artery. H. Wille.

153. **Action of the Electric Current on the Human Body.**—Harbitz discusses 18 cases from his own experience and the factors which determine the outcome. Experience has shown a remarkable difference in the resistance of different individuals to the same current. A workman was killed instantly with a current of 2 amperes and 220 volts, but some others recovered after from 5,000 to 16,000 volts. In one a current of 7,000 volts apparently passed through the head and spine and after unconsciousness for two hours there was acute mania for three hours which then subsided suddenly and completely with no lesions of consequence. In another case a man of 43 came in contact with a current of 30 amperes and 12,000 volts. After a few minutes of unconsciousness, he was able to get up alone, but his right arm was helpless for a time and there were burns on both arms and one leg, and occasional slight pains in the legs for a few months. In another case the head came in contact with a current of 16,000 volts and was much burned and cataract developed later. It is possible that in this case the current did not pass through but merely skipped, with production of a spark, the latter doing the damage. The resistance offered by the skin is great, especially in the palm or sole of the foot, while thin, delicate skin has less resisting power and mucous membranes still less. The resistance is less also if the skin is moist, especially with sweat, or from damp shoes and stockings. Predisposition is of importance. Young people of the lymphatic temperament seem to be especially liable to sudden death in electric accidents; next in order come hard drinkers and persons with heart disease; in one of his cases the electric accident seems to have aggravated an already existing vascular affection. Different species of animals show great difference in their susceptibility, the horse succumbing to a weak current, 400 or 500 volts, while a rabbit may survive the passage of 1,000 volts and the frog 10,000. The autopsy findings in Harbitz's cases are reported in detail. An electric accident is especially dangerous when the chest and heart are involved but the head seems to be less susceptible. Some advise venesection in cases of cyanosis, others advise against it on account of the danger of lowering the blood pressure. Jellinek has recommended lumbar puncture. Massage or regular elastic pressure on the heart may arouse it to spontaneous contraction, supplemented by stimulants and revulsion. These measures for resuscitation should not be abandoned for several hours. Prévost revived dogs by massage of the heart after two hours of apparent death. Schumacher advises in the most desperate cases tracheotomy and massage of the heart for two hours, supplemented, as a last resort by sending a current of not less than 240 volts through the body, one electrode in the rectum, the other in a moist compress on the heart, applying the current for two or three seconds at a time. It is important to have the patients examined by an ophthalmologist later for detachment of the retina, atrophy of the optic nerve, etc. Tardy eye symptoms were observed by Jellinek in about one-half of his 122 cases of electric accidents (exclusive of 12 fatal cases).

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Examination of the Function of the Intestines by Means of the Test Diet. Its Application in Medical Practice and Its Diagnostic and Therapeutic Value. By Dr. Adolf Schmidt, Halle, A.S. Authorized Translation from the Second Revised and Enlarged German Edition by Charles D. Aaron, M.D., Professor of Diseases of the Stomach and Intestines in the Detroit Post-Graduate School of Medicine. Price, $1.50 net. Cloth. Pp. 126, with illustrations. Philadelphia: F. A. Davis Co., 1909.

Founders' Week Memorial Volume. Containing an Account of the Two Hundred and Twenty-fifth Anniversary of the Founding of the City of Philadelphia, and Histories of its Principal Scientific Institutions, Medical Colleges, Hospitals, etc. Edited by Frederick P. Henry, M.D. Cloth. Pp. 912, with illustrations. Published by the City of Philadelphia in Commemoration of the Two Hundred and Twenty-fifth Anniversary of its Founding. Philadelphia, 1909.

Die Praxis der Hydrotherapie und verwandter Heilmethoden. Ein Lehrbuch fur Aerzte und Studierende. Von Dr. A. Laqueur, leitendem Arzt der hydrotherapeutischen Anstalt und des mediko-mechanischen Institutes am stadtischen Rudolf-Virchow-Krankenhause zu Berlin. Price, 8 marks. Paper. Pp. 288, with 57 illustrations. Berlin: Julius Springer, 1910.

The Practice of Midwifery. Being the Seventh Edition of Dr. Galabin's Manual of Midwifery, Greatly Enlarged and Extended. By Alfred L. Galabin, Late Fellow of Trinity College, Cambridge, and George Blacker, M.D., Fellow of University College, London. Price, $6 net. Cloth. Pp. 1123, with 503 illustrations. New York: The Macmillan Company, 1910.

Manual of Tropical Medicine. By Aldo Castellani, M.D., Director of the Clinique for Tropical Diseases, Ceylon, and Albert J. Chalmers, M.D., Registrar and Lecturer on Pathology and Animal Parasitology, Ceylon Medical College. University Series. Cloth. Price, $6 net. Pp. 1242, with 373 illustrations. New York: William Wood & Co., 1910.

Principles of Surgery. By N. Senn, M.D., late Professor of Surgery, University of Chicago. Fourth Edition thoroughly revised by E. J. Senn, M.D., and E. Friend, M.D., Instructor in Surgery in Rush Medical College. Price, $5 net. Cloth. Pp. 706, with 231 illustrations. Philadelphia: F. A. Davis Co., 1909.

First Biennial Report, Comprising the Eighteenth and Nineteenth Annual Reports of the Trustees and Officers of the Ohio Hospital for Epileptics at Gallipolis. To the Governor of the State of Ohio. For the Biennial Period Ending Nov. 15, 1909. Paper. Pp. 119, with illustrations.

Ueber die Natur und die Herkunft des Trachomerregers und die bei seiner Entstehung zu beobachtende Erscheinung der Mutierung des Gonokokkus Neisser. Von Dr. Hans Herzog (Berlin). Paper. Price, 5 marks. Pp. 56, with illustrations. Vienna: Urban & Schwarzenberg, 1910.

Practical Suggestions in Borderland Surgery. For the Use of Students and Practitioners. By Gustavus M. Blech, M.D., Professor of Clinical Surgery, Medical Department, Loyola University, Chicago. Price, $1.50. Cloth. Pp. 219. Philadelphia: Professional Publishing Co., 1910.

Operative Surgery. For Students and Practitioners. By John J. McGrath, M.D., Professor of Operative Surgery at the New York Post-Graduate Medical School. Third Edition. Price, $5 net. Cloth. Pp. 653, with 265 illustrations. Philadelphia: F. A. Davis Co., 1909.

Chirurgische Operationslehre für Studierende und Aerzte. Von Dr. Friedrich Pels-Leusden, Oberarzt der Chirurgischen Universitatsklinik. Paper. Price, 18 marks. Pp. 728, with 668 illustrations. Vienna: Urban & Schwarzenberg, 1910.

Congenital Dislocation of the Hip. By J. Jackson Clarke, F.R.C.S., Senior Surgeon to the Hampstead and North-West London Hospital. Cloth. Price, $1.50 net. Pp. 92, with 55 illustrations. New York: Paul B. Hoeber, 69 East 59th St., 1910.

Atlas der rectalen Endoskopie. Nebst einer Einführung in die Technik der Rectalen Endoskopie. Von Dr. Arthur Foges, Wien. Second Edition. Price, 14 marks. Paper. Pp. 102, with illustrations. Wien: Urban & Schwarzenberg, 1910.

Handbook of Electrotherapeutics. By William James Dugan, M.D., Lecturer on Electrotherapeutics at Jefferson Medical College, Philadelphia. Cloth. Price, $2 net. Pp. 212, with 91 illustrations. Philadelphia: F. A. Davis Company, 1910.

Therapeutische Technik für die ärztliche Praxis. Ein Handbuch für Aerzte und Studierende. Von Dr. Julius Schwalbe. Second Edition. Paper. Price, 22 marks. Pp. 979, with 537 illustrations. Leipzig: Georg Thieme, 1910.

A Text-Book of Physiology. By Isaac Ott, M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Third Edition. Price, $3.50 net. Cloth. Pp. 891, with 393 illustrations. Philadelphia: F. A. Davis Co., 1909.

The Vegetable Proteins. By Thomas B. Osborne, Ph.D., Research Chemist in the Connecticut Agricultural Experiment Station, New Haven. Price, $1.20 net. Cloth. Pp. 125. New York: Longmans, Green & Co., 1909.

Tuberculosis Work in Buffalo. What We Are Doing and What We Plan for the Future. Paper. Ppp. 62, with illustrations. Buffalo Association for the Relief and Control of Tuberculosis, March, 1910.

Mortality Statistics, 1908. Department of Commerce and Labor, Bureau of the Census. E. Dana Durand, Director. Ninth Annual Report. Cloth. Pp. 705. Washington: Government Printing Office, 1910.

A Short Handbook of Cosmetics. By Dr. Max Joseph, Berlin. Third Edition. Authorized English Translation. Cloth. Price, $1. Pp. 86. New York: E. B. Treat & Co., 1910.

Twenty-fifth Annual Report of the Directors of the New York Post-Graduate Hospital. For the Year Ending Oct. 1, 1909. Paper. Pp. 106, with illustrations.

Twentieth Annual Report of the Eye, Ear, Nose and Throat Hospital of New Orleans, La. Jan. 1, 1909, to Dec. 31, 1909. Paper. Pp. 76, with illustrations.

Transactions of the Luzerne County Medical Society. For the Year Ending Dec. 31, 1909. Volume XVII. Paper. Pp. 228. Wilkes-Barre, Pa., 1910.

Transactions of the Florida Medical Association for the Year 1910. Held at Jacksonville, Fla., April 6, 7 and 8, 1910. Paper. Pp. 201.

The Forsaken. By Ivan Trepoff. Price, $1.10. Cloth. Pp. 179. New York: Cochrane Publishing Company, 1910.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 2 Chicago, Illinois July 9, 1910

RADIUM'S CONTRIBUTION TO SURGERY*

ROBERT ABBE, M.D.
Surgeon to St. Luke's Hospital
NEW YORK

I have long felt that the study of so novel and extraordinary an agent as radium should not be left exclusively to the student of physics or to the dermatologist, but that it be given a chance to demonstrate the virtues residing in it, if any there be, in the field of general surgery.

During the seven years past, in which it has been possible to obtain the material, I have taken many occasions to give trial to it, and while knowing my endeavors to demonstrate its utility are far from complete, this much can be said, that without prejudice I have applied it in 500 cases of disease, from the large field of exclusive surgical work and have found enough of interest in its application to warrant my speaking of it in the brief time allotted to me here.

From the first I have entertained the attitude of extreme scepticism, and can truly claim that with a wide and lifelong surgical experience my prejudices have been in favor of first resorting to all other surgical measures endorsed by time in cases in which I might desire to use radium. At the expenditure of much time, personal discomfort and expense, keeping an open mind, as it were, my one desire has been, not to exploit radium, but to test it.

A SURGICAL CURIOSITY

The absence of extensive records of its use in surgical literature is amply accounted for by the almost insuperable difficulty in obtaining a sufficient amount for study, and by the great cost of its production. It will be long before these conditions change materially, and it must to some extent remain a surgical curiosity. Yet, if its utility can be demonstrated in any definite way, its production and distribution will surely follow the law of supply and demand.

The world was hardly ceased to marvel at the ultrascientific, almost inspired, research of Madame Curie, which rent the darkness and laid bare the unsuspected force of radiant energy in matter exhibited in the most demonstrable form of radium. As yet we know as little of it, as of the vital force that actuates our bodies, our functions, our intellects. The needs of surgery are greater than we are willing to admit. The ever-ready scalpel, caustic, cautery, medicine, are still our weapons.

For the moment dismiss from our thoughts serum therapy, vaccines and later laboratory products from which so much hope is raised, and look briefly at the one agent we have chosen to consider.

RADIO-ACTIVITY

The study of radio-activity is a wholly new science. From it has grown the realization that all matter is endowed with potential energy—atoms eternally breaking up and subject to the laws of death and decay. The instability of the ultimate atom is revealed for the first time in the discharge of electrons from atoms of radium, carrying their own charges of electricity, "if indeed, they be not electricity itself;" atoms, visible to the eye in their brilliant scintillation as they are shot into space and impinge on the fluorescent screen, or as they can be seen, diverted in the magnetic field, and weighed, timed and classified. The trained physicist accurately estimates their speed of travel, the varying electrical charge each carries, the changes they undergo and the ultimate transmutation into other elements.

Varieties of rays given off are productive of wholly different results when brought to bear on living structures. We must for the moment familiarize ourselves with the now commonly talked of *alpha*, *beta* and *gamma* rays, for we may soon learn to use them judiciously in practical work. The *alpha* are discarded; they have not been demonstrated to have any value therapeutically. They carry positive electricity on the shoulder of every atom; they can be sifted out by paper or by the glass wall of the tube containing radium and are better set aside for they only serve to burn the skin. The *beta* rays, however, are acquiring importance; these carry negative electricity and can be drawn this way and that by a magnet. They constitute the greater part of the available rays from radium. Some are held back by layers of obstructing films, as of lead foil, others penetrate deeper and others very deeply into living tissues. The *gamma* rays are more powerful and swift, penetrating all minor obstacles and even several inches of metal. But they carry no electric charge that is measurable.

Experience and experiment show that the softer *beta* rays are irritating to the skin, but can be held back by interposing thin lead foil between radium and the skin, allowing only the hard *beta* rays and the *gamma* to penetrate the tissues. This preliminary note prepares us to understand somewhat the results we see in tumor structures. As far as it is possible to understand this mysterious force, all we know is that we are dealing with a nascent electric atom, an electron, which supplies a negative discharge to the growth we are studying.

EFFECT ON NEW CELL GROWTH

In the play of radiant energy on a mass of new cell growth in a tumor, we often see a retrograde change, as striking as the shrinking of a mimosa plant under the touch of a human finger. Is there a supply of the needed electric balance, be it positive or negative, shot into the disorderly growth, which, perhaps, by exhaustion has lost its equilibrium? Certain it is that success or failure depends on supplying a limited amount of the varied rays which we can filter out by degrees of interposed screens of lead.

---

* Oration before the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

It is as if one were fighting with infantry, cavalry and artillery; or as if one loaded a gun with shot of varying size: the *alpha* rays do not escape from the tube, the *beta* may penetrate the muscles at varying depths, the *gamma* go clean through; but all leave something of themselves—a part of their electric charge—and some, the *beta*, remain to undergo change, probably, as Ramsey says, to helium. This unquestioned lodgment of material particles in the tissues accounts for persistent favorable action for weeks and months after treatment, and indeed for some secondary outbursts of dermatitis, when all effects seem to have gone by.

EFFECTS ON PLANT LIFE

It is impossible to overlook the mysterious power of radium over plant life, in considering its action on animals. Who can define the difference in the vital force actuating both? Let us expose seeds to radium rays, some for two hours, some for four, eight, twelve and so on; plant them in rows, beside one row which has had no radium. Watch them grow. Soon the normal one will have grown several inches; those longest exposed will have grown only an inch. Between these limits an exact growth proportioned to exposure will be shown. In other words, the mysterious rays have devitalized or inhibited growth proportionately to their time exposure. If we expose the seeds two days they will never grow. Here, then, is one clue to the truth in using radium. We may decide, after this experiment, at the start of our work, that there is a definite time treatment in all use of this agent in surgery, and it remains for us to work it out for every variety of growth.

EFFECT ON EPITHELIAL STRUCTURES

Let us consider one of the most commonplace, but the most characteristic types of cell tumor, the common wart. I ask you to consider that we are to use a specific agent, and to dismiss from your mind all thought that surgery has many other agents destructive of this growth. We propose not to destroy it, but to make it destroy itself. A wart is a simple overgrowth of the cells of the papillary layer of the skin. It may appear anywhere on the body, even in most inaccessible places, under the finger nails, on the sole of the foot, tongue, lips, eyelids, vocal cords. Apply radium to it for half an hour, and it will slowly retrograde until in four weeks the parts are as if nothing had been there. No cicatrix marks the spot as when caustics are used. The disorderly cells have simply resumed their orderly life. Nothing has been done, but a short bombardment of electrons carrying negative electricity. The result is infallible, and prepares us to wonder whether other, more succulent cells than those in this horny layer of the skin, will react as well.

The epithelial layer of the skin seems particularly susceptible. The basal-cell epithelioma, even when [illegible], is just as ready to undergo retrograde change as the papilloma. Nothing more startling can be seen in surgery than to watch even a good-sized epithelioma [illegible] yield after one or two applications of a small tube containing radium, and, losing its combative energy, melt away, draw back its budding edges, lose itself in the normal structures, and having decayed away leave only healthy tissue behind.

Such a clinical picture is to be seen every day. And what has been done? The vicious cell growth has been shot through by swift moving particles, leaving something of themselves, probably, in the tissue which they pierce in their transit through space.

WHY TUMORS GROW

If we only knew why they grow! That is more of a mystery than radiant energy. There is logical evidence that in some forms of new growth the body cells have become worn out.

In elderly people we often see a crop of epitheliomas on various parts, notably the face and hands. Often these are secondary to senile keratoses. Both show failing vitality. But, paradoxical as it may seem, the weakened cells grow exuberantly instead of dying and undergoing atrophy. Is it not fair to suppose that healthy growth is sustained by a balance of energy maintained in each cell, the loss of which upsets the equilibrium of control, and disorderly growth ensues? What follows immediately on applying the rays of radium, supplying negative charges, is a return to health. If less than a correct dose is given the relief is imperfect or temporary. Hence we can say that we medicate these exhausted cells with their own tonic, the *elixir vitæ* of cell life.

If one desires to argue that a specific germ life may be actuating the diseased growth, we must answer that that cannot be disproved, as yet.

EFFECT ON GERM LIFE

Cultures of staphylococcus, colon bacillus and other bacteria grow under a thin lead protective, but are killed on the surface of a Petri plate where radium rays play on them. Moreover, a less than lethal dose changes their virulence. A *Staphylococcus aureus* will change to an *albus*. All are so modified that, it may be, the life forces of natural repair are given a chance to conquer. This opens up a field of study not yet pursued.

RESULTS OF TREATMENT

What has been accomplished in epitheliomas of all grades, ulcerated or not, when situated on the skin, is that a healing and disappearance of the growth promptly follows a correct dosage of radium rays. This I have seen endure in perfection from three to six years in several cases. In others a slight recurrence showing an insufficiency of the first dosage, is at once overcome by renewed treatment, not more surprising than that malaria will recur when too little quinin has been given.

If we could accomplish the same result on the epithelial cancer of the wet surfaces as on the skin we might rejoice. But no such conquest can yet be claimed. Epithelial cancer of the lip, tongue, tonsil, pharynx, inside of the cheek, esophagus, stomach, rectum and uterus, are still the *bête noire* of the surgeon in spite of radium. This generous admission has given rise to an attitude of supercilious criticism by some uninvestigating members of our profession, that radium after all is a weak agent, applicable only to a few superficial conditions, better treated by the knife. So far from this common cant representing the truth, I propose to show a growing interest has widened out its sphere of influence. Let us not forget that very small quantities have as yet been available to the general surgeon.

Now, however, in England, Germany and America, following the lead of France, the most searching inquiry is being instituted, prompted by rivalry, fortified by science and corrected by criticism.

During several years I have selected a few grave cases from my own clinic, and have had many advanced and wholly inoperable cases thrust on me by good surgeons.

Having accurate notes of every case and every application of radium made during seven years, I can summarize the total outcome of treatment of these groups briefly as follows:

SUMMARY OF RESULTS

Of the lip, I have failed to cure any case. Patients shown two years ago by French observers as seemingly cured by filtration of rays are now dead from recurrences, I am informed. Dr. Wickham, the greatest living authority, recently confessed sadly that he had as yet failed to cure permanently any case of lip cancer. Cancer inside the cheek grows as if not treated; the same is true of the tonsil.

Of lingual cancer one has to speak cautiously. First, because they must be differentiated from ulcerated or non-ulcerated papillomas of the tongue, which may simulate malignancy. Of the latter, I have promptly and permanently cured four, (a section of one had shown undoubted epithelial changes).

Second, because an ulcerated cancer of the tongue is increased by foul bacterial infection. This is modified and improved by radium treatment. I have seen a long, deep, fungating cancerous ulcer of the entire side of the tongue, referred to me by the late Dr. W. T. Bull as inoperable, so far recover as to heal and retrograde until all that remained were two small nodes on the side of the tongue, which were undoubtedly the original cancer masses, lost in the infected mass first presented for treatment. At this stage Dr. Bull (always most conservative) said it was wonderful. But the retrograde process never proceeded further, and it was not many months before the extension of the cancer pursued the usual fatal course.

Third, epithelial growths in the tongue are often complicated by old syphilitic taint. So also chronic ulcers of the lip and cheek, with leucoplakia, which will not yield to medication. Almost without exception, these yield to judicious use of radium, in part, and often wholly, with cures that have been watched from one to three years.

In considering malignant growths of the esophagus, stomach, rectum and uterus in one group, we are facing that which defies every resource of our art, for as yet radium has no complete conquest to offer that has come to my knowledge, unless retardation and temporary relief be so regarded. Experience as yet is limited and the field large. Conscientious efforts and close study may resolve some of the clouds that cover this mountain of horror and obscurity. Although I have no roseate picture to present, I can truthfully say that enough has been seen to stimulate hope. Certain it is that where cachexia and hemorrhage accompany the advanced condition, the former is apt to disappear and the latter to cease after free use of radium.

If there were needed further proofs of the specific curative action of radium on certain tumors, it can be demonstrated in two cases of pure round cell growth. One, heretofore reported, still excites my wonder.

Case 1.—A tumor had grown on the lower eyelid of a man for a year; it occupied the central part and more than half the substance of the lid. It grew forward on the skin, upward and inward, to press on the eyeball. It engulfed the entire lid, beyond all semblance of edge or surface or skin. This purple growth had resisted faithful application of Roentgent rays for six weeks, and was still growing when presented to me to decide whether radium, or a plastic operation to create a new lid, was best. I laid a tube of radium on it an hour each day for four days. Then I waited. In two weeks shrinkage began; in four weeks it had half gone, and in eight weeks no trace of it was left.

Five years have gone by and to-day it is still impossible to say on which eye the tumor had been. There is a slight nick only on the sharp edge where a piece had been cut from the tumor for original microscopic study. Otherwise the edges of the lid are sharp and normal. The polished mucous surface and the skin are absolutely restored. The lashes have grown in.

In the original section made through the mass nothing but round sarcoma cells can be seen. Where were the original cells normal to the lid, the skin, the cartilage, the glandular structure, all engulfed by and apparently replaced by the neoplasm from which they have faultlessly reassembled?

Hand in hand with this instructive history of a cure, the only pure round-celled growth submitted to radium, one of even greater interest must be studied which lures on the surgeon and pathologist.

Case 2.—Six months ago, a child of four years was brought to my office, exhausted by the presence of a tumor in the right half of the abdomen, apparently renal sarcoma. Exploration showed an inoperable tumor embedded in the side, extending from the liver to the pelvis and from the vertebræ to the ribs. Its estimated weight was over four pounds. I inserted eight hollow thin celluloid tubes into different parts of the growth, into two of which strongest radium was placed. The others were for the time "dummies." Every six hours a dummy was replaced by a radium tube, so that even radiumization was obtained through the mass. During the succeeding month rapid gain in health followed. In two months the child was walking and eating and apparently restored to fine health and color, with shrinkage of the tumor in three months to one sixth its former size. At five months I again cut away a central piece for examination and inserted radium hoping to further destroy the growth. It is too soon to say that beneficial reaction may not follow, but extension in mesenteric lymphatics is progressing slowly and not now controlled by radium.

Examination of the first pieces of tumor removed before radiumization showed massive small-cell sarcoma, with only a few scattered nerve cells; while after three months no small-cell sarcoma tissue remains, but nerve cells only. This agrees with gross appearances. The first section was a highly vascular purple mass; the second revealed a pale, inert, entirely altered tissue. In brief, though radiumization seems to have caused retrograde change of all the round-cell sarcoma, there is left neuroma structure in what was a teratomatous type of growth.

In these two cases we have seen a selective and alterative action antagonistic to a special type of new growth. But we stand more amazed at its unquestionable specific action against another type of highly specialized but destructive tumors, the giant cell, or myeloid sarcoma. Six years ago I reported a restoration to health—through the application of radium only—of a young man's jaw, which had been in part destroyed by a soft giant cell growth. That patient remains absolutely cured to-day, with complete return to solid bone and with teeth firmly fixed in it.

During six years I have treated fourteen cases of giant cell growth by radium; with uniform demonstration of its selective action in causing retrograde changes. The first eight treated during the first three years remain as cured, though two have died of other causes, one and two years after perfect cure. The remaining six are too recent to report yet as cured, but show such characteristic changes as to be probably included in future reports. The first ten I have reported in a paper read last winter.[1] Suffice it to say, a powerful and unique selective action against pure myeloid tumors can be seen when subjected to radium irradiation.

Again, there has been demonstrated a similar response, in a specialized type, of embryonic vascular tissue, nevoid growth. It is due to the assiduous and masterly work of Dr. Louis Wickham of Paris that several hundred cases of all forms of birth marks, from port wine stains to deep angiomata, have been shown to yield results unparalled in surgery. Their shrinkage in size and return to a nearly normal color of skin, without destructive cicatrix (unless the treatment be overdone) has demonstrated in the hands of Wickham and De Grais a specific alterative and restorative action in this embryonic type of tissue, that adds another claim to the specific action of radium on endothelial growth, which shrinks the mass and obliterates without destruction of tissue. I have seen many of these beautiful results in the hands of these masterly French workers, which, however, will long challenge equality in less experienced ones.

EXPERIMENTAL

Finally a trial of this unique agent has been given in a large variety of morbid conditions, and necessarily in rather a desultory way, as leaders for research. It has been demonstrated beyond question that it exerts a beneficent action on many varieties of glandular hyperplasias, notably on some goiters. Two or three out of some fourteen remain cured from three to six years. Also, on parotid sarcomas, in which, of all surgical conditions, we need more efficient surgical help. In trachoma and obstinate vernal catarrh also there have been demonstrated some brilliant cures. In short, there has been shown the existence of a subtle force latent in radium, resembling that in Rœntgen rays, but unlike it and supplemental to it, with specific action for certain cells found in specialized tumors, which causes retrograde degeneration and atrophy.

The cases are not yet sufficiently numerous nor long enough studied to classify in groups warranting definite promise of uniform results. The careful scientific study by four radium institutes now established in France, Germany, England and America promises ultimately to clear the atmosphere of doubt, and formulate definite rules guiding its correct usage.

13 West Fiftieth Street.

Teratoma of the Ovary with Carcinomatous Changes.—A solid ovarian tumor was removed from a child 12 years of age (Martland, *New York Path. Soc. Rep.*, December, 1909). Two weeks previous to admission the patient had sharp, stabbing pains in the abdomen, later becoming localized in the right side, accompanied by nausea and vomiting. A diagnosis of appendiceal abscess was made and the abdomen opened. The tumor was removed a week later. Adhesions to the abdominal wall and the omentum caused troublesome bleeding. The left ovary at the first operation showed no tumor but at a third operation was as large as an orange. The child died several weeks later with numerous nodular masses in the abdomen. On gross section a large portion of the tumor looked like myxomatous tissue. There were considerable areas of smooth muscle and many cysts lined with cuboidal and low cylindrical cells, containing blood or serum. In some parts typical glandular structures occurred, formed of a single layer of cylindrical cells. No cartilage, nervous tissue, fat, striated muscle or bone were found. After considerable study by the Pathological Society the above pathology was determined.

---

[1] [illegible] of a Specific in Giant Cell Sarcoma, Med. Rec., New York, Jan. 1, 1910, p. 1.

PURPURA CAUSED BY THE INGESTION OF THE IODIDS*

FRANK CROZER KNOWLES, M.D.
Assistant Dermatologist to the Philadelphia Hospital; Dermatologist to the Dispensary of the Children's Hospital, to the Church Home for Children, to the Baptist Orphanage; Associate Dermatologist to the Dispensary of the Howard Hospital; Assistant Dermatologist to the Dispensaries of the Pennsylvania and the University of Pennsylvania Hospitals
PHILADELPHIA

Because of the numerous types of eruption that may be produced by the ingestion of the iodids the subject is fraught with the greatest interest. Very few lesions of the skin have not been caused, at one time or another, by small or large doses of iodin or its various salts. Hundreds of papers have been written on the subject as a whole or on some interesting phase of it. The literature is so large that I am compelled to limit my remarks to the eruptions of the purpuric type.

Although it is frequently difficult to ascertain accurately its past history in medicine, Coindet[1] was apparently the first to introduce iodin into the practice of medicine as a therapeutic agent. Ricord,[2] in 1839, mentioned various cutaneous eruptions that were caused by the ingestion of potassium iodid; the same author,[3] in 1842, referred to several cases in which he had seen the same drug produce a "veritable purpura hemorrhagica"; the purpuric eruption not having been mentioned in his first communication. Zeissl[4] stated that he had seen in very rare cases ecchymoses and telangiectases in the form of nevi, of the size of the head of a pin, produced by the administration of the salts of iodin. Cazenave[5] was the first to record the occurrence of bullous lesions, with sanguinolent serum, followed by ulcerations difficult to heal, caused by the ingestion of potassium iodid. The most complete papers written on the subject of iodism and the various eruptions caused by the absorption of iodin and its various salts have been compiled by Petitjean[6] and Bradley.[7]

I have been able to obtain references in the literature to eleven bullous and fifty non-bullous cases, all of the hemorrhagic type, exclusive of the two petechial cases reported in the present paper. Mora[8] and Welander[9] have also written papers on this subject, reporting cases of the purpuric type, but I have been unable to consult the articles.

HEMORRHAGIC BULLOUS CASES

Sex.—Four of the cases with hemorrhagic bullæ occurred in women (Pusey,[10] Elsner,[11] Broadbent,[12] Taylor[13]); five in men (Russell,[14] Gottheil,[15] Morrow,[16] Bumstead,[17] McGuire[18]); and two in children, the sex being unspecified (Hudelo and Lebar,[19] Hallopeau and Lebret[20]).

Age.—The youngest case reported of the hemorrhagic bullous type, occurred in a child of 10 years (Hallopeau and Lebret[20]); another developed under the age of 20 years (Hudelo and Lebar[19]); one patient showed the idiosyncrasy at 28 years (Bumstead[17]); another at 39 years (Broadbent[12]); one patient was attacked at 45 years (Gottheil[15]); another at 49 years of age (Elsner[11]); one at 50 years (Morrow[16]); one at 51 years (McGuire[18]); and the ninth, at 68 years of age (Russell[14]). The ages of two of the patients were not mentioned (Pusey,[10] Taylor[13]).

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Cause of Administration.—In four of the eleven cases, the drug was administered for syphilis (Bumstead,[17] Gottheil,[15] Hallopeau and Lebret,[20] Hudelo and Lebar[19]); in pneumonia (McGuire[18]); in Bright's disease (Broadbent[12]); for rheumatism (Russell[14]); for a "cold" (Elsner[11]); and in three cases the disease for which the drug was prescribed was unspecified (Morrow,[16] Taylor,[13] Pusey[10]).

Length of Administration and Quantity of Drug Given.—The quantity of the drug and the length of administration varied considerably in the eleven cases with sanguinolent bullæ; in some but a few small doses produced the outbreak while in others hundreds of grains of potassium iodid were ingested before the point of intolerance was reached. In Bumstead's[17] case the eruption appeared after taking three 20-grain doses of potassium iodid; the outbreak was noted in Taylor's[13] case after 1 dram had been ingested; hemorrhagic bullæ appeared on Elsner's[11] patient after nine doses of potassium iodid had been administered, grains four having been given every six hours; McGuire's[18] patient took a total of 20 grains of the ammonium iodid in 1¼-grain doses; the eruption appeared in Broadbent's[12] case after taking potassium iodid in 3-grain doses during a period of five days; Pusey[10] prescribed for his patient 7½ to 10 grains of potassium iodid three times daily; Russell's[14] patient took 15 grains of iodin in three days; Morrow's[16] patient received 900 grains of potassium iodid in the space of ten days; Gottheil[15] administered 100 grains of potassium iodid daily for six days; Hallopeau and Lebret[20] produced the eruption experimentally on giving 3 gm. of potassium iodid. The dose or the quantity of the drug prescribed was not mentioned by Hudelo and Lebar.[19]

Character of Eruption.—The eruption was multiform, chiefly, however, consisting of hemorrhagic bullæ in Morrow's[16] case. Gottheil[15] recorded the presence of hemorrhagic vesicles and bullæ. Hemorrhagic bullæ with subsequent ulcerations were noted in three cases (Taylor,[13] Russell,[14] McGuire[18]). Pusey[10] reported the occurrence of sanguinolent bullæ, ulcerative and gangrenous areas in his case. In Bumstead's[17] case purpuric spots, clear and hemorrhagic bullæ, and ulcerations were all present. Elsner[11] recorded the presence in his patient of hemorrhagic and clear vesicles and bullæ, wheals, and nodular lesions. Hallopeau and Lebret[20] reported a remarkable case, in which hemorrhagic vesicles and bullæ, macular petechiæ, infiltration plaques, papillomatous lesions, and callous areas were produced by the ingestion of potassium iodid. Hudelo and Lebar's[19] patient exhibited large ecchymotic areas, small petechiæ, hemorrhagic bullæ, and a tuberculid of an angiokeratoma type was also present.

Distribution.—The arms, the hands, the face and the legs were attacked in the cases of Broadbent[12] and Gottheil.[15] The lesions were limited to the face, the hands, and the forearms in Morrow's[16] and Elsner's[11] cases. The feet, the lower legs, the face and the hands were involved in Bumstead's[17] patient. Taylor[13] noted the eruption on his patient on the face, the arms and the gluteal region. The face, the shoulders, the groins, the back, and the scalp were attacked in McGuire's case.[18] The face, the scalp, the neck, the chest, the arms and the legs were involved in Russell's[14] case. Hudelo and Lebar[19] reported the involvement of the arms, the neck, the legs and the feet. The distribution was generalized in the case reported by Hallopeau and Lebret.[20] Pusey[10] did not mention the distribution of the eruption.

PURPURIC NON-BULLOUS CASES

Sex.—Ten cases occurred in patients of the female sex (Fournier,[21] Cruveilhier,[22] Silcock,[23] Walter Smith,[24] Morrow,[25] Janovsky,[26] Labat,[27] Waren Tay,[28] Barlow,[29] Raymond[30]); twenty-two developed in the male sex (Ringer,[31] Debuchy,[32] Robinson,[33] Bradbury,[34] Duckworth-Gee,[35] Bernart,[36] Fournier,[21] and Suchanek,[37] each two cases, Ricord,[3] Duffy,[38] Barton,[39] Neumann,[40] Petitjean,[41] Payen,[42] Lemoine,[43] J. H. Wilson,[44] Colcott Fox,[45] Abbe,[46] Hoening,[47] Vidal[48]); and the sex in eighteen cases was not specified (Mackenzie,[49] Petitjean,[50] Virchow,[51] Neumann,[52] Pernet,[53] two cases, Fournier,[21] twelve cases).

Age.—The youngest case reported occurred in a child of 5 months (Mackenzie[49]). Ringer[31] reported a case at 17 years; Janovsky[26] one at 22 years; Petitjean's[41] was noted at 23 years of age; Suchanek's[37] patient developed the eruption at 21 years; Duffy's[38] patient showed the outbreak at the twenty-fifth year; the case of Duckworth Gee[35] developed at 29 years; four cases were recorded at 30 years of age (Fournier,[21] Neumann,[40] Colcott Fox,[45] Abbe[46]); Bernart,[36] reported a case at 31 years; Lemoine's[43] occurred at 32 years; Barton,[39] noted his case at 35 years; Walter Smith[24] observed his patient at 39 years; the outbreak developed in Barlow's[29] patient at the forty-second year; Labat's[27] case showed the exanthem at the forty-third year; the eruption appeared in Waren Tay's[28] patient at the age of 44 years; the outbreak in Suchanek's[37] second patient occurred at the forty-sixth year; the eruption appeared in Vidal's[48] case at 50 years of age; a case reported by Raymond,[30] developed at 53 years; Bradbury's[34] patient was 58 years old when the eruption appeared; the outbreak attacked Robinson's[33] patient at 53 years of age; Hoenning reported the case of the oldest patient (aged 64) in whom the eruption appeared. The age of the patients on whom eruption of petechiæ and ecchymoses developed were not mentioned by Fournier,[21] fourteen cases, Pernet,[53] two cases, Ricord,[3] Cruveilhier,[22] Silcock,[23] Petitjean,[50] Morrow,[25] Payne,[42] J. H. Wilson,[44] Neumann,[52] Virchow,[51] Debuchy.[32]

Cause of Administration.—The drug was administered for syphilis in eighteen cases (Bernart,[36] Fournier,[21] three cases, Cruveilhier,[22] Silcox,[23] Suchanek,[37] two cases, Walter Smith,[24] Petitjean,[50] Janovsky,[26] Payen,[42] Barlow,[29] Colcott Fox,[45] Abbe,[46] Hoening,[47] Vidal,[48] Mackenzie,[49]). It was given in the treatment of rheumatism in eight cases (Duffy,[38] Labat,[27] Lemoine,[43] J. H. Wilson,[44] Raymond,[30] Bradbury,[34] Ringer[31] Debuchy[32]). The iodid was given in one case for paralysis (Barton[39]); for leprosy in another (Pernet,[53]) for atrophy of the optic disc in a third (Waren Tay[28]); for uratosis in one case (Robinson[33]); and in another for cancer (Virchow[51]). The indication for the use of the drug was not specified in nineteen cases (Fournier,[21] twelve cases, probably given for syphilis, Duckworth Gee,[35] Ricord,[3] Petitjean,[41] Pernet,[53] Morrow,[25] Neumann,[40], [52] two cases).

Length of Administration and Quantity of Drug Given.—Mackenzie[49] described a case in an infant of 5 months in which the eruption appeared in three-quarters of an hour, after 2½ grains of potassium iodid had been given. In Colcott Fox's[45] case the eruption developed after two doses of 5 grains each, of potassium iodid had been administered about six hours apart. Three 5-grain doses of potassium iodid caused the outbreak in the case reported by J. H. Wilson[44]. In Robinson's[33] case potassium iodid was given in grain doses three times daily; the eruption occurred after six days of medication. The outbreak appeared in a few days in Labat's case[27] after giving 3-grain doses. Lemoine[43] prescribed 1 gm. of sodium iodid daily; the next day the eruption appeared, twenty hours after the drug was administered. Ringer[31] gave his patient 10 grains of potassium iodid three times each day; the rash appeared in five days. Waren Tay[28] produced the eruption on prescribing 1.5 gm. of potassium iodid daily. Petitjean[50] gave between 3 and 4 gm. of potassium iodid daily; the outbreak occurred in four days. Abbe[46] prescribed 10 grains of potassium iodid three times daily; the eruption appeared after two weeks' administration. Raymond[30] gave 50 cg. of potassium iodid in two doses daily; after ten days the dose was increased to 1 gm. daily; the outbreak occurred after 8 gm. of the drug had been ingested. In Vidal's[48] case 15 grains of potassium iodid were given three times each day; the exanthem appeared after the drug had been taken for three weeks. Barlow[29] ordered 1 gm. of the drug to be given daily; at about the third week the potassium iodid was increased to 1.5 gm. each day; two days later the rash developed. The eruption appeared in Janovsky's case[26] after 24 gm. had been administered; 2 gm. sodium iodid having been given daily. Hoening[47] prescribed a mixture of sodium and potassium iodids; 40 gm. of this combination were given in twenty days. Silcock[23] gave 10 grains of potassium iodid three times a day; the dose was increased after fifteen days to 15 grains three times daily; seven days later the eruption appeared. Duffy[38] prescribed for his patient 10 grains of potassium iodid three times each day; the dose was increased three weeks later to 15 grains three times daily; 2½ ounces of the drug were given; the outbreak occurred in one month's time. Suchanek[37] gave a total of 12 drams in one case and 23 drams of potassium iodid in the other. In Duckworth-Gee's[35] case 50 cg. were given daily; 6 gm., in all, were ingested. In Payen's[42] case the eruption appeared after two months' treatment with the iodid of iron. The eruption occurred after administering potassium iodid for five days in Bernard's case.[36] Moderate doses of potassium iodid were given in Fournier's[21] three cases; the purpuric spots appeared in one week, five days, and a few days, respectively. The rash appeared after a few doses in Debuchy's case.[32] The outbreak occurred in Ricord's[3] case after potassium iodid had been given for fifteen days. After the drug had been given but a few days the exanthem appeared in the case reported by Walter Smith.[24] The eruption appeared on Barton's[39] patient in three weeks' time, small doses of potassium iodid having been prescribed. The dose of the drug and the length of administration were not mentioned in twenty of the cases (Cruveilhier,[2] Neumann[40, 51] and Pernet,[53] each two cases; Petitjean,[41] Bradbury,[34] Virchow,[51] Fournier,[21] twelve cases).

In a few instances the eruption appeared some days after the drug had been discontinued. Suchanek[37] recorded a case in which the eruption appeared eight days after the iodid had been stopped. In the hemorrhagic bullous case reported by Morrow[16] the eruption did not reach its height until five days after the potassium iodid had been intermitted. In the case with hemorrhagic bullæ recorded by McGuire[18] the lesions continued to appear for ten days after the drug was discontinued. Broadbent[19] also recorded the fact in his hemorrhagic bullous case that the eruption continued to appear for six days after the potassium iodid had been stopped. The purpuric exanthem continued to appear for eight days in one of Suchanek's[37] cases, and for twenty-six days in the other. Outbreaks of purpura from the iodid continued for ten days in Janovsky's[26] patient, and for three weeks in Raymond's[30] case.

Type of Eruption.—In all of the non-bullous cases, except five, the eruption was entirely purpuric in type. The lesions were mostly from small to large pinhead in size; in Hoening's[47] case, however, some of the ecchymoses were one-quarter dollar in dimensions. Duckworth-Gee[35] described, in the case reported, a herpetic eruption with a purpuric areola. In Neumann's[40] patient the eruption was chiefly papillomatous or pustular; some of the lesions were petechial. In one of the two cases reported by Petitjean[41], with purpuric lesions, the predominant type consisted of furuncles and pustules. Vidal[48] noted in his case a papular outbreak on the trunk and a purpuric eruption on the legs. The outbreak in Debuchy's[32] case consisted of a vesicular as well as a petechial eruption; an eczema was also present.

Distribution.—The eruption was, in a great majority of the cases, localized to certain portions of the body, chiefly the lower extremities. The eruption was generalized in Hoening's[47] case. The outbreak was generalized, excepting the chest, the back, and the hairy scalp, in Neumann's[40] patient. The upper and lower extremities and the shoulders were attacked in the case reported by Mackenzie.[49] There was extensive involvement in Lemoine's[43] case; the thighs, the abdomen, the lumbar region, the chest and the arms are the areas attacked. The entire face, the forearms and the neck were the areas of predilection in Duckworth-Gee's[35] patient. The scrotum, the thighs and the legs were involved in Bernart's[36] case. The upper and lower extremities were attacked in two cases (Janovsky,[26] Bradbury[34]). The forearms and the lower portion of the legs were involved in three cases (Colcott Fox,[45] Abbe,[46] Robinson[33]). Raymond's[30] patient showed the lesions distributed on the arms, the hands and the legs. The hands and the legs were the seats of attack in the case recorded by Debuchy.[32] J. H. Wilson[44] noted the distribution in his patient on the lower legs, and the dorsum of the feet. The eruption was limited to the lower abdomen in one case, and attacked the lower abdomen and the extremities in the other case of Suchanek's.[37] The lower extremities alone were attacked in eight cases (Cruveilhier,[2] Silcox,[23] Barton,[39] Waren Tay,[28] Vidal,[48] Ringer,[31] Petitjean,[41, 50] two cases). The eruption was limited to the lower portion of the legs in twenty cases (Duffy,[38] Ricord,[3] Walter Smith,[24] Payen,[42] Labat,[27] Barlow,[29] Fournier,[21] fourteen cases). In one of Fournier's[21] fifteen cases, the outbreak was not only found on the lower legs but lesions, purpuric in type were also scattered on the trunk. The distribution of the eruption was not specified in five cases (Morrow,[25] Neumann,[52] Virchow,[51] Pernet,[53] two cases).

Mild symptoms of iodism preceded or accompanied the eruption in several of the cases, notably in those reported by Petitjean,[50] Janovsky,[26] Barlow,[29] J. H. Wilson,[44] and Debuchy.[32] Severe symptoms of iodism were observed in Mackenzie's[49] and Raymond's[30] fatal cases.

Edema of the glottis was caused by the drug in two of the cases (Petitjean[50] Neumann[52]). Several authors have referred to edema of the glottis caused by the ingestion of potassium iodid. Nelaton,[54] Lawrie-Adair,[55] and Fenwick[56] have reported cases of this character. West[57] recorded an interesting history; a woman of 28 was instructed to take 50 grains of potassium iodid a day; eleven hours after the first dose was administered a generalized edema developed.

Mucous Membrane Involvement.—The mucous membranes were attacked in two of the hemorrhagic bullous cases. Hemorrhagic bullæ were found on the tongue and the roof of the mouth in the case reported by Taylor.[13] Russell[14] recorded the occurrence of bullæ filled with blood in the nares in his case. The mucous membranes were attacked in five of the non-bullous petechial cases. Purpuric spots were noted on the left conjunctiva in Duckworth-Gee's[35] patient. A hemorrhagic eruption was present on the gums in the patient of Suchanek.[37] Numerous ulcers were found on the walls of the stomach near the pylorus in Neumann's[52] patient, supposedly caused by the ingestion of potassium iodid. The roof of the mouth exhibited petechiæ in Hoening's patient,[47] and on the hard palate in the one reported by Mackenzie.[49] Milain[58] described a case in which ecchymotic spots were found on the palate, which appeared on starting the drug and disappeared on stopping the same. There was a papulopustular eruption on the face, the back and the limbs caused by the potassium iodid, but there were no purpuric lesions on the cutaneous surface.

Hemorrhage from Mucous Membranes or Organs.—Boinet[59] in 1865 mentioned the fact that the ingestion of iodin may cause hemorrhage from the lungs and the intestines. Rodet[60] recorded an interesting case in which a man of 35 was attacked by hemoptysis whenever potassium iodid was given. DeBolze[61] reported an instance in which a blood-tinged cough was produced whenever the iodids were given; no signs of phthisis were present. Lindsay[62] referred to a case in which a woman of 58 after taking a few doses of potassium iodid developed the catamenial flow, which had been absent for twelve years. This flow continued for the entire week during which the drug was given. The administration of the iodid also caused symptoms of iodism and a bullous, non-hemorrhagic eruption.

In the present series two of the hemorrhagic bullous cases and five of the petechial, non-bullous cases exhibited phenomena of this character. Hemoptysis was noted in Broadbent's[12] case. Elsner's[11] patient vomited blood and passed the same by the rectum. Epistaxis and bleeding from the gums were noticed in the case reported by Duckworth-Gee.[35] Cerebral hemorrhage was present in Neumann's patient; whether caused by the drug or from some other condition is not clearly stated by the author. Epistaxis was caused by the drug in the cases recorded by Janovsky,[26] Bradbury[34] and Abbe.[46]

Organic Disease Present at the Time of Administering the Iodid.—Heart or kidney disease, one or both, were present at the time the drug was administered in four of the cases which developed the hemorrhagic bullous lesions, and in six of the non-bullous cases. Disease of both the heart and kidneys were found in Morrow's[16] and Gottheil's[15] patients. Disease of the kidneys was found in the case recorded by McGuire.[18] Broadbent's[12] case exhibited nephritis, pericardial trouble and a pleuritic condition of the lungs. Nephritis was discovered in the two cases reported by Neumann[40, 52]. Valvular disease of the heart was present in the case recorded by Duffy.[58] Nephritis and valvular disease of the heart were found in Lemoine's[43] and Pernet's[53] cases. Pericarditis, congestion of the lungs, aortic and mitral lesions, hypertrophy of the heart, and disease of the kidneys were all noted in Duckworth-Gee's[35] patient.

CASES OF THE AUTHOR

CASE 1.—Helen L., aged 27, born in Germany, came to the skin dispensary of the Pennsylvania Hospital April 13, 1906. There were no derangements of the heart or kidneys present, and her past history was negative. A few weeks previous to her visit to the dispensary she obtained a mixture at a drug store for pains in her muscles and joints. The patient stated that the mixture contained potassium iodid. After taking the preparation for some weeks, ten days before coming to the dispensary an eruption appeared on the lower extremities. The lesions were limited to the lower extremities, extending from the upper thighs to the ankles, and consisted of bluish and reddish-blue, pinhead to split pea sized macules, from which the color could not be pressed. The eruption disappeared a few days after stopping the medication. To prove whether or not the iodid was the etiologic factor, one week after the disappearance of the lesions the drug was again given. Potassium iodid was given in 10-grain doses three times daily; on the second day 11 grains were given at a dose; on the third, twelve grains three times during the day, and the administration was continued in the same ratio. When the dose had been gradually raised in this manner to 17 grains three times daily, a purpuric eruption developed with the same characteristics and distribution as the first outbreak previously described.

CASE 2.—Mary H., a very light mulattress, aged 40, born in North Carolina, came to the skin dispensary of the Pennsylvania Hospital, July 13, 1906. The patient had previously been treated in Dr. Morris Lewis' ward at the Pennsylvania Hospital for aneurism and aortic insufficiency. No history of rheumatism could be obtained. The urine contained no albumin or casts. The patient was given 10 grains of potassium iodid, three times a day. The drug was started April 15 and continued until the patient's visit to the dispensary. A few days before she came to the skin dispensary the eruption appeared on the legs. The purpuric lesions were large, pin head in size and limited to the tibial aspect of the lower legs. The eruption disappeared a few days after the drug was stopped. One week after the disappearance of the lesions the drug was again given. Five grains of potassium iodid were administered three times daily. After the drug had been taken for twenty days the purpuric eruption again appeared on the same areas as previously exhibited the outbreak.

Potassium iodid is not the only salt of iodin that may produce an eruption, as the outbreak was produced in Lemoine's[43] patient by sodium iodid and also in the case reported by Janovsky.[26] The iodid of iron was causal in Payen's[12] case. The eruption was caused in Hoening's[47] patient by a combination of the sodium and the potassium iodids. Both the ammonium and the potassium iodids, separately, produced the outbreak in Duffy's[58] and Ringer's[31] cases. The latter writers, however, reported negative results with the sodium iodid.

The same individual may have an idiosyncrasy to more than one drug. Raymond[63] found that his patient had also a marked intolerance for 5 cg. of santonin, and for 2 gm. of sodium salicylate.

Pathology.—Tilbury Fox[illegible] believes in the sweat-gland and sebaceous gland origin of all types of iodid eruption. Fox and Gibbs[64] found that the small arteries were blocked and the vessels were affected in every section examined by inflammatory changes. Engman and Mook[65] found in the examination of papules, pustules and macules from numerous cases of iodid eruption that the sebaceous glands and the follicles were not primarily affected by the drug, pointing to all of the changes occurring in the neighborhood of the blood vessels. Thin[66] found in the acne form of eruption, caused by the ingestion of potassium iodid, limited edema with congestion of the vessels, in the bullous or pustular cases an effusion of serum with more or less of the formed elements of the blood, and in the purpuric type destruction of the wall of the vessel and hemorrhage. Thin[66] points out the tendency of iodin when present in the blood current to attack special points of the vessels, thus explaining all the varieties of eruption caused by iodin. As an explanation of the purpuric eruption he suggests that a portion of the vessel is so suddenly and completely destroyed that the local changes are limited to effusion of a small quantity of pure blood, and to plugging of the vessel. The specimen examined by Thin[66] showed the changes limited to a small part of the vessel, which was dilated at that spot and blocked by coagulum. Duckworth and Harris[67] found the blood vessels were very numerous in all of the specimens examined. The sebaceous gland origin of the various types of iodid eruption can probably be excluded, as most authorities do not agree with the original findings of Tilbury Fox.[63] As Biesiadecki[68] and others have never been able to demonstrate the presence of either sebaceous glands or lanugo follicles on the palms of the hands, and as Duhring[69] and Hyde[70] have each reported eruptions from potassium iodid on this area, the sebaceous origin of the outbreak is evidently disproved.

Absorption and Elimination.—Arnozan and Carles[71] have gathered together in an excellent paper the facts regarding the rôle the leucocytes play in the absorption of certain medicines, including iodin. The latter phase of the subject has been particularly studied by Stassano and Bourcet.[72] The leucocytes absorb the iodin and carry this drug, with which they are charged, to different tissues or organs of elimination. The drug absorbed may undergo various changes in the leucocytes, being transformed by the action of various ferments which these cells contain. The drugs may be stored by these cells at various points and thus give rise, under various circumstances, to a pathologic effect. Ménière,[73] after a great many experiments, concluded that the time required for the absorption of the salts of iodin and their elimination by the salivary glands is on an average from eight to ten minutes; when the stomach is full the elimination is retarded from thirty to forty minutes. If the stomach is absolutely empty and the potassium iodid is given in a warm liquid of some stimulating power, such as tea, elimination may be detected in the saliva in from two to three minutes. According to this same investigator absorption of this drug occurs most rapidly by the bronchial mucous membrane; it takes slightly less than double the time for absorption to occur by the stomach and the esophagus as by the bronchial mucous membrane. Quincke[74] found the presence of iodin in the small intestine, the saliva, the urine, the serum of the blood and in the aqueous humor, but not in the stomach or the large intestine, one and one-quarter hours after a hypodermic injection of the drug had been given; while it took almost two and one-half hours to produce the same results after ingestion through the stomach.

Iodin has been found in the urine in several of the cases in this series. Janovsky[75] noted the reaction for the drug for six days after the medication had been stopped; iodin was found in the urine in Pusey's case.[10] Berg[75] gave a venous injection of from one hundred to one hundred and thirty grains of potassium iodid in animals and iodin was found in the urine after fifteen minutes had elapsed. Marshall[76] recovered 265 grains daily in a case of Woodson in which 360 grains of potassium iodid were taken daily. According to Sée[76] the reaction to the drug remains in the saliva after it has disappeared from the urine.

Adamkiewicz[77] mixed the pus from the pustules caused by the ingestion of the iodid with starch and added a few drops of very dilute nitric acid, and obtained the reaction of iodin. The test for iodin in Gottheil's case proved negative. Engman and Mook[65] in a valuable series of experiments on numerous patients with various types of iodid eruption proved the elimination of iodin through the skin. They found a positive reaction of the pus in every case examined, iodin being distinctly present. Skin free from any lesions, although an iodid eruption was present on other portions of the body, was blistered by them in two cases and the serum from these blisters was investigated. In each instance iodin was readily discovered, thus proving that iodin occurred in chemical combination in all the tissues of the body. Taylor[78] believes that iodin is eliminated in certain cases by the sweat-glands, citing a case to prove this assertion.

Prognosis.—The administration of the iodids, particularly in large doses, to those individuals who have a strong idiosyncrasy to the drug, or in cases with organic disease of the heart or the kidneys, is frequently a dangerous procedure. Seven out of the eleven hemorrhagic, bullous cases ended fatally, and two of the non-bullous, petechial type. Elsner's[11] patient died five days after the drug was started! Russell's[14] patient succumbed on the tenth day after the drug was first given. The patient whose case is reported by Pusey,[10] died ten days after the appearance of the eruption. The termination was fatal in Gottheil's[13] case, seventeen days after the medication was commenced. Broadbent's[12] case ended fatally three weeks after the drug had been given on a second trial. Morrow's[16] and McGuire's[18] patients died six weeks after the drug was first administered. Mackenzie's[49] case proved fatal sixty-eight hours after one dose, 2½ grains of potassium iodid, had been given to a child of five months. In Duckworth-Gee's[33] case, the patient died on the tenth day after the drug had been started.

Fournier[21] has had more opportunity to study purpura caused by the ingestion of potassium iodid than any other observer, as he has reported in one series fifteen cases. According to his observations, if the drug is given in the same moderate dose over an uninterrupted period the purpuric eruption produced by the potassium iodid is apt to lessen in severity until there is an almost complete disappearance, even while the small dose of the drug is continuously given; if, however, the dose of the drug is considerably increased, a fresh outbreak will occur which is usually not so severe as the first attack. If the drug is stopped for a few weeks, and the same small dose is given as in the first instance, an eruption will again be produced but the outbreak is usually not so severe as the lesions first caused by this small dose. The experience of Fournier[21] has coincided with the observation of more recent writers on the subject. A certain tolerance, therefore, seems to be formed to the drug in a great many individuals who are susceptible to this medication, but the tolerance is but transitory, as the increase of the dose, while the drug is being taken in moderate quantities, will produce a fresh outbreak, or if the drug is stopped for but a few days the tolerance is lost and the original dose, or even a smaller quantity, will again produce the eruption.

The decreased dosage causing the eruption is well exemplified in the bullous, non-hemorrhagic case described by Besnier,[9] in which the outbreak was first caused by 2 gm. of potassium iodid, on a second occa sion by 1 gm. and a third time by 10 cg. The eruption was first produced in Duffy's[38] case by 2½ ounces of potassium iodid, and on another occasion by 15 grains. In Abbe's[46] case the eruption was produced on six different occasions, each time less of the drug being required to cause the outbreak; the eruption first appeared after 10 grains of potassium iodid, three times daily, had been given for two weeks; the fifth and the sixth attack was caused by three and by two 5-grain doses respectively. The eruption was at first caused in Raymond's[30] case by giving 8 gm. of the drug, in divided doses, the second outbreak was induced by administering 3 gm. in five days. On the first occasion the exanthem appeared in Ringer's[31] case after 10 grains of potassium iodid three times each day had been given for five days, the eruption was reproduced by prescribing four 10-grain doses of the drug. The outbreak first occurred in McGuire's[18] case after 20 grains of ammonium iodid had been given; on a second occasion 5 grains sufficed to produce the hemorrhagic bullae. The administration of 1.5 gm., of potassium iodid in Waren Tay's[28] patient produced the eruption on five different occasions in nine weeks. In one of my cases the eruption was reproduced by one-half of the dose of the drug and in one-quarter the length of time required for the first outbreak.

After a careful study of sixty-three cases of purpura caused by the ingestion of potassium iodid, eleven being of the hemorrhagic, bullous type, I feel justified in making two provisional groups of these eruptions. In the first group may be placed all those cases in which there is some organic disease, some lowered condition of the general economy which makes the individual more susceptible to the effects of the drug, and those with a strong idiosyncrasy to the iodid. The bullous eruptions of the hemorrhagic type and the petechial cases with a somewhat generalized outbreak should be classed in the first group. In the second group the patient is found in the best of health, and there is absolutely no way of explaining the outbreak except on the hypothesis of a mild idiosyncrasy to the drug. In this latter group should be placed the purpuric cases with a very localized distribution, which have the tendency to remain limited, particularly to the lower portion of the legs. Fournier's[21] fifteen cases should be taken as the type of case belonging in the second group. There is probably no doubt that in the localized cases of purpura, caused by the iodids, in which small doses of the drug have been administered, the eruption may be made general and severe if the drug is continued in very large doses over a long period of time. The drug should be used with the greatest care in those individuals with some organic lesion, in whom the general condition is below par, and as a safeguard the beginning dose should be small, as a strong idiosyncrasy to the iodid may be present.

SUMMARY

Purpuric eruptions caused by the ingestion of the iodids may be divided into two provisional groups.

The first group includes the extensive petechial and hemorrhagic, bullous cases, which occur in those individuals with organic disease, particularly of the kidneys or the heart, or with a lowered condition of the general economy, making them more susceptible to the effect of the drug, or with a strong idiosyncrasy to the same.

The second group includes all cases with a localized distribution, particularly those in which the eruption is limited to the lower extremities or the lower legs, which occur in those individuals in perfect health, and which can be explained only on the theory that a mild idiosyncrasy to the iodid is present.

Sex and age have nothing to do with the occurrence of the eruption, although most of the cases developed during middle life, and a considerably larger percentage of males were attacked than females.

The drug was administered in twenty-two of the sixty-one cases for syphilis, for rheumatism in [illegible] cases, and in the remainder in numerous other conditions, none of which apparently exerted any predisposing influence.

The quantity of the drug given and the length of administration varied so markedly that an average dose or the length of time of continuance cannot be stated, the personal element alone deciding the question of an eruption.

The eruption was chiefly of one type, either the petechial or the hemorrhagic bullous, although in a few cases other forms of iodid lesions were present.

In the hemorrhagic bullous cases, although in several the eruption was somewhat generalized, the face and the extremities were mostly involved, particularly the face and the arms.

In the petechial type the eruption in a great majority of the cases was limited to the lower extremities, particularly the lower portion of the legs; in a few cases, however, the outbreak was somewhat generalized or noted on the upper as well as the lower extremities.

Mild symptoms of iodism were present in a few cases, and severe reaction to the drug was noted in two cases. Edema of the glottis was found in two instances.

Lesions were found on the mucous membranes in a few cases; hemorrhages occurred from the mucous membranes or from various organs in a few others.

Organic disease of the kidneys and the heart was found in but few—ten out of sixty-one cases.

The various salts of iodin are all capable of causing a purpuric eruption.

The pathologic changes of the skin were noted in the immediate vicinity of the blood-vessels and in the walls of the vessels themselves.

Iodin is rapidly absorbed by all mucous and serous surfaces and rapidly eliminated, chiefly by the kidneys and also through the skin itself. The [illegible] play a distinct rôle in the absorption of the drug.

Hemorrhagic bullous cases, of extensive distribution are frequently fatal, seven out of the eleven in this series ending fatally.

Petechial, non-bullous cases rarely terminate in death, unless there is marked disease of the heart or kidneys or a very extreme intolerance to the drug; two out of the fifty cases of this type ended fatally.

In conclusion I wish to express my thanks to Dr. Charles N. Davis for the privilege of reporting the two cases and to make a plea for smaller doses of the iodids.

332 South Seventeenth Street.

ABSTRACT OF DISCUSSION

DR. J. A. FORDYCE, New York: I do not think we ought to allow this occasion to go by without expressing the [illegible] way in which potassium iodid [illegible] not only by the general practitioner, but by the specialist. In syphilis it is frequently given in doses of several hundred grains daily, and in the majority of these cases the same benefit could be derived from thirty, or, at most, one hundred grains daily. We are entirely too reckless in the administration of the drug, and have overlooked the fatalities that have been reported from its excessive use. In some instances, these harmful effects are due to excessively large doses; in others, to an over-susceptibility on the part of the patient. Dr. Knowles' paper also emphasizes the importance of looking into the condition of the eliminative organs before we resort to large doses of potassium iodid.

Dr. Howard Fox, New York: In connection with this rare form of eruption due to the ingestion of potassium iodid, I should like to call attention to another rare form, a case of which I recently presented before the New York Dermatological Society. The eruption was a very extensive one of the purely bullous type. When the patient, a colored girl of 12 years, came to the Vanderbilt Clinic, she presented a number of unpigmented circinate lesions that we were disposed to regard as dermatitis herpetiformis of the circinate and bullous type. The patient gave a history of having taken five weeks previously a bitter medicine in doses of ten drops three times a day for one week. At the suggestion of Dr. George T. Jackson she was given iodid of potash, ten drops three times a day. After the second dose an eruption consisting of large, tense, clear bullæ appeared on the whole body, more especially on the legs. Iodid was found in the contents of the bullæ and in the urine. The case is mentioned as an unusual form of an eruption produced by potassium iodid in an extremely susceptible patient.

Dr. F. C. Knowles, Philadelphia: In reference to the possibility of an eruption being produced by small doses of potassium iodid, I would refer to the case of Mackenzie, who described a case in an infant of five months where a small dose produced an eruption in 45 minutes, and the child died ten hours later.

DERMATITIS EXFOLIATIVA *

WILLIAM FRICK, A.M., M.D.
Professor of Dermatology, University of Kansas School of Medicine
KANSAS CITY, MO.

The name "dermatitis exfoliativa" may be given to any inflammatory disease of the skin which has for its most prominent features, inflammation and exfoliation of the epidermis. There may be features, however, histologic, etiologic or otherwise, which can be used to advantage in designating some of the types. Brocq recognizes seven types of exfoliative dermatitis. It may not be necessary to make as many distinct divisions as this, since several of these types may have the same or similar etiologic factors and differ only in degree of severity; still, we must acknowledge that there are as many clinical types as he describes.

The case I am about to report is evidently related to the more frequently seen cases of erythema scarlatiniform. Still I think that it would be a mistake to consider them identical.

The type known as "dermatitis exfoliativa neonatorum" or Ritter's disease, is a distinct type, and is generally conceded to be due to an infection at or near the time of birth.

The distinct type described by Hebra as "pityriasis rubra" is generally considered a fatal disease, but from time to time we have reports of recoveries of cases in all respects resembling this type, with the exception that they recover. There seems to me no adequate reason why they should be put in a different class. Frank Woodbury,[1] reports two cases, which he considers identical as examples of this disease. One of the patients died and the other recovered.

We have many other diseases which tend to a fatal termination in the severe cases, but in the milder cases of the same kind the patients recover. Why should we not consider this disease capable of the same variation and conclude that, while many patients die, others recover?

REPORT OF CASE

Patient.—B. K., a girl, $8\frac{1}{2}$ years old at the time of first appearance of this skin disease, in April, 1907; her family history was negative. Her father, mother and two sisters are healthy. The cutaneous history of the family is negative. The patient had been healthy up to the time this disease made its appearance. Her skin was fair, hair inclined slightly to red, temperament nervous in mild degree, rather slender and of medium height for her age. She lived with her parents on a farm, where sanitary conditions are supposed to be good.

Present Illness.—The disease made its appearance as spots of reddened, rough skin, inclined to scale. These spots ranged from the size of a split pea to that of a silver dime; some were circular, while others were irregular in shape. The distribution was general over the body and extremities. At one or two places several of these lesions coalesced, forming irregular patches. Desquamation was in small scales. There must have been decided itching, as the parents say the child scratched until the blood flowed. Even while asleep, she scratched, which is indicative of severe itching. Her appetite was irregular and health not up to par. The parents of the child supposed this to be a case of multiple ringworm of the body, and it was treated as such. No physician was called at that time. In August, 1907, she had typhoid fever. This ran a reasonably mild course, the temperature at its highest being about 103 F. While the fever was present the skin disease disappeared completely, just as we see sometimes in psoriasis. When she recovered from the typhoid fever about September 15 the skin lesions returned, apparently about as they were before the typhoid made its appearance. They were the same red, slightly scaling spots as at first. The lesions were more numerous on the thighs than in other localities, but they were quite general in their distribution. This condition continued all through the winter, and in the spring of 1908 the family physician was called in to see the case. He considered it a case of disseminated ringworm and treated it accordingly for the next six months. There was no permanent improvement, but an increase in size of the lesions with more scale formation.

Examination.—When I first saw the case, Nov. 20, 1908, there were only a few of the smaller scale lesions present, and these were scattered about over the trunk and extremities without definite grouping. The larger ones had grown in size, ranging from $1\frac{1}{2}$ to 3 inches in diameter, and were circular or oval in outline, not noticeably elevated above the surrounding skin, and had an erythematous base with thin papery scales covering the surface. At two or three places, several of these lesions had coalesced and formed irregular patches, but most of them were still discrete and were scattered promiscuously with the thickest distribution on the thighs. The distribution was about equal over the flexor and extensor surfaces. The lesions were sharply marginate.

Course of Disease.—My first impression was that I had an atypical psoriasis to deal with. An ointment was given, containing small quantities of salicylic acid and resorcin, in addition to internal treatment, and the patient was requested to return three weeks later. Promptly in three weeks the patient was brought to see me again. The change in these three weeks was great. Instead of scattering lesions, the entire skin was involved. I was informed that this involvement came, not by formation of new patches, but by extension of those present before. The whole process took on a more active appearance; the skin became brighter red and somewhat thickened. The process was extending up over the face and scalp, where it had not appeared before. The worst of the inflammation, however, all through the disease, was on the thighs and trunk. The face and scalp suffered least. This extension was accompanied by chilly sensations and fever. This began about December 1. The temperature was usually not high, but for the next two months it seemed to be always somewhat elevated, ranging from 99 to 103. There was no particular time for the increase in temperature, but the high points were just as likely to be in the early morning as late in the day. The discomfort of the patient, due to chilling, was quite marked, especially when circulating air came in contact with the denuded surfaces. Desquamation soon followed the extension of the inflammation. This desquamation left large patches of raw, oozing, sensitive skin. This was so general that the underclothes became at times saturated with the serous fluid. The patient did not complain of itching, but of a burning sensation, which she tried to relieve by rubbing. Desquamation occurred in small scales over the body and extremities. The palms and soles desquamated in large pieces. Toward the end of the disease the nails from the small toe on both feet desquamated also. The other nails were rendered rough and ridged, but remained intact. The urine was examined at several different times and nothing abnormal was found. The heart, lungs, liver, spleen and all other abdominal and pelvic organs were normal as far as could be ascertained. No blood-count was made. The inflammatory process subsided gradually, the oozing grew less by degrees until it ceased altogether, the desquamation gradually disappeared along with the erythema and the skin became normal in appearance again. This point was reached about the end of April, 1909, about five and one-half months after I first saw the case. During the course of the disease the child had lost flesh until the bones became prominent. Now her appetite returned and the lost flesh was regained and more. A year from full recovery of this patient she remained perfectly well, has grown normally and has a skin as perfect as any child. In fact, there is no trace of the old trouble.

---

* Read in the Section on Dermatology of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] The Journal A. M. A., 1890, xv, 81.

Treatment.—This consisted, first, of the application of soothing applications to relieve the disagreeable sensations: oily preparations seemed quite effective and agreeable to the patient; second, of tonic remedies internally. Various tonic remedies were used, as seemed indicated. Along with this I tried the efficacy of quinin. I realized that this case was different from those in which Mook[2] seemed to secure so much benefit, but gave it a trial. The benefit received from this treatment was not great, but nevertheless the child's parents claimed some improvement from it. I could not say that treatment accomplished anything in a specific way; it merely supported the patient's strength and palliated the suffering, while Nature produced a cure.

I do not believe that the causative factor in all cases of this type is the same. As in scarlatiniform erythema, which it resembles, the causes may be various. In the case just reported I thought at first that the general inflammation might be due to the local application of resorcin or salicylic acid. It is true that these were applied in mild strength and would have required a skin with an idiosyncrasy to have produced the inflammation.

The involvement of the entire skin, even where none of the ointment was used, made it apparent that this was not the cause. Also we see that the inflammation continued and grew worse after the local applications were withdrawn. The continuation of the inflammatory process for three months before beginning to abate would indicate the continuation of the cause for that length of time. That this cause was a toxic agent generated within the body I believe to be the rational explanation of the trouble.

ABSTRACT OF DISCUSSION

Dr. Frank C. Knowles, Philadelphia: In the *Journal for Cutaneous Diseases* for January, 1910, Dr. John T. Bowen, of Boston, published a paper in which he described seven cases of dermatitis exfoliativa, five ending fatally. In a previous paper, presented to the American Dermatological Association in 1902, he divided these cases into four types. The first was the recurrent desquamative scarlatiniform dermatitis; this form might occur after the ingestion of drugs. The second was the dermatitis exfoliativa of Wilson; the third occurred as a sequel to psoriasis, eczema, lichen planus, etc., and followed the administration of certain drugs, such as belladonna, mercury and quinin; and the fourth form was the pityriasis rubra of Hebra. I have seen a few cases of dermatitis exfoliativa, and recently, since the first of the year, I have seen a generalized case which followed the administration of [illegible] and another in which the eruption appeared following the local use of a mercurial ointment. In this case the application was followed by an immediate generalized exfoliation of the [illegible]

---

[2] Jour. Cutan. Dis., xxvi, 408.

THE NERVOUS UNFIT*

S. S. CROCKETT, M.D.
NASHVILLE, TENN.

It may have been the original intention of our Creator that all human creatures should start the race of life with the same equipment of physical and functional strength, and many generations back in the history of the human family such may have been the case. The profession would be relieved of an ever-present problem if all of God's favored creatures acted and reacted alike to the responsibilities of life, to the daily fight for bread, to the wild chase after wealth, to the exacting demands of social responsibility with all its joys and sorrows, with all its pleasures and disappointments, with all its cares and comforts, with all its successes and all its failures.

That so many fall short in being able to stand the tension of life's responsibility and fail to fill their measure of work at the end, is due to one of the following:

1. The development of some local or general diseased condition that puts an end to their existence.

2. Some diseased condition, local or general, resulting not in death, but in incapacity.

3. Incapacity without local disease being clinically present. The third class may be divided into (*a*) those overtaken by mental incapacity, and (*b*) incapables—mentally sound.

It is to the latter class that I beg to direct attention. The cases of this incapacity, in mentally sound persons, without any local pathologic condition being clinically present, may vary in shades all the way from those very slightly affected to the "ne'er-do-weel" or the chronic bedridden invalid who has long since abandoned all effort except that of complaint.

Some of these cases seem to be of congenital origin. Consanguinity or inebriety of parents, or the presence in the parents of other neuroses or psychoses, have all been charged with causal responsibility.

Our social and educational systems are perhaps answerable for many of the cases of acquired incapacity. The more strenuous and exacting the occupation, the greater and the less interrupted the tension on the nervous energies, the more numerous the victims. The mad merciless mania for money; the pitiless contention for preferment, that our neighbors may not appear richer than ourselves; the great and criminal lack of [illegible] attention to students in educational institutions; the early exactions made of the nervous to the detriment of the physical side of the growing child; the [illegible] sin of our ever recurring [illegible] its attendant evils, and many [illegible] as causes of its acquisition. Neither age, race, nor sex nor social condition seems to afford immunity.

The good housewife seems to be the sufferer in the greatest number of instances, and not without [illegible] justification. The continual grind of the daily routine, the determination of what we have to eat and how to have it prepared, three times a day, every day in the year, and then to begin all over again for another year, and for a whole lifetime; the ever-present servant problem, with its yearly increasing magnitude, the vigils of maternity, the education and clothing of children, the daily combat with the butcher, the baker, ice-man, laundry-man *et id omne genus*, each demanding a larger proportion of her allowance, not to mention the exactions of her social environment, constitute a draft on her nerve energy that would bankrupt any but an inexhaustible supply.

---

* Read at [illegible] Tennessee State Medical Association, at Memphis, April 13, 1910.

The financier who presides over the exchequer of a large enterprise, whose perplexing problems follow him home at night to disturb his domestic tranquillity and rob him of sleep, whose hasty meals are sandwiched in between the reading of the market quotations and telephone messages, etc., is often overtaken by an incapacity that seems unwarranted considering his age and apparent physical condition.

The minister, the ambitious student at college, the teacher, the professional man and especially the schoolgirl furnish large numbers of recruits to this ever-increasing army of incapables.

As paradoxical as it may seem, many cases are observed among the unfortunate unemployed children of wealth, who have never known the absorbing interest of earning their daily bread, who have so little to do that it is an effort to keep themselves physically fit, who are constantly begging for a potion for a night's sleep and who are strangers to that "kind of slumber that has to be fought off" till a task is done; whose organs of elimination from lack of physical activity are as foul as a surface sewer; whose digestive organs from early and long-continued over-indulgence have long since lost all that compensation that food brings to honest toil; whose principal occupation and whose greatest delight seems to be the contemplation of their own sensations. This class elicits our constant pity and commiseration.

These various groups of cases present a protean picture: Headache, backache, tender spine, tender nerve endings, gastric and intestinal disturbance, abdominal pain and tenderness, constipation, flatulency, occasional mucous diarrhea, disturbance and painful menstruation, palpitation, tachycardia, dyspnea, cold extremities, hyperesthetic and anesthetic areas, exaggerated reflexes, tire, inattention, inability to work, irritability, weakness, introspection, discouragement, hopelessness, chronic incapacity or invalidism—and all this while they are yet young and in apparently good physical condition.

The correct recognition and proper management of these cases is an ever-present and trying problem, and failure too often involves many fatal errors. The ready appreciation of the central origin of this incapacity is beset by two great stumbling-blocks:

1. These patients from constant introspection and analysis of their own symptoms assume to diagnose their own cases; it seems so simple; the stomach and intestines are upset and there is abdominal pain and tenderness, the trouble is abdominal; or there is constant pain in the back with menstrual disturbance; the trouble is located in the pelvis; or there is intermittent or constant headache that is made worse by much use of the eyes, hence there is certainly some error of vision; or perhaps there is tachycardia, palpitation and dyspnea, and heart disease is assumed. Having made a diagnosis, these patients at once elect to place themselves under the care of some professional man who devotes his activities to the treatment of the particular organ complained of, and then there develops the second stumbling block, which seems to have resulted from the following fact:

2. The limitation of our endeavors to any special line of professional activity seems to exaggerate and magnify that particular work in our minds until our perceptions are so restricted and our point of view so contracted that we are blind to all else, save those organs and tissues in which we are taking special interest. This seems to result from a one-sided development of our powers of observation, and is not limited to any special line of work.

Unhappily, the medical profession has not been able to rid itself of the mysticisms that still surround it in the eyes of the laity, and when a man makes a reputation on a certain line of work, the public assumes that he at once becomes an authority on all branches of the science—a pleasant misapprehension which is rarely corrected, but which is indulged in at times even by the man himself. Hence we see the doctor often falling into the same error as the patient and diagnosing disease in that complaining organ to which he is directing his special attention. That error is, however, as previously stated, not limited to any special line of work. These patients usually run the gamut of the profession and are successively fitted with beautiful glasses, have their stomachs washed out for a longer or shorter time, and then have a gastroenterostomy done; the appendix is next removed, and then are successively performed cholecystotomy, uterine and kidney suspension, perhaps removal of tubes and ovaries, dilatation or sewing up of cervix, removal of hemorrhoids, perhaps dilatation of an old stricture or massage of the seminal vesicles, and after all these procedures have been followed by brief improvement, temporarily justifying the idea that each succeeding new medical attendant has just really discovered the cause of all the suffering and is going to furnish the long-expected cure, the patient, if enough has been left to carry on his vital functions, then either becomes a victim of the infirmary habit, a chronic, neurotic incapable, or drifts into the ranks of some of dietetic or religious fanatics.

Is it not possible for us to draw a valuable lesson from our experience with these people? That the various diagnoses of so much local disease could not possibly be correct is beyond question; that improvement followed the treatment and assurance of relief in each instance may be true, yet a cure has not been effected. The hope and expectation of promised relief and the confident assurance of each and every new medical adviser that relief would follow each new treatment has conveyed to the confiding patient's mind the suggestion that that particular organ would be relieved, and it usually is for a longer or shorter interval. But is it not possible for us to approach the subject from a higher and broader point of view, and to secure more permanent relief?

1. It is essential to fix steadily before our own minds after thorough and painstaking examination the fact that the varied complaints of such patients cannot possibly be explained satisfactorily on the basis of local disease, but that they are probably due to a central cause acting through the nervous system, which, for want of a better name, might be designated "lack of nerve energy." Perfect frankness should be used in explaining to the patient that there is no disease present to account for the symptoms; that the complaints are due to a lack of nerve energy supplied to the tissues; that the tissues cannot discharge their functions without this nerve energy—that it is just as necessary to proper function as the circulation of the blood; that it is now proposed to institute a line of treatment that

will restore the proper amount and proper character of nerve energy; that restoration of function will result; that relief cannot come, however, without cooperation of the patient, in a new direction.

This explanation usually interests and seems to help the most fastidious and long-suffering. The greatest difficulty is experienced at the very outset, however, in convincing the patient, in the face of previous opinions, that there is no local disease present.

2. Restoration of function in any organ or tissue is impossible in the absence of the proper food-supply to that organ or tissue. Neurons and their multiple connections are no exception to this rule. An improvement in the food-supply of these patients is always of prime importance, and to accomplish this improvement is no easy task, as the belief in the presence of nervous indigestion has been indelibly impressed on the patients and they often consider themselves an authority on the subject of dietetics. Much help, however, may be derived from the constant suggestion that the trouble is entirely supradiaphragmatic and that the fear of food is unwarranted.

3. Chronic constipation is usually associated with the intestinal indigestion: mucous colitis is common, much abdominal pain and tenderness not infrequent, contributing an auto-infection from this canal that may not be an inconsiderable secondary etiologic factor; hence laxatives are continually called for, and may form a part of the daily regime.

4. Nothing is more important, impressive and suggestive than to have the doctor write out a program to occupy every hour of the patient's time, day and night, including amount, character and frequency of food, time, character and duration of baths, amount and time of isolated rest, hours in bed, amount of recreation and company, and an accurate instruction as to medicine, if any. In this way vicious habits of life may be corrected incidentally without friction, and the importance of the treatment impressed. Some of these patients are at times able to accomplish a considerable amount of work if their energies at other times are properly conserved. At times the only treatment that will be necessary at all will consist in temporary suspension of work, at other times change of occupation is the price of health and happiness.

5. In the effort to secure sleep many fall victims to drug addiction, an unfortunate complication always to be looked for, and a result to be carefully avoided. It will be difficult to avoid the occasional use of hypnotics; sleep, however, may be effectively secured by other and less dangerous means, to be mentioned later. The procuring of sleep by the regular use of narcotics is criminal.

6. The use of the cold bath in the treatment of these neurotic patients is an indispensible therapeutic agent; commence at first with a cold morning sponge, followed by a brisk rub, to be supplanted later by the cold spinal douche and then the cold plunge, effect is observed in procuring sleep, improved digestion, restored vascular, nutritional and metabolic equilibrium that is at times astonishing.

7. It becomes at once apparent, as already pointed out, that these patients are peculiarly susceptible to suggestion; otherwise the temporary improvement, under so many different lines of treatment, for different complaints, would not have been obtained. This temporary relief came from suggestion of relief directed to that individual complaint. Now with local disease out of the mind of the doctor and out of the mind of the patient, and the central idea of the trouble substituted therefor in the minds of both, is it not possible to substitute a conscious intentional and wholesale for the present unconscious and unintentional retail method of conveying the suggestion?

For the carrying out of this idea there are several prerequisites: the doctor himself must be of a tactful and magnetic disposition and possessed of a patience that would excite the envy of Job. The hearty cooperation of the members of the family is of importance; all of them are to be instructed to remark occasionally the patient's improved condition. Unkind criticism or reflection on former medical attendants is fatal to the effort. Patients must be prohibited from discussing their complaints with anybody but the doctor.

Electricity and vibration, aside from any inherent therapeutic merit, are perhaps the best vehicles in which to administer the suggestion. Either or both may be used alternately. A certain hour, on a certain day, must be selected and the engagement scrupulously observed. Negligence, indifference or inattention is at once followed by loss of cooperation. The patient's clothing should be removed and the surface of the body carefully gone over either with the electrode or the vibrator and as tender points are reached they should be gone over again carefully with the constant, confident, yet quiet assurance that the treatment will remove the tender spots. The greater the elaborateness, the more obscure the complexity of detail, the greater the amount of surface covered, the more forceful and lasting the suggestion. During the treatment and immediately thereafter the patient should be assured that it is always followed by more quiet and refreshing sleep, that digestion and appetite are constantly invigorated and the tender spots retieved, and that general comfort will follow until the next visit. On the next and all succeeding visits, before the patient has had an opportunity to begin the usual recital of discomforts, the doctor should be careful to remark casually on the improved appearance and better color, and at once to ask tactfully and carefully after each and all specific complaints, with the inquiry if they are not better. Optimistic suggestive inquiry, with confident reassurance, should characterize each and every interview.

I beg that this paper may be construed as a plea for a broader and deeper conception of the complaints of this class of patients, a conception which will carry the diagnostician beyond the consideration of local expression as an evidence of local disease, into the realm of mental control, where the seat of injury is often found in the loosening of that tie which should normally bind the higher subliminal self to functional activities.

Patients of this class are certainly entitled to every means of relief that can be afforded—dietetic, medical, surgical and hygienic; but shall we stop there, abandoning that wide field of psychotherapy, now holding such promise of development for the future?

All therapeutic measures belong to the medical profession, and failure on the part of the physician to add mental therapeutics to other treatment is, in my opinion, largely responsible for the ever increasing numbers of devotees to those false religions whose tenets are neither scientific nor Christian, but who adroitly swell their ranks and promulgate their false doctrines by practice of this principle, so long well known, yet only recently being seriously put on a sane and healthy basis for the use of every practitioner.

PRESCRIBING OF LENSES FOR CLOSE WORK *

MARK D. STEVENSON, M.D., and E. M. WEAVER, M.D.
AKRON, OHIO

It will be possible to discuss only certain phases of this broad subject. Some procedures do not seem to be sufficiently well known, and require elucidation and emphasis in order to secure their more general adoption by those who prescribe lenses for the eyes. Before considering the prescribing of lenses for close work, the muscle conditions and static refraction for distance should be correctly determined. The latter is usually impossible without the proper use of cycloplegics, except in certain cases of myopia and in some people past middle life whose accommodation is weak or easily controlled. Sometimes the examiner must be satisfied with partial corrections, because fatigued yet determined, hypertrophied, habit-controlled, spasmodically contracting muscles are by no means limited to the young, but are often found in the eyes of the middle-aged with their more inelastic resisting lenses.

There are many young persons who suffer more or less distress, e. g., blurring, eye-ache and even headache after continued close work who experience no difficulty in the ordinary use of their eyes. In such cases it is a common custom to advise the constant use of lenses; during our first years in practice we made it a rule to do so. If there is no fixed vertical muscle imbalance, however, and no astigmatism or only a slight degree, less than .38 D., with weak spheres of nearly similar strength for each eye, the proper distant correction should be worn only for close work if all the symptoms are thereby relieved. In many patients it is more satisfactory to advise constant use of the lenses for the first few weeks or months until unnecessary ciliary contraction and consequent dimmed distant vision has more or less disappeared, when, if no symptoms remain, the patient may lay aside the lenses except for near work. Patients are often compelled by their advisor's orders to undergo the discomfort of constant use of lenses, although many, after a period of rest, disobey instructions, lay aside their lenses except for close work, discovering that they are comfortable without them. Such patients may lose confidence, and often go one step too far, discarding the lenses altogether for a variable time without discomfort, although possibly injuring the eyes by the added accommodative strain. It must be admitted that certain of these patients are not comfortable without constant use of lenses and it might be argued that in some the ametropia, e. g., astigmatism, is more likely to increase, but this chiefly depends on the individual and his work and can be known only by a fair trial. The oculist should not as a matter of routine advise such patients to wear lenses constantly. Of course, if there is considerable astigmatism or heterophoria present the patient may harm his eyes by not doing so and is not so likely to find comfort in their use for close work only. The eyes of the great majority of young people are hypermetropic, requiring the use of the ciliary muscles for clear distant vision, but such eyes, unless very hypermetropic, do not necessarily suffer distress or impairment of function in doing distant work; it is nearly always the added strain in near work that distresses and injures, especially if there is impairment of the general nervous system of the patient.

The use of lenses in close work is often made necessary independent of the condition of the eyes for the distance. This is true when there is any impairment of the general health and vigor weakening the action of the ciliary muscle or influence of the third nerve, e. g., in conditions following various infectious fevers, especially after typhoid and diphtheria, and in certain toxemias and anemias as well as in cases of subnormal accommodation, or ciliary asthenia from other causes. In such cases pure hypermetropia of low degree might require lenses for only close work, while patients with considerable astigmatism or those who require prisms, especially one base up or down, usually should have bifocals. Lenses could be tried for near work, but, since these would not permit good distant vision, bifocals would be particularly helpful, especially in certain vocations, for instance, in that of a student. As the ciliary asthenia disappears the segments may be made weaker or dispensed with, leaving the proper distant lenses for distant and close work. In these cases there is a temptation to give too strong lenses for near work so as to help the patient as much as possible, but this discourages return of function in the weak muscle, although, according to Hess,[1] exercise can have no effect on the maximum of lens convexity. Duane[2] believes that exercise can increase the accommodation when weakened. Such patients should be requested to hold the reading, etc., as far away from the eyes as possible and to give the eyes frequent short rests from close work. Attention to general treatment and hygiene is very important, and posture, position, intensity of lights, etc., should not be neglected.

In myopia of about the same degree in each eye, over .50 D. and less than 2.00 D. or 3.00 D., and with little or no astigmatism, it is often best to have the patient wear the lenses only for the distance and lay them aside in close work unless he holds objects too close, necessitating too much strain on the muscles of convergence. In quite young persons it is better, if possible, to have the patients wear the lenses constantly in order to develop the accommodation. In myopia over 2.00 D. or 3.00 D. the use of bifocals is often advisable, great care being taken not to add too strong a segment. Space forbids a full discussion of anisometropia; but in cases in which a patient does not enjoy binocular vision or uses one eye for distant vision, the other for near, attempts to equalize them or adapt both to one distance will be fruitless and contrary to the best interests of the patient.

The far and near point giving a fair idea of the amplitude of accommodation should be found. In testing for close work, not only the best but also the nearest and farthest distances at which the print can be comfortably read with lenses should be determined. This gives the ordinary accommodative range. In difficult cases, especially in those who have previously complained of their lenses in close work, the accommodative range in each eye separately should be carefully ascertained. In testing the accommodation by means of test-types, the retinal image varies in size, depending on the distance of the test-type from the eyes. For accuracy this image should not vary in size and thus change the visual angle; therefore, ordinary tests with test-types or with lenses are inaccurate. I have found the punctumeter, a variety of Badal's optometer (Tscherning[3]) in which the retinal image remains the same size, convenient and sufficiently accurate, as by it the accommodation

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Hess, Carl: Modern Views on the Physiology and Pathology of Accommodation, The Journal A. M. A., July 20, 1907, xlix, 230.

[2] Duane, Alexander: The Accommodation and Donders' Curve and the Need of Revising Our Ideas Regarding Them, The Journal A. M. A., June 19, 1909, lii, 1993.

[3] Tscherning: Physiologic Optics, pp. 83 and 84.

may be quickly measured. Last year before this Section Duane[2] described a disc and method for testing the accommodation.

All these tests should be made with the patient's back to the source of light, thus avoiding contraction of the pupils sufficient to affect the result. Any of these tests may be misleading if the muscles have been fatigued by a previous long examination, especially if by fogging or other methods the patient has been induced to relax wholly or partially his accommodation. On the other hand, such tests made in the beginning of the examination, during or after it, when a spasmodic effort is made by the strained eyes of the anxious patient, may demonstrate greater accommodation than is ordinarily present. Accommodation in some people, especially in neurasthenics, in certain hysterical persons and in those with marked convergence defects, is very variable, the ciliary muscles easily becoming exhausted, so that it is instructive to make these tests early in the examination as well as after the eyes are tired. This exhaustion of the accommodative apparatus partially explains the blurring and other difficulties certain persons experience after continued close work which they do not notice in using the eyes for a short time. When the blurring begins they bring their close work nearer, securing magnification, sacrificing clearness but forcing additional work on their already exhausted ciliary and adducting muscles.

By the tests described above the amplitude of accommodation on the two sides may be shown to be quite unlike, the result of various diseases, especially those of the nervous system, usually weakening, paresis or paralysis of accommodation and possibly, in rare instances, spasm of accommodation. For close work it is occasionally necessary to place a stronger lens before the eye with the weaker accommodation. Commonly the difference between the lenses will be from one-third to two-thirds the difference of accommodation, or in young persons even less than one-third (Jackson[4]). It is very helpful to know that there is no accommodative power in some old people with not very clear media and small pupils. The vision may be so blurred that they cannot select the proper amount to add to their distance correction for near work, e. g., such a patient may not be able to chose between a +2.00 D.S. or +3.00 D.S. added to the distant correction. In these cases the equivalent in diopters should be added, as for 33 cm. a +3.00 D.S. should be added to the distant correction. While the range of vision with lenses for close work should be found in order to help determine the best lens, as too strong lenses often limit the range too much, and while the amplitude of accommodation should be determined and will prove helpful, rules for prescribing applicable to every case cannot be made. Probably no one could constantly employ his full accommodative power, but it is impossible to say whether a particular patient can use two-thirds or one-half of his power, as asserted by some writers. Some persons can use three-fourths of their accommodative power more constantly and easily than others can one-fourth. Fixed rules, a given distance or method are not applicable to all cases.

After having determined the ametropia for the distance, and, in special cases, the amplitude of accommodation, the distance which the patient prefers for close work should be ascertained. Next he should be placed with back to source of light and a test chart given to him. He should not be permitted to face the source of light, as this causes contraction of the pupils, partly preventing diffusion circles, thus doing away with the necessity for lenses and making it difficult or impossible to find the correct strength for ordinary conditions. The test-card should not be in direct sunlight, although it should be in good daylight without the patient's shadow on the card. Good artificial light from a source behind the patient serves well, and, as this is the kind of light commonly complained of, its use is often advantageous. He should be directed to look at test-letters of about the size of ordinary print, e. g., .75 D. or Jaeger 1. If the patient's vision is poor he should be directed to look at larger letters. If the test is made with very small letters the patient is likely to hold such letters a little closer than he would ordinary-sized letters, sacrificing ease and clearness to secure greater magnification. A sheet of ordinary music should be used when lenses are desired for reading music. If care is taken that the lenses are properly centered in the trial frame a seamstress may suggest something helpful as to distance if required to thread a needle and possibly to make a few stitches.

The range for the test-object should next be found; first, how far away the letters can be comfortably seen; next how close they can be easily read, and last the best distance at which they can be seen. The patient should be told to confine his attention to the distance for the lenses being tried, for if this distance is unsatisfactory it may be made right by other lenses and that, therefore, he should totally put aside his preconceived ideas of the proper distance for his work.

Persons in various vocations prefer different distances. A bookkeeper, type-setter, laundress, painter, carpenter, pianist, violinist or one who works at a flat-top desk rarely likes lenses which necessitate his coming close to his work, e. g., by leaning forward over books or desk. The lenses for the ordinary reading distance should first be found which will greatly aid in determining the proper lenses for particular distances. We have described our ideas about the proper distance for close work, especially as dictated by heterophoria and convergence tests, and the necessity for muscle exercises and prisms in these conditions in former papers.[5] These papers emphasized the point that, whenever lenses are prescribed, the intimate relation between accommodation and convergence is changed, requiring readjustment; further, that a patient with a strong desire for fusion, or single vision, may have marked ability to converge for a short time, or, for that matter, to rotate the eyes in any direction, just as a hypermetrope can accommodate, but that he is likely to become tired by such forced convergence, just as a hypermetrope becomes tired by forced accommodation, if the eyes must, in order to secure single vision, be rotated considerably from what may be termed their position of rest for any particular distance.

The examiner, in order to prevent early change of lenses and to thus lessen the patient's future expense, is often tempted to prescribe too strong lenses for close work. These limit the patient's range for near work, and, while lessening the accommodative stimulation to convergence, add to the convergence strain. For ordinary patients with good convergence power, for reading and sewing it is usually well to prescribe lenses for about 37 cm. This is a little too close for sewing on a machine or ironing, but is a good average distance. This distance is varied, depending on the vocation, desires of the individual patient, conditions of the extra-ocular muscles and convergence power and also dependent on whether there is binocular single vision. Unless the vocation demands otherwise, a one-eyed patient will usually prefer a strong lens if convex, and those with marked subnormal vision will also usually accept a strong lens, preferring magnification to clearness, range, etc.

---

[4] Jackson: Ann. Ophth., July, 1907.

[5] Stevenson, M. D.: Ophth. Rec., July, 1904, and February 1907; Practical Importance of Hyperphoria in Prescribing Lenses for Use at Particular Distances and in Different Directions, The Journal A. M. A., July 17, 1909, liii, 203.

As in tests for the amplitude of accommodation, it is sometimes necessary to make separate and repeated tests for the best lens for close work, since the ciliary muscle, if exhausted by the previous examination, will require too strong a lens for ordinary use; that is, a lens which at the time of examination gives a reading distance of 37 cm. may in the ordinary condition of the eyes have a reading distance of considerably less. On the other hand, there might be a spasm of the ciliary muscle, and on continued use the lens would be too weak.

Accommodation is strongest in the young, not in infants, and gradually diminishes afterward until abolished. The age when special assistance to the eyes in close work because of weakened accommodation is first required varies, but much depends on the general health and vitality, the vocation of the patient, the amount and nature of ametropia or heterophoria present and the size of the pupils. Accommodation is the first important function to weaken and does so while the ordinary muscles of the body are growing and developing, possibly suggesting its biologically difficult and recent acquirement, especially as it is imperfectly developed in the savage and in the lower animals. In these times of overworked eyes, as in reading, embroidering, engraving, etc., special help for the accommodation is frequently demanded, i. e., a stronger lens if convex, weaker if concave, than the proper distance correction is required. Many patients over 30 or 35 complain of the use of their eyes only in close work. They are usually given their full or nearly full distant correction, to wear constantly. Many of these with a low degree of ametropia, especially with only a little astigmatism, with good extra-ocular muscles, will get greater relief and avoid the nuisance of wearing lenses constantly if a somewhat stronger convex or weaker concave lens than is required for the distance is prescribed for close work only.

Judgment and great care must be exercised in these cases. If there is much astigmatism or if a prism, especially a vertical prism, is required it may be better to prescribe only the full correction and as accommodation diminishes and this correction fails to satisfy in close work add a segment or give a separate stronger pair of lenses for near. A + .50 D. or + .75 D. segment added to the distant lenses often greatly aids the patient. It should not be forgotten that even if the ametropia for the distance is fully corrected in close work the ciliary muscle is compelled to make continuous effort, for instance, 3.00 D. at 33.3 cm. The time is probably coming when many more young people than at present will wear bifocal lenses, giving clear and easy vision at the distance and special aid in near work.

When patients past middle life complain only in doing close work and the eyes are normal or nearly so for the distance, lenses may be prescribed only for the former. In these cases, however, bifocals should often be prescribed, the patient being requested to wear them only for close work. Even a weak lens correcting the ametropia is preferable to a plane lens, and if a large segment with its upper edge just below the lower margin of the pupil is given in frames with good reading angle the patient will find it more convenient in doing his close work, not having to remove his lenses to see at the distance. The main objection to bifocals, viz., that the patient cannot see easily when walking about is removed, as the lenses are used only for close work. For patients who object to this use of a bifocal or for those whose vocation demands a whole lens, e. g., certain dentists or bookkeepers, a single lens is prescribed. Some prefer to use half or clerical-shaped lenses.

When there are symptoms of asthenopia, e. g., headaches, blepharitis, etc., due to a considerable degree of ametropia, two pairs or bifocals should be prescribed. Two pairs are better for those engaged in certain vocations, whose eyes must be directed through every part of the lens, as for dentists, bookkeepers, type-setters, sign-painters, etc., but they are inconvenient in many well-known ways. Two pairs require more care and must be frequently changed, especially difficult as it necessitates the use of both hands, a case, and some place to lay one pair of lenses.

To avoid the use of two pairs several substitutes have been used. Grab-fronts, whole or half lenses, grab-backs, whole or half lenses, are very serviceable in some cases. Half grab-backs serve like a bifocal both near and distant vision, but for those who wish a whole lens and desire to make quick changes the whole grab-back is useful. The grab-backs are not convenient for those who are often required to look upward, as salesmen in stores, painters or carpenters, for the grab-back then slips backward against the eyes; or for those who, like skirt-fitters, are often required to stoop, since the lenses are then liable to drop out from behind the spectacle frames. Grab-fronts hang on better than grab-backs, but are more difficult to adjust; and both are objectionable because of appearance, can be used only with spectacles, require careful and frequent adjustment and the rubbing together of the lenses scratches and mars their surfaces.

The most generally used substitute for two pairs is the bifocal, and, while the patient is usually disappointed in their use during the first few weeks, he usually likes them after becoming accustomed to the necessary blur of distant objects seen through the lower portion of the lens in looking downward and to the doubling of objects seen through the upper margin of the segment. The difficulty with this upper margin is much less in kryptoks and so-called invisible bifocals than in the older varieties. The patient should be given to understand that at first he must be patient with bifocals. In many ways they approach the ideal for two distances without any change of lenses. The segments are easily and cheaply changed. They may be prescribed either in spectacle or nose glass frames and with any degree of durability and elegance. For temporary use a detachable segment suggested by H. G. Huffman of Youngstown, in which the segments may be quickly clamped on the distant lenses by merely pressing them into a special case, may be employed. This form of bifocal may also prove useful in making a prolonged trial of double lenses. They are superior to other bifocals in that the patient may discard them when not doing close work, may have two pairs of them for different distances, may place one pair over regular bifocals and in that they can be easily decentered.

With bifocals the great difficulty complained of is in seeing downward at a distance—seeing the sidewalk, curb, etc., when walking. We formerly made the common error of trying partly to avoid this trouble by prescribing too small segments, by giving frames so that the segments were placed too far below the pupils. It did help the patient when walking about, but made near work more difficult and tiresome. The very small sizes require too much adjustment of objects looked at, give too small a field. Very large segments are required only for those who must move their eyes much in their work. They can scarcely be made large enough for bookkeepers and some dentists. Small segments for distant vision may be placed on the uppermost portion of the lens, the remaining large part being for close work. If the segment is placed too low the eye is compelled to look downward to such a degree as to tire the external ocular muscles. A false lens astigmatism is produced by looking through the strong segments at such an angle; also the effect of a stronger sphere results so that the patient is compelled to hold his work closer than was intended by the prescriber. This tires the eyes because of the increased amount of convergence required. Experience has taught us that the segment should be only very slightly below the pupil, especially in those who wear the bifocal only in close work, and that all lenses for near work, especially bifocals, should have the top tilted considerably farther away from the face than the bottom—a large reading angle.

Toric lenses give a better reading angle in the segment than ordinary lenses. With a good reading angle the eyes then look more directly through the lenses with less false lens astigmatism and with more nearly the spherical effect desired. Ordinarily the patient will soon accustom himself to walk about with segments high up. If spectacles are worn, for a time the frames can be pulled forward and down on the nose while the patient is walking. With nose-glasses, in close work, the reading angle should often be increased by tilting outward the top of the lenses. When a different prism is required in the reading lens from that in the distant lens it can be made in bifocals, but is often better employed in two pair. Last year before this Section one of us described a method by which hyperphoria in various planes for near work can be examined, and pointed out that, since it sometimes varies in different planes, it is necessary to prescribe different prisms for near than for the distance, also that such patients as well as anisometropic patients must learn how best to hold the head and eyes, that for such there is only one best position or plane in which the object should be held.

Everett Building.

ABSTRACT OF DISCUSSION

Dr. A. G. Bennett, Buffalo: I wish to take exception to one point in Dr. Stevenson's paper, and that is the statement that it is a waste of labor to try to make the patient with anisometropia use both eyes. I have had several instances of patients with one eye myopic and the other hyperopic or emmetropic using the emmetropic eye for distance and the myopic eye for reading. Some years ago I followed the advice now given by Dr. Stevenson and allowed the patient to use one eye for reading and the other for distance. But in the case of a young woman who came to me some years ago with a difference of 3D., I thought I would try to make her use both eyes. She had entire loss of accommodation in both eyes —the right eye from lack of use and the left eye from myopia, also from lack of use. So that she had a subnormal accommodation of at least 3D. I gave that patient a pair of hook-ons of 3D. to use before both eyes when reading or doing close work, with full correction for distance. Then I gave her some weak physostigmin (eserin) to use at night. She used the physostigmin and glasses three or four weeks. I was then able to reduce the hook-ons a half diopter. I continued that method of decreasing the strength of the hook-ons until in nine months she had full accommodative power. I have carried out this plan a good many times and always with success, being able in every case to give them full accommodation.

Dr. A. E. Bulson, Jr., Fort Wayne: The accommodative power is influenced by so many factors that no hard and fast rules can be observed in the prescribing of lenses for close work. The health, temperament, vocation habits and the amount and kind of error of refraction may affect the muscular tone, and these factors may be inconstant. They must, however, be taken into consideration in the management of any case in which there is discomfort in using the eyes for close work. Some persons are thoroughly uncomfortable when wearing the full correction for close work, but derive the greatest benefit from a quarter, a half, or two thirds of the correction. Other persons secure the greatest relief when wearing the full correction. A small percentage of patients will derive no lasting benefit from any correction, owing to inconstancy of muscular tone. Many cases, and the last class in particular, require treatment or a regulation of the habits or the conditions under which the eyes are used. I do not believe that in non-presbyopic cases we are ever justified in giving more than the full correction of the static refraction, for in such cases there is an urgent demand for a correction of the abnormality by means directed to the underlying cause. The lowered tone of the accommodative power requires something more than the effect of lenses, which do not aid in restoring the impaired function. The patients are generally, if not always, benefited by rest, coupled with whatever treatment may be indicated to aid in the restoration of normal accommodative function. The emmetropic eye should possess the necessary accommodative power for near work, as otherwise the eye is suffering from an impairment of function which calls for something more than lenses. The ametropic eye may possess all or more than emmetropic accommodative power, and the determination of the lenses required resolves itself into the question of an estimation of the amount of surplus accommodative power under average conditions, which, taken from the total refractive error, indicates with a fair degree of certainty the lenses which should be prescribed. Theoretically, a correction of the full amount of ametropia is indicated, but practically this does not work out satisfactorily in all cases. Here again we must take into consideration other factors which must be considered, not by correction with lenses, but by suitable treatment. We are also confronted with the effects of varying uses to which the eye is put. The person who works satisfactorily at one occupation with certain lenses may be very uncomfortable when the occupation changes. The person doing only an average amount of eye work very comfortably with a certain correction may be uncomfortable when doing something requiring more use of the accommodation. Therefore each case must be studied on its merits before it is altogether satisfactorily settled. The ophthalmologist who secures the best results will be the one who looks beyond the findings obtained from objective and subjective tests of the refraction before prescribing lenses.

Dr. Allen Greenwood, Boston: I want to emphasize what Dr. Bulson has said, that each case of refraction must be treated by itself. I also want to suggest a procedure which I have followed with great advantage, and that is, in young people who have a fair amount of esophoria, it is a good rule for a time to require glasses for near reading. The patient with exophoria very seldom will wear glasses for near. I also want to speak about anisometropia. I find that young people with the symptom uncorrected may be made absolutely comfortable with the proper correction for each eye.

Dr. S. L. Ledbetter, Birmingham, Ala.: Dr. Stevenson speaks of the difficulty in getting accustomed to bifocals on account of the blur that occurs in passing from the upper to the lower lens. There is a distinct blur depending on the strength of the lower lens, for practically ⅛ inch in which nothing is seen. This is obviated by a little device which some of you may have heard of. It was suggested to me by a manufacturing optician. The usual bifocal segment is placed with the apex up. When the ray of light comes to pass through the segment it is deflected and gives more the appearance of coming from high up. Whereas, if you put the base up, when you reach the point of disappearance of the image, it produces a deflection so that the object is seen through the lower segment before distinct vision becomes lost through the upper, and you pass immediately from the upper to the lower segment, apparently seeing the object below before it has been lost from above. Mechanically, it does not look very bad, and it does away with the blurring. It can be made in the kryptok in the same way.

Dr. G. C. Savage, Nashville: There are two points not yet touched on in the discussion that are of vital importance. If you have cases of anisometropia, you can correct the error in each eye, but if you fail to tell the patients that they must look through the centers of the lenses, then they will get into trouble. To illustrate: Suppose I have a case of hyperopia of 2 D. in the right and 5 D. in the left eye. That is a difference of 3 D. Looking through the centers of the lenses there is no prismatic effect anywhere, but let the patient look one-fifth of an inch above the centers and he gets 3 degrees of prismatic effect vertically in the left eye; likewise, if he looks below one-fifth of an inch, he gets three degrees of prismatic effect vertically for that eye. The muscles cannot bear that sort of a displacement, and if the patient cannot look through the center of the lenses, he should be given the same strength lens as that given the better eye.

The other point is this: If you have a young person who has weak accommodation, it is the easiest sort of thing to tell it. You do not tell it in a haphazard sort of way; but place the patient behind the phorometer, and if he has orthophoria for distance and esophoria for near, that speaks for weakness of the ciliary muscles, and that weakness can be cured by gymnastic exercises. Instead of giving such a patient presbyopic lenses, I put him on exercise by means of concave spheres. I tell him what I want to accomplish. "The ciliary muscles require too much nerve force to do the focusing, and that produces a disposition to cross, and that gives a pull on the part of the externi to keep the eyes from crossing. You exercise these little focusing muscles as I tell you and thus will gain power and you will be relieved of the disposition to cross." When the concave spheres are put on, the patient should be 8 or 10 feet from the letter or figure on the wall to be looked at, and he should be told to raise and lower the concave lenses in front of his eyes rhythmically, like the tick of the old-time clock, at first for about two minutes, and add a half minute to each exercise until he gets up to ten minutes, and then for weeks or months exercise these ciliary muscles ten minutes just before retiring, so that the blood thus invited will build them up and make the muscles strong. These spheres should be — .75 D.

Dr. Joseph S. Lichtenberg, Kansas City: There is still one point that should be taken into consideration in fitting glasses for near, and that is the character of the light used. In our present day civilization stenographers, bookkeepers and others are compelled to work by artificial light, principally incandescent electric or gas lights, and in this light there seems to be an irritant quality, possibly due to ultra-spectroscopic rays. My experience is that stronger glasses are necessary. Also under certain circumstances a certain tint can be given to the glasses, as amber or amethyst tinted glasses, as suggested by Dr. Fox, or possibly those so-called ray filtering glasses made by the German chemists.

Dr. Mark D. Stevenson, Akron, O.: Last year, before this section I emphasized the importance of the anisometropic patient looking through the center of his lenses as much as possible; that he should turn the head, using the neck muscles instead of the external eye muscles, and that he should hold the reading matter as nearly on the proper plane—up or down—as he could. As stated, a full discussion of anisometropia was impossible in this paper. Usually the patient using one eye for distance the other for near, especially if there is a great difference between the strengths of the two eyes, will not appreciate attempts to equalize the eyes or adapt both to one distance. Of course, painstaking care and great patience on the part of both physician and patient will be occasionally rewarded by a brilliant result. As pointed out in the paper, I think the proper use of artificial illumination in fitting for near work is very important, since it is commonly used by many patients. In asthenic conditions of the muscles the prime factor in treatment no doubt depends on the improvement of the local and general hygienic conditions and health—proper rest, exercise, etc.—but in many busy people there is a period before recovery when the eyes must be given more than ordinary assistance by lenses. This is not only demanded by the patient's necessity to use the eyes comfortably, but is often important temporarily in preventing harm to the eyes. As the whole is greater than the part, the examiner must not forget that he is above all else a physician, and that these cases require not merely local lens or other treatment, but, in addition and above all, his best skill in diagnosing and treating the underlying general cause or causes.

EDUCATIONAL WORK IN REDUCING INFANT MORTALITY

WILBUR C. PHILLIPS,
Secretary New York Milk Committee
NEW YORK

Step by step as we descend from the level of the extremely rich to that of the extreme poor, we find conditions increasing which militate against the lives of little ones. Where people are poorest, and where the scantiest means are found to combat evils which threaten, there invariably we find the darkest tenements, the narrowest and foulest streets, the lowest standards of living and the greatest ignorance. In consequence the death-rate among infants, as all persons know who work in these localities, is appalling. Especially in the summer, the babies literally die like flies. The fear of something terrible hangs like the sword of Damocles over the frightened, ignorant, and too often superstitious mother. Why does the baby die? The mother does not know. She knows only that her baby is vomiting and lying almost lifeless in their arms, and that at any moment it may follow where the others have gone. A timely word, telling her not to do the thing which makes her ignorance murderous, in many instances would save the baby. When the mothers begin to realize this their eagerness to learn, their hunger for instruction, is pitiful, more pitiful than physical hunger or its twin specter, undernourishment, stamped on the faces of so many, many women and children of our tenements.

This is the real tragedy of infant mortality—the unsatisfied desire of souls for knowledge, the permission of spiritual suffering and death.

To reduce infant mortality in its great and shocking totality, knowledge of infant-feeding, the hygiene of infants and all things pertaining to infancy must be placed first of all at the command of these poor mothers. The rich woman, the middle class woman, must also be taken into consideration, but the long red columns of infant deaths will not begin to shrink until the campaign deals effectively with those whose lack of knowledge is most pitiful and distressing.

Last year in Greater New York 15,977 infants less than 1 year of age died from causes which were largely preventable. No figures exist to show what percentage of these deaths occurred among the rich, middle class and poor respectively, but it is safe to say that a large majority, probably four-fifths, occurred among the people of the tenements. Some basis for this claim may be obtained from an investigation of Health Department records made by the New York Milk Committee in January, 1908. Three sections of the city were included—one section of twenty-eight blocks, comprising a fashionable residential district in the neighborhood of Fifth Avenue, Madison Avenue and Central Park; the second of five blocks comprising a middle-class residential district in the neighborhood of One Hundred and Thirty-fourth Street and Lenox Avenue; a third of three densely populated blocks comprising a typical tenement-house district bounded by Avenue A, East Seventy-fourth Street, First Avenue and East Seventy-second Street. In 1907 the estimated population of the three districts and the number of births recorded were as follows:

	Population.	Number of births recorded in 1907
28 fashionable blocks.	7,561	37, or ½ per cent.
5 middle-class blocks............	7,696	160, or 2 per cent.
3 tenement blocks..............	7,858	431, or 5½ per cent.

Thus we see that in the above areas containing approximately the same population, three times as many babies were reported born to poorer classes as to the middle classes and eleven times as many to the poorer classes as to the upper classes. These figures are undoubtedly influenced considerably by the fact that most wealthy women and many women of the middle classes, go out of the city for confinement or are confined in institutions not included in the districts above named.

A fair estimate of the ratio of births among the three classes would probably correspond with the figures for Paris, Berlin, Vienna and London, reported by Dr. Bertillion at the Congress of the International Statistical Institute of St. Petersburg in 1887, which are as follows:

PARIS

If the birth-rate of *rich* = 1, then *middle* = 1.5 and *poor* = 2.3

BERLIN

If the birth-rate of *rich* = 1, then *middle* = 1.9 and *poor* = 2.6

VIENNA

If the birth rate of *rich* = 1, then *middle* = 1.7 and *poor* = 2.0

LONDON

If the birth-rate of *poor* = 1, then *middle* = 1.4 and *rich* = 1.9

It is safe to say that in the districts above mentionel, twice as many babies were born to the poorer classes as to the middle classes and four times as many to the poorer classes as to the upper classes. These figures, although not so sensational as the actual comparative birth-rates reported to the Health Department, nevertheless show a striking contrast.

Knowing that the greatest danger to infants exists at the time of greatest heat, the Milk Committee, at the suggestion of Dr. L. Emmett Holt, selected a period of fourteen days, of which the first seven comprised the hottest week of 1907. In this way not only the immediate but the after-effects of a period of excessive heat were observed—something that is rarely done. The average mean temperature of the first week from July 18 to July 24 was 78.6 degrees and of the second week from July 25 to July 31, 76.1 degrees. In the three tenement-house blocks sixteen deaths, or 4 per cent. of the total number of infants known to have been born during the year died during the two weeks—nine during the first week and seven during the second. Had a similar death-rate prevailed throughout the rest of the year the mortality would have been 100 per cent. In the four middle class blocks and in the twenty-eight wealthy residential blocks of approximately the same population no deaths were recorded.

These facts tell their own story. The probable absence for the summer of most of the wealthy mothers and many of the middle-class mothers cannot be considered, as the ability to leave a hot city and thus avoid a principal cause of infant death—like the ability to employ infant specialists, trained nurses, etc.—is a purely economic advantage. Light, air, sanitary surroundings and proper nourishment, are all factors in the reduction of infant mortality. The lack of the means to purchase these commodities spells misery, disability and death.

VALUE AND KINDS OF INSTRUCTION

Because of the facts already mentioned, instruction and educational work, up to the present time, has been largely confined to mothers in the lower strata of society. This educational work has been of three kinds: (1) home instruction by nurses; (2) class instruction by doctors; (3) combined class and home instruction by doctors and nurses.

1. *Home Instruction by Nurses.*—The first educational campaign of house-to-house visiting in New York City was started by the New York Association for Improving the Condition of the Poor in the summer of 1907, when a small army of nurses, with headquarters at Junior Sea Breeze Hospital, were detailed to work in the Nineteenth ward, bounded by Thirty-ninth and Ninetieth streets between Fifth Avenue and the East River. These nurses visited mothers in their homes, instructed them in the care and feeding of their infants, and, as often as was necessary, revisited them and gave additional advice.

As a result of this work (for other reasons seem to be lacking), the deaths among children in the Nineteenth ward in 1907 was 222 against 251 in 1906, although the death-rate among infants and young children from diarrheal diseases throughout the summer was higher for the entire city in 1907 than in 1906.

Stimulated by the excellent results of this work, the New York Health Department in the summer of 1908 detailed a force of 83 nurses to do instructional work in the five boroughs in Greater New York. Each borough was divided into districts which were in charge of a chief medical inspector and a supervising nurse. Instruction was confined to the mothers of new-born babies whose births were reported to the Health Department. On being notified of these births the nurses visited the homes and, if the case was not already in the hands of the family physician or some competent person, instructed the mother, and, by follow-up visits, saw that the baby improved in health.

In this work the Health Department cooperated with the Conference on the Summer Care of Babies (now called the Conference on the Care of Babies, as it is intended, under the newly created Bureau of Child Hygiene, to continue this work throughout the year), an organization composed of representatives of some fifty societies and agencies directly or indirectly interested in the problem of infancy and motherhood. As the result of the combined and coordinated efforts of the Health Department and these agencies the mortality-rate among infants under one year of age was lowered in Greater New York from 17,138 in 1907 to 16,230 in 1908, and to 15,977 in 1909. In the summer of 1909, 110 nurses were detailed to this work by the Health Department alone.

2. *Class Instruction by Doctors.*—The idea of educating mothers in consultation or classes was first conceived by Dr. Budin in the Tarnier Clinic in Paris. Dr. Budin observed that many mothers, after leaving his maternity hospital, returned in two or three weeks without their babies. On inquiry, he found that these little ones, who had been dismissed in good health, had died; and he finally came to the conclusion that their deaths occurred largely because their mothers had no idea how to feed and care for them. As a result of this discovery,

Dr. Budin organized groups or classes of mothers, who had been delivered at the hospital, and who, after dismissal, returned to him at regular intervals, bringing their babies to be examined and weighed, while they themselves received oral instruction in infant-feeding, infants' hygiene and other matters affecting their little ones. In this way began the great movement of the *consultations de nourrissons*, which has since spread throughout Europe and was introduced in America in 1908 in the infants' milk depots maintained by the New York Milk Committee at that time organized under the New York Association for Improving the Condition of the Poor.

In the French consultations as well as in the consultations connected with the committee's depots the main thing striven for was the encouragement of breast feeding, an educational feature of great importance. No nurses were employed in the French consultations, concerning which Dr. Budin made the statement that the main essentials were a pair of scales and the service of a devoted physician.[1]

3. *Combined Class and Home Instruction by Doctors and Nurses.*—Believing that educational work among mothers would be greatly strengthened if connected with the distribution of pure modified milk, (a conclusion reached in France where, it was discovered, the *consultations de nourrissons* attained their greatest efficiency when connected with *gouttes de lait*) the New York Milk Committee on June 15, 1908, opened seven infants' milk depots in congested districts of Manhattan. In these depots pure milk was distributed to infants under the supervision of trained nurses. Volunteer physicians examine the babies weekly, weigh them, prescribe their food and talk to the mothers on infant hygiene in very much the same manner as do the physicians in the French *consultations de nourrissons*. The French method has been improved on, however, by the addition of the trained nurse who, by her home visiting and by her personal contact with the mothers, not only greatly enhances and strengthens the work of the physicians, but in many cases, where other demands intrude themselves on the doctor's time, actually bears the main burden of the educational work. In these cases the doctor prescribes and attends to the feeding, and the nurse instructs.

In order to compare the value of group educational work in milk depots, with that of group educational work independently organized, the committee supported two nurses who were in no way connected with the distribution of milk. These nurses cooperated with physicians, and organized consultations or classes at which feeding and hygienic instructions were given. From the results of this work[2] it was apparent that combining the instructional work for mothers with the distribution of milk greatly enhanced its efficiency and effectiveness, as the necessity of securing milk from a certain depot not only attracts mothers to it in the first place, but, by bringing them either directly or indirectly, in daily contact with those who prescribe the milk, at the time when they obtain their supply, maintains a steady interest on their part which otherwise might be sporadic, easily interrupted and discontinued on slight excuse. Because of the continuity of this work as well as because careful records are kept of the weight and physical condition of the child when received; of the period of observation; of the regularity of attendance; of the continuity of physical progress while under observation; and of the weight and physical condition of the child when dismissed, the results of this work are both definite and trustworthy.

In the seven depots maintained since June, 1908, 1,207 babies were regularly (that is, for periods of three months or more) under supervision of the physicians and trained nurses. Careful records were kept of 466 cases; these records show that 55 per cent. of the babies were rated as fair, poor, bad or moribund; 70 per cent. of the families lived on $5 to $15 a week; 61 per cent. were housed in one, two or three rooms; 85 per cent. lived under conditions that were below normal; 64 per cent. of the mothers were rated as ignorant.

In spite of these facts, which it may be assumed apply to the entire group of infants fed by the Milk Committee, the average gain in the physical vitality of the depot babies as estimated by the Bureau of Sociological Research was 21.6 per cent. and the number in good condition grew during the year from 45 per cent. to 78 per cent.

Owing to the limited time and effort of the nurses, control was not exercised among many babies who might otherwise have been saved. Of those under control, eleven or less than 2 per cent. died.

This record of a work which is not yet perfected, demonstrates conclusively that by educating prospective mothers and by throwing about them all possible social safeguards, it is certain that a large number of deaths which now occur from ante-natal causes can also be prevented.

Educational Work of the Future.—In considering the future of educational work for mothers, it is important to remember that the quantitative problem of reducing the sum-total of infant mortality by carrying education to the mothers of the poor is no more important, although perhaps more striking and gratifying in its apparent gross results, than the qualitative problem of saving the lives of children, better fitted by heredity and environment to supply vigor and stamina to the nation.

Inasmuch as knowledge, that is to say, education, is a commodity, like milk or sugar, to be purchased or given away, those mothers who desire and can pay for instruction should be able to purchase it, while those who equally desire, but cannot afford to pay for it, should obtain it free. In this connection, the idea has long been in my mind of commercializing the work of supervision and instruction, which is now carried on by the Milk Committee's physicians and nurses in the tenement districts of Manhattan, just as the committee is actually commercializing the sale of milk in its depots. Indeed, many persons hold the opinion and often express it, that the time will come when physicians—and what applies to them applies equally to the nurses—will be paid to keep people from being sick and not to cure them when they are well. People able to pay for the knowledge which will accomplish this result would, in this case, be made to pay for it, and people handicapped by poverty, sickness or disability would be allowed to obtain it at part price or for nothing at all. The doctor who could duplicate on a paying basis among the upper classes what is already being done gratuitously among the poor with a sufficient variation of method to meet the altered demands of his patients, in the opinion of some persons, would be surprised by the success of his undertaking. The work might be extended to include the period of pregnancy, the importance of which is felt by all persons working on the subject of infancy. This would be a practical way of educating the middle class and wealthy mother, requiring only the energy and initiation of the practitioner, assisted as he is at present in other matters, by a trained nurse.

---

[1] The results of the work started by Dr. Budin and carried on in France have been summarized in a Plan for Reducing Infant Mortality in New York City, which I published in the Medical Record, May 30, 1908. Detailed information concerning the consultations held in connection with the Milk Committee's depots will be found in the committee's report entitled Infants' Milk Depots and Their Relation to Infant Mortality. Copies of these publications can be obtained by writing to the New York Milk Committee, 105 East Twenty-second Street. An article descriptive of the method of conducting a consultation, written by Dr. Ira S. Wile, who has charge of the Milk Committee's depot in Bloomingdale, located at 136 West One Hundredth street, appeared in the May number of the Dietetic and Hygienic Journal.

[2] Infants' Milk Depots and Their Relation to Infant Mortality, p. 49 of the Milk Committee's report.

For the mothers of the poor, free municipal education, the foundations of which have already been laid by the New York Health Department, must inevitably be extended. While ignorance as gross as that found among the foreign inhabitants of our overcrowded communities continues to exist, infants' milk depots, because of the natural and tangible hold exercised by them over poor mothers, will prove a valuable aid.

As the problem of the baby's health is largely a feeding problem the proximity to the milk-supply of those who prescribe the food and give the instruction is an important consideration. It is to be hoped that the time will come when milk satisfying the requirements of physicians can be secured at a reasonable cost by all mothers who have need of it; but the value of merely referring such mothers to places where they can get milk will be increased if by daily supervision over them as they come for it, those upsets and irregularities, so often fatal, are immediately attended to. Keeping one's eye on a large group of infants in widely separated homes is a difficult matter. The nurse who sits in a milk depot and receives daily the reports brought from her little patients by those who must come for the baby's daily supply is much better able to feel the pulse of her situation and intelligently to direct her energies than the nurse whose only knowledge is obtained by a separate visit to each infant. When education and social reform have eliminated bottle-feeding, by securing mothers who can suckle at the breast, the milk depot, with its abnormal features, will not be needed. The high mortality among bottle-fed infants urges a campaign of instruction and enlightenment which will accomplish this end.

By carrying to all mothers, then, rich as well as poor, the knowledge how to feed and care for their infants—having the mother at the same time under the supervision of a physician assisted by a trained nurse, who, either on a charitable or commercial basis, supervises the child's feeding and by home visitations and demonstrations, emphasizes the educational features of the work—the problem of infant mortality will solve itself. Eventually, in one form or another, this is what it will come to—mothers will either demand and receive instruction for which they will pay, or will so sorely need it that others, in pity, will supply it free. Whether there is need of coordinating this work of paid or professional instruction with free or municipal instruction is not clear. Here, as in all other educational problems, public and private education will follow the usual lines—education for the many falling more and more into the hands of society as a whole, that is to say, in the hands of the state or municipality, and education for the few confining itself to smaller and more expensive groups.

WANTED—EDUCATORS FOR INFANT WORK

In all this educational work one need of paramount importance has received practically no attention up to the present time. This is the necessity, if we are to educate, of securing properly qualified instructors for our infant work. It is not enough for a few doctors to have carefully studied the infant and its needs. Knowledge on these matters should be more generally extended to all physicians, for however greatly the general health of the community may be elevated and sickness correspondingly decreased, as long as the world lasts, women will become mothers, children will be born, and inexperience and ignorance must be replaced by intelligence and foresight. It will not be enough, if the work is to be educational, preventive, that the doctors know simply the technical side of their problem; they must be instructors, too, able to teach others what they know, and if they labor with the poor, as some of them will, they must also have some idea of those social problems which are not learned in the laboratory and the lecture hall. Consultations may be established, schools for mothers may be founded, instructional work of one kind or another may be ever so carefully conceived and organized, but all, like a boat without oars or a college without professors, will be of no avail unless there are trained instructors to do the work.

The need of educators for infants' work has been particularly emphasized in the work of the New York Milk Committee where few of the nurses and physicians feel fully qualified for the work. It is one thing to feed and care for; another thing to instruct and prevent. Examining and prescribing are matters of individual attention; teaching can also be done individually but experience has demonstrated that the collective or group method is best. And not all doctors are qualified for this class-room work.

What can be done by group instruction, in which emphasis is placed mainly on prevention by education rather than on scientific feeding alone, has been demonstrated by Dr. Ira S. Wile at the committee's milk depot in Bloomingdale Guild, 146 West One Hundredth street. Dr. Wile talks to about thirty mothers of various nationalities at his weekly meeting. As each baby is weighed and examined he comments on its condition, either praising the mother for the manner in which she has followed his instructions or criticizing her for indifference or neglect. These remarks are accompanied by advice and instruction suggested by such incidents or circumstances as may happen to arise, as, for instance, the need of household as well as personal cleanliness, suggested by a dirty baby; the danger of overdressing, suggested by the long red flannel bandages enveloping an Italian baby; the value of breast-feeding, suggested by remarkable gains in weight of a child recently taken off the bottle; the danger of crackers, sugar, beer, tea, etc., suggested by the anemic condition of a child fed on those articles. This information delivered week after week in an entertaining way has wrought a great change not only on the mothers themselves but on the whole character of the neighborhood in which Dr. Wile has worked. Of course not all of the mothers listen all the time, any more than a college student pays precisely the same attention to every word that falls from the mouth of his professor. The total effect of the work, however, is of great value and shows what can be done by a real teacher in work of this description.

Dr. Wile educates at the same time that he feeds, using each mother, baby and incident in the life of each, as an illustration to his text. This method has been criticized because many physicians feel that their work is of an individual nature and that best results are obtained when they deal with their patients privately. This is undoubtedly true if they are prescribing for patients. It is not true if they are educating to prevent sickness, for that is work of a different nature—educational work to which educational methods must be applied. All persons realize the value of personal, intimate relation between doctors and patients, but after the examination and prescription (if it is quite impossible to do two things at the same time), should come the lesson which teaches and prevents. If the doctor can feed at one time and educate at another, well and good. If he can only feed and not educate, an educator must be secured in addition.

It is because doctors are not educators that this important work is often left to nurses who work under them. Possibly there is a reason for this; possibly women are naturally better fitted to teach other women than are men. I will not say that this is not so (and certainly if it is so, it opens up a new and attractive educational field to women), but the need of physician educators must nevertheless be met. At present these educators do not exist. Physical directors tell us how to care for ourselves but the physician has contented himself mainly with administering pills and medicine to us when we are sick. This the future will surely alter. Prevention by legislation, and social reform are not enough. There must be prevention by education, carried to the masses by the newspapers and magazines and to individuals directly by men and women who employ known methods of educational work. The problem of infant mortality is in its infancy. Taking life at its source, it lays the foundation for all future health and physical efficiency. The doctor who can teach and prevent is the one needed. If there are no educators they must be manufactured; if in no other way by establishing schools of medical and physical pedagogy. For the doctor is the educator of the future; the best knowledge is that which gives life, and gives it most abundantly.

105 East Twenty-second Street

THE PRESENT STATUS OF THE ETIOLOGY OF SQUINT *

WILLIAM ZENTMAYER, M.D.
PHILADELPHIA

Twenty-five years ago, the theory of Donders as to the causation of squint seemed firmly established despite the objections brought forward at that time by Schweigger, but since then several new theories have been advanced, one of which at least, has secured a considerable following. A study of the various monographs bringing forward theories other than the accommodative one shows that there is a lack of unanimity regarding the essential phenomena entering into the question. Thus one observer (Straub[1]), who believes that a failure of the development of binocular vision accounts for both the hyperopia and the squint, admits the almost constant and important association of the two conditions but has not found that the vision in the amblyopic eye can be improved frequently or materially by practice, and in those instances where parallelism of the visual axes is obtained he finds that only the rudiments of binocular vision have been secured.

Worth[2], the introducer of the theory of the failure of development of the so-called fusion faculty, does not find that there is an undue proportion of hyperopes of moderate degrees among squinters, but he does find that by practice the vision of the amblyopic eye may usually and greatly be improved and binocular vision established.

Bjerke[3] states his belief that a peculiar innervation is the cause of squint, finds in the refractive error only a favoring influence and claims that the amblyopia is primarily a cerebral suppression and for a long time only functional, or we could not have the enormous improvement in vision which follows exercise of this eye. He also finds that binocular vision is so frequently recovered after operation for squint that it could not have been primarily undeveloped and thus the cause of the squint; and he says, further, that many can squint who have excellent binocular vision. The declination and hypertropia theory is brought forward by its sponsor (Stevens[4]) because he found these conditions almost constantly associated with squint and because he found no relation between hyperopia and convergent strabismus.

An analysis of the assertions contained in the above summary shows such contradictions in the findings and in the results of treatment that it would seem that they must result either from bias or from conclusions drawn from too few observations. One author finds constant association of hyperopia and convergent squint; another finds no such association; one finds that the vision in the amblyopic eye cannot often or materially be improved; another finds that not only can vision be improved but that binocular vision can be established by practice; one finds that when binocular vision is secured it is only rudimentary while another finds it so frequently restored after operation that he is convinced that the center for binocular vision could not have been undeveloped.

According to its opponents, the inherent weakness in the accommodative theory is that it is not always high-degree hyperopes who have a convergent squint and that not all squinters are hyperopic.

The fact that some clinicians have not found a greater relative proportion of hyperopia and convergent squint than would be accounted for by actual greater frequency of this refractive condition of the eye, has caused these observers either to discard Donders' theory or to assign but a secondary importance to the refractive error.

Stevens, who believes the causes of convergent strabismus to be the declination of the meridians of the eye and hyperphoria (the latter usually itself the effect of the declination), gives the state of the refraction in 67 of his cases of esotropia. Of this number 23 individuals were emmetropes, 18 myopes and 20 hyperopes. The estimations were made without the use of cycloplegics. He has observed that "in many cases in which during the period of life while accommodation was active, atropin revealed a supposed 'latent hypermetropia,' there has been no indication of hypermetropia when, as the result of presbyopia, years later, the accommodation has been practically abolished." He says that "it thus appears that the mydriatic may cause a condition of apparent hypermetropia, which is not the normal refractive condition of the eye."

He justly holds that the figures given above do not sustain the view that convergent strabismus is caused

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Etiology of Anomalies of Refraction and the Origin of Emmetropia, Arch. f. Ophth. (Graefe's), March 19, 1909, lxx, 1.

[2] Squint: Its Causes, Pathology and Treatment, Philadelphia.

[3] Arch. f. Ophth. (Graefe's), Jan. 5, 1909, lxix, 3.

[4] Motor Apparatus of the Eye, Philadelphia.

principally by hyperopia but then these figures are at variance with those of all other writers. I do not share in the opinion expressed by Stevens regarding the production of hyperopia by the use of a mydriatic. I have oftener seen a hyperopia develop or an existing hyperopia increase at the time of life when the accommodation is weakened by age. More rarely, a decided rapid increase in the refraction of the eye is seen as the result of swelling of the lens at this same period of life.

I have made a tabulation of 485 cases of convergent strabismus with hyperopia in groups according to the refractive error present in the meridian of lowest error of the fixing eye. This plan was followed in order that the results might be compared with the statistics of Worth which are similarly arranged. In my series, all the estimations were made under cycloplegia produced by a 1 per cent. solution of atropin instilled into the eyes three times daily for from 2 to 5 days. Reference to the table published by Worth will show that in 66 per cent. of his cases the hyperopia was over 3 D. In my series this group represented 44 per cent. of the whole. In 68 per cent. of Worth's cases the error was higher than 2 D. In mine in 70 per cent. Basing the calculation on the highest meridian of the deviating eye my series shows that in 55 per cent. the error was over 3 D, and in 75 per cent. it was over 2 D. It will be noted that in 10 per cent. the error was over 6 D.

Comparing the above percentages with those in a series of 250 cases of hyperopia without squint, grouped according to the refractive error in the highest meridian, in which the patient sought relief from asthenopia, it was found that in only 10 per cent. was the error over 3 D, and in 27 per cent. over 2 D, and in only 1.2 per cent. was the error above 6 D. There were no cases in which the hyperopia equalled 8 D. In a series of 500 cases in which the percentages are calculated on the error in the lowest meridian of either eye it was found that in less than 5 per cent. was the error above 3 D, and in 16 per cent. above 2 D. and in less than 0.5 per cent. was it above 5 D. In the above 2 series the estimations were made either under atropin or homatropin cycloplegia.

TABLE 1.—FOUR HUNDRED AND EIGHTY CASES OF MONOLATERAL CONVERGENT SQUINT ARRANGED IN GROUPS

Refractive error in the lowest meridian in the fixing eye.	No. of Cases.	Percentage Whole Numbers.		Refractive error in the highest meridian in the deviating eye	No. of Cases.	Percentage Whole Numbers.
Not above + 1 D	48	10	56%	45%	33	7
Above + 1 D, not above + 2 D	98	20			86	18
Above + 2 D, not above + 3 D	126	26			96	20
Above + 3 D, not above + 4 D	90	19	44%	55%	102	21
Above + 4 D, not above + 5 D	55	11			76	16
Above + 5 D, not above + 6 D	36	8			43	9
Above + 6 D, not above + 7 D	20	4			31	6
Above + 7 D, not above + 8 D	5	1			12	3
Above + 8 D, not above + 9 D	3	0.6			3	0.6
Above + 9 D, not above + 10 D	...	..			3	0.6

TABLE 2.—TWO HUNDRED AND FIFTY CASES OF HYPEROPIC REFRACTION ARRANGED ACCORDING TO THE REFRACTIVE ERROR IN THE HIGHEST MERIDIAN

	Number of Cases.	Percentage Whole Number.	
Not above 1 D	50	20	92%
Above 1 D, not above 2 D	137	54	
Above 2 D, not above 3 D	46	18	
Above 3 D, not above 4 D	11	4	
Above 4 D, not above 5 D	9	3	
Above 5 D, not above 6 D	4	1.6	
Above 6 D, not above 7 D	1	0.4	
Above 7 D, not above 8 D	2	0.8	

TABLE 3.—FIVE HUNDRED CASES OF HYPEROPIC REFRACTION ARRANGED IN GROUPS ACCORDING TO THE REFRACTIVE ERROR IN THE LOWEST MERIDIAN

	Number of Cases.	Percentage Whole Number.	
Not above 1 D	270	54	96%
Above 1 D, not above 2 D	150	30	
Above 2 D, not above 3 D	61	12	
Above 3 D, not above 4 D	9	2	
Above 4 D, not above 5 D	8	2	
Above 5 D, not above 6 D	1	0.2	
Above 6 D, not above 7 D	1	0.2	

Some years ago I tabulated for Dr. William F. Norris 378 cases of convergent squint in reference to the state of the refraction. In 96.1 per cent. there was hyperopia, in 1 per cent. there was anisometropia and in 2.9 per cent. there was myopia. A consideration of the above figures will show that not only is hyperopia the preponderating refractive error with other refractive states in a negligible quantity but that in considerable more than one-half of the cases, when the estimation is based on the highest meridian of the deviating eye, the hyperopia is above 3 D, and slightly less when it is based on the lowest meridian of the fixing eye. They also show that the high errors are of far more frequent occurrence than in non-squinting eyes, outnumbering them 10 to 1.

In the presence of a hyperopic error any condition which would reduce the vision of one eye below that of its fellow would act as an exciting factor in the production of a convergent stabismus, and this factor is frequently found in the existence of a higher degree of hyperopia or an astigmatism of a higher degree in one eye than in the other or in an unilateral astigmatism, as shown in the Table 4.

TABLE 4.—TABLE OF COMPARISON OF THE REFRACTIVE ERROR IN THE TWO EYES OF SQUINTERS

	Percentage
Astigmatism greater in the deviating eye 0.50—1 D	17
Astigmatism greater in deviating eye over 1 D	25
Astigmatism greater in fixing eye	12
Hyperopia greater in deviating eye, 0.50—1 D	10
Hyperopia greater in deviating eye over 1 D	20
Hyperopia greater in fixing eye	2
No difference	10

According to my figures, there is not the close correspondence between the number of hyperopes of over 2 D in squinting and non-squinting patients, found by some clinicians.

Worth admits that hyperopia stands in some close etiologic relation to convergent strabismus, but considers that a defect of the so-called fusion faculty is the cause of the squint. If a defect in the fusion faculty be the cause why is this defect so largely associated with hyperopia of middle and high degrees and not oftener with hyperopia of low degree, emmetropia and non-progressive myopia? In my series, only 30 per cent. of patients had hyperopia of less than 2 D, whereas in hyperopia without squint this amount of error represented 72 per cent.

A fusion faculty which had normally developed up to the time of the occurrence of a squint from disturb-

---

5. In tabulating the cases which were obtained from the records of Dr. Norris, it was remarked that in the earlier years when less exact methods of determining the refractive error were in use the estimations gave a lower degree of hyperopia than in those obtained from more recent records and this probably accounts for the lower percentage of higher degrees of hyperopia in my series than in Worth's.

ance of the normal relations between accommodation and convergence might lose its function when the need for such had disappeared with the loss of binocular vision. A similar loss of function is seen in the amblyopia of an eye which has been turned. In children convalescing from febrile disorders, and particularly from whooping cough, the power of accommodation is weakened and if the child returns to its books during this period a convergent strabismus sometimes results even though there may be present only a low or moderate hyperopic error. The weakening of the accommodation produces a disturbance of its relation to convergence precisely in the same manner as does a higher degree of hyperopia with a normal accommodative power, and a squint results even at an age when the fusion faculty is believed to be fully developed. The fact that patients with convergent strabismus have been cured by developing the fusion faculty after the method of Worth is taken as proof that a defect in this faculty must have been the cause of the squint. However, the method by which the cure of the squint is brought about consists of many steps and this renders it difficult to decide in what degree any or all are concerned in bringing about the result. The first step is the correction of the existing refractive error. The second is the overcoming of the amblyopia in the turned eye. The third is developing true fusion. The fourth is increasing the amplitude of fusion, during which procedure the angle of the tubes of the amblyoscope is altered in a way that aids in a restoration of the parallelism of the visual axes. The fifth is the further development of the fusion faculty by stimulating it to bring about binocular vision with the sense of perspective under equalized illumination of the objects.

Every clinician has observed how frequently the simple correction of the refraction error relieves the squint, and there is general agreement that Worth's ingenious method of restoring vision in the amblyopic eye is productive of excellent results; furthermore, in increasing the amplitude of fusion something is also accomplished in the way of diminishing convergence excess. So that aside from its purpose in developing the fusion faculty, the treatment must aid materially in restoring the normal relations between convergence and accommodation.

One of the cases reported by Worth is of particular interest. It was that of a child 5 months old with H.—5.5 D. in one eye, and 6 D. in the other. This child was cured by glasses and an occlusion bandage. Worth's explanation is that by giving glasses and so relieving strain on accommodation the visual axes were in the course of from 5 to 6 weeks brought back to parallelism and this allowed the natural development of the fusion sense to take place.

If it be as Worth says that the fusion faculty was allowed to develop naturally by reason of the visual axes having been brought back to parallelism it follows that if the visual axes had not been brought back to parallelism the fusion sense would not have developed naturally; and this, it seems to me, explains why the fusion faculty is found undeveloped in those cases of squint in which the refractive error has not been early corrected and in consequence of which a convergent squint has occurred. In other words, the undeveloped fusion faculty is a result and not the cause of the squint. The theory of the absence of a normally developed fusion faculty seems best adapted to explain essential alternating squint; that is, a squint which does not evolve into the monocular permanent type but which continues through life as an alternating one, as here, as a rule, the visual acuity and the refraction are not at fault. To me, it would seem that these facts, the absence of an error of refraction and the equal visual acuity of the two eyes, which sustain the theory when it is applied to this class of strabismus, rather weakens the theory when it is sought therewith to explain permanent monocular squint, as this form is so constantly associated with hyperopia and unequal vision (which determines the deviating eye that later becomes amblyopic). It would seem reasonable to suppose that the almost constant feature is the essential causative one.

The perfect correlation of the facts in myopia with divergent strabismus, with those in hyperopia with convergent starbismus, is a strong argument in support of Donders' theory. As the divergence does not occur early in life, but appears only after the developing myopia has produced a derangement of the normal relations which exist between convergence and accommodation, the fusion faculty is found to be well-developed. Notwithstanding this, it is powerless to maintain the parallelism of the visual axes when once the coordination between these faculties has been disturbed.

The theory of Donders is upheld by the following facts: Convergent strabismus is associated with hyperopia in over 95 per cent. of the cases; the average degree of refractive error is very much higher in a series of cases of hyperopia with convergent stabismus than it is in a series of cases of hyperopia without squint; there is usually a difference in the refractive error in the two eyes sufficient to unequalize the visual acuity and thus favor a deviation of the more defective eye; in a considerable number of cases the correction of the refractive error relieves the squint (I believe that this number would be greatly increased if glasses were prescribed as early as the third year of life. Worth has shown that it is perfectly possible for them to be worn at an even earlier age); the fact pointed out by Donders that a convergent squint can be produced by placing before the eye a concave glass; that divergent strabismus is usually associated with myopia and that the same process of reasoning by which it is shown that hyperopia is the cause of convergent stabismus serves to explain the causation of divergent strabismus by myopia.

It appears to me that when one approaches the subject with an unbiased mind and considers the facts as they are, the accommodative theory accords best with these facts and when it fails in individual cases these can well be explained by other known causes of strabismus, such as congenital palsies, structural defects or anomalies, favoring effects of abnormal orbital axes, divergence weakness and congenital amblyopia. I believe, with some other authors, that congenital palsies of the ocular muscles are more common than heretofore supposed and that some of the cases of monocular permanent squint apparently comitant, with normal vision in the squinting eye, are the end results of paralytic strabismus.

I wish to express my thanks to Dr. J. Hiland Dewey and to Dr. D. Forest Harbridge for their kind assistance in the preparation of the statistics of this paper.

1819 Spruce Street.

ABSTRACT OF DISCUSSION

Dr. Cassius D. Westcott, Chicago: One of my revered teachers was fond of saying that 'no effect is the result of a single cause." It is quite likely that there are two or more causes, each one evinced in every case of squint. The multiplicity of opinions held to-day as to the cause of squint would, of itself, indicate the probability of a variety of causes of this defect. It must be true, however, as Dr. Zent mayer suggests, that some who have written on the subject "have been influenced by bias, or have drawn their conclusions from the study of too few cases," or, I would add, from a faulty method of study. I think we need not, for example, long consider the opinion of one who studies squint cases without a cycloplegic or who finds 23 emmetropes in 67 cases studied. Mr. Worth's contribution is important, if true, but I cannot avoid the feeling that his studies have been made to establish a theory rather than for the purpose of learning all of the truth about squint. He gets rather careless of his theory, however, when he tells about the little girl of 5 months, referred to by Dr. Zentmayer, cured by glasses "which restored parallelism and allowed the natural development of the fusion sense to take place."

My own experience would indicate that convergence excess induced by excessive accommodation due to hyperopia is a sufficient cause of convergent squint in a very large number of cases. If, added to this, we have defective vision, or more complicated refraction in one eye, we have another potent reason for squint. Dr. Zentmayer's figures are very suggestive in this connection, and he has placed us all under obligations to him for presenting his tables, and bringing this subject before us once more. I believe with him and Dr. Duane that the undeveloped fusion faculty is often a result of squint; that it is ever the sole cause, I very much doubt. We must not forget the anatomic conditions which favor squint. Dr. Risley especially has called our attention to the formation of the head, and the direction of the axes of the orbits in connection with both dynamic and static squint. In accounting for some cases of squint, as well as for the fact that not all hyperopes squint, it is well to remember also the very great individual difference in the elasticity, or amplitude of the relation between accommodation and convergence. It is also quite possible, as Dr. Duane says, that convergence excess with divergence deficiency, and the contrary conditions, are due to central causes. I see no reason why any case of comitant convergent squint should not be alternating, provided vision is equally good, and the refractive error relatively the same in both eyes. The thing that determines constant squint is the low vision, or more difficult vision of one eye. I do not mean to undervalue the labors of Mr. Worth or the assistance he has given us in the treatment of this troublesome condition, but I quite agree with Dr. Zentmayer that the results of Worth's treatment do not prove the correctness of his premises as to the etiology of squint.

Dr. G. C. Savage, Nashville, Tenn.: Dr. Zentmayer has presented about the sanest paper on squint that I have ever heard in this Section. The fundamental, underlying essential of binocular single vision is corresponding retinal points. Without this there can be no such vision. I am going to show the fundamental underlying principle of corresponding retinal points, and that its non-existence is the cause of that form of squint which no man has ever yet corrected or ever will correct. At the crossing of the vertical and horizontal meridians is the macula of each eye. Now they should correspond one with the other. Let us begin at the macula on the right side and follow a fiber to the commissure, across the commissure and on until it terminates in a cell of the left cuneus. Then let us trace a fiber from the left macula until it terminates in the same cell of the left cuneus. A double image means a double impression. The double impression carried along these two nerve-fibers to a single cell means a single sensation, and therefore means that the images have been fused. Unless common brain-cell connection exists there is no such thing as binocular single vision. Now, tracing the fibers to separate cells in the same cuneus, or finding that one macula is connected with one cuneus and the other with the opposite cuneus, would mean double sensation and impossible fusion. Corresponding retinal points mean common brain-cell connection. In the absence of common brain-cell connection there can be no fusion. Now we know that we have a case of squint depending on want of common brain-cell connection because of two things: first, the child squints at birth and squints from that time on; second, whether in a child or a youth or an adult or an old person, one eye sees as well as other alone. That I call insuperable squint. You may try to fuse these images only to fail. They will come or recede. You may get these close together but they will not fuse, because of the want of common brain-cell connection. But suppose you have a case of squint that has occurred in the second or third year. You will find that at the time of crossing or squint the vision in the crossing eye is low. In a few years it is less still, and still lower [illegible] and finally there is no vision in the squinting eye at all. This is the kind of a case in which there is a common brain-cell connection; but because of the existence of factors that tend to divergence, convergence, elevation or depression, the image must be suppressed by the mind, and the mind begins to suppress it, and keeps on suppressing it until the process is perfected. We can train the blind eye out of its blindness after operating. These are the cases I like to have, for the patients can be cured.

The fusion power is a power of the mind. There are fusion centers and over these fusion centers the fusion faculty of the mind presides. Each fusion center has its own muscle under control, and only one muscle. Now suppose a child is born with common brain-cell connections and there is a predisposition for the development of squint. If the eye turns in or out far enough to let the image go beyond the fusion retinal area the eye will stay turned until properly treated. As long as it may be possible the fourth basal centers, by acting on the two externi, will prevent the interni from crossing the eyes, but these centers act only when the images lie in the fusion area, and thus under the stimulus of the fusion faculty of the mind.

Dr. L. Emerson, Orange, N. J.: It does not seem to me that there is opportunity for controversy between the theories of Worth and of Donders on the etiology of squint. I am very much a believer in Worth's theory. There is without question a fusion faculty, and a point which Worth makes and which does not seem to be clearly understood is that there may not only be an absence of the fusion faculty, but a deficiency thereof. Now as underlying all cases of squint I have never seen one case in which the fusion faculty was not either deficient or absent. There is also the cause, hyperopia, and given these two things, absence or deficiency of the fusion faculty and the presence of a refractive error, we can account for nearly all forms of convergent squint. The deficiency of the fusion sense explains why we have cases of squint in which there are no refractive errors, and there are many of these cases of squint which can be cured by [illegible] methods. The patient has a perfect cure and yet with the stereoscope or amblyoscope it is absolutely impossible to get any fusion up to the second or third grade, showing that there is a deficiency of the fusion sense.

Dr. W. Zentmayer, Philadelphia: I have no quarrel with Worth as to the existence of a fusion faculty. I do not doubt that it exists and I do believe that its absence may be the cause of certain cases of convergent squint.

THE NORMAL VARIATION OF THE SYSTOLIC BLOOD-PRESSURE

A STUDY OF ONE THOUSAND CASES

H. P. WOLEY, M.D.
CHICAGO

The practice of taking blood-pressures in life insurance examinations has become comparatively common in the last few years. The question has been asked, What is the normal blood-pressure? Is this blood-pressure different at different ages and, if so, what is the difference? We all know that the pulse runs [illegible] between certain limits, say 60 to 82, and that we would not hesitate to say that a person within these limits was in health. If it is beyond either limit we would make a further study of the case, fearing that it might be a pathologic condition.

The medical examiner, from an insurance standpoint, is in the opposite position from the general practitioner in his office, for the latter is dealing almost entirely with cases in a pathologic condition, while the insurance medical examiner is dealing with healthy persons and trying to find out how far their cases may deviate from the normal, typical case and still be healthy and a first-class risk. He is trying to establish boundary lines, a high mark and a low mark, within which an applicant may be safely considered in health, and outside of which he would be looked on with suspicion.

With these ideas in view I have collected, during the past three years, the records of 1,000 blood-pressures, all of supposedly healthy individuals. There has been excluded every case of kidney disease, heart disease, and in fact, every case in which there was a pathologic condition found, either from physical examination or from the history. These cases represent typical healthy individuals, ranging in age from 15 to 65. These records were all taken by five different physicians. Often they were taken by two physicians working together. Again, records were made at the same sitting with two different instruments; for instance the mercury column and the Collins or the Dr. Rogers' Tycos sphygmomanometer. From time to time the instruments were corrected or standardized by subjecting them to the same pressure and then the readings taken. This was done by using the usual 5-inch cuff, but one having several openings or rubber tubes, to each of which a sphygmomanometer was attached. When the pressure was raised in the rubber bag, an equal pressure was made at the same time on every instrument. This was done to reduce the liability of error and insure as far as possible an accurate and uniform reading. All of the results herein recorded were made by using the 5-inch cuff about the arm, with the subject in the sitting posture, and the systolic reading taken at the point at which the pulse disappeared and reappeared, with the finger on the radial artery.

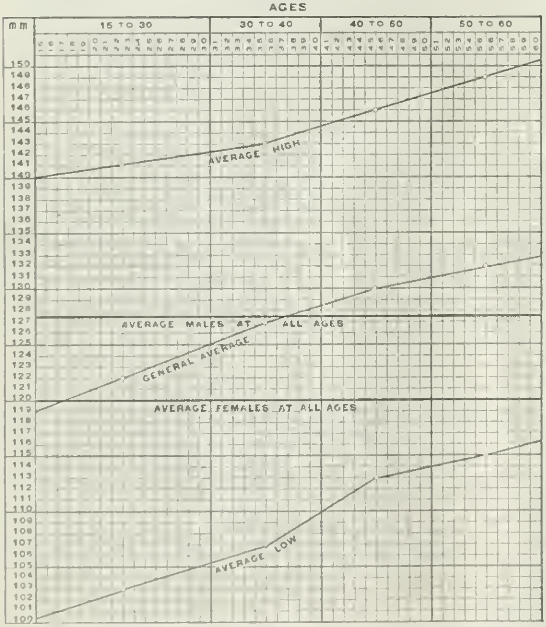


Chart showing the normal limits of variation in systolic blood-pressure.

From comparison and study of many cases during the last five years, I believe that, at any age, a constant blood-pressure of 160 mm. or over is pathologic, and therefore should be excluded from forming any part in the results or conclusions reached in this paper. Many of these cases have been studied, where it was possible, and albumin and casts have been found in the urine sooner or later, though sometimes in small amounts. It explained the condition, however. This has been of considerable assistance, for many risks might have been accepted as first-class, were it not for the abnormal elevation in blood-pressure, which led to a further study.

Experience has taught us that the selection of a single individual's blood-pressure, as a high mark or a low mark, would be manifestly unreliable, while it is equally certain that the general average of a group of blood-pressures would be pretty nearly the truth. The larger the group the more accurate the results. It is found to be practically correct in considering vast numbers of supposedly healthy individuals that about 85 per cent. prove to be healthy and 15 per cent. are questionable. Following this principle, I shall take the general average of the group of 15 per cent. of the highest blood-pressures and the general average of the group of 15 per cent. of the lowest blood-pressures, and designate them as the average high and the average low blood-pressure.

With this explanation, the results reached after a study of 1,000 blood-pressures are as follows:

The average blood-pressure for males at all ages was 127.5 mm.

The average blood pressure, for females, at all ages, was 120 mm.

By taking them in groups, first, from ages 15 to 30, the average blood pressure was 122 mm. An average high blood-pressure of 141 mm., and an average low of 103 mm.

Second, those from 30 to 40 years of age gave an average blood pressure of 127 mm. An average high of 113 mm., and an average low of 107 mm.

Third, those from 40 to 50 years of age gave an average blood-pressure of 130 mm., an average high of 146 mm., and an average low of 113 mm.

Fourth, those from 50 to 60 years of age gave an average blood-pressure of 132 mm., an average high of 149 mm., an average low of 115 mm. These are best shown by the accompanying chart.

By looking at the chart it will be noticed that the maximum and minimum blood-pressures are about equally apart from the average blood-pressure at a given age. It can also be seen at a glance what the average blood-pressure with its maximum and minimum marks should be at any given age from 15 to 60. There is a gradual rise in the blood-pressure as the years advance. There is also a corresponding rise in the high and low averages. It can be readily seen that between 50 and 60 years of age a man giving a blood-pressure of 145 mm. could undoubtedly be accepted without further question, while a man under 30 years of age giving the same blood-pressure would present a case for further study and investigation.

In regard to women, it will be noticed that the average blood-pressure at all ages was 120 mm., about 8 mm. below the average in males at all ages. There is practically the same ratio of increase in blood-pressure in women as in men at the same age. In women it averages 8 points below the men.

It is a source of regret that the number of cases above the age of 60 proved to be too small to obtain a fair average. There appeared, however, to be quite an advance in blood-pressure above the age of 55. Therefore, I have selected the group from 55 to 65, which gives an average blood-pressure of 138 mm., an average high of 153 mm., and an average low of 120 mm.

There are a few points worthy of notice that might be mentioned here, namely, in regard to the pulse—rapid or slow. The average blood-pressure in all cases with a pulse under 65 was 123 mm., while the average blood-pressure in all cases with the pulse over 85 was 130 mm. It was also noticed that there were twice as many healthy individuals with a pulse over 85 as there were with a pulse under 65.

It was the desire in making the above study to obtain as far as possible the normal variation in blood-pressure in health, which would be of practical service, not only to the insurance examiner, but to the general practitioner. It would not have been sufficient to accept the blood-pressure alone; therefore, physical examination of every case was necessary in order to exclude all of those who were in any way impaired, thus leaving, as far as it was possible, typically healthy individuals.

171 LaSalle Street.

THE ADVANCEMENT OPERATION IN SQUINT *

VARD H. HULEN, A.M., M.D.
HOUSTON, TEXAS

Teachers of ophthalmic surgery have long advocated the more frequent performance of advancing and shortening operations, and some do them exclusively in preference to tenotomy for strabismus, but I believe that most of us are still very largely doing tenotomies. It must be that none of the various methods of advancement are considered entirely satisfactory, the simpler operation of tenotomy being more frequently chosen, hoping thereby to obtain an acceptable result.

Most ophthalmologists will agree that the advancement operation is more certainly corrective, physiologically more scientific, and functionally safer than tenotomy, and it is my conviction that a tenotomy alone should rarely be done in any case of squint.

A rather extensive observation of the work of various operators, including repeated visits to many of the large European eye clinics, convinces me that the ideal advancement operation has not yet been presented. There are certain requisites for this ideal operation, as they appeal to me:

First, the method must be simple and expeditious in order that the average patient may submit to it under local anesthesia and that the average operator may use it satisfactorily.

Second, when the operation is done under general anesthesia the determining sutures should be under such subsequent control that any possible deviation may be easily corrected when the true position of the eyes is ascertained.

Third, the scleral suture should not depend in the least on the episcleral or conjunctival tissues for its support.

Fourth, one suture firmly introduced into the sclera is sufficient and it should be placed with the tendon insertion in view and before the muscle has been severed.

Fifth, the suture in the tendon must be firmly looped to avoid a tendency to give or cut out, yet it must not be looped or knotted to the muscle, which would impede the vascular supply of the tissues involved and also make its removal difficult, thereby endangering the satisfactory adhesion of the tendon to the sclera in its new position.

Sixth, and this is very important, the tendon and globe should not be pulled into the position for fixing by the process of tying the sutures.

An old surgical law, the observance of which is particularly important in ophthalmic surgery, which forbids that tissues be pulled into position by the sutures, is broken in nearly all the methods for advancement known to me. Traction aids will eliminate the operator's agony from broken sutures or cut and strangulated tissues due to vain efforts to obtain the desired position by straining at knots already tight.

Apropos of these statements I beg to describe an advancing and shortening operation which I first did five years ago and which, with slight modifications, has since seemed to have fulfiled my requirements. Reference to the two accompanying diagrammatic illustrations will render a minute description unnecessary. Figure 1 shows the method of introducing the sutures; Figure 2 shows the position of the traction sutures in use and the method of knotting the fixing sutures.

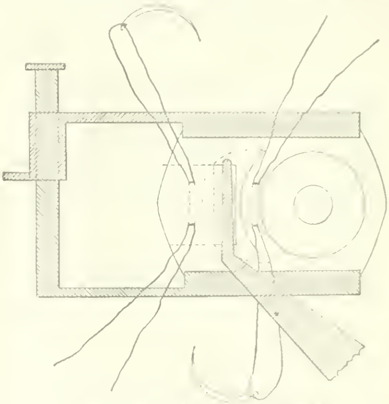


Fig. 1.—Method of introducing the sutures.

The necessary instruments are two No. 28 full-curved sharp flat needles threaded with No. 6 iron-dyed black silk, the needles being placed in the middle of the sutures, a needle holder, fixation forceps, a strong pair of advancement or muscle forceps, tenotomy scissors, and a speculum; a strabismus hook is often useful.

The procedures are the same for either the internal or external rectus. After complete anesthesia, local or general as the case may require, the speculum is introduced, the conjunctiva pinched up and incised vertically about 1 mm. from the cornea; the incision is extended above and below parallel with and corresponding to about one-third the circumference of the cornea, and the conjunctiva separated toward the cornea and the site of the tendon. Next the tendon is loosened along its upper and lower margins and clamped close to the scleral insertion with the muscle forceps, including the

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

distal margin of the retracted conjunctival wound. The globe is held in perfect control with the muscle forceps, and, the tendon insertion being completely exposed, the scleral stitch should be accurately placed. The conjunctiva is first entered from without inward, then with the needle firmly grasped in the holder the suture is inserted vertically into the sclera close to the limbus, taking as deep and wide a bite as is safe, and the double suture drawn half-way through, again penetrating the conjunctival flap.

The tendon is next severed from its attachment, all the tissues as held in the jaws of the forceps are lifted and stretched into position for placing the second suture: the needle is made to penetrate from without inward through conjunctiva, Tenon's capsule and muscle at a point one-fourth the width of the muscle from one edge and as far back as we may wish to advance, the doubled suture is pulled half-way through and the needle is reintroduced at the corresponding point from the other border penetrating, from within outward, muscle, check ligament and conjunctiva.

The muscle forceps are then cut loose by severing the tissues as far from the jaws as one wishes to shorten, but not close enough to the suture to weaken its hold.

The needles are removed by cutting the sutures close to them. It will then be seen that there are really two sutures in the sclera and also two in the muscular tissues. One of the scleral sutures and one of the muscle sutures are crossed and used during the tying part of the operation for traction purposes only. The assistant has perfect control of the globe and the muscle by means of these traction sutures, and when he has brought them into the exact position required for correct fixation the operator ties loosely with a double twist the upper ends of the other sutures, the lower ends of those sutures are similarly tied, then he tightens the upper knot, now the lower one, and so on until the proper tension has been secured; each knot is then completed by the final twist, and the operation is practically finished. Supplementary conjunctival sutures will rarely be required.

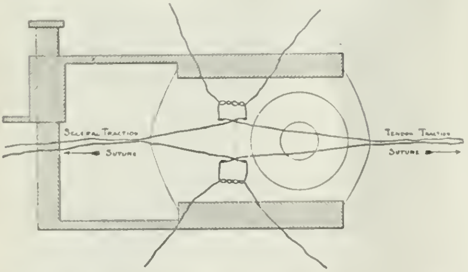


Fig. 2.—Position of the traction sutures in use, and the method of knotting the fixing sutures.

Many details and important points not here described will readily occur to the surgeon performing this operation, or are common to all similar procedures.

Under general anesthesia, we cannot be sure of the correction, and it is one of the decided advantages of this method that the sutures used for traction can be left *in situ* until consciousness is regained. I usually allow them to remain until the following day, and if the squint has been materially over-corrected the tied sutures are severed, and the traction sutures are used to fix the eye in its correct position with but little discomfort to the patient or embarrassment to the operator.

At the conclusion of the operation done under local anesthesia we can be satisfied to remove the traction sutures immediately.

Also, should the surgeon prefer in any case to do the "tucking operation," the method should be precisely the same as described, except that the tendon is not severed, the muscle forceps are simply unclamped (the scleral suture will have been placed further from the limbus) then, when the traction sutures are used the muscle is smoothly folded on itself and any desired tension or position fixed by knotting the other sutures as in the strictly advancing operation.

Both eyes are bandaged and the patient is kept quiet. In five or six days the sutures are removed by cutting the upper one to the nasal side of the knot and the lower suture to the temporal side of its knot, or *vice versa*, and lifting them out.

It might be added that in doing this operation under general anesthesia, especially in marked squint, in which I combine it with tenotomy of the opposing muscle, a control suture is introduced through the tenotomized muscle and its stump.

In this method of advancing an ocular muscle attention is directed particularly to its simplicity, to the minimum amount of traumatism to all tissues, to the accuracy possible and security obtainable from the method of anchoring the scleral suture, the vertical introduction is decidedly advantageous, to the efficient "bite" of the tendon suture looped across the under surface of the muscle, to the perfect control of the parts to be united by means of the traction sutures which were obtained without additional suturing, and to the advantage of having already at hand a perfectly placed pair of sutures to be used, if required, for correcting any overeffect following the primary operation.

Scanlan Building.

ABSTRACT OF DISCUSSION

DR. H. H. BRIGGS, Asheville, N. C.: The great variety of principles and methods employed in shortening an ocular muscle is sufficient evidence that no one method satisfies even the majority of ophthalmic surgeons, or is adequate for the correction of the various types and degrees of heterotropias with which the clinician is constantly confronted. Were there one and only one exact and best method of changing the anatomical relationship, and therefore the physiological effect, of an abnormally acting muscle, surely some one of our confrères of to-day, not to mention the great ophthalmologists who have gone before, would have discovered it. Even as it is, we have graduated tenotomists, partial tenotomists, tendon stretchers and tendon tuckers. If no operation for advancement had ever been made, and if one familiar with the anatomy and physiology of the eye, and surgical technic, should be required to devise a method of advancing or shortening an ocular muscle for the correction of heterotropia, I fancy he would reason thus:

1. It must be done without danger to the vision and with the least possible chance of infection. In these days of aseptic surgery we expect healing without infection, but in wounds made in mucous membranes we can never be absolutely sure of this, and to this end the amount of suture material and the number of knots should be reduced to a minimum consistent with efficiency, and the dissection also should be limited to that barely necessary to accomplish the advancement. 2. It must be effective; that is, the globe must be rotated to and maintained in such position as is necessary to transpose the visual axis as nearly as possible to the primary position after convalescence. The advanced tendon, in case of advancement, or the shortened tendon or muscle in case of resection or tucking, must be held firmly *in situ* and maintained in position until adhesion takes place. 3. The cosmetic effect must be good. The eye is the most beautiful of all the organs, and its

beauty must be guarded. The purpose of advancement is to improve the appearance, and straightening the eye is practically all that is ever accomplished, binocular single vision and fusion being seldom ever acquired, and an ugly scar from reckless mutilation of conjunctiva and Tenon's capsule and from redundant sutures and knots may be worse than the squinting eye, otherwise beautiful.

The object of advancement is to change the direction of the visual axis of a squinting eye back to a position parallel to that of its fellow eye, or to its primary position. To accomplish this, we change the point of application of a force which rotates the globe by acting as a fulcrum about the center of rotation of the eye. This force is the muscular force, and acts in a somewhat variable tangential plane to the globe toward the origin of the muscle. The tendinous insertion, or point of application of the force, is a variable point as compared to its origin, which is fixed, and which cannot be changed. The insertion after tenotomy or resection may be transferred forward or the same physiological effect may be had by tucking or looping the tendon without molesting its insertion.

It is difficult to discuss a method of operation without having first tried it, and I am sorry I have not had the opportunity to try that of Dr. Hulen. It has the same features as do all operations where tenotomy and resection are used, and the disadvantage over the shortening methods without tenotomy the possibility of not advancing the muscle along a meridian of the eye directly forward from the original insertion. This may result from not placing the scleral sutures in the proper position at first or by the suture of one side cutting through, leaving the attachment more on the other side of the tendon than intended. His method has the advantage of one suture, or practically one, and of being placed previous to the severing of the tendon. The counter tension on tendon and globe by the sutures inserted is rather unique, and I should think very serviceable and convenient.

Dr. G. C. Savage, Nashville, Tenn.: I want to congratulate Dr. Hulen on his suture and condemn him on cutting the muscle. If he had not cut the muscle, but pulled it forward and tied his sutures, they would have held it in contact with the ball and it would have been a beautiful Lagleize flat advancement operation. I think if Dr. Hulen will turn to Norris and Oliver, or turn to a smaller book of mine, he will find the Lagleize operation described and then he will cease to cut that muscle in two. I did this operation ten or fifteen years ago without cutting the muscle, the thought occurring to me just as I was about to cut the tendon, and seeing the beautiful results following claimed the operation for myself, but I found that Lagleize had done it before, and I immediately gave credit for the operation to Lagleize. In connection with this operation, and any other stitch operation, let me advise you to tie your suture over a Price suture plate. It will not excite any additional irritation and it will be the easiest suture removed that you have ever seen.

Dr. F. C. Todd, Minneapolis: While I believe in the tucking operation and prefer not to cut off the loop of tendon, and believe that can be best attained by an instrument which one may have under his control, yet it is evident to me that there are some valuable features in this operation, as, for instance, the vertical suture. The objection which I wish to point out to this operation is the fact that the pull is along the fibers of the tendon so that the degree of effect produced cannot be thoroughly controlled. The fibers of the tendon going toward the cornea, the thread then to be pulled in the direction of the tendon fillers, will cause the thread to cut through and it may give way entirely. I would suggest that this objection can be overcome by inserting a suture in the edge of the tendon in the manner I do with my tucking operation, using a catgut suture which will be absorbed, so that when tied at right angles to the direction of the tendon fibers it will bind them together and then the silk sutures may be inserted back of them and thereby the silk sutures will pull against the already tied catgut sutures and so will not cut or slip. Thus there will be an anchorage against which to pull, and a more definite and permanent control over the tendon.

Dr. Mark D. Stevenson, Akron, O.: There are many things about this operation that commend it. The simple use of traction sutures is unique and helpful. The needle and doubled thread must be forced through each suture canal in every case so there is no reason why both threads should not be used. If the thread is oiled before use by some sterile ointment it will slip through the canal more easily, will absorb and carry less fluid into the canal, with less likelihood of infection, and the two threads will occupy the canal more fully than one. If one of the threads should break, the other can be used to fix the muscle on the globe. In a paper, "A Securely Looped, Single Stitched Advancement Suture with a Consideration of Scleral Anchorage" (*Ophthalmology*, July, 1906), I discussed the best position of scleral anchorages. The sclera is [illegible] quite near the cornea and at the muscle insertion, being thinner between these two points. I described in a paper before this Section in 1905 the single vertical suture canal, where the pull of the suture is against the side of the whole canal and not merely against the shelving anterior edge of a horizontal canal which is much more likely to be cut through by the suture. The scleral suture should be made strong enough, but anyone who will make these sutures through pig's eyes will be alarmed to find how many of them go entirely through the sclera. I think Dr. Hulen's hold on the muscle tendon inadequate, except where low degrees are to be corrected. It could be improved by a loop on upper and lower threads of tendon, the cross part of the loop assisting in grasping the tendon fibers so as not to cut between them so readily, and also to support the traction parts of the suture.

Dr. John Green, Jr., St. Louis: If I may be permitted to speak on the basis of a single experience with this operation, I may say that the operation appeals to me as being decidedly simple. The scleral suture can be easily and exactly inserted as the tendon insertion, which serves as a landmark, has not been interfered with. In the second place, the placing of the tendon suture is equally easy. The most gratifying feature of the operation is when you ask the assistant to draw on the traction sutures, you will be surprised and gratified at the ease and exactness with which the tendon is brought into position. Finally, after the operation is completed, the apparent traumatism is hardly any greater than after a simple tenotomy.

Dr. E. C. Ellett, Memphis: It has been demonstrated recently that in these operations where the tendon of the muscle is advanced you do not advance the true attachment of the muscle at all. The muscle attaches itself solidly to the globe from the point of the new attachment back to where it was cut from the sclera and the true new point of attachment is the old point of attachment. You have merely shortened the muscle. If that is true, and it has been demonstrated anatomically to be true, it seems to me a great deal would be gained by abandoning this scleral anchorage altogether and fastening the stump of the cut muscle at the site of the original insertion, which is very much easier to do.

Dr. Vard H. Hulen, Houston, Tex.: If Dr. Savage has time to read my paper, he will find that I have described the procedure to which he refers, and in some cases of heterophoria, where a large effect is not necessary, I might recommend this looping operation; you can easily do it by passing and tying the sutures without severing the tendon. I have used this plan and like it in just these cases.

Dr. Todd, I think, will find that by putting the tendon suture in vertically and as I have described, the loop around the tendon will give efficient friction check across, and there is no tendency for the suture to slip out.

Dr. Ellett may be correct when he says the tendon is not ultimately advanced beyond its original insertion. [illegible] know the action of these operations is [illegible] and certainly by introducing the suture for anchorage in the sclera you can get a much greater effect than by passing it in at the site of the original insertion of the tendon. You may thus get the desired result without [illegible] of the tendon itself. Whenever you have [illegible] underlying the tendon, or at the [illegible] adhesions and thus fail to [illegible]. One of the great advantages in my procedure of putting the sutures in the sclera before severing the tendon is you know where the insertion is and can judge the correct site for the new insertion, and not get it too high or too low.

I am much gratified that Dr. Green has tried this operation in one case since the appearance of the prepublication reprints and can here testify to the great usefulness of the traction sutures. If the sclera is thin, the scleral suture must not be placed too deeply, and to broaden the loop the suture may be entered twice, thus increasing the distance between the entrance and exit of this suture, so that the tendon will not be bunched when the fixing sutures are tied.

A NEW CARTILAGE KNIFE FOR USE IN THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM

ALFRED N. MURRAY, M.D.,
CHICAGO

To obviate the danger of perforating the opposite mucous membrane when making the initial incision in the cartilage in the submucous resection of the nasal septum, I have devised a simple blunt knife not unlike a number of other knives used in various fields of surgery, which reduces the chances of this accident to a minimum. While it is true that in experienced hands the sharp knife can be used with comparative safety, many who do this operation are not so skilled, and not infrequently produce perforations. Even in the case of the skilled operator, however, the use of this protected knife will greatly simplify the making of the initial incision in the cartilage. A description of the manner of using the instrument will demonstrate its simple principle and the ease with which it is adapted to its purpose.

Having reached the stage in the operation where the cartilage is to be incised, the incision is begun in the ordinary way with the sharp knife, the finger being placed in the opposite nostril to feel the point of the knife as it penetrates the cartilage. The incision, however, is made only 2 or 3 mm. long, or just sufficient to admit the dissector point of the blunt knife. When this is in position the knife is moved at will along the line of incision, dissecting the mucous membrane of the opposite side in its course and incising the cartilage at the same time. Thus the dissection of the opposite mucous membrane is also already begun when the incision is completed.

A new cartilage knife for use in the submucous resection of the nasal septum.

Some little difficulty may be experienced in first introducing the knife, but I have found that by placing the dissector point at right angles to the line of incision and working it under the mucous membrane of the opposite side, one soon has ample space in which to direct it properly and start the incision.

The knife is, of course, not adapted to all cases, or to work far back in the nose, its especial use being to make the primary incision in the cartilage.

100 State Street.

PRELIMINARY REPORT OF WORK ON CLOT-CULTURE

LOYAL A. SHOUDY, A.B., M.D.
Senior Resident Pathologist to the German Hospital
PHILADELPHIA

After reading the work done by Gaffky, Durham, Gruber and others with the *Bacillus typhosus*, noting the dilutions to a greater or less degree for the purpose of lessening the inhibitive power of the serum, the idea came to me that the blood-clot was the essential part in the growing of organisms from the blood. Accordingly after doing the Widal agglutination test in a case that was not a clear enteric, I was prompted, after the removal of the serum from the Widal tube, to put the small remaining clot in a tube of bouillon. This I incubated for twelve hours and then examined by means of the hanging drop. I noted many organisms morphologically characteristic of the *Bacillus typhosus*. From this tube I inoculated a tube of litmus milk, one of agar slant, one of potato and a stab of glucose agar and incubated over night. On examination the following morning I noted that the growths were all typical of typhoid.

Next day I did the same in five other cases with like results. The Widals had been collected in the ordinary manner and I was not surprised to find growths of *Staphylococcus albus*. I plated my growths and again inoculated, using litmus milk, agar, glucose, potato, lactose and litmus lactose with the same results. Later I tried the agglutination test on my recovered organisms. They clumped and I was satisfied that I had recovered the *Bacillus typhosus* from the clot.

I was at once struck with the simplicity of the method and have since tried it in sixteen other cases with equally good results, each time obtaining a growth of the *Bacillus typhosus*.

In all but three cases the Widal was positive. In two of these three cases a positive reaction was obtained later but not to date in the third. Another feature of this third case is the fact that a blood-culture taken in the usual manner gave a negative result, being sterile. In a number of these cases I obtained the organisms before a positive Widal reaction was secured.

My technic to date is to sterilize my Widal tubes and blood-sticker, wash the finger or ear carefully (in the usual way, with mercuric chlorid, etc.) collect the blood, seal the tube, shake the blood to the opposite end, place in the centrifuge for fifteen minutes or until the serum is separated, break open the tube and by means of a sterile pipette remove the serum, remove the clot and place it in a tube of bouillon, incubate twelve to twenty-four hours and then plate, inoculate, and identify the organisms. My series of twenty-one cases extends over a period of two months and with positive results in each case.

I am sure that with care one can secure negative results or sterile cultures, where the blood contains no organisms, because I have done so in three cases as a check to my work in the laboratory.

In three cases I have made a hanging drop of normal salt solution and inoculated this from the clot and noted organisms morphologically characteristic of the typhoid bacillus; and later cultures proved them to be such. I have also tried collecting the blood in a 0.2 per cent. solution of sodium citrate to prevent the clotting and compared results.

On this I will report later. At the present time I am working with cases of general infection other than typhoid with the idea that the clot is the essential part for culture work. I feel that this method of culture by clot, however obtained, will simplify blood work in general and typhoid in particular.

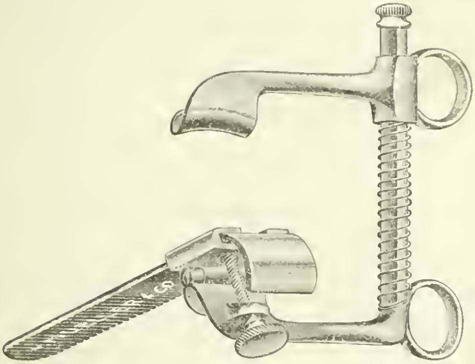
This is but a preliminary report of the work now being done in the laboratory of which I will give a complete account in the near future.

A NEW COMBINATION MOUTH-GAG AND TONGUE-DEPRESSOR

F. H. BRANDT, M.D.
BOISE, IDAHO

Because it is almost impossible for an assistant to hold the tongue down properly in operations on the throat, under general anesthesia, without being in the way of the operator, I have designed an instrument, of simple construction and easy to adjust, which keeps the tongue out of the field of operation. The objection to similar instruments now on the market lies in the impossibility of removing the tongue-depressor without taking out the mouth-gag also. This is important, as conditions may arise during an operation which necessitate the immediate removal of the tongue-depressor.

The mouth-gag is the well-known Stubbs-Murdock model, to which I have attached the tongue-depressor, working on a swivel joint, which accommodates it to the base of the tongue, so hard for an assistant to hold down. As seen in the illustration a set-screw is fastened to the lower teeth-plate which controls and fastens the tongue-blade at any angle desired, and it is not necessary, in order to remove the tongue-depressor, to touch or unfasten the set-screw. The main feature of the instrument lies in the readiness and ease in which it can be introduced, adjusted to the base of the tongue and instantly removed.



A new combination mouth-gag and tongue-depressor.

THREAD WORMS IN THE APPENDIX

REPORT OF TWO ADDITIONAL CASES

J. M. ALLEN, M.D.
ST. JOHNSBURY, VT.

A few months since I reported the finding of thread worms in the appendix of a young girl. I now wish to add two additional cases of this somewhat rare condition.

Case 1.—Dec. 11, 1909, while operating on a boy aged 4 for a right inguinal hernia the appendix was found in the hernial sac, and was, of course, removed. On opening it there were found eleven thread worms.

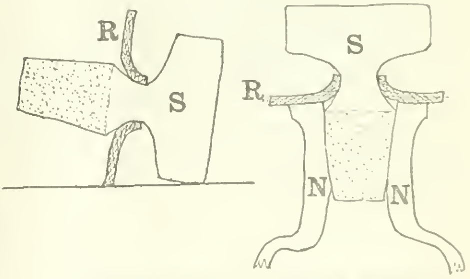
Case 2.—Jan. 15, 1910, a girl aged 14 was presented for operation by Dr. F. E. Farmer of this place. The patient gave a history of one sharp attack of appendicitis over a year ago, and several attacks of colicky pain at intervals since that time. The last attack occurred January 12. There was no rise in temperature nor increase in pulse rate but there was great tenderness and pain in the region of the appendix. The appendix was removed January 15 and appeared to be full of fecal matter. On opening it there were found a ball of thread worms in the distal end and several single worms along the walls. There were no gross changes in the walls, and it seems reasonable to suppose that the movement of the worms set up a spasm of the appendix and the pain was caused by the spasm.

All of these cases were seen by my assistants, Drs. W. B. Fitch and F. E. Farmer.

A SIMPLE AND INEXPENSIVE DEVICE TO PREVENT THE CONTAMINATION OF STERILE SOLUTIONS

A. G. BETTMAN, M.D
Demonstrator of Histology, Medical Department, University of Oregon
PORTLAND, OREGON

Sterile solutions are often put into carefully sterilized bottles, closed by sterile stoppers and then set away. By the time the solutions are to be used dust has collected on the lips of the bottles and in pouring out the contents the germs are washed off and the solutions are no longer sterile. Wiping the top of the bottle, at best, removes only part of the germs and drops the rest of them directly into the bottle. Then the stopper is laid down on some unsterile surface and, loaded with micro-organisms, is returned to the bottle.



Sectional view of glass stopper with protective rubber collar attached. S, stopper; N, neck of bottle; R, rubber collar.

To obviate this I have devised a simple inexpensive device, so simple, in fact, that I hesitate to present it. From a piece of heavy rubber sheeting (that from a hot-water bottle answers best) cut a round piece, of such size that when placed over the mouth of the bottle the edges project somewhat. Then cut a small round hole in the center, of such size that the rubber is with some difficulty slipped over the stopper. When the stopper is now returned to the bottle the rubber covers the lip and extends a little beyond, thereby keeping off all dust. Evaporation of the bottle contents is also prevented.

A third advantage, and probably the greatest, is that the stopper may be laid down without the inner end resting on the unsterile table, as the rubber acts much the same as the rest on a carving knife. This device may be used for stoppers of any size, shape or material by varying the size of the rubber and of the hole. For an ordinary eight ounce perfume bottle I cut the rubber a little larger than a silver dollar and the center hole not over $1/4$ in. in diameter.

I believe that many stitch abscesses might be prevented by using this device on suture containers and on dressing jars; druggists could adapt it to advantage.

392½ Sixth Street.

EXCESSIVELY HIGH TEMPERATURE IN A CASE OF INCIPIENT PULMONARY TUBERCULOSIS

O. H. BROWN, M.D.

ST. LOUIS.

The patient in this case was in the Missouri State Sanaterium for from twelve to fourteen months. One morning, a year or more ago, the nurse brought a thermometer to me complaining that she could not tell where it registered. She said that this happened every time she shook the mercury down and returned the thermometer to the mouth of this particular patient. The nurse also complained that the patient had bitten the bulb off from one or two thermometers. On examining, I found that the mercury extended nearly to the free end of the thermometer. I was aware that a patient sometimes plays a trick on the nurse by holding the mercury bulb in the steam jet of the radiator, so I took the thermometer and placed it in the patient's mouth and stayed by her side. Soon the patient complained that the thermometer bulb was broken in her mouth. So it was, but the mercury also filled the tube nearly to its free end, and she had not bitten the glass.

Thinking that it might have been the fault of the thermometer, I tried another, and with each the mouth temperature registered 109 to 110, or higher. The patient's rectal and arm temperatures were both normal. This observation was made on several different days. On one occasion only, and this several days after the high mouth temperature ceased, the patient's rectal temperature registered about 108.

On seeking for an explanation for this singular manifestation, it was found that the patient had several small sublingual ulcers. No bacteriologic study of these was made. She also had some decayed teeth and inflamed gums. The patient was of a hysteric type and frequently had pains and other symptoms that were unexplained except as hysteric manifestations.

I regret that I was not able at that time to make a bacteriologic examination of the ulcers, as these were possibly the cause of the phenomenon. The high rectal temperature was perhaps caused by an ulcer of the rectum against which the bulb of the thermometer came in contact.

Humboldt Building.

PROLONGED USE OF EPINEPHRIN IN ASTHMA

J. N. HALL, M.D.

DENVER

Patient.—A physician of unusual enterprise and intelligence, aged 35, an athlete weighing over 200 pounds, contracted whooping cough in May, 1903, and during convalescence from this disease began to suffer for the first time with bronchial asthma. During the summer nasal polypi were removed from the region of the middle turbinate, with much aggravation of the asthma. During the next year he was treated by prominent physicians in two of the largest American cities and in Liverpool and London, more polypi being removed in the latter city. The asthma became progressively worse so that the patient came to Denver a complete invalid in October, 1904. He had at this time no free interval of over an hour, and slept in the upright posture.

Physical Examination.—This showed pronounced general asthmatic wheezing. There was marked dulness over the upper sternal region and the voice and respiratory sounds on the right were decreased in intensity. I believe that these phenomena were due to enlargement of the tracheo-bronchial glands.

Treatment and Course of Disease.—I recommended a trial of a 1 to 1000 epinephrin solution hypodermatically. The first dose of 8 minims in half a minute gave the first absolute relief from the asthma and the terrible mental depression from which the patient suffered. The tenacious mucous secretion was loosened and expectorated at once. The relief lasted two or three hours, and the patient thereafter took the remedy whenever symptoms of the return of the paroxysms appeared. During the past five and a half years he has taken about 200 ounces of the solution, at times taking from 40 to 60 doses hypodermatically in a twenty-four-hour period, generally 5 or 6 minims at a dose. He progressively lost weight until he stood at 114 pounds in January, 1910. Without any change in treatment or other circumstances which might explain it, he suddenly began to improve, and the asthma entirely disappeared in six or eight weeks. He weighs today 185 pounds and is apparently entirely well. He has, of course, stopped the epinephrin.

Attention is called to this case on account of the phenomenal amount of epinephrin used. The reports from clinical laboratories led me to fear serious damage to the arteries and heart from the long-continued use of it. The blood pressure is normal (135 mm.), heart and arteries entirely negative, urine free of albumin, and general condition absolutely good, so far as careful examination can demonstrate. Dr. Henry Sewall confirmed these findings, and Dr. E. W. Stevens examined the retinal arteries and reported them negative as to the presence of arteriosclerosis. The dulness in the upper sternal region has disappeared. No emphysema is present.

The patient has had three attacks of suddenly developing, intense distress with emesis, headache, involuntary evacuations and profuse perspiration, and tense wiry pulse after taking his medicine. He believes that they were due to too rapid absorption of the drug, presumably from its entrance into a vein. He concludes that the remedy is best given diluted with normal saline solution and placed so superficially in the tissues as to prevent too rapid absorption, with the purpose of avoiding the frightful attacks described.

The patient exhibited himself at our local society meeting and attracted so much attention that he has given me permission to report his case.

Therapeutics

HEXAMETHYLENAMIN

Hexamethylenamin, U. S. P., is a solid crystalline substance obtained from formaldehyd. It is very soluble in water and soluble in ten parts of alcohol.

This most useful drug has been known for a number of years, and was made official in the Pharmacopeia of 1900, but its efficient activity as an antiseptic in the fluids of the body, combined with its comparative harmlessness, has not been thoroughly recognized until recently. It has been freely used as a bowel antiseptic and a genito-urinary antiseptic, but it had not been demonstrated until within the last few years how efficient it was as an antiseptic and germicide in the gall-bladder. It has been clinically positively demonstrated that it is valuable in acute infections of the gall-bladder, and efficient in preventing the development of, and the propagation of, typhoid bacilli and other bacilli in the gall-bladder. Consequently, when used during or after typhoid fever it is efficient in preventing these bacilli from remaining in the parts of the body where they prefer to harbor and perpetuate their kind, viz., the gall-bladder and the pelvis or other parts of the kidneys. Being excreted also through and into the biliary passages with the bile it acts as an antiseptic for all of the biliary ducts. When any operation on the gall-bladder is decided on, unless the operation is one of emergency, a course of several days of hexamethylenamin treatment should be inaugurated as tending to render the gall-bladder more or less antiseptic. At least it is possible with this drug enormously to diminish the bacteria in this infected region.

Crowe (*Archives internationales de Pharmacodynamie et de Therapie*, 1908, xviii, 315) showed by experiments on dogs that hexamethylenamin was excreted not only by the liver ducts into the gall ducts, but also by the gall-bladder itself and also by the pancreas. After exposure of the duodenum an opening was made about 3 cm. below the pylorus, and small catheters inserted into the orifices of the pancreatic and common bile ducts. The bile and pancreatic juice were collected after the intravenous injection of secretin. The experiments showed that hexamethylenamin is excreted in both the bile and pancreatic juice. Examination of the bile in the gall-bladder in experiments in which the cystic duct had previously been ligatured, showed that the substance is excreted directly by the gall-bladder as well as by the hepatic cells. The milk and saliva of these dogs also gave the test.

In view of the findings in animals it was determined to make a bacteriologic and chemical study of the bile obtained from patients with biliary fistula before and after giving hexamethylenamin. The number of colonies of organisms obtained from one loop of bile in all cases was rapidly reduced to zero. In one specimen before giving the drug, 150,000 colonies were obtained from one loop of the bile, while after giving the drug for a few days, the bile was absolutely sterile. The organisms found were chiefly typhi, coli and pyocyaneus. Typhoid germs are particularly susceptible to hexamethylenamin. The dose necessary to obtain the desired effect quickly in the gall-bladder was found to be 5 gm. (75 grains) a day. Usually one to two doses are sufficient to render the bile absolutely sterile.

Crowe also demonstrated what has since been repeatedly noted, viz., that hexamethylenamin is excreted into the cerebrospinal and synovial fluids. One instance was that of a boy aged 13 who had symptoms suggesting a cerebellar tumor. A decompression operation was done and the wound closed. A plaster dressing was applied, and on removing it twelve days later, a cerebrospinal fistula was found in the upper part of the incision. The discharging fluid contained a few pus cells, bacteria, and shreds of necrotic tissue. Meningitis was feared. Thinking that hexamethylenamin might possibly be excreted by this route also, the boy was given a 0.66 gm. (10 grain) dose of the drug and five or six hours later some of the discharging fluid was collected and tested. A distinct test was obtained and the dose was increased to 2.0 gm. (30 grains) a day. Three weeks later, under this treatment the fistula had closed entirely and the temperature was practically normal.

The second case was one of acute gonorrheal arthritis. The knee joint was swollen, very hot and tender. The patient was given 1.0 gm. (15 grains) of hexamethylenamin. Nine hours later the joint was aspirated and about 100 c.c. of pus withdrawn. The chemical test showed the presence of hexamethylenamin in considerable amount. The dose was increased to 5.3 gm. (80 grains) a day, and four days later cultures from the joints showed a marked decrease in the number of organisms present. A third aspiration, ten days after admission into the hospital, showed that the organism had completely disappeared, but some periarticular infiltration and some limitation of motion still remained.

In no case were ill effects noticed after the administration of hexamethylenamin, other than painful micturition after prolonged administration. This entirely and rapidly disappeared on withholding the drug.

At the recent annual meeting of the American Therapeutic Society, held in Washington, May 5, 6 and 7, Dr. Wilfred N. Barton, of Washington, D. C., reported a number of cases of otitis media in which the suppuration rapidly healed and became sterile under the administration of hexamethylenamin.

It therefore seems demonstrated that in bowel infection, typhoid fever, and especially post-typhoid, in gall-bladder inflammations, in cerebrospinal infections and in middle ear infection, it is scientific and logical to administer hexamethlyenamin whatever other treatment is inaugurated or deemed advisable. It has, now, long been recognized that this drug is the most valuable urinary antiseptic that can be administered, and it is, therefore, useful when the urine contains bacteria of any kind; in inflammations and suppuration of the pelvis of the kidney, in cystitis, and in urethritis.

From the observations of Crowe it would certainly seem advisable to administer this drug in gonorrheal arthritis, pneumococcic arthritis, and perhaps in tubercular arthritis. We are not aware that it has yet been shown to be of value in tubercular disease, whether of the joints, kidneys, or lungs. It certainly is worthy of investigation in this disease.

The dose of hexamethylenamin varies from 0.25 to 1.0 gram (4 to 15 grains). The size of the dose should be determined by its frequency. Probably 0.50 gram (7½ grains) is always a sufficient dose, and this dose could be administered two or three times in twenty-four hours, or 0.25 or 0.30 gram four times in twenty-four hours. It is quickly absorbed and quickly appears in the urine. Occasionally it causes slight irritation to the kidneys, and rarely has seemed to be the cause of a slight hematuria or hemoglobinuria. This, however, has occurred so rarely as to be considered instances of peculiar idiosyncrasy. It is, perhaps, however, unwise to administer this drug, except in much smaller amounts, when there is an acute nephritis. The writer of this editorial has used this drug in many instances for weeks or even months, and in one instance at least for two years in daily doses of the size above described without any symptoms or signs of undesired action. It can, therefore, be presumed that the drug is harmless to the digestion, nutrition, circulation, blood-making organs and kidneys.

This drug will act satisfactorily in preventing phosphaturia when all other drugs, diets and treatments have failed, and hence, can be used to prevent undesired alkalinity of the urine.

Healthy Diphtheria Bacillus-Carriers. Lemoine inoculated tubes of coagulated serum with mucus from the pharynx of 232 individuals including 86 entirely healthy, 90 with measles and 56 with other affections. He found that the diphtheria bacilli developed in 22 per cent. of the healthy, in 37 per cent. of the measles patients and in from 30 to 47 per cent. of the others. Notwithstanding these positive bacteriologic findings no cases of diphtheria developed in the environment of any of the persons tested. Contagion occurred, however, from others sheltering the bacteria who had not entirely recovered from a preceding attack of diphtheria, some sequel still persisting. On the whole his experiences show, he declares, that no danger need be apprehended from the really healthy diphtheria bacillus carrier, but that persisting sequels of the disease seem to maintain the virulence in the germs. The development of coryza or sore throat in persons in the environment of a diphtheria patient also calls for prompt bacteriologic examination. It is scarcely necessary, he thinks, to examine the persons in the environment not in direct contact with the patient if they remain free from clinical symptoms under close supervision.—*Bull. Soc. Med. des Hôp.*, March 19, 1910, page 160.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 9, 1910

HEMORRHAGE AND TRANSFUSION

The study of hemorrhage and transfusion of blood and various associated changes and conditions, as now being carried out in surgically equipped research laboratories, is producing results of much interest. The work is so intensely practical that it merits the attention of the pure clinician as well as of those who devote their energies solely to scientific pursuits.

In summing up the results already accomplished in this comparatively new field of work we find much of value. The early workers of recent times, among whom are Carrel, Guthrie, Crile and others, demonstrated the feasibility of vascular anastomosis and vascular suture. They have shown that the technic of direct transfusion from one person to another is easily mastered, can be quickly performed, and opens up a large field for future therapeutic achievements. We are already assured that direct transfusion is a life-saving measure in case of accidental hemorrhage. It is of value in the prevention and treatment of shock. It probably is of considerable aid in tuberculosis and some other chronic diseases.

Control experiments, performed with the object of comparing the value of blood and saline transfusions, tend to show that the latter has enjoyed undue prominence as a therapeutic measure; for example, in the treatment of accidental hemorrhage it rarely is a life-saving measure, whereas blood transfusion certainly is. Indications are that the use of blood will also in a large measure supersede the use of saline transfusion in illuminating-gas poisoning.

Study of the blood elements has revealed a diagnostic point of aid in differentiating acute hemorrhage from shock; in the former, the red cells and hemoglobin are decreased while the white blood cells undergo a distinct leucocytosis; in shock these changes do not occur.

The present-day workers are expending their energies in various directions. The injection of blood-serum for uncontrollable hemorrhage promises to yield good results. The logic of the universally accepted calcium-lactate therapy in hemorrhagic conditions is being investigated and in the due course of time we may hope to know, as a result of carefully planned and well-controlled work, whether such treatment is truly of value in selected cases or is to be discredited and given up.

Boycott and Douglas are doing interesting work in following out the changes which transfused blood undergoes and in studying the effects of transfusions on the organism of the recipient. They find the anatomic and histologic structure of transfused rabbits not essentially altered. The spleen is three times the normal size, the liver and kidneys slightly increased. Eosinophilic granules in the phagocytic cells of the mesenteric glands and spleen show an activity greater than normal. The organism disposes of transfused blood, they conclude, in the same way as normal animals dispose of their own "effete" red blood corpuscles. It is taken out of the circulation by phagocytic cells, chiefly endothelial in nature, in the spleen, bone-marrow and hemolymph-glands and then broken up, first into recognizable fragments, later into residue, part of which is seen in iron-containing pigment.

The work of Crile in clinical investigation of transfusion, of Carrel and Guthrie in vascular anastomosis and transplantation of organs, in conjunction with that of Boycott and Douglas and others who are concerned with the histopathologic and chemical features of the subject, promises to yield rich returns in the near future.

THE MAXIMUM OF HUMAN LONGEVITY

To continue the subject we discussed last week, it would be a matter of interest if the extreme age limit of human beings could be definitely ascertained. Instances of extreme longevity, reaching 132 years, have been reported, but according to the mortality report of the Census Bureau of Vital Statistics as prepared by Dr. Cressy L. Wilbur, most of these reports when investigated are found to be unreliable; not intentionally untruthful in many instances, perhaps, but untrustworthy because based on unverified report. This is also found to be the case in Europe, as reported by Thoms and Young. It is believed that the age of 100 has been attained, but, as Dr. Wilbur suggests, "it is perhaps doubtful whether, as shown by incontrovertible evidence, the age of 110 has ever been reached or exceeded." If it could be determined by exact observation that human beings had lived 140 or 130, or even 110 years, that fact would establish the capability of the human organism to keep up those metabolic changes which are essential to life for a period much greater than the present ascertained average or Scriptural allotment of years. Thus it would furnish a mark toward which superior eugenics and real hygienic living could aim, and the extreme limit might be attained more frequently and the average of longevity raised.

There are various theories in relation to longevity. The idea has been advanced that the human machine, in any particular instance, or in a family, is wound up to run about so long, and, barring accident, the individual life will attain approximately that length.

Another idea, advanced by Nascher,[1] is that if the period of development is not forced, and maturity not reached too soon, the period of maturity is longer and the rate of decline into old age slower and a greater age is thus attained. In the period of youth and maturity the protoplasm of the cell is more abundant; in old age the nuclei of the cells are larger in proportion to the cell-contents and there is a greater and more inflexible differentiation of the cells. With an improvement in the inherited vitality of the cell by improved eugenics, a better understanding and attainment of the correct nutritional equilibrium, and the preservation of the status by correct hygiene, the maximum span of life may be reached more frequently and the general average lengthened. What that maximum is at present can be determined only by the adoption of efficient methods of obtaining vital statistics.

In Maine and Massachusetts details in regard to the deaths of reputed centenarians are collected and the facts authenticated. As Wilbur says, physicians should be interested in such cases, and together with registration officials, should endeavor to ascertain the truth about them. Complete and reliable vital statistics would establish the present maximum of longevity, a fact of real scientific as well as popular interest.

THE BRITISH AWAKENING

"Great is truth, and it will prevail"—somewhat slowly, however. For some years The Journal has been exposing the fraud and deception connected with the exploitation of proprietary remedies and at last its campaign appears to be overcoming even the inertia of British conservatism. In a recent issue, the *British Medical Journal*[2] editorially protests against antikamnia and gives the results of The Journal's analysis published five years ago. No mention is made of the fact that the Association Laboratory demonstrated that after the Food and Drugs Act went into effect in this country the antikamnia people substituted acetphenetidin for acetanilid in the product sold in America while they retained the older and cheaper drug in the antikamnia on the British market.

The immediate cause of editorial indignation seems to be that now the British public is being circularized with the "Do-you-suffer-pain?" letters, and our conservative over-seas contemporary is constrained to object, mildly it is true, but nevertheless to object. It goes even further and deplores the fact that physicians have written testimonials for this nostrum. Of course, as the *British Medical Journal* says: "They are, it is true, American doctors; but are British practitioners guiltless in the matter?" Unfortunately they are not. On this side of the Atlantic, in fact, the most widely circulated testimonial of the antikamnia people is one credited to "Wm. Hy. Griffith, M.D., L.R.C.P., Edin.; L.R.C.S., Edin.; L.F.P.S., Glas." A gentleman answering to this somewhat elongated cognomen appears in the British Medical Directory as living in the "rare old city" of Chester, England. We also find among the testimonial-givers a "Dr. Arthur Bailey Francis (Queen's College), Belfast, Ireland"; "Dr. John Arthur D[illegible] (Med. Ref. Globe Accident Assur. Soc., of London, England)," and "Dr. M. G. Dundas," who eulogizes antikamnia in *Medical Reprints*—whatever that may be—London, England. We read too, in one of the latest American advertisements, that "among those who have paid high tributes to their [antikamnia tablets] value and who occupy positions of great eminence, may be mentioned Dr. J. Acheson Wilkin and Dr. R. J. Blackham, practitioners of London."

Doubtless there are very many more. Yet it is probable that more American physicians than British have written panegyrics on this "headache mixture"; but that is natural. There are more American physicians than British and, besides, the nostrum, we are ashamed to admit, is an American one. As a class, however, American physicians have long since ceased to be fooled on the subject of antikamnia. The advertisements of this nostrum which appear in high-class medical journals indicate that as much can hardly be said for our British confrères. We find that up to as late as last month such publications as the *Lancet, Practitioner, Medical Press and Circular, Dublin Journal of Medical Science, Glasgow Medical Journal* and the *Journal of Obstetrics and Gynecology of the British Empire* were still carrying the advertisements of this dangerous nostrum.

We hope that this is the opening wedge. Antikamnia was one of the first "ethical proprietaries" which the Council on Pharmacy and Chemistry exposed through The Journal; since it was first shown up a host of others just as bad, if not as impudent, have been dealt with in these pages. May the *British Medical Journal*—which has already purged its pages of these frauds—take up this unsavory brood *seriatim* and it will not not be long before medical journals of the better class across the water will have as clean advertising pages as American journals of the same class already have.

REPORTS ON MEDICAL EDUCATION AND THEIR RESULTS

Two thorough investigations of the medical schools of the United States and Canada have been [illegible] in the last few months, one by the Council on Medical Education of the American Medical Association, extending through a period of six years, the other by the Carnegie Foundation for the Advancement of Teaching, extending through the last two years.

In its report the Council on Medical Education presented a list of the medical colleges graded in three classes: Class A, including those considered acceptable; Class B, including those needing certain improvements, and Class C, those which require a general reorganization to make them acceptable.[1]

---

[1] New York Med. Jour., April 17, 1909.

[2] See comment of our London Correspondent, in London Letter, this issue.

As a result of its investigation, the Carnegie Foundation published an exhaustive report on its findings exposing defects wherever found. Hypocrisy, misstatements of fact in college announcements or otherwise, and makeshifts in the enforcement of standards received particular attention, and even some regarded as of high standard did not escape criticism. Numerous cries of "unfair," "unwarranted," "lack of knowledge," and even of "prejudice" have been raised, which show that the shoe fits pretty tightly in certain quarters. There is an adage that it is the truth that hurts. It is so in this instance. The report may be subject to criticism in some matters of detail, but those who are competent to judge—those who know the actual facts—realize that, in general, the conditions set forth in the Carnegie report are true and indisputable.

It is not surprising that one college, the St. Louis College of Physicians and Surgeons, has filed a suit for damages against the officers of the Foundation and the editor of The Journal of the American Medical Association. Possibly that was the only answer the school could make to the charges brought against it, judging from an abundance of information in the possession of the Council on Medical Education. We fear that the college will not bring the suit to trial; but, if it does the public will be made acquainted with the facts—a highly desirable result. Many colleges have taken the better course, have frankly admitted their shortcomings, are endeavoring to make the needed improvements, and planning to make the best of a bad situation.

Now that the investigations have been completed and the facts have been clearly set forth, it is to be hoped that the splendid reconstruction already begun may be carried on with increased vigor. As set forth in the report of the Council on Medical Education, medical teaching in this country should be developed as a part of our educational system, coordinating and not conflicting with the other departments of that system. Let there be a strict enforcement of a four year high-school education as the minimum preliminary requirement; let there be well-trained, full-time salaried teachers in the laboratory branches; let there be better equipped laboratories, better clinical facilities, more bedside clinics, better courses in laboratory diagnosis, and finally, let there be at least as thorough methods of teaching in our medical schools as prevail in our standard universities and colleges of liberal arts.

Undoubtedly the faculties of the majority of colleges will attempt to develop stronger and better institutions in place of those now existing. This is evident from the reports of additions to the endowments of medical education, of the erection of new buildings, of voted increases of preliminary standards and of the eager search for better laboratory instructors. In justice to the colleges it should be said that many of these extensive improvements were planned long before the results of the investigations referred to were made public. After all, the improvements which are inspired by an actual desire to teach medicine properly are the ones which count the most. Other colleges, desiring to make improvements, heartily welcomed the investigations, since the changes which could be made to the best advantage would thereby be indicated. May this improvement and development go on until medical education in the United States is second to that of no other country!

Current Comment

A NEW PATRIOTISM

Those who have been engaged for several years in keeping toll of the awful cost in life and limb through the old methods of celebrating the Fourth of July, and who have been persistently advocating more quiet, orderly and uplifting methods, have been looking forward to this year's celebration, more hopeful than in any previous year. During the last two years, and during the last year especially, an enormous amount of comment has appeared in the newspapers and magazines, calculated to educate the public to a more sensible method of celebrating this national holiday. And from the newspaper reports from all over the country, the educational work has counted, the hoped-for change has come, and the newer method of celebration has been adopted. If the change in method of celebration of Independence Day has been as great all over the country as in Chicago, then indeed has a new era begun, and a new patriotism developed. Instead of the senseless booming and snapping of bombs and firecrackers, not only on the Fourth of July itself but for several days preceding, quiet reigned supreme. Instead of whiling away the time in thoughtless, aimless efforts to create a noise, the people assembled by the hundreds of thousands to witness parades intelligently planned and of marked educational value; they looked on displays of flags and witnessed the marching of soldiers to the rhythm of inspiring music; they saw floats representing the signing of the Declaration of Independence, the birth of the American flag, the inauguration of the nation's first president and other historic incidents of which the nation, the state, and the city are justly proud. They spent the rest of the day at picnics, at band concerts, in the parks, in visiting friends and relatives—and even here the main topics of conversation were doubtless influenced by the inspiring incidents of the morning. Of more vital importance, however, was the fact that, for the vast majority of homes, the day was peacefully ended without any awful aftermath of sorrow and suffering. And the wonder is, why the old methods were tolerated so long as they were; and why the celebration of the Fourth of July had not long since been recognized as a great opportunity to develop a genuine patriotism. Such celebrations as that witnessed in Chicago, and undoubtedly in a large number of other cities, cannot fail to create a stronger national spirit, a genuine love for our country, a pride in her past achievements, and a desire to uphold her future—and surely this is patriotism.

---

[1] The classification was published in The Journal, June 18, p. 2061.

UPHOLDING THE VITAL STATISTICS LAW

An Ohio physician was convicted of violating the vital statistics law by persistently refusing to report births. He was not a member of a county society, but in appealing the case to the Supreme Court he solicited financial aid from the societies. On this account the matter came before the House of Delegates of the state society. That body wisely expressed its disapproval of this violation of the law, and also of the action of those county societies which had extended aid to the physician. In effect the resolution adopted by the Ohio House of Delegates says that the vital statistics law of Ohio should be upheld by physicians and strict compliance with it insisted on. We believe this is right. A physician who refuses to comply with this law does not appreciate his responsibility or his obligation to the state. The attitude of physicians in such matters should be carefully considered. It is an axiom in the legal profession that every lawyer who has been admitted to the bar is in fact an officer of the state. In a similar way every physician who has been licensed to practice medicine in accordance with the laws of the state is in fact a health officer of that state. The state has granted him certain privileges, in addition to placing its seal of approval on him in the form of a license to practice medicine. In return for this he is under moral, and in some states legal, obligations to render a fair and proper return by promptly performing the duties his position requires. The importance of vital statistics is known better to physicians than to others, and they should be the last to resist in any way the enforcement of these laws. Hence the attitude of physicans who refuse to make returns of births or who demand the payment of a small fee by the state cannot be commended.

MEDICAL SECTS

Sectarianism in medicine has long been with us; yet, singularly enough, its literature is exceedingly limited, aside from that of a controversial and partisan character. Apparently no one has thought it worth while to inquire why medical sectarianism exists, or why each new cult, no matter how absurd its tenets from a scientific point of view, always succeeds in attracting a following. The superficial explanation that "the public likes to be humbugged" has been repeated, *ad libitum*, although it is not true; and even if it were true, it is no explanation. Mr. Flexner, in his report to the Carnegie Foundation, on American medical schools, devotes a chapter to a dispassionate review of the subject, summarizes the present conditions, and prophesies for the future. This chapter is one of the most important in the book, and is deserving of careful perusal on the part of every thoughtful physician. It is for this reason that we have copied the greater part of the chapter in this issue of THE JOURNAL.[1] Mr. Flexner's explanation of sectarianism and its underlying causes constitutes the first attempt that has been made to account psychologically and philosophically for the peculiar fact that, historically speaking, medicine, using the term in its broadest sense, has given rise to more sects than any other form of human activity—except religion. The philosopher, the psychologist, the economist, even the latter-day sociologist and anthropologist, who have covered all fields of investigation as his by right, have overlooked the enormous influence of medicine and medical sects on our social organism. It would be interesting to speculate on what might have been the differences in our present social, economic and educational systems and conditions, had sectarianism in medicine never existed. Only by a thorough understanding and an accurate appreciation of the causes underlying sectarianism in medicine, can we hope to evolve a permanent system of rational, legal regulation to take the place of the existing illogical, inequitable and constantly changing patchwork of compromise and legislative stupidity, which makes up most of our existing system of state regulation. Flexner's contribution will help to make such an understanding possible.

FOURTH OF JULY ACCIDENTS

Although, as stated above, new methods of celebrating the Fourth of July seem to have largely superseded the noisy, unenlightened methods heretofore in vogue, we must not be too confident of the future. Possibly nothing has been so effective in bringing about this new order of things as THE JOURNAL's annual presentation of the net results of the older methods. Furthermore it will be particularly interesting this year to show what effect these new methods have had in diminishing the numbers of killed and injured. THE JOURNAL will therefore gather statistics of Fourth of July casualties, as in previous years, and again asks the cooperation of its readers. It is hoped that each reader of THE JOURNAL will report any accidents that come to his knowledge. Complete details are particularly desired regarding all cases resulting in tetanus or death. Special blanks for such reports will be sent on application.

Medical News

CALIFORNIA

Health Conditions in the State.—That health conditions have improved is shown from the records of the State Board of Health. In 1909, 30,985 persons died as against [illegible] in 1908, and 31,095 in 1907. Births and marriages show an increase over the previous year. The births reported in 1909 numbered 30,882; in 1908, 28,077 and in 1907, 24,647. The marriages during 1909 numbered 22,917; in 1908, 21,731 and in 1907, 23,000.

Care for the Insane.—The State Lunacy Commission at Sacramento has raised the salaries of the superintendents of the five state asylums and of the superintendent of the Sonoma Home for Feeble-minded Children. Dr. Hatch, secretary of the commission, states that commitments to the State Hospital for the Insane have been large this year, due to the increasing immigration and the use of alcohol. The state board is endeavoring to secure an amendment to the present law governing the commitment of the insane, and the legislature will be asked to create a fund for the establishment of a special building at one of the asylums for the care and treatment of inebriates and drug habitués.

---

[1] Department of Medical Economics, p. 147.

CONNECTICUT

Personal.—Dr. Robert S. Clark, New Haven, has been appointed intern in the House of Mercy Hospital, Springfield, Mass.

New Dean for Yale Medical School.—Dr. George E. Blumer, professor of theory and practice of medicine, is to be the new dean of the Yale Medical School, to succeed Dr. Herbert E. Smith, who has been dean for twenty-five years.——A silver loving cup was presented to Dr. Smith at the Yale Medical Alumni Association banquet, June 20, and he responded to the toast, "Twenty-five Years of the Yale Medical School." The toastmaster of the evening was Dr. Edward R. Baldwin, Saranac Lake, N. Y.——The ninety-seventh anniversary of the founding of Yale Medical School was held in the College Street Hall, June 20. The annual address in medicine was delivered by Dr. William T. Councilman, professor of pathology in Harvard University.

DISTRICT OF COLUMBIA

New Doctors for Army.—Forty-five members of a class of fifty physicians who have taken the course of instruction at the Army Medical School, Washington, D. C., successfully completed their work, June 1, and were awarded commissions as first lieutenants in the medical reserve corps of the army by the secretary of war. Surgeon-General George H. Torney presided and the principal address was made by Dr. Victor C. Vaughan, Ann Arbor, Mich.

ILLINOIS

New Sanitarium.—Contract has been let for the new Memorial Sanitarium at Charleston, to be known as the Mack A. Montgomery Memorial Sanitarium.

License Revoked.—At the meeting of the State Board of Health, June 24, the board revoked the license of Dr. David Apfelbaum, Chicago, for advertising under a fictitious name.

State Civil Service Examination.—Secretary Joseph Mason, of the State Civil Service Commission, has announced the successful candidates in the promotional examination for physicians in the various state institutions. There were ten successful candidates for promotion to physician and twelve to assistant physician.

Fraudulent Diplomas.—On June 24, Judge Landis, in the United States District Court, sentenced Dr. Alexander Chittick, Chicago, to serve sixty days in the county jail for the fraudulent use of the mails in connection with the sale of diplomas from the Chicago Medical University and the Crescent Medical University. Dr. Chittick's license was revoked by the State Board for this offense May 21.

State Board Rules Against Night Schools.—The Illinois State Board of Health adopted a ruling, June 21, that it would not consider in good standing any medical college which after June 30, 1911, offers, during the evening or at night, all or the major portion of the clinical and hospital instruction or of the didactic work such as is commonly embraced in the third and fourth years of the medical curriculum.

Personal.—Drs. William Plumer and Frank Robb have been appointed assistant physicians at Farmington.——Dr. William F. Miller, Columbus, was appointed physician for Adams County, June 15.——Dr. Augustus R. Reder has been appointed city health officer at Aurora.——The late Dr. Jacob H. Huber, Pekin, has bequeathed $50,000 to his home city for benevolent purposes.

Reorganization of Antituberculosis Association.—The Illinois State Association for the Prevention of Tuberculosis, said to have been practically out of existence since 1906, was reorganized at a meeting in Chicago June 25, under the call of the Chicago Tuberculosis Institute. An effort will be made to arouse an interest in the formation of county and other local organizations, and an appropriation will be asked from the state legislature for a traveling tuberculosis exhibit and for the erection of a state sanatorium. Gov. Charles S. Deneen was elected honorary president; Dr. William A. Evans, Chicago, president; vice-presidents, Drs. Tully O. Hardesty, [illegible] and George T. Palmer, Springfield; secretary, Frank E. Wing, Chicago; treasurer, David R. Forgan, Chicago; medical members of the central council, Dr. J. W. Pettit, Ottawa; Drs. Theodore B. Sachs, Ethan A. Gray and George W. Webster, Chicago, and Dr. St. Elmo M. Sala, Rock Island.

Chicago

Free Tuberculosis Hospital.—The Chicago Fresh Air Hospital, 7528 Northwestern avenue, exclusively for tuberculous patients, opened July 1. Treatment will be free. The hospital is equipped with two open air sleeping porches and indoor accommodation for more advanced cases. The grounds comprise twenty acres.

Endowment for Medical Research.—By the will of the late O. S. A. Sprague, the Sprague Memorial Institute for Medical Research will be established with an endowment of $1,000,000. The first step in organization has been the securing of a charter, July 1, by the trustees, A. B. Bartlett, Charles L. Hutchinson and Albert A. Sprague.

Personal.—Dr. Alice Hamilton, a resident of Hull House, has been granted the honorary degree of M. A. by the University of Michigan.——Dr. W. H. Holmes has been appointed bacteriologist to the State Board of Health to succeed Dr. N. E. Wayson, resigned.——Dr. N. E. Wayson has been appointed a physician in St. Francis Hospital, Wichita, Kan.——Dr. Robert H. Babcock, Chicago, has been given the degree of LL.D. by the University of Michigan.

IOWA

Bierring Goes to Drake.—It is reported that Dr. Walter L. Bierring, former professor of the State University of Iowa College of Medicine, will move to Des Moines, where he has accepted the chair of medicine in the reorganized College of Medicine of Drake University. He will be provided with two salaried assistants, in clinical diagnosis and in pharmacology.

Medical Society Meetings.—Jones County Medical Society held its regular semi-annual meeting in Anamosa June 9 and elected the following officers: President, Dr. Aram G. Hejinian, Anamosa; vice-president, Dr. Aileen B. Corbit, Wyoming; secretary-treasurer, Dr. John E. King, Anamosa, and delegate, Dr. Thomas M. Redmond, Monticello.——The Des Moines Valley Medical Association met at Ottumwa, June 23, and elected the following officers: President, Dr. Lawrence W. Littig, Iowa City; vice-presidents, Drs. Lewis A. Rodgers, Oskaloosa, and Ernest C. McClure, Bussey; secretary-treasurer, Dr. Fred W. Bowles, Ottumwa, and censors, Drs. Smith A. Spilman, Ottumwa; Jerry A. Replogle, Udell, and Henry C. Young, Bloomfield.

KANSAS

Personal.—Dr. H. A. Dykes, Lebanon, has been elected secretary of the Kansas Board of Medical Registration and Examination to succeed Dr. F. B. Hatfield.——Dr. Albert S. Ross, Sabetha, the newly appointed member of the board, was elected president.——Dr. Oscar R. Troje, Kansas City, has entered government service in the Canal Zone.

Meeting of State Health Officers.—At the meeting of the Association of Public Health Officers, held at Topeka, June 15, Dr. Clay E. Coburn, Kansas City, was elected president to succeed Dr. Charles H. Lerrigo, Topeka. Dr. Benjamin J. Alexander, Hiawatha, was elected vice-president. The following were reelected members of the advisory board: Dr. J. O. Marvin, sanitary adviser, Lawrence; Dr. William C. Hoad, sanitary and civil engineer, Lawrence; Dr. E. H. S. Bailey, chemist, State University, Lawrence; Dr. J. T. Willard, Agricultural College, Manhattan; Dr. L. E. Sayre, State University, Lawrence; Dr. Robert S. Magee, Topeka; Dr. Sara E. Greenfield, Topeka; Dr. W. J. V. Deacon, statistician, Topeka, and Dr. Samuel C. Emley, lecturer, Lawrence. The association declared that measles, infantile paralysis, typhoid fever and ophthalmia neonatorum are henceforth to be reportable diseases. Ex-Senator J. E. Brewer, Abilene, appeared before the board with a copy of resolution adopted by the Merchants Association to the effect that when the rules of the board operate in restraint of trade and to no benefit to the consumer they should be dispensed with. The next meeting will be held in Hutchinson in September.

KENTUCKY

New Hospital Located.—The new city hospital for Louisville is to be located on the present site at Floyd and Chestnut Streets.

Society Meetings.—The Southwestern Kentucky Medical Society met at Paducah recently and elected the following officers: President, Dr. John Q. Taylor, Paducah; vice-presidents, Drs. George W. Payne, Bardwell, and Quintus L. Shelton, Paducah; secretary, Dr. E. C. Reynolds, Paducah; treasurer, Dr. Vernon Blythe, Paducah, and historian, Dr. Robert T. Hocker, Arlington.—Under the auspices of the Lincoln County Medical Society, the local board of health at Goshen held a public meeting, at which health questions were discussed in a popular way by various physicians of the county society.

Personal.—The State Board of Control June 18 elected Dr. Henry P. Sights, Paducah, superintendent of the Western Asylum for the Insane, Hopkinsville, to succeed Dr. Thomas W. Gardiner, who has become a member of the board of control. Dr. Sights is the present health officer of Paducah, and was for three years first assistant physician at Hopkinsville.——Dr. Llewellyn P. Spears, Louisville, has been made jail physician to fill the vacancy made by the resignation of Dr. Samuel H. Garvin.—Dr. S. J. Smock has been elected health officer at Glasgow to fill the unexpired term of the late Dr. Richard E. Garnett.—Dr. Henry Enos Tuley and family, Louisville, have gone to Europe to remain until September.

MARYLAND

Personal.—Dr. Marshall West has been appointed health officer of the First District, Baltimore county, vice Dr. Arthur H. Mann, resigned, on account of ill health.

School to Be Enlarged.—It is announced that the recent legislative appropriation of $150,000 for the Maryland Training School for the Feeble-Minded, will enable that institution to care for 200 additional patients.

Bequest of Hahnemann Portrait.—The late Dr. Alfred Wanstall, homeopathic physician, bequeathed a bust and portrait of Hahnemann and his medical books to the Maryland State Homeopathic Society, and all his medical instruments and drugs to the Homeopathic Hospital.

Monument to Dr. Horace H. Hayden.—A monument was unveiled at Windsor, Vt., his birthplace, June 25, in honor of Horace H. Hayden, M.D., the "Father of Dental Science." He came to Baltimore in 1800, joined the Medical and Chirurgical Faculty in 1810, took part in the organization of the Maryland Academy of Sciences, delivered the first course of dental lectures in the University of Maryland in 1837, founded the first dental college and society in 1840 and the first dental journal in 1841. He was an uncommon genius, an indefatigable student and investigator, particularly in geology and botany. He collected a valuable cabinet of minerals, now at Roanoke College, Va. He was twice honored with the M.D. degree, by Jefferson College and by the University of Maryland. He served as surgeon with the troops defending Baltimore in 1814. The Baltimore College was represented at Windsor by Dr. B. Holly Smith, the dean, who delivered the address.

State Society Notes.—The Medical and Chirurgical Faculty has assumed financial management of its *Bulletin*, which was begun two years ago by Dr. Henry O. Reik, who conducted it with much credit. The present staff are Dr. Emil Novak, editor; Dr. Joseph A. Chatard, associate editor; Dr. Arthur P. Herring, business manager. The *Bulletin* recommends that there be a medical man on the staff of every daily newspaper to exercise oversight in medical matters. This is necessitated by the constantly increasing importance of medical and health news and the lamentable frequency with which such news is incorrectly presented or distorted.——The semi-annual meeting of the state society will be held at Annapolis about the middle of September.—Drs. J. McPherson Scott, Hagerstown, and Henry M. Fitzhugh, Westminster, were elected medical examiners for Maryland. The Medical and Chirurgical Faculty will hereafter elect its officers in general meeting, the nominations to be made in the House of Delegates.

Baltimore

Personal.—Dr. Charles W. Mitchell has sailed for Europe.—Dr. Franklin P. Mall has gone to Münich, Germany.——Dr. J. Burr Piggott has assumed charge of University Hospital as superintendent, vice Robert P. Bay, resigned.—Dr. William W. Russell left for Chester, Nova Scotia, June 29.—Dr. C. Urban Smith has resigned as professor of medicine and diseases of the stomach at the Maryland Medical College.

Food and Drug Law.—The State Board of Health, on July 1, took up the enforcement of the new pure food bill, which became effective then. The legislature appropriated $15,000 for expenses. The act prohibits the sale of any drug or food that is adulterated in any way, unless the fact is stated on a label showing the percentage of adulteration. Although the act became effective July 1, it does not apply to foods and drugs purchased by the dealers prior to the passage of the act until Jan. 1, 1911, thus giving dealers ample opportunity to dispose of all goods which do not come up to the requirements of the law. It is believed that the druggists welcome the law.

NEW YORK

Personal.—Health Commissioner Fronczak, Buffalo, left June 26 for Europe, where he will study open air schools and attend the conference on school hygiene in Paris.—Dr. John Parmenter has been elected president of the health board at Geneva.—Dr. and Mrs. John H. Collins, Schenectady, have sailed for Europe.

Bills Signed by the Governor.—Governor Hughes has signed bills permitting the establishment of a board of inebriety for New York City; authorizing the State Lunacy Commission to contract for the completion of the Mohansic State Hospital for the Insane at a cost of $2,000,000 and making a preliminary survey appropriation of $100,000; and placing the care of the insane during temporary commitment with the health officer. He vetoed bills providing for the reconstruction of the Long Island State Hospital, and for expenditures for the Kings Park State Hospital and the Central Islip State Hospital.

Would Ease Restrictions on Milk.—Modifications in the health board regulations as to milk are being urged by the Sanitary Milk Dealers' Association which was originated by Dr. Lederle. Among the provisions which it is desired to remove is one requiring that barns be swept in the morning before the milking is done. It is claimed that this requirement is practically a dead letter and that sweeping just before milking increases rather than diminishes the number of germs in the air that may gain access to the milk. The association also wants to sell pasteurized milk from cans like raw milk, and they want the time limit in which pasteurized milk must be disposed of increased from twenty four to thirty six or forty eight hours.

New York City

White Plague Exhibit in Italian Quarter.—The charity organizations opened their tuberculosis exhibit June 20 in Grand street. The Italian consul general made an address. The exhibit will be kept open for a month.

Floating Hospital Begins Season.—The Helen C. Juillard floating hospital for sick children, made her initial trip from Manhattan Island to New Dorp, S. I., July 5. This vessel carries children sick enough to require skilled treatment to the Seaside Hospital at New Dorp.

Personal.—Yale University has conferred the degree of doctor of science on Dr. Simon Flexner of the Rockefeller Institute of Medical Research.—Dr. A. Norton Brockway was stricken with apoplexy while attending the commencement exercises of Hamilton College.——Dr. Francis E. Butler has sailed for Europe.

New Medical Building for Fordham.—Fordham University School of Medicine has secured $100,000 for the erection of a new medical building on the university campus, consisting of three stories and a basement, 110 by 150 feet. It will be used largely as a dispensary, all the first floor and a part of the second being divided into rooms for clinics and laboratories for microscopic work. The building also provides for two lecture halls, a students' common room, etc.

New Hospital Dedicated.—The Peoples' Hospital at 20[illegible] Second avenue has recently been dedicated. Meyer [illegible] made the address and stated that the funds had been raised entirely by the Jews. He stated that there were at the present time in New York city 1,250,000 Jews and of that number less than 5,000 could be cared for by the Jewish hospitals of the city. He upbraided his race for not having fulfilled the contract that they made with the Colony of New Amsterdam by which they agreed to care for their own sick and destitute.

PENNSYLVANIA

Personal.—Dr. Harry B. Adams, [illegible], has been appointed chief house surgeon at the Metropolitan Hospital, New York.—Dr. William S. Vanneman, formerly of [illegible], has come home after having spent twenty years as a medical missionary in Persia.

Dickson City Epidemic Halted.—Within the past few days no new cases of smallpox have been reported in Dickson City. The physicians from the State Department of Health, the Dickson City Board of Health and the seven physicians employed by the borough were kept busy vaccinating the residents of the stricken city, and are now confident that the epidemic is well under control.

School Medical Inspection.—The Wilkes-Barre school board has adopted Dr. S. P. Longstreet's plan for a medical examination of all pupils twice a year. Dr. James T. Williams has been appointed chief medical inspector and his salary fixed at $1,000 a year. Pupils will be examined at the beginning of each term and at the spring vacation. Teachers will also be instructed how to determine physical defects in pupils.

Philadelphia

Addition to Hahnemann Hospital.—Ground was broken June 25 for the erection of a four-story $40,000 addition to the Hahnemann Hospital at Fifteenth and Race streets.

Infant Mortality Campaign.—Active work was begun July 1 by the new child health division of the Department of Public Health and Charities, under the direction of S. W. Newmayer, who is in charge of the infant mortality work of the department. Eight visiting and one supervising nurse began an active campaign to reduce the death rate among children, particularly in the congested sections.

Measles Delays Panama Liner.—Development of a case of measles on board halted the Panama liner *Alliance*, July 1, when fifty miles down the coast on the way to the isthmus. The steamer returned to quarantine, and the patient was removed to the hospital on Hoffman Island with another child which was exposed to the infection. The steamer resumed her way the following day.

TEXAS

Site for Quarantine Home.—The War Department has ceded a portion of its reservation on Pelican Spit at Galveston to the government health department for a site for the new quarantine station. About $200,000 is at present available for the work.

Society Meeting.—At a meeting of the Taylor County Medical Society held on June 27, in Abilene, Dr. Charles M. Rosser, Dallas, delivered an address on "Cancer of the Uterus." A dinner was given in honor of Dr. Rosser at the Hotel Grace. Covers were laid for thirty.

College Commencement.—At the commencement exercises of the Medical Department of the University of Texas, Galveston, May 31, medical degrees were conferred on a class of fifty-seven by President Mezes. The principal address was delivered by Dr. Ashley W. Fly, Galveston, a member of the board of regents.

Personal.—Dr. George M. Decherd has been appointed health inspector at Austin.——Dr. Edward Scott has been appointed county health officer at Bay City to succeed Dr. Bat Smith, who has resigned.——Dr. John F. Y. Paine, professor of obstetrics and gynecology in the medical department of the University of Texas, was presented with a loving cup by the senior class, June 1.

Fraudulent Instructor.—The El Paso County Medical Association warns physicians to look out for a man speaking broken English, weighing about one hundred and eighty pounds and pretending to give courses in bacteriology and pathology to physicians. It is said that he knows but little of the subjects, and at El Paso he forgot to pay his hotel bill. The society wishes to have him located.

GENERAL NEWS

New Chief for Leper Colony.—Dr. James H. Biggar, former chief of the Culion leper colony in the Philippines, has resigned from the service and will take up the practice of medicine in Texas. He has been succeeded by Dr. Paul Clements, medical inspector of the Bureau of Health.

Annual Conference of American Hospital Association.—The twelfth annual conference of the American Hospital Association will be held at the Planters' Hotel, St. Louis, September 20, 21, 22 and 23. An extensive and interesting program has been arranged for the meeting.

Epidemic of Smallpox in Mexico.—An epidemic of smallpox is reported to have been raging for several months in the district of Ozeaba, Northern Chihuahua, Mexico, and an appeal has been made for medical officers and soldiers to enforce quarantine laws. It is reported that over six hundred [illegible] have occurred [illegible] months.

Appointments and Promotions at Rockefeller Institute.—The directors of the Rockefeller Institute for Medical Research announce the following promotions and appointments for the year 1910-1911: Laboratory Staff—Jacques Loeb, Head of Department of Experimental Biology. Associates, W. A. Jacobs, biologic chemistry; D. R. Joseph, physiology and pharmacology; Peyton Rous, pathology; B. T. Terry, protozoology; D. D. Van Slyke, biologic chemistry. Assistants, M. T. Burrows, experimental surgery; P. F. Clark, bacteriology; I. S. Kleiner, physiology and pharmacology; Hardolph Wasteneys, experimental biology. Fellows, F. J. Birchard, biologic chemistry; F. B. La Forge, biologic chemistry. Scholar, J. Bronfenbrenner, pathology. Hospital Staff—Resident physician, G. Canby Robinson. Interns, George Draper, H. K. Marks, F. W. Peabody, H. F. Swift. General manager, Jerome D. Greene.

International Congress of Medical Electrology and Radiology.—The fifth international congress for discussion of these branches of the medical sciences is to meet at Barcelona, Spain, September 13 to 18. Among the topics to be discussed are the unification of methods of electrodiagnosis, electricity as an antiphlogistic agent, the biologic action of high-frequency currents, the therapeutic action of the uninterrupted current and the electrolytic introduction of medicinal ions, the use of Roentgen rays in abdominal diagnosis and autoconduction. The international committee in charge of the congress includes among its twenty-five members C. Beck of New York and S. Leduc of Nantes. Dr. C. L. Leonard, 112 South Twentieth street, Philadelphia, Pa., is the representative for this country. He is to present an article on the progress realized in Roentgen diagnosis to date.

National Confederation of State Medical Examining and Licensing Boards.—At the twentieth annual meeting of this confederation held in St. Louis, June 6, the following officers and committees were elected: President, Dr. J. C. Guernsey, Philadelphia; vice-presidents, Drs. James A. Egan, Springfield, Ill., and Charles A. Tuttle, New Haven, Conn.; secretary-treasurer, Dr. George H. Matson, Columbus, Ohio; assistant secretary, Dr. Darlington Snyder, Columbus, Ohio; executive council, Drs. N. R. Coleman, Columbus, Ohio; Edwin B. Harvey, Boston, James A. Duncan, Toledo, Ohio, A. H. Hamel, St. Louis, D. P. Maddux, Chester, Pa.; committee on clinical instruction, Drs. Henry Beates, Philadelphia, Charles A. Tuttle, New Haven, Conn., Fred C. Zapffe, Chicago, Maurice J. Lewi, New York; L. F. Bennett, Beloit, Wis.; committee on materia medica, Drs. M. G. Motter, Washington, D. C., J. C. Gurnsey, Philadelphia, George MacDonald, Washington, D. C.; committee on lay publicity, Drs. Darlington Snyder, Columbus, Ohio, Frederic Singer, Pueblo, Colo., Fred C. Zapffe, Chicago.

MANILA LETTER

(From Our Regular Correspondent)

Manila, May 31, 1910.

Medical School and Hospital

In medical circles in Manila considerable interest is shown at present in the Philippine Medical School and the new Manila General Hospital which is nearing completion. Much pride in the possession of such handsome and modern structures as those of the hospital and medical school is felt by both the American and Filipino physicians. It is expected that the building of the medical school will be completed and ready for occupancy in time for the opening of the fourth annual session, June 6. These buildings are modern serviceable types, of reenforced concrete. Especial attention has been given to sanitation, light and fresh air and the buildings are well adapted to a tropical climate. During 1908 the Philippine Commission appropriated the sum of 780,000 pesos for the construction of the hospital, which is planned on the pavilion system. At the same time there was set aside the sum of 250,000 pesos for a new medical school laboratory building to be erected on the same campus as the Bureau of Science and the hospital. These buildings are now nearing completion.

The Philippine Medical School

The Philippine Medical School is an outgrowth of the educational system instituted throughout the Philippine Islands by the Philippine Commission and it is also a natural development of the Bureau of Science and the Bureau of Health. The movement looking toward the establishment of such a school had its origin at the second annual meeting of the Philippine Islands Medical Association in 1905, at which meeting the proceedings demonstrated the great need of supplying physicians to the people of the islands. It was shown from statistics that there is an average of one physician to 21,209 of the population of the Archipelago, and that at present there is only one physician to each 430 square miles of territory. In this connection it is to be remembered that the population of the Philippine Islands is greater than that of Canada and that the density of population per square mile is equal to that of Indiana, and, deducting New York City, nearly as great as that of New York state. In view of these amazing facts one is inclined to ask whether a great proportion of the population, having done without reputable physicians so long, will take to improved medical attention or will patronize the modern physician. In the case of the Filipino physician this, to some extent, may be answered by the citation of the twelve months' career of a native graduate, a former scholarship student of the Philippine Medical School. After taking some hospital work he returned a little over a year ago to his native province and started practice in a town of a few thousand inhabitants, which up to that time had been without a registered physician. On the day of his arrival a man was shot through the stomach. The new doctor was sent for, merely, however, to give relief to the man before his expected death. The new doctor at his first serious case became scared out of his wits. However, with the moral support and the assistance of an American scout, ether was administered, rather at the protest of the relatives, and the wounds sewed up and dressed. By careful nursing the doctor was able to bring the man through, and, as a result, at once became a hero of the town. Last week one of the leading druggists of Manila received an order from this doctor for drugs, office fixtures and surgical supplies amounting to nearly $1,000, and he paid cash.

Scholarships

In order that the medical school may serve as wide a field as possible, the Philippine Commission has established "for each province in the Philippine Islands one free scholarship in the Philippine Medical School." This scholarship is competitive and entitles the successful competitor, who must be at least a high school graduate, to "the expenses of transportation to Manila, board, subsistence and maintenance while in Manila attending the Philippine Medical School not exceeding 500 pesos per annum each." In accordance with act No. 1632: "(d) Each scholarship student who shall graduate from the medical school with the degree of doctor of medicine, unless he shall accept appointment under the government of the Philippine Islands or one of its branches, shall return to his province and practice medicine and surgery therein for a period at least equal to the time of his scholarship tuition, unless permission to do otherwise be granted by the Secretary of the Interior. Failure to comply with the terms of this section shall be deemed sufficient grounds for revocation of his license to practice medicine and surgery in the Philippine Islands in the same manner as are other offenses described by section 8 of act numbered 310."

Entrance Examinations

During the past week entrance examinations of the Philippine Medical School have been held. These examinations are made necessary because the schools throughout the provinces are not of a uniform grade and the different colleges are too often deficient in their science instruction. There were 34 applicants.

LONDON LETTER

(From Our Regular Correspondent)

London, June 25, 1910.

Annual Meeting of the British Medical Association

The seventy-eighth annual meeting of the British Medical Association, which will be held in the University of London July 22 to 29, promises to be one of the most important and successful functions of the association, both from the scientific and social standpoint. It is many years since the annual meeting was held in the metropolis, which contains a population equal to that of some European countries and is the center of medical as of all other activities in the country. The scientific business will not commence until July 26, when President-Elect H. T. Butlin will deliver his address. Among the social functions is a *conversazione* at the Guildhall given by the lord mayor and corporation.

Tetanus and the Motor Car

The statistics of recent years show a great increase of the number of deaths from tetanus in spite of the use of antitetanic serum and increasing knowledge of the mode of invasion of the disease. In the years 1889 to 1900 the average number of deaths in England and Wales from tetanus was between 30 and 40. In 1900 the number rose to 66, but fell to 57 in 1901. In 1902 an extraordinary increase occurred, the number reaching 201, and this high level has since been surpassed. From 1903 to 1908 the figures are respectively 257, 257, 248, 254, 226 and 180. The *British Medical Journal* suggests that the cause for this extraordinary increase is the motor car. It might at first be thought that the great development of motor traffic of recent years would have an opposite effect, for the concomitant reduction of the number of horses in the streets and roads would diminish the amount of animal excreta lying on them. But simultaneously the distribution of the excreta which remains has been greatly increased by the dust raising powers of the motor car and the germ has been spread far and wide. To this greater distribution it is suggested that the increase of cases of tetanus is due. The slight fall in 1908 may be due to the fact that the supply of horses is rapidly diminishing in recent years, now that it has been proved that mechanical traction is commercially superior to horse traction.

Typhoid-Carriers in India

The annual report of the sanitary commissioner of India for [illegible] which has just been published, shows that while inquiries to trace the source of outbreaks of typhoid fever in the army to water, food, etc., usually failed to yield definite results, the disease was traced to typhoid carriers in many stations. At Wellington the search was carried out with great thoroughness by making a bacteriologic examination of the excreta of all convalescents, thrice weekly; one man was found to have chronic typhoid bacilluria 13 months after his attack. At Sialkot the investigations revealed the grave danger which may arise from the employment of the native cooks in the kitchens. A servant in the officers' mess was found to have typhoid bacilluria and two cooks in one of the squadrons of a cavalry regiment to have a similar condition. As results of these discoveries all natives applying for the post of cook were examined and another carrier was detected. At other stations the blood was examined for the Widal reaction, which was found in some cooks. Though this does not prove that the subject is a typhoid-carrier, it was considered sufficient grounds for dismissal. Evidence is also recorded of the danger of contracting the disease from patients during the acute stage. This danger is recognized at all stations, but despite careful precautions seven orderlies became infected.

Antikamnia

After a long career of tolerance in the advertising pages of most of the medical journals of this country, including, I regret to say, some of the best, Antikamnia has at last come under editorial censure. The proprietors of this nostrum have managed with some success to appeal to the profession as vendors of an "ethical" preparation and at the same time to the public with the usual wiles of the nostrum humbug. Even the revelations published by The Journal seem to have had no effect on our editors. One journal at the very time it was publishing a series of articles denouncing and exposing quackery of all kinds and criticising with due severity the lay press for inserting fraudulent advertisements of nostrums had a running advertisement of Antikamnia. The exploiters of this preparation have gone a step too far. They have sent to women through the mail samples and pamphlets, with a letter beginning: "Do you ever suffer from pain? If so please try enclosed sample of Antikamnia tablets. Always prompt and reliable." Among the conditions for which it is claimed to be a sovereign remedy are the menopause, miscarriage, pains, painful menstruation, "after debauch." It is especially recommended for Americans in London who are the subjects of 'brain fag!'" The *British Medical Journal* has received a shower of complaints from doctors whose wives and women patients have received these objectionable pamphlets. It reprints the analysis of this nostrum made by the Council on Pharmacy and Chemistry of the American Medical Association and published in the "Propaganda for Reform in Proprietary Medicines." Your contemporary regrets that several of the testimonials quoted appear to be from physicians and points out that one of the greatest obstacles to reform in the trade in proprietary medicines is that physicians can be found to testify to their virtues. [This subject is commented on editorially in this issue of The Journal.]

Medical Treatment of School Children in London

A [illegible] has been in [illegible] between the London County Council and the British Medical Association for the medical treatment of the [illegible] who attend the [illegible] schools (the greater part of the [illegible] London). By a recent act the medical inspection of school children was established. A large number of children were found suffering from various diseases—adenoids, enlarged tonsils, impetigo, ringworm, errors of refraction, deafness, etc.—which interfered with their education. It was then realized that it was of no use to make provision for medical inspection if medical treatment did not follow. Unwilling to incur the large expense which this would involve the council made arrangements with several of the London hospitals to treat the children on condition of receiving donations. To this the British Medical Association has objected that it was wrong in principle for the state to endeavor to get new services carried out on its behalf by trading on the charitable institutions of the country. A further objection is that the scheme provides only for the treatment of about a fourth of the children who require it. The association suggests that the only satisfactory method is for the council to make provision for the treatment of the children by local physicians at suitable local centers. Again, the council has made no provision whatever for the treatment of the children's teeth. As shown in previous letters, dental caries is prevalent to an appalling extent: at the age of 6 nearly 100 per cent. of children suffer from it and in each child an average of 9 teeth are affected. When the permanent teeth appear there is only slight improvement: at the age of 14 less than 15 per cent. of children are free from caries, and this percentage gradually falls until not more than 5 per cent. of adults have a perfect set. No provision has been made for the treatment of children's teeth for the simple reason that the dental hospitals have declined to undertake it and have informed the council that the only method is to establish school-clinics for the purpose.

PARIS LETTER

(From Our Regular Correspondent)

Paris, June 24, 1910.

Vital Statistics of France for 1909

The *Journal Officiel* has just published the annual vital statistics of France for 1909. The number of births was very small; in fact, only 769,969 live births were recorded, in place of 791,712 in 1908, a diminution of 21,743. The excess of births over deaths was only 13,424, being less by 33,017 than in 1908, when the excess was 46,441. At least a third of this diminution in the excess of births was due to the fact that there were 11,274 more deaths in 1909 than in 1908, the remaining two-thirds being due to the actual diminution of the number of births. In the first semester of 1909 the number of deaths was greater than the number of births by about 28,000; but a fortunate compensation occurred in the course of the second semester, in which there was an excess of 41,524 births, thanks to the lowering of the mortality. As for the share of the various departments in the French birth-rate, it is stated that the only regions where the birth-rate is gaining over the death-rate are the regions of the north, Brittany, the eastern frontiers, the Limousin and Corsica. On the other hand, in the departments of the Garonne and the Rhône valleys each year there are more deaths than births recorded, so that depopulation increases from year to year. In the Department of the Seine there were recorded last year 73,466 births and 71,576 deaths, an excess of 1,110 deaths. While the population of France remains, so to speak, stationary, that of Germany is increasing annually by more than 900,000, that of Austria by more than 300,000, that of England by more than 400,000, that of Italy by more than 400,000. Doubtless the diminution in the birth rate is far from being a phenomenon peculiar to France, but in the other countries this diminution has not yet attained the same proportions; and, moreover, thanks to their previous headway, these other states preserve a large excess of births. While the average annual excess of births over deaths for each ten thousand inhabitants, or the increase in the population does not exceed 18 for the last five-year period in France, it amounts to 106 in Italy, 113 in Austria, 121 in England, 149 in Germany and 155 in the Netherlands. In other words, the annual increase in population is six to ten times more rapid in the other countries than in France. The number of marriages has also diminished in France. In 1909 there were registered only 307,951 marriages, while the preceding year there were 315,928 and in 1907 314,756. The number of divorces has continued to increase since 1900. There have been, in fact, 12,874 divorces during the last year against 11,515 in 1908, an increase of 1,359 divorces. There were only 10,938 in 1907, 10,573 in 1906 and only 7,157 in 1900.

Improved Vaccination Against Typhoid

On June 21 Dr. H. Vincent, professor at the school of military hygiene at Val-de-Grâce, read before the Académie de médecine an interesting communication on vaccination against typhoid fever. The vaccine prepared from dead bacilli by Wright and Leishman while efficacious, arouses local or general reactions which are often painful. Dr. Vincent, after numerous attempts, prepared a vaccine by autolysis of the young bacilli in physiologic salt solution cleared by centrifugation and sterilized by agitation and mixed with ether. The ether is easily disposed of by evaporation at 37 C. for a few minutes. The vaccine is not heated and no antiseptic is added to it. It is perfectly limpid and is easily absorbed. Used on animals, this vaccine has shown high protective qualities. To immunize human beings Dr. Vincent has used a polyvalent vaccine prepared with eight strains of typhoid and paratyphoid bacilli. This vaccine, which was injected into 13 adult subjects under the skin of the side, was well tolerated and caused only a slight local pain without fever. It was absolutely inoffensive. The serum of the subjects so vaccinated shows very energetic bactericidal properties. In contact with it the Eberth bacillus became deformed, smaller, granular, irregular and unrecognizable. It is active for paratyphoid as well as for typhoid fever and causes a large production of specific antibodies which renders its use of great value for the prevention of typhoid fever.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 16, 1910.

German Society for Protection of Infants

May 20 and 21 the second session of the German Society for the Protection of Infants occurred at Munich with a large attendance. The first subject of discussion was the measures which are included in the imperial insurance law for the protection of infants. The provisions that have been introduced in this bill were regarded as in part insufficient. A demand was made that it should be made obligatory on the Krankenkassen to provide for puerperal patients as follows: 1. A weekly allowance up to the amount of the sick relief money for eight weeks, of which at least six must fall in the period after delivery. 2. Service of a midwife and medical treatment for symptoms during pregnancy. 3. Aid on account of pregnancy in case of inability of the pregnant woman to work, amounting to the sick relief money for the entire time of six weeks. 4. In addition to the puerperal aid, a nursing payment amounting to the sick relief money to be paid to the nursing woman as long as she nurses her new-born child up to twelve weeks after delivery. The amount of the nursing money is to be correspondingly diminished if the nursing money and the puerperal money exceed the amount of the regular wages. The expenses which would arise in carrying out these demands would be small in comparison to the object to be accomplished and in view of the fact that they would lead in the end to lessened expense on the part of the Krankenkassen. They amount to 22 cents (90 pfennigs) per head of the insured for the nursing payment and 10 cents (40 pfennig) per head for the midwife and medical services.

There was also considerable debate on the removal of the evils connected with the German wet-nurse system. It was demanded that the furnishing of wet nurses should be placed under the supervision of the state. So far only one state in Germany, viz., Hamburg, has regulated wet nursing by law and there a physician is in charge of the matter. According to Professor Schlossmann it would be best to forbid the furnishing of wet nurses by private parties altogether, and turn the matter over to the foundling asylums. The foundling asylums are best prepared to form a safe judgment as to the health and nursing capacity of the wet nurse and particularly to decide whether she is free from syphilis or not. On the other hand, the wet nurses should also be protected in their rights, for instance against infection by the child they nurse. It should also be provided that a mother shall offer herself as nurse only when she has nursed her own child for three months. The foundling asylum should oversee and provide for the nurse's child for two years. The asylums should make regular reports to the authorities in charge, regarding the children of the nurses. In the discussion much stress was properly laid on the great difficulty in the practical carrying out of these provisions. The physician would be burdened with a responsibility which he might not be able to accept. The furnishing of nurses by asylums would be very expensive. It would be best, if on the whole there were no wet nurses; reference was made to America, where wet nurses are said to exist no longer. For the displacement of the wet nurses, the so-called nursing women (*Stillfrauen*) should be recommended, healthy women, known to the physician, who go to the house of their employer several times a day and nurse the child without completely depriving their own child of breast milk.

Finally, the subject of infant hygiene in the country was taken up, especially the question of the cooperation of physicians and midwives in the prevention of infant mortality. As a chief cause of infant mortality in the country, errors of diet and the indolence of mothers were given. Where the infants are breast fed, the mortality in the country is small. Essentially the propaganda is one for nursing reform and this can be most efficiently carried on by the midwives. The nursing premiums given to the midwives have proved very useful in this respect in small cities; 13 cents (50 pfennig) after six weeks' nursing. To avoid contradiction in the advice of physicians they should be required to employ a circular of instruction. Milk kitchens are indispensable in small cities. The introduction of trade guardianship, regulation of the system of boarding out children, the erection of institutions for sick infants and the improvement of the housing conditions are especially needed in the small cities. It is not practicable to extend the present arrangements for the care of infants in the cities to the open country. In the country nursing prémiums are not necessary, as there the women as a rule have time for nursing. It is important to improve the method of inspection of the dead, as carried out in the country; the cause of every death should be exactly determined.

Personal

Privy Councillor Goldscheider has been selected as the successor of Professor Senator. Goldscheider has been until now director of the department for internal medicine of the Rudolf Virchow Hospital, which was opened under his direction. He is very glad I am sure to exchange this position for that of the directorship of the university medical policlinic. The numerous administrative demands which are made on the director of a hospital, especially so large a one as the Virchow Hospital, require so much of a clinician's time, that it is easy to understand his dissatisfaction with his present place. Moreover in such a position conflicts with the authorities are very apt to arise and in this case with the municipal authorities, and as Goldscheider possesses a somewhat excitable temperament such conflicts have occurred to a greater extent than was agreeable to him.

The filling of the chair of ophthalmology at Heidelberg which Professor Leber resigned on account of his advanced age has caused some difficulty. Professor Hess, of Würzburg, and Professor Axenfeld, of Freiburg, refused the call, but now it has been accepted by Professor Wagenmann, of Jena.

Dedication of the New Building of the Kaiser Wilhelm Academy

June 10 the new building of the Kaiser Wilhelm Academy for the instruction of military surgeons was dedicated in the presence of the Kaiser and the Empress and many ministers and other officials. The institution is designed, as its name indicates, for the instruction of students of medicine who wish afterward to serve as army surgeons in the active Prussian army. It was founded Aug. 2, 1795, under the name of the "Pepinière." The number of students has continually increased and as the old institution in all its arrangements was no longer suitable to modern requirements, the corner-stone of the new building was laid five years ago. The building is arranged for the accommodation of about 500 students. Like all other students they attend the lectures of the university and are expected to follow the same course in general, but in the academy they are also instructed, especially by lectures and practice, in military surgery and hygiene. Laboratories for scientific investigation are also provided. The new building, which was erected at an expense of $1,500,000 (7,500,000 marks), is architecturally a very beautiful edifice and one most admirably suited to its purposes. A series of valuable collections has been installed in it: a collection of drugs, one of instruments and dressings, a collection of models of apparatus for the care of the sick, for transportation of the sick, for lodging the sick, for the study of ophthalmology, pathologic anatomy and of ear and throat diseases. There is also an anatomic collection, a collection for physics, a collection for military surgery, including 170 preparations of gunshot wounds of the bones from many wars, presented by Professor v. Esmarch, and finally a library which at present contains about 68,000 volumes. Further there is found in the new building the hygienic laboratory, in which investigations on the provision of drinking water, on preserved foods for the army, on the clothing of soldiers, on methods of disinfection, etc., will be carried on. In the academy postgraduate courses for sanitary officers will be annually provided. A number of our most distinguished physicians have been graduates of the academy: Helmholtz, Virchow, Leyden, Behring, Löffler, Gaffky, etc.—which is good evidence of the excellent instruction which the youths studying military medicine receive at this place.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 23, 1910.

The Right to Grant the Title of Specialist

A difference of opinion has arisen recently between the medical council and the government as to the right to grant the title of specialist. For a few years endeavors have been made to regulate the question and to prevent the increase of self-styled specialists. The right to confer this title was claimed by two universities and special examinations or at least certain studies were demanded as the minimum requirements. In the case, a doctor who had made the treatment of diseases by physical means, like massage, gymnastics, electricity, his special study, settled down in a country town and asked and received from the medical council permission to call himself "specialist tor physical treatment" (*Spezialarzt fur physikalische Heilmethoden*) which, however, was not recognized by the district government officer At length the right of the council to grant the title was recognized, and the right of a medical representative body to regulate the affairs of its own members has been clearly acknowledged for the first time in this country. In connection with other satisfactory achievements, like the right to settle financial disputes between practitioners and private corporations, the growing influence of medical representatives is clearly shown, proving the value of a good organization.

Benzoic Acid—A Dangerous Food Preservative

By order of the Bureau of Health of the ministry of home affairs (*Ministerium des Innern*) to whose notice several cases of adulteration of food by preservatives had come, an investigation of the question was recently conducted. The laboratory for food examination in Vienna, a government institution, has recently published the results of the investigations. It has been clearly proved that the addition of benzoic acid is necessary only to disguise either the smell or the color of articles of food which are not fit for use and which would otherwise not be procured by the public, and that thus it tends to be used in a fraudulent way. Apart from this fact, its constant use in even small doses may cause irritation of the mucous membranes of the gastro-intestinal tract. Therefore its use was condemned as a preservative and an order made to seize all articles containing such addition in a higher percentage than 0.025 per cent.

Results of Surgical Treatment of Lupus

In a publication dealing with the necessity of centralizing the endeavors to treat lupus systematically Professor Lang, an authority on this subject, is strongly in favor of surgical treatment of certain forms of this disfiguring disease, in preference to the Finsen treatment. He has operated on 455 patients, showing in 250 instances lupus of the face. The latter cases are very interesting, as they prove that in skilled hands excellent cosmetic and functional results can be expected from surgical treatment with a minimum expenditure of time and expense in comparison with the Finsen method. The lesion in the face was in 95 cases larger than a five-shilling piece, in some instances nearly covering one side of the face. Lang, formerly head of the dermatologic department of the Vienna General Hospital, extirpated all these lupus patches and followed up the extirpation by plastic operations. Of all his patients operated on for lupus 273 remained free from all recurrence for 16 years (the length of time that he has employed his method). Three patients had a recurrence, but outside of the field of operation, and after 12, 3½ and 3 years, respectively; 22 of the patients had recurrence within the field of operation, which yielded to another surgical intervention with good results, while 10 had inoperable recurrence out of 455. All these 10 belong to the first half of the cases, or 7 to the first quarter, showing clearly the better results [illegible] improvement of technic and of indication. Extirpation is, of course, not always possible. Surgical removal is [illegible] only when the patch is well defined, which is not the case when it is in the mucous membranes. Size and number are not contraindications, but progressive edema and grave complications of other organs contraindicate operative measures. In these cases Finsen's method is indicated. Its only disadvantages are the expense and the duration of treatment. Lang is absolutely opposed to excochleation and scarification of lupus, because of the resulting dense scars which hinder later excision or Finsen treatment. He insists that every lupus station shall be in charge of a competent surgeon dermatologist who is capable of dealing with the cases according as they require excision, plastic operations, Finsen, hot air or the actual cautery. Such equipments require great funds, therefore, it is better to have one large, completely equipped institute than several small ones. As the means of the Vienna Lupusheim are rather limited, the adoption of the light method alone would have sufficed to consume the funds at disposal. Therefore, the advantage of the surgical method is evident, as the resulting scars are as supple as those of the light treatment.

Correspondence

Practical Examinations for Medical License

To the Editor:—Of all the methods of raising standards, efficiency of examination is no doubt by far the best plan. I doubt whether any other branch is more exposed to a reeling off of mere patter instead of the furnishing of evidence of training than that of psychopathology and psychiatry. The differences of teaching are so great and the vocabulary seems to play such an undue part that there is no fair way to size up the efficiency of a man outside of a demonstration of what he does with an actual case. This plan was in practice when I passed my state examination at Zurich, in Switzerland, in 1890; both in psychiatry and in medicolegal work we had to examine and report on a case, which is perfectly feasible and really the only way to get around the differences of teaching and the hollowness of answers to mere abstract questions. I therefore plead for the introduction of these practical examinations as it will be as much to the interest of the public as to the interest of true efficiency of the work of our colleges.

Adolph Meyer, New York.

Director-elect of the Henry Phipps Psychiatric Clinic, Johns Hopkins University, Baltimore.

McCourt's Early Study of Cancer Treatment by Toxins

To the Editor:—A rereading of your editorial on "Dr. Hodenpyl, a True Scientist" (The Journal, May 14, 1910, p. 1618) and the article of J. W. Vaughan (May 7, 1910, p. 1510) describing the treatment of cancer by the cancer residue, recalls to my mind the earlier work of Dr. P. J. McCourt. Dr. McCourt for a long time treated malignant neoplasms by a diluted glycerin solution of their toxins. The remedy was administered per os. Some very encouraging results were reported, including some apparent cures. A point much insisted on by Dr. McCourt and worthy attention of other investigators is that the remedy used should represent the toxins, not only of the neoplasm but of other complicating affections, such as syphilis, tuberculosis, etc.

At the time when Dr. McCourt began his work, the immunity theory was not distinctly worked out, so that his work appears to us somewhat crude, but it seems to have been along much the same lines as the later work and deserves attention not only as a matter of historical interest but possibly also because it may be fruitful in suggestion to other investigators. Through former acquaintance with the doctor I am able to send you reprints of his articles on this subject published in the *Medical Review of Reviews*, November, 1899, February, 1900, and April, 1904. I believe these articles are worthy of study by those who are interested in this line of work.

I. W. Wallheim, M.D., New York.

Comments on Dr. Pettey's Article Criticizing the Lambert Treatment for Drug Addictions

To the Editor:—It would appear from a casual reading of Dr. Pettey's article (The Journal, May 14, 1910, p. 1593) that his method of procedure in treating drug addictions is radically opposed to that set forth by Dr. Alexander Lambert (The Journal, Sept. 25, 1909, p. 985). As a matter of fact, the underlying principle and purpose in both treatments are the same. Dr. Pettey's article, on careful analysis, reads not unlike a comment designed to explain the various steps followed in the Lambert method.

Dr. Pettey lays stress on the fact that he administers the purgatives so that they may act at a time when the paralyzing effect on peristalsis of the narcotic to which the patient is addicted, is at a minimum. That is, he takes advantage of the habitué's customary absence from his drug during his sleeping hours; when, naturally, peristalsis is being reestablished. Precisely this idea is adhered to in the treatment advocated by Dr. Lambert. The latter waits fourteen hours from the time he administers the narcotic before beginning active purgation; and further narcotics are not administered until this is obtained. Dr. Pettey, too, insists that the narcotic must not be given again until the bowels have been thoroughly emptied. Thus it is seen that in each case cathartic activity coincides with the fag-end of narcosis. Dr. Pettey decries the drastic cathartics employed by Dr. Lambert and then proceeds to advise a dosage which does not appear to me less heroic when we consider the powerful check the belladonna exerts in Dr. Lambert's plan. Moreover, in the cases in which I have used the Lambert method, the catharsis has not been more than was needed for successful elimination and has seemed secure from dangerous purgation. It must be borne in mind, too, that Dr. Pettey is outlining a course of treatment for a patient taking not more than 10 grains of morphin daily, while Dr. Lambert's treatment embraces the maximum amount of narcotic that may be taken.

Dr. Pettey aims to get the same results by the use of the alkaloids, atropin and scopolamin, which are obtained by Dr. Lambert from the belladonna and hyocyamus from which the alkaloids are derived. In the one, the administration is hypodermatic; in the other, by mouth. There are objections to both as a routine practice and virtue in either where indicated. Dr. Pettey rightly objects to the use of the term "specific" as applied to the combination used by Dr. Lambert. The most that can be said for the drugs in this combination is that they are antidotal. But I cannot agree with Dr. Pettey when he says that the prickly ash has no value in the treatment. This drug is a stomachic and intestinal stimulant and certainly gives the stomach greater tolerance for the other drugs used.

In both treatments characteristic bilious stools are sought for. Dr. Lambert says that "the castor oil will produce a characteristic stool composed of mucus and bile 'after which' the patient is relaxed and comfortable." Dr. Pettey states that the hyposulphite causes the "patient to have small bilious stools which prepare him for a rapid convalescence." Now, to that part of Dr. Lambert's article concerning this phase of the treatment Dr. Pettey gives this critical interpretation: that the patient reaches a "state of placidity and comfort" because he has had a liquid green stool composed of mucus and bile. I believe, however, that anyone will see from a careful reading of the two articles that the significance attached to this stool is identical in the minds of the two men. Each considers it merely as an evidence that the "hyperesthetic state" has terminated and effective elimination taken place.

Dr. Pettey has failed to call attention to a noticeable omission in the Lambert paper. While the method for treating alcoholics is carefully outlined, yet in the appended table of cases, the physician endeavoring to apply the formula finds not a case of alcoholism recorded. Then, too, Dr. Lambert's article seems to say that the treatment for a morphinist may cease at a specified time—the "characteristic stool shows that the entire treatment may cease." Yet a study of the appended table shows that in the majority of cases the so-called "specific" was continued for longer or shorter periods after the time at which, judging from the treatment outlined, it might have been stopped. In my own cases, I have found it necessary to continue the "specific" in most cases for a somewhat longer time than Dr. Lambert designates.

While it is necessary often, as Dr. Pettey suggests, to detain patients in the sanitarium for a convalescence of "one or two months," I believe that patients are sometimes harmed by over careful carrying along. I have obtained excellent results by dismissing patients from my sanitarium just as soon as it seems at all advisable, and letting them feel that they must rely on their own strength. In most cases, however, I find it best to have patients return to my office at intervals until I am confident that their self reliance is fully reestablished.

C. C. Wholey, Pittsburg, Pa.

Marriages

Charles J. Wehr, M.D., to Miss Lena Hitzelberger, both of Bellevue, Ohio, June 18.

Alexander J. Rooney, M.D., to Miss Sophia Livermore, both of Brooklyn, June 21.

Kinchen B. Taylor, M.D., to Mrs. Rosina C. Morton, both of New York City, June 19.

John H. Thompson, M.D., to Miss Mabel Ayers, both of Greenspring, Ohio, June 22.

H. Seth Anderton, M.D., Diboll, Tex., to Miss Margery J. Smith, at Baltimore, June 24.

Frederick George Dyas, M.D., Chicago, to Miss Mabel Freer, of Hinsdale, Ill., June 29.

Jacob John Kocher, M.D., to Miss Clareta Margaret Hicks, both of San Jose, Cal., June 15.

John B. Walker, M.D., to Miss Mai Elmendorf Hackstaff, both of New York City, June 22.

Noel Gano Mussey, M.D., Glendale, Ohio, to Miss Penelope Lever, of Loveland, Ohio, June 16.

Julius B. Evans, M.D., and Mary L. Evans, M.D., both of Ada, Ohio, at Columbus, June 20.

Leslie W. Morsman, M.D., Omaha, to Mrs. Margaret M. Thurwood, of Vail, Iowa, June 16.

Charles N. Sturdevant, M.D., Detroit, to Miss Katharine Irvine, at Mercersburg, Pa., June 18.

J. Raymond Kirk, M.D., Paw Paw, W. Va., to Miss Mary Arnold, at Springfield, W. Va., June 18.

Arthur George Blakeslee, M.D., to Miss Helen Catherine Monroe, both of New York City, June 22.

Walter Green Evans, M.D., Stuart, Okla., to Miss Hilda Abernethy Grayson, of Mobile, Ala., June 15.

Gustavus Golseth, M.D., Jamestown, N. Dak., to Miss Florence Pugh, of Casselton, N. Dak., June 14.

Elwin Carl Schneider, M.D., Washington, D. C., to Miss Celina Cruett King, at Alexandria, Va., June 21.

John Peter Schneble, M.D., Woodhaven, N. Y., to Miss Ida Brandenstein, of Glendale, Brooklyn, June 15.

Deaths

Dwight Robbins Burrell, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1868; a member of the Medical Society of the State of New York, American Medico-Psychological Association, Rochester Pathological Society, and Rochester Academy of Medicine; resident physician at Brigham Hall; one of the incorporators of the Ferris Thompson Memorial Hospital, Canandaigua; a veteran of the Civil War; died at his home in Canandaigua, June 18, from cerebral hemorrhage, aged 67.

Alfred Wanstall, M.D. New York Homeopathic Medical College and Hospital, New York City, 1875; a member of the American Medical Association; of Baltimore; aurist and physician in charge of the Baltimore Homeopathic Free Dispensary; a member of the staff of the Atlantic Medical College, Baltimore; died at Baltimore, recently, from heart disease, aged 58.

Arthur Ludwig Anderson, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1908; a member of the American Medical Association; health officer of Aurora, Ill.; died at the St. Charles Hospital, Aurora, June 26, as the result of complications following an operation for appendicitis some time before, aged 28.

Jesse W. Downey, M.D. University of Maryland, School of Medicine, Baltimore, 1869; a member of the Medical and Chirurgical Faculty of Maryland; a Confederate veteran; for many years surgeon of the First Regiment, Maryland National Guard; died at his home in New Market, June 25, from cerebral hemorrhage, aged 62.

Willis Sidney Anderson, M.D. College of Physicians and Surgeons, New York City, 1891; a member of the American Medical Association; of Detroit, Mich.; in charge of the eye and ear department at Harper Hospital for twenty years; was drowned near Belle Isle, June 27, by the capsizing of his canoe, aged 42.

Orin A. Lyon, M.D. Homeopathic Hospital College, Cleveland, 1881; a member of the Northeastern Medical Society; of Akron, Ohio; died June 17, from internal injuries caused by being crushed between his automobile and a tree while cranking the automobile a few days before, aged 55.

Henry Stanley Warren, M.D. Harvard Medical School, Boston, 1900; a member of the American Medical Association; for two years house surgeon at the Boston Children's Hospital; died at the Massachusetts General Hospital in that city, June 25, from cerebral hemorrhage, aged 36.

Clifford Harvey Robinson, M.D. Western Pennsylvania Medical College, Pittsburg, 1900, of Pittsburg; died at the home of his mother in that city, June 26, following an attack of pleurisy last December from which he had never fully recovered, aged 33.

Charles Larkin McCracken, M.D. University of Toronto, Ont., 1881; a member of the Medical Society of the State of California; tax collector of San Mateo county, [illegible]; died at his home in Redwood City, June 24, from heart disease, aged 48.

Herman D. Marcus, M.D. Medico-Chirurgical College of Philadelphia, 1891; a member of the American Medical Association; is said to have committed suicide at his home in Atlantic City, N. J., June 16, by taking a solution of cyanid of potassium.

O. T. Huebner, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1869; a member of the Board of Trustees of the Millersville State Normal School; died at his home in Lancaster, Pa., June 25, from dropsy and heart disease, aged 71.

Elijah Blacksheare Bush, Jr., M.D. Atlanta (Ga.) School of Medicine, 1909; a member of the Medical Association of Georgia; surgeon to the Georgia railroad; died suddenly at his home in Colquitt, June 4, from pulmonary tuberculosis, aged 23.

Jacob Huber, M.D. Medical College of Ohio, Cincinnati, [illegible]; Bellevue Hospital Medical College, 1879; a member of the Illinois State Medical Society; a Civil War veteran, a former mayor and alderman of Pana, Ill.; died at that place, June 27, aged 70.

John R. Shannon, M. D. Southern Medical College, Atlanta, Ga., 1893; a member of the Medical Association of Georgia, and one time president of the Sixth Congressional District Medical Association; died at his home in Cabaniss, near [illegible], Ga., June 22.

Charles L. Gates (exemption certificate; license 188[illegible]); one of the earliest settlers of Hancock, Minn., and a resident of that place for thirty years; was killed while walking on the Great Northern track near Hancock, June 19, aged about 7[illegible].

James Eloi Hickley, M.D. Baltimore Medical College, 190[illegible]; a member of the Massachusetts Medical Society and American Academy of Medicine; of Springfield, Mass.; died in that city Dec. 4, 1909, from pulmonary tuberculosis, aged 31.

Belle M. Walrath, M.D. Northwestern University Woman's Medical School, Chicago, 1882, a member of the American Medical Association; of St. Paul, Minn.; died in St. Luke's Hospital, St. Paul, June 20, from cancer, aged 62.

William J. Whittaker, M. D. Royal College of Surgery, Dublin, Ireland, 1863; King's and Queen's College of Physicians, Dublin, 1864; a retired physician of Kansas City, Mo.; died at his home in that city, June 22, aged 6[illegible].

Albert Osborn Bogert, M.D. College of Physicians and Surgeons, New York City, 1875; a member of the Medical Society of the State of New York; died suddenly at his home in Spring Valley, N. Y., June 25, aged 59.

C. H. O. Young, M.D. College of Physicians and Surgeons, Baltimore, 1875; a member of the Kentucky State Medical Association; a [illegible] of [illegible], Ky., for [illegible] years; died at that place, April 22, aged [illegible].

George W. Cox, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 186[illegible]; formerly of [illegible]; died at the Masonic Home at Sullivan, Ill., June 16, where he had lived for the past three years, aged [illegible].

Stephen Frost Horton, M.D. New York University Medical College, New York City, 188[illegible]; a member of the Medical Society of the State of New York; died at his home in Peekskill, N. Y., June 22, aged 45.

Harvey S. Seymour, M.D. Chicago Homeopathic Medical College, 188[illegible]; of Sugar Grove, Ill.; a veteran of the Civil War; died at the Aurora (Ill.) Hospital, June 23, from pernicious anemia, aged 66.

William Black Rowland Jordan, M.D. College of Physicians and Surgeons, Baltimore, 1886; died at his home in Liberty Grove, Md., June 8, from ischiorectal abscess, aged 50.

Isaac D. Moore, M.D. Medical College of Georgia, Augusta, 1856; of White plains, Ga.; a surgeon during the Civil War; died at his home, June 16, from paralysis, aged 81.

William M. Hendrickson, M.D. Albany (N. Y.) Medical College, 1863; a prominent physician of Coupeville, Wash.; died at that place, May 30, from nephritis, aged 68.

John Colby Landon, M.D. Detroit (Mich.) College of Medicine, 1896; of Philadelphia, Pa.; died in that city, June 20, from heart disease, aged 40.

Emmett C. King, M.D. New York Homeopathic Medical College and Hospital, 1880; died at his home in Hartford, Conn., June 17, aged 58.

James M. Massie, M.D. Physio-Medical College of Indiana, Indianapolis, 1889; of Fort Worth, Texas; died June 15, from nephritis.

Lucius M. Quinn (license, Miss.); died at Holmesville, Miss., Nov. 5, 1909, from hepatic abscess, aged 62.

Pharmacology

DIABETOL

A Diabetes Cure of the "Tropical Herb" Type

Bearing in mind that the nostrum exploiter finds his most fertile field in the "treatment" of those diseases which kill slowly, it is not surprising to find many fake specifics on the market for the cure of diabetes. The average victim of this disease rebels at the only treatment which holds out any hope of success—careful dieting and strict attention to hygiene—and demands of the physician the impossible: a drug that is specific for his ailment. Those who treat diabetics know how terribly difficult it is to get these patients to obey the orders as to diet, etc., and how extremely prone such unfortunates are to experiment with the thousand-and-one "cures" recommended to them by well-meaning friends or by the manufacturers. The field is thus a rich one for the nostrum exploiter and needless to say is being assiduously tilled.

"Diabetol" is put on the market by the Ames Chemical Company, Whitney's Point, N. Y., and is heralded through the newspapers as "A New Discovery for the Cure of Diabetes and Kidney Diseases." The "discovery" was made, we are told, by Frank M. Ames, a civil engineer, who spent more than twenty years in tropical American countries, most of the time being in "tropical jungles." From an "absolutely reliable" native Mr. Ames learned of the existence of a "herb that would cure diabetes," and from experiments which he has made with this "herbal remedy" he finds that it "has a direct specific action in the cure of this dreaded disease."

In the advertising pamphlet the physician is told that "Diabetol is not a patent or secret medicine." How much reliance can be placed on this statement may be seen by the following reply from the Ames Chemical Company to a physician who, on the strength of the above claim, wrote for information regarding this nostrum:

> We have received your favor and would say in regard to our herb that we do not know whether it has been classified botanically or not, as we only know the Indian name and location where it grows which of course *we have to keep secret* [Italics ours.—Ed.] to protect ourselves.
>
> The Diabetol herb will certainly cure diabetes and do it quick . . . ."

The old scheme of a "home made" uranalysis, by which the patient may confidently be expected to frighten himself into purchasing the nostrum is worked as follows:

> Set aside a quantity of your morning urine for twenty-four hours, then if found cloudy, stringy or with sediment there is something wrong and you should take a few packages of Diabetol to correct your trouble, thereby forestalling the invasion of Diabetes or Bright's Disease.

It is hardly necessary to say that this "test" will indicate the presence of incipient diabetes or Bright's disease in no small portion of the human race.

On an advertising circular headed, "First week results with Diabetol," the following statements are made:

> "Diabetol acts like magic in the cure of diabetes and the patient improves rapidly from the first dose. Note a few of the marvelous results. Can any other remedy approximate it? We challenge comparison."

Then follows a list of individuals who enthusiastically endorse Diabetol. The worldly-wisdom of the exploiter of Diabetol in publishing "first week results" instead of later reports, was made evident when we began to receive letters from physicians to whom we had written for further information, regarding these cases. For instance:

WHAT THE TESTIMONIALS SAY	WHAT PHYSICIANS WRITE
"Have gained 5 pounds in 12 days and specific gravity lowered 13 points with a slight reduction in sugar; guess I am on the right track at last."—N. C. B., Mich.	"Relative to the matter of Mr. N. C. B.; he died May 29, 1909, from diabetic coma."
"The trial treatment has improved me a great deal and I hope to find a permanent cure in your remedy."—F. P. R., Tenn.	"Mr. F. P. R. gave Diabetol a good trial but he received no benefit from it; died about 3 weeks ago."
"I received good results from sample."—A. M. G., Pa.	"Regarding Mr. A. M. G., have conferred with both the chief of police and postmaster and am unable to locate a party having this name."
"I received your sample package of Diabetol and I think it will do all you claim."—W. E. L., Ohio	"Mrs. W. E. L. . . . has progressively lost weight from 175 to 144 pounds. . . . She estimates the quantity of urine each 24 hours to more than fill a 12-quart pail. . . . I have to-day examined a sample of her urine and find the sp. gr. 1.034 with plenty of sugar."
"Have taken about one-half of the trial package you sent me and feel much improved already."—E. N. T., New York.	"Mr. E. N. T.'s appearance is now very good . . . says he is still weak; he tells me that *when he adheres closely to diet* and takes the medicine he feels much better . . ."
"Received sample, and it has made a big improvement in me."—G. W. Y., Md.	"Mr. G. W. Y. died Jan. —, 1910."
"I am feeling much better."—H. R., Ind.	"The party referred to . . . never had diabetes . . ."
"The sample package sent me has proved more than satisfactory."—A. P. B., New York.	"Mr. A. P. B. has had diabetes over 10 years . . . his condition is about the same as usual. . . . He now knows Diabetol did him no good."
"I have been using your herb for diabetes for four weeks with success . . . After another package I expect very little trace of sugar in my system."—J. N. H., Iowa.	"Mr. J. N. H. had diabetes and still has. . . . He stated to the Diabetol company that he felt a little better . . . but he soon felt the same as before. I tested his urine and found it loaded with sugar."

To determine so far as possible what the nature of this marvelous "tropical herb" is, the help of Prof. C. F. Millspaugh was sought. Professor Millspaugh is curator of the department of botany of the Field Museum, Chicago, an institution having one of the most extensive collections in botany extant, enabling the experts there to determine the character and source of almost anything that belongs to the plant world. Professor Millspaugh's reports:

ANALYSIS

> "I have this day examined the contents of a package of Diabetol Herb received from you in original and unbroken package. The package contains broken young stems and leaves with a few flower buds and bits of developed flowers intermixed. All the material is from a shrub belonging to the Bignonia family and known as *Stenolobium stans* (L.) Don. (*Bignonia stans* Linn.; *Tecoma stans* Juss.) This shrub grows more or less plentifully from Arizona southward through Mexico and Central America to the northern part of South America, throughout the West Indies and to the Bahamas and south Florida. The contents of the package suggests to me that its source was somewhere near the State of Hidalgo, Mexico.

> "This shrub has more or less local reputation as a diuretic and is used to some extent for that purpose by the natives of the regions in which it grows."

Diabetol, then, differs not at all from other nostrums of its class. The mysterious secret herb, the absurdly broad claims, the worthless testimonials, the exploiter without medical knowledge—all these elements enter into so many of the widely advertised "sure cures" that one would think that the very lack of originality would make their sale impossible. But there is no limit to the credulity of the hopelessly ill and on this weakness the great American fraud thrives.

CALCIUM CHLORHYDROPHOSPHATE

C. R. Noyes, pharmacist, St. Paul, Minn., calls attention to the formula on page 152 of the National Formulary, which he thinks of interest, in view of the article on calcium chlorophosphate in THE JOURNAL, May 7, 1910, page 1560.

The formula referred to is for "syrupus calcii chlorhydrophosphatis," or syrup of calcium chlorhydrophosphate. In the preparation of this syrup calcium phosphate is dissolved by the addition of hydrochloric acid. It therefore does not contain the hypothetical or impossible compound indicated by its title, but instead appears to owe its therapeutic value to calcium acid phosphate and calcium chlorid. Thus THE JOURNAL'S criticism of Pautauberge's solution, to the effect that it is claimed to contain a chemical substance unknown to chemists, may with equal fairness be applied to the National Formulary preparation referred to. The assertion has been made that a number of the preparations in the National Formulary have been devised in imitation of, or rather as substitutes for, certain proprietary mixtures which had become somewhat popular. This assertion derives a certain degree of support by a comparison of the two preparations in question. In naming the preparation, it is probable that the makers of the formulary were guided by the composition claimed for Pautauberge's solution, although they should have known there is no such substance as calcium chlorhydrophosphate.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MUNICIPAL HOSPITALS

To the Editor:—Are there any municipal hospitals built on the plan of providing a room for each patient? Two or three years ago you had some plans in THE JOURNAL, which I put away, but have lost. Please refer me to them. T. D. LONGINO, Atlanta, Ga.

ANSWER.—So far as we know there is no municipal hospital in which each patient has a private room. There are private rooms in nearly all municipal hospitals for certain classes of patients, such as the insane, some of the infectious diseases, and so on. In a number of children's hospitals, and in general hospitals that have children's departments, there are what are known as observation wards; these are private rooms fitted with private bath, basin and toilet, so that a child suffering from one of the exanthemata, or suspected of developing a contagion or infection, can be isolated until the disease develops. These rooms are built with part of the partitions of glass, with the head nurse's desk so placed that she can look through two or three, or even more of these private rooms.

Nearly all detention hospitals which are municipal in character, and supported by the public are made up of a private room for each patient, and a common recreation room where a single guard can watch a number of patients as they exercise or associate with each other. The tendency, however, is to construct hospitals generally with wards very much smaller, containing say a maximum of ten or fifteen beds. Nearly all municipal hospitals are now constructed with one or more so-called "quiet rooms" off each ward, in which special cases may be placed, as for instance, immediately following operations, delirious patients, patients that are noisy, patients suffering from some nervous affection, making them oversensitive to noises made by others.

The articles referred to are as follows:

Sturm, Meyer: The Planning and Construction of Hospitals in Smaller Cities and Towns, THE JOURNAL, Feb. 20, 19[illegible], p. 61[illegible].

Holmes, Bayard: A Suggestive Plan for a Modern General Metropolitan Hospital of Five Hundred Beds, THE JOURNAL, May 28, 1908, p. 1025.

Thompson, W. Gilman: Modern Hospital Construction, THE JOURNAL, Sept. 21, 1907, p. 993.

Ochsner, A. J.: Practical Points of Economy in Hospital Construction, THE JOURNAL, Sept. 21, 1907, p. 990.

SERUM FOR EXOPHTHALMIC GOITER

To the Editor:—Please inform me where Rogers' serum for the treatment of goiter can be obtained; also give brief comment as to its usage. S. W. T.

ANSWER.—The antithyroid serum for use in exophthalmic goiter or Graves' disease can be obtained on application to Dr. S. P. Beebe at the Loomis Laboratory, 414 East Twenty-sixth Street, New York City. It will be furnished only after receiving complete information in regard to the particular case under treatment. It is of therapeutic value only in cases of so-called exophthalmic goiter. It is of no value in the type known as "simple goiter." The antithyroid serum is not harmless and cannot be administered with impunity on the principle that if a little is good, more is better. The dosage must be carefully regulated to suit the condition of the patient. The injections are rarely given oftener than once in twenty-four hours and are not to be continued in the face of manifest increasing severity of reaction. The serum treatment, with its modifications, has been discussed in the November, 1908, number of the *Archives of Internal Medicine* and in the *Annals of Surgery*, December, 190[illegible] and February, 1910. As the serum is not on a commercial basis, and as it is prepared at large expense by the Cornell University Medical College, in which the Loomis Laboratory is devoted to the department of experimental therapeutics, the laboratory should be asked to supply it only in cases in which it is really indicated, and therefore careful case records should be furnished with all requests for the serum. These records of cases are preserved for reference.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 2, 1910.

Nichols, Henry J., capt., granted 3 months leave of absence with permission to go beyond sea, about July 1, 1910.

Allen, John H., major, left Fort Meyer, Va., accompanying Headquarters Band and Troops A, B and D, 15th Cavalry, en route to Camp of Instruction, Gettysburg, Pa.

Waterhouse, S. M., major, left Fort Washington, Md., en route to Washington Barracks, D. C., for duty with Headquarters and Cos. A and D, 1st Batt. Engineers, to Camp of Instruction at Gettysburg, Pa.

Sheep, William J., lieut., left Fort Myer, Va., accompanying Headquarters 2nd Battalion and Batteries E and F, 3rd Field Artillery, to Camp of Instruction, Gettysburg, Pa.

Casaday, George H., dental surgeon, ordered to proceed to Fort Baker, Cal., for temporary duty.

Reno, W. W., major, left Fort McKinley, Me., en route to South Framingham, Mass., for duty as inspector-instructor to Ambulance Co. and Hospital Co., Massachusetts Militia.

Hollingsworth, R. M., dental surgeon, contract annulled June [illegible], 1910.

Ingalls, R. E., dental surgeon, left Fort Douglas en route to Fort Duchesne, Utah, for temporary duty.

Talbott, F. M., capt., and Haverkampf, G. W., lieut., left Fort D. A. Russell, Wyo., with Co. A, Hospital Corps, en route to military tournament, Chicago.

Williams, H. B., M. R. C., left Camp [illegible], Sparta, Wis., en route to military tournament, Chicago.

Cosman, George H. R., major, left Fort Barrancas, Fla., en route to Chickamauga Park, Ga., for duty at Camp of Instruction.

Wickline, William A., capt., and [illegible], I. F., lieut., left Walter Reed General Hospital, Takoma Park, D. C., with detachment of Hospital Corps Co. C, en route to Camp of Instruction, Gettysburg, Pa.

Taylor, Blair D., col., left Atlanta, Ga., for duty as Chief Surgeon, Camp of Instruction, Chickamauga Park, Ga.

Reynolds, Frederick P., major, ordered to proceed from Fort Monroe, Va., to Kavner, N. Y., and report on arrival to the general instructor at the encampment of infantry officers [illegible] of New York, for duty [illegible].

Appel, Aaron H., col., detailed as Chief Surgeon of [illegible] Instruction at the Fort D. A. Russell [illegible] and Maneuver [illegible]tion, Wyo.

Ingalls, Raymond E., dental surgeon, ordered from Fort Douglas, Utah, to Fort Duchesne, Utah, thence to Fort Wingate, N. Mex., for such professional services as may be required of him at these posts.

Shook, Jay R., major, ordered to Denver to take physical test.

Marietta, Shelley U., M. R. C., with one sergeant and one private first class or private, H. C., with one ambulance and necessary medical supplies, ordered from Fort Des Moines, Iowa, by marching to Iowa City, Iowa, to participate in encampment of 54th Iowa Inf., from July 18 to 27.

Morgan, Norman D., contract surgeon, relieved from duty at Presidio of San Francisco, June 30, and ordered to report to Chief Surgeon of that Department for annulment of contract.

Lowe, Thomas S., M. R. C., ordered from Presidio of Monterey, Cal., to Atascadero, Cal., for temporary duty, relieving Contract Surgeon James W. Brownlie, Jr., who is directed to report to Chief Surgeon of Department on June 30, for annulment of contract.

Johnson, Thomas H., M. R. C., ordered from Fort Baker to Fort Mason, Cal., for temporary duty as post surgeon and attending surgeon Headquarters Department of California, during illness of Captain Perry L. Boyer, Medical Corps, or until latter is relieved.

Hill, Eben C., 1st lieut., sick leave of absence further extended 1 month.

Carr, William B., 1st lieut., detailed member of examining board at Fort Monroe, Va., vice Captain George P. Peed, M. C., relieved.

Sharpe, Herbert H., M. R. C., assigned to permanent duty at Fort Niagara.

Bartlett, Cosam J., capt., ordered to Fort Banks, Mass., as member of examining board to meet July 12, 1910.

Crum, Wayne H., M. R. C., ordered to Fort Ontario, N. Y., as member of examining board to meet July 12, 1910.

Patterson, Robert F., dental surgeon, ordered from San Francisco to Fort Sheridan, Ill., for duty.

Johnson, Howard H., capt., granted 2 months' leave of absence, to take effect on or about July 20, 1910.

Myers, William H., M. R. C., ordered to Fort Screven, Ga., for duty, relieving First Lieutenant Fred T. Koyle, M. R. C., who is ordered to Fort Mansfield, R. I., for duty, on expiration of leave.

Sanford, Joseph L., M. R. C., granted leave of absence for 4 days to take effect on or about July 5, 1910.

Oliver, Robert T., examining and supervising dental surgeon, granted 2 months' leave of absence, to take effect on or about July 1, 1910.

Siler, Joseph F., capt., ordered from New York City to Peoria, Ill., to study pellagra in connection with commission organized by the governor of Illinois.

Blanchard, R. M., capt., reported for duty at Camp J. M. Dickinson, Chicago.

Person, Elbert E., major, reported for duty at Camp of Instruction, Gettysburg, Pa.

Woodall, William P., capt., reported for duty to temporary command of one-half of Co. A, Hospital Corps, at Target and Maneuver Camps at Fort D. A. Russell, Wyo.

Oliver, Robert T., E. S. D. S., order to proceed to Camp of Instruction at Gettysburg, Pa., is revoked.

Hallett, Harley J., M. R. C., relieved from temporary duty at Fort Hamilton, N. Y., and ordered to return to Fort Totten, N. Y.

Hartnett, E. H., major, ordered to Fort Monroe, Va., for temporary duty.

Talbott, E. M., capt., and Haverkampf, C. W., lieut., report arrival at Camp J. M. Dickinson, Chicago, for duty.

Demmer, C. C., lieut., left Fort Thomas, Ky., for duty at Camp of Instruction, Gettysburg, Pa.

Johnson, Thomas H., M. R. C., reported for temporary duty at Fort Mason, Cal., and as attending surgeon, Department Headquarters.

Beery, Harry R., lieut., reported for duty at Camp J. M. Dickinson, Chicago.

Williams, H. B., M. R. C., reported for duty at Camp J. M. Dickinson, Chicago.

Owen, L. J., capt., left Fort Benjamin Harrison, Ind., en route to Camp J. M. Dickinson, Chicago.

Lynch, Edward C., M. R. C., left Omaha, en route to take station at Fort D. A. Russell, Wyo.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended June 29, 1910.

Irwin, Fairfax, surgeon, leave of absence for 1 month and 10 days from Sept. 1, 1910, amended to read from September 15.

Banks, Charles E., surgeon, leave of absence granted for 12 days from June 12, 1910, amended to read 10 days from June 15, 1910.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from June 22, 1910, on account of sickness.

Brooks, S. D., surgeon, detailed to represent the Service at the meeting of the American Institute of Homeopathy to be held in Los Angeles, Cal., July 11-15, 1910.

Cobb, J. O., surgeon, granted 7 days' leave of absence from June 26, 1910.

Geddings, H. D., surgeon, detailed to attend the First International Congress of Administrative Sciences to be held at Brussels, Belgium, July 28-31, 1910.

Von Ezdorf, R. H., P. A. surgeon, granted 5 days' leave of absence from June 28, 1910, on account of sickness.

Lumsden, L. L., P. A. surgeon, reassigned for duty in the Hygienic Laboratory, effective June 27, 1910.

Holt, John M., P. A. surgeon, granted 7 days' leave of absence June 19, 1910, and 1 day's leave of absence June 26, 1910.

Lloyd, B. J., P. A. surgeon, granted 1 month's leave of absence from June 20, 1910, on account of sickness.

Bahrenburg, L. P. H., P. A. surgeon, granted 18 days' leave of absence from July 1, 1910.

Warren, B. S., P. A. surgeon, granted 2 months' leave of absence from July 5, 1910.

Stimson, A. M., P. A. surgeon, reassigned for duty in the Hygienic Laboratory, effective June 29, 1910.

Spratt, R. D., P. A. surgeon, granted 7 days' leave of absence from June 11, 1910, on account of sickness.

Herring, R. A., asst. surgeon, granted 11 days' leave of absence from June 15, 1910.

Adams, N. I. B., acting asst. surgeon, granted 4 days' leave of absence from June 30, 1910.

[illegible], W. A., acting asst. surgeon, granted 28 days' leave of absence with pay, and 2 days leave of absence without pay from May 7, 1910.

[illegible], B. W., acting asst. surgeon, granted 7 days' leave of absence from June 24, 1910.

Parker, Thomas I., acting asst. surgeon, granted 1 months' leave of absence without pay from July 1, 1910.

[illegible], J. C., acting asst. surgeon, granted 1 days' leave of absence from June 27, 1910.

[illegible] A., acting asst. surgeon, granted 30 days' leave of absence from July [illegible], 1910.

[illegible], J. C., acting asst. surgeon, granted 7 days' leave of absence from June 22, 1910, under paragraph 210, Service Regulations.

Association News

NEW MEMBERS

The following is a list of new members of the American Medical Association for the month of June, 1910. Stars and daggers are placed before those who became members at the St. Louis Session; the dagger indicates that the name so marked was previously on the subscription list.

ALABAMA

*Blake, W. H., Sheffield.
*Copeland, M. A., Birmingham.
†Goode, Rhett, Mobile.
Peterson, E. A., Mobile.
†Stubbins, S. G., Birmingham.

ARKANSAS

*Biles, Lee E., Augusta.
*Bourland, O. M., VanBuren.
Davis, E. N., Little Rock.
Harrison, F. E., Fordyce.
*Lightfoot, J. A., Texarkana.
*Neece, Thos. C., Walnut Ridge.
†Powell, J. T., Maysville.
Purifoy, L. L., El Dorado.
*Reeves, W. R., Alma.
Rodman, T. N., Cushman.
*Watson, E. L., Newport.
Webb, Abner, Ft. Smith.

CALIFORNIA

Bunnell, Sterling, San Francisco.
Bruman, A. K., San Francisco.
O'Neill, B. J., San Diego.
†Sellery, A. C., Long Beach.

COLORADO

Davis, J. B., Denver.
†Elliott, E. W., Ft. Morgan.
*Neuman, D. S., Denver.

CONNECTICUT

†Hepburn, T. N., Hartford.

FLORIDA

Thompson, J. M., Ocala.

GEORGIA

Adair, Robin, Atlanta.
Bradley, T. E., Cordele.
Dennard, J. H., East Point.
Moore, J. M., Macon.
Murray, G. S., Columbus.
Roberts, C. W., Douglas.
Stuckey, E. O., Atlanta.

ILLINOIS

*Adams, J. W., Carrollton.
†Allyn, W. H., Waverly.
†Altman, Maurice, Springfield.
*Beard, I. J., Godfrey.
*Berrey, I. S., Batchtown.
†Bradley, R. C., Peoria.
Brown, L. S., Hillsboro.
*Bryant, J. B., Lawrenceville.
*Burke, C. O., Atlanta.
†Cannady, E. W., E. St. Louis.
†Carter, Wm. J., Mattoon.
*Caseburn, A. L., Ferris.
Casey, L. B., Marion.
*Chapin, H. A., White Hall.
†Cook, E. A., Upper Alton.
*Crain, B. F., Carterville.
Culbertson, F. D., Littleton.
*Davidson, W. E., Kingston.
†Doane, J. F., Peoria.
†Du Four, W. G., Chenoa.
†Fentje, Robt., Buffalo.
*Fockler, G. W., Delavan.
Garrison, A. J., Buckley.
*Glascock, E. N., Mill Shoals.
*Gore, C. P., Lawrenceville.
†Grear, D. W., Jonesboro.
Green, W. I., Sumner.
Harrigan, C. F., Chicago.
*Hick, J. C., Eldorado.
*Hillard, T. J., Fairfield.
*Johnson, C. W., Litchfield.
Jones, Wm., Aurora.
†King, B. H., Granite.
*King, J. A., Victoria.
*Kroppenberger, T. G., Chicago.
†Lamb, J. G., Fisher.
*Lane, E. H., E. St. Louis.
*LeSaulnier, H. L., Red Bud.
*Loeber, E. R., Mt. Carmel.
Lockwood, F. K., Virden.
*[illegible], J. H. L., Moline.
*McFee, J. F., Johnston City.
*McMurray, R. J., St. Francisville.
*[illegible], G. H., Cairo.
[illegible], B. J., Germantown.
[illegible], John, Jr., Carmi.
*Noble, C. D., Buncombe.
*Nyberg, R. R., Harrisburg.
*Paul, E. W., Forest City.
*Perry, W. H., Carterville.
*Pope, R. D., Duquoin.
Rayhill, C. G., Belleville.
*Riffey, J. H., Girard.
Roberts, R. B., Brimfield.
Rubovits, W. H., Chicago.
Russell, Rose A., Granite City.
*Sanders, C. J., Ashley.
*Sanders, K. D., Jonesboro.
*Scott, F. C., Adrian.
*Shawl, J. L., Onarga.
*Siegel, J. H., Collinsville.
Stacy, G. H., Jacksonville.
Steffenson, O. M., Chicago.
Stiehl, E. P., Floraville.
*Stewart, J. H., Jr., Exeter.
*Summers, Edmund, Mattoon.
†Tharp, Royal, Beaton.
Thomas, J. Smith, Pleasant Hill.
†Tobin, J. R., Elgin.
†Treadway, W. Y., Jacksonville.
*Trueblood, R. B., Lawrenceville.
†Turner, A. F., Taylorville.
†Van Hook, H. M., Mt. Pulaski.
*Wattleworth, J. R., Yale.
Wickstrom, Emma M., Chicago.
†Wilhlemj, Walter, E. St. Louis.
*Wilkins, D. R., Pocahontas.
Wilson, G. K., Streator.
†Wolfe, H. M., Taylorville.
*Wright, L. D., Rochester.

INDIANA

*Arthur, S. L., Patoka.
Barnes, L. C., Indianapolis.
†Buck, G. M., Burrows.
*Carson, S. L., Lincoln City.
†Chappell, R. S., Indianapolis.
*Gibson, J. P., Stewartsville.
†Haskell, C. C., Indianapolis.
*Haywood, C. W., Elkhart.
†Hill, L. R., Seymour.
†Jerome, J. N., Evansville.
*Lukemeyer, E. G., Huntingburg.
†Maxedon, T. H., Vincennes.
McCormack, H. D., Vincennes.
*McGowan, T. J., Vincennes.
*Olmsted, R. T., Milan.
*Rothrock, M. W., Howell.
Somes, J. F., Vincennes.
*Thurston, H. S., Indianapolis.
Townsend, R. C., Osgood.

IOWA

*Chesire, Marshalltown.
†Dierker, F. H., West Point.
*Downing, W. L., Moulton.
*Jordan, J. C., Des Moines.
Leavitt, F. J., Gilmore City.
†Lomas, W. A., Villisca.
*McClure, E. C., Bussey.
*Mott, W. H., Farmington.
†Posner, E. R., Des Moines.
Sanders, W. E., Alta.
*Townsend, P. M., Marshalltown.
†Williams, B. G., Oskaloosa.
†Zook, A. J., Adair.

KANSAS

Brady, C. F., Parsons.
†Ford, K. B., Wichita.
*Forney, C. D., Wichita.
†Gooch, W. S., Mapleton.
†Green, D. E., Pleasanton.
*Greene, Marie A., Kansas City.
Harker, H. J., Horton.
Hobson, A. D., White Cloud.
*Jewink, J., Prairie View.
Knox, W. E., Norcatur.
Kees, W. H., Pleasanton.
*Lambeth, G. B., Moran.
Matassarin, Leon, Lawrence.
Smith, G. S., Liberal.
†Smith, L. T., Newton.
†Sutton, W. S., Kansas City.
Walker, A. F., Anthony.
*Wilholt, J. C., Manhattan.
†Williams, F. S., Wichita.
Zergan, G. F., Holyrood.

KENTUCKY

†Amerson, S. S., Sullivan.
†Blakey, T. W., Hopkinsville.
†Boggess, W. F., Lowndes.
†Boyd, Frank, Paducah.
*Covington, E. D., Hardin.
*Dixon, J. T., Providence.
Flowers, M. R., Albany.
*Gourley, W. W., Fulton.
*Hughes, H. L., Hardin.
*Hunt, Chas., Clinton.
*Lamkin, T. L., Paducah.
Lewis, J. W., Oakland.
Lowery, O. T., Tolu.
†Mason, Will, Jr., Murray.
Moore, J. M., Tolu.
Moore, P. A., Jordan.
*Patterson, John, Frankfort.
*Poole, W. A., Henderson.

Taylor, J. W., Hartford.
†Travis, F. M., Gilbertsville.

LOUISIANA

Dimitry, T. J., New Orleans.
Jarrell, C. M., Crowville.
Ney, K. W., Madisonville.
Perkins, R. T., New Orleans.

MARYLAND

Casles, D. B., Baltimore.
†Fochtman, F. W., Cumberland
Knapp, H. C., Baltimore.

MASSACHUSETTS

Bixby, O. E., Saugus.
Bush, A. D., Newtonville.
Gafney, H. D., Ware.
Piper, F. S., Lexington.
†Sargent, O. F. L., Lawrence.
Stowell, E. C., Boston.
Watkins, R. P., Worcester.
Wentworth, M. H., Boston.
West, F. O., Boston.

MICHIGAN

Abelmann, T. C. H., Grand Rapids.
Budde, A. E., Norway.
Bunshaw, A. H., Detroit.
Cushman, M. L., Lansing.
Donker, A. E., Forest Grove.
Groff, C. F., Detroit.
Hackney, F. J., Lupton.
†MacKenzie, R. G., Ann Arbor.
McLandress, J. A., St. Charles.
Mercer, C. D., Addison.
Rigterink, J. W., Freeport.
Sample, J. T., Saginaw.
Sanderson, H. A., Detroit.
Stevens, R. H., Detroit.
Treat, David, Adrian.

MINNESOTA

Bigelow, C. E., Madison Lake.
*Kirmse, G. W., Frazee.
*Lewis, C. B., St. Cloud.
*Munger, L. H., Winona.
†Smith, F. L., Chatfield.
*Verne, V. E., Moorhead.
*Whitstone, Mary S., Minneapolis.

MISSISSIPPI

Cooper, I. W., Newton.
*Leathers, W. S., University.
Hand, A. P., Shubuta.
Sharp, W. E., Pascagoula.

MISSOURI

†Alderman, M. C., Sedalia.
*Allee, W. L., Eldon.
*Allen, F. W., Callao.
Altham, A. G., Metz.
†Amyx, R. F., St. Louis.
*Andrews, J. P., Marionville.
†Armstrong, J. H., St. Louis.
Bankhead, J. E., Clarksville.
†Barber, M. B., Flat River.
*Barnes, P. C., St. Louis.
†Barnett, M. C., St. Louis.
†Barr, C. M., St. Louis.
Bartels, L. G., St. Louis.
Bartlett, E. M., Clarksville.
*Bassett, C. W., St. Louis.
Beeson, J. P., Southwest City.
Blue, A. B., Hannibal.
†Bohan, P. T., Kansas City.
†Bohling, C., Sedalia.
†Bonham, V. Q., Fayette.
*Bracy, Rolla, Wellston.
*Bradley, J. M., St. Louis.
*Bradley, W. P., Windsor.
†Brener, R. E., Newburg.
*Bridges, J. R., Kahoka.
*Brooks, F. C., St. Louis.
*Brown, C. H., Fair Play.
*Bruton, J. W., Ozark.
*Bryan, E. M., Fulton.
*Burke, J. P., California.
†Caplan, L., St. Louis.
*Claiborn, E. G., Decaturville.
†Corley, H. N., St. Paul.
†Curtis, A. N., St. Louis.
*Damour, F., Balckow.
*Damron, O. H., Silex.
Daniel, J. R., Clarence.
Davis, J. D., Louisiana.
*Davis, J. S., East Prairie.
*Dawson, J. W., El Dorado Springs.
*Dreschler, Louis, St. Louis.
†Dixon, C. H., Holliday.
Donnell, J. F., Crystal City.
Dummit, Manford, Pierce City.
Dyer, J. H., Warrenton.
†Dyer, D. O. P., Sedalia.
*Edgell, O. K., Eolia.
*Elkins, C. B., Springfield.
Ellis, F. B., Garden City.
Enloe, I. N., Jefferson City.
*Fairchild, S. F., St. Louis.
*Fewel, R. B., Montrose.
†Fleming, C. R., Farmington.
†Foreman, C. O., Warrenton.
†Foreman, J. M., Jonesburg.
†Foster, J. P., LaCrosse.
*Forsyth, R. C., Kirkwood.
*Fulbright, J. H., Springfield.
*Fulton, A. L., St. Louis.
Glahn, C. P., Palmyra.
†Grace, H. M., Chillicothe.
Gray, Isabel S., St. Louis.
Greenlee, A. R., Kansas City.
Grimes, W. P., Kansas City.
*Grote, W. F. H., St. Louis.
Gunn, W. G., Florence.
†Guss, W. C., Hannibal.
Guthrie, C. C., St. Louis.
*Hampton, J. R., Clinton.
*Handley, W. E., St. Louis.
†Harmann, M. F., St. Louis.
†Harrell, H. J., St. Louis.
*Harris, H. W., Winchester.
*Hartley, L. D., Nebo.
*Harwood, W. S., Rensselaer.
*Hauck, E. F., St. Louis.
*Hauck, Louis, St. Louis.
Hays, W. H., Hannibal.
†Hendrix, M. B., Caruthersville.
†Herrick, H. C., St. Louis.
Hertel, G. E., St. Louis.
Hickerson, E. R., Moberly.
†Hickerson, J. T., Centralia.
*Hodges, D. M., East Prairie.
*Hogue, J. A., Jr., Holcomb.
*Hooss, Albert, St. Louis.
*Hopkins, W. S., Bolivar.
Horwitz, A. E., St. Louis.
*Howard, F. A., Slater.
Howell, J. S., Hannibal.
†Jackson, T. J., St. Charles.
†Jacobson, Jacob, St. Louis.
*James, E. F., Springfield.
Jameston, C. H., St. Louis.
*Jennings, R. J., Windsor.
Johnson, F. P., St. Louis.
*Jones, J. L., Jonesburg.
*Kirth, J. F., Sturgeon.
†Kenney, W. L., St. Joseph.
*Kerr, H. L., Sparta.
†Kutzeborn, E. E., St. Louis.
*Koontz, C. J., St. Louis.
*Lang, J. H., Centertown.
*Lebrecht, J. C., St. Louis.
Lee, E. J., Jr., St. Louis.
Leighton, W. E., St. Louis.
†Leonard, H. O., Kansas City.
Leusley, M. E., Madison.
*Luman, F. E., Baring.
Lutman, H. N., Versailles.
†Macdonald, J. W., St. Louis.
Mackey, C. A., Hannibal.
*Mann, A. W., Oak Grove.
†Martin, T. A., St. Louis.
*McCall, W. K., Worcester.
†McCoy, G. C., St. Louis.
†McNutt, W. B. A., Monroe City.
†Meisenbach, A. E., St. Louis.
†Meisenbach, A. H., St. Louis.
†Merz, Adolph, St. Louis.
†Miller, R. M., Bogard.
*Miller, T. C., Ash Grove.
Miller, W. H., Macon.
*Mitchell, A. W., Humansville.
Monroe, A. E., Sedalia.
†Moore, Chas., Advance.
*Moore, Sherwood, St. Louis.
†Morris, C. C., St. Louis.
Muns, G. E., Montgomery City.
*Myers, G. T., Macks Creek.
Nelson, H. E., Excelsior Spgs.
†Nickell, L. O., Clarence.
*Nifong, Wm., Fredericktown.
Noland, M. R., Holliday.
*Ogle, O. L., St. Louis.
Osborn, J. F., St. Joseph.
Owens, R. J., Mill Spring.
*Paine, G. F., St. Louis.
Paxon, C. E., Hannibal.
*Peters, M. L., Cameron.
*Petty, W. S., Rutledge.
Pfeffer, P. A., St. Louis.
†Pfingsten, C. F., St. Louis.
Pickard, M. W., Kansas City.
†Pohlmann, F. L., St. Louis.
*Poorman, B. A., Kansas City.
*Poston, H. P., Bonne Terre.
*Potts, J. D., St. Louis.
Prichard, J. B., St. Louis.
Rafter, J. G., Huntsville.
*Reim, Hugo, St. Louis.
*Richardson, K. R., Kansas City.
*Risley, C. H., Cameron.
*Robinson, J. F., Nevada.
†Rowe, H. J., Willow Springs.
Rowland, W. P., Bevier.
Roy, F. K., Clarence.
*Rutledge, J. E., Festus.
†Ryland, C. T., Lexington.
*Safford, W. G., Tarkio.
†Sanders, F. L., Kansas City.
†Schmidt, R., Victoria.
†Schweninger, E. A., St. Louis.
†Scott, C. D., St. Louis.
Scott, J. M., St. Louis.
*Shattinger, Chas., St. Louis.
†Shaw, J. W., St. Louis.
†Sheets, M. E., St. Louis.
Shotwell, J. R., Curryville.
*Sieving, H. J. C., St. Louis.
*Slayden, J. L., Dexter.
Sloan, O. J., Neosho
Smith, Avis E., St. Louis.
*Smith, J. K., Fredericktown.
*Spencer, H. N., St. Louis
*Stewart, James, St. Louis.
†Stocking, L. C., St. Louis.
*Teel, S. M., Prairie Home
†Temm, L. N., St. Louis.
*Tiller, J. A., Bloomfield
Tinsley, G. N., Bowling Green.
†Titsworth, Guy, Sedalia
*Todd, W. T., Thompson
*Taney, L. E., Piedmont.
Unsell, J. B., Louisiana
Vaughn, H. C., Shelbina
*Walters, C. E., Dexter
*Ward, E. P., St. Louis.
†Weiss, R. S., St. Louis.
†Welch, W. A., Callao
*Weil, Wm., Versailles.
*Wheeler, W. S., Kansas City
†Wilkes, B. A., St. Louis.
Williams, D. E., Pacific
Williams, P. E., Tipton
†Wright, L. S., Lowry City
*Yount, W. E., Cape Girardeau.

MONTANA

Fuller, A. G., Iron Mountain.

NEBRASKA

Beghtol, J. V., Hastings
†Hamel, E. B., Hastings.
Lee, D. R., Arcadia.
†Lynch, Albert, Fairbury.
Nye, F. H., Plainview
*Powell, E. W., Omaha.

NEW HAMPSHIRE

Chirurg, Chas., Manchester.

NEW JERSEY

Barwis, Elmer, Trenton.
Campbell, C. M., Paterson.
Clay, T. A., Paterson.
†Danzis, Max, Newark.
Jennings, C. H., Merchantville.
DeMerritt, C. L., West Hoboken.
Forney, N. N., Milltown.
Lamy, A. W., Elizabeth.
Marks, E. G., Arlington.
Maxson, C. B., Jersey City.
Mendenhall, D. D., Bordentown.
Murray, W. H., Plainfield.
*Parsonnet, Victor, Newark.
Schmidt, W. H., Atlantic City.
Stoddard, R. L., Rochester.
Woolley, J. S., Plainfield.

NEW MEXICO

*Smith, Clyn, Clovis.

NEW YORK

Comstock, Elizabeth, New York City.
Cruttenden, H. L., Morris.
Duke, W. C., Fredonia.
Guile, H. V., New York City
Loewenstein, A. M., Rochester.
†March, C. A., Buffalo.
McKee, O. S., Buffalo.
Satterlee, H. S., New York City.
Soresi, A. L., New York City.
*Stearns, M. J., Ogdensburg.

NORTH CAROLINA

Dodds, S. A., Salisbury
Hyatt, F. C., Waynesville.
Merritt, J. H., Woodsdale
Norris, Philip, Rutherfordton.
Pierce, S. B., Durham

NORTH DAKOTA

Campbell, C. C., Ashley.
Joyce, M. T., Harvey.
Towler, H. H., Stanton.
Trainor, M. E., Stanley.

OHIO

Axline, C. Z., Fultonham.
Bange, Theodore, Cincinnati
†Campbell, W. H., Cincinnati
Conner, A. R., Cincinnati
*Macleod, G. D., Cleveland.
†Manning, W. J., Cleveland.
†McKitrick, A. S., Kenton.
†Noble, H. S., St. Marys.
North, E. A., Cincinnati
Olmstead, D. S., Millersburg.
*Pomeroy, F. S., Chardon
†Rockwell, C. S., Cincinnati
*Rouse, W. L., Paintersville
Silberman, Jacob, Cleveland.
Smith, A. B., Wellington
*Stahl, S. S., Franklin.
†Tillotson, J. R., Delphos
Townsend, F. W., Columbus

OKLAHOMA

Beard, D. A., Westville
*Bradshaw, J. T., Shawnee
Caldwell, C. W., Chelsea
†Clark, M. T., Temple
*Conway, W. Q., Tulsa
*Gaston, J. I., Kingston
House, C. F., Hastings
Howard, R. M., Oklahoma City.
*Howell, D. D., Nowata
*Huffman, L. H., Hobart.
Keyes, Robert, Schoolton.
Noble, F. W., Guthrie
Lendegraft, W. C., [illegible]
*Phelan, J. R., Oklahoma City.
Riley, J. T., El Reno
*Strother, S. P., Alva
Tilly, W. T., Muskogee
*T[illegible]on, W. A., [illegible]
*Will, A. A., Oklahoma City.
†Wilson, S. W., Lindsay

OREGON

Reitzel, M. E., Dayton
Taylor, M. B., Grass Valley

PENNSYLVANIA

Bennett, W. F., Scranton.
†Boyd, D. H., Pittsburg
Campbell, E. E., Butler
Craig, J. J., Columbia
Downs, R. N., Jr., Philadelphia.
Elliott, C. H., Brownsville
Fox, G. T., Bristol
King, J. J., Freeland
Lenker, R. W., West Leesport
McLate, J. C., Meadville
Mowery, S. I., Mechanicsburg
Murray, M. A., Wilkes Barre
Nathen, David, Norristown.
Peet, E. L., Scranton
Thompson, J. J., Carbondale.
White, W. C., Pittsburg

TENNESSEE

†Breeding, W. J., Ravenscroft.
*Chapman, S. T., Halls
*Farmer, W. S., Cookville
*Crosthwait, G. W., Florence
Dalton, W. B., Lillydale
*Dupree, M. W., Bethel
*Hargis, W. A., Hermitage
Harrell, E. B., Unicoi.
*Johnston, C. H., Lexington.
Jones, J. T., Jackson
*Lewis, J. R., Ripley
*Medling, W. I., Dyer
*Neblett, S. E., Southside.
*Porter, J. A., Ripley
Smith, H. G., Chattanooga.
*Steele, J. B., Chattanooga
*Venters, J. M., Portland

TEXAS

*Anderson, R. B., Sherman.
†Baird, R. W., Dallas
Brannin, E. B., Dallas
†Brown, G. F., Sherman.
*Carey, J. W., Whitesboro.
†Decherd, H. B., Dallas
*Dodson, J. F., Jr., Vernon.
*Ferriss, J. H., Henrietta
Hale, J. F., Miles.
Lindahl, F. F., San Antonio.
*Neel, J. M., Dallas.
†Sherwood, M. W., Temple
*Stout, J. B., Dallas
†Sorrells, C. C., Royse City.
Terrell, S. L., Dallas

UTAH

Campbell, Henry, Logan
Robinson, H. F., American Fork

VIRGINIA

Hughes, T. J., Roanoke
Love, J. M., Norfolk
*Whitmore, W. S., Mt. Sidney
Willis, A. M., Richmond.

WASHINGTON

Booth, J. R., Seattle
Hoffman, C. B., Kent
Nevitt, O. R., Raymond
Oppenheimer, S. S., Spokane.
White, E. W., Pasco
*Woolley, W. T., Seattle
Young, F. W., Seattle

WEST VIRGINIA

Anderson, J. C., Mucklow
Carter, H. L., Danville
Fittro, E. B., Salem
Flowers, E. N., Clarksburg.
Fortney, F. D., Newburg
Jones, E. C., Exchange
Owen, B. A., Huntington.
Rankin, B. S., Tunnelton

WISCONSIN

*Ap[illegible], F. W., [illegible]
†Finney, W. H., [illegible]
G[illegible], J. C., M[illegible]
†J[illegible]n, H. A., [illegible]
†Je[illegible], A. G., Milwaukee.
Mu[illegible], C. G., Kil[illegible]
†Raymond, M. F., M[illegible]
Ro[illegible], J. T., Waldo
*Sandal, George, [illegible]
*[illegible], J. F., Milwaukee.
W[illegible], I. J., Kewaunee
Sweeney, W. H., Superior.

CANAL ZONE

*Darling, S. T., Ancon
Detrow, H. V., Ancon
*Eckhart, T. W., Ancon
*Phillips, C. E., Panama.

PHILIPPINE ISLANDS

Singian, Gregorio, Manila.

State Boards of Registration

COMING EXAMINATIONS

ALABAMA Montgomery, July 12. Chairman, Dr. W. H. Sanders.

CONNECTICUT Regular, City Hall, New Haven, July 12-13. Sec., Dr Charles A. Tuttle; Homeopathic, New Haven, July 12. Sec., Dr Edwin C. M. Hall, 82 Grand Ave; Eclectic, New Haven, July 12 Sec. Dr. T S Hodge, 19 Main Street, Torrington.

DISTRICT OF COLUMBIA: Washington, July 12-15. Sec., Dr. George C Ober, 125 B Street, S. E.

INDIANA: Room 120, State House, Indianapolis, July 12-14 Sec., Dr W T Gott

MAINE: Augusta, July 19-20. Sec., Dr F. W. Searle, Portland.

MASSACHUSETTS: State House, Boston, July 12-14. Sec., Dr. Edwin B Harvey

OKLAHOMA Ione Hotel, Guthrie, July 12. Sec., Dr. Frank P. Davis, Enid.

SOUTH DAKOTA: Lead, July 13-14. Sec., Dr. F. W. Freyberg, Mitchell.

VERMONT: Burlington, July 12-14. Sec., Dr. W. Scott Nay, Underhill

WEST VIRGINIA: Capitol Bldg., Charleston, July 11-13. Sec., Dr. H A. Barbee, Point Pleasant

WISCONSIN: Madison, July 12-15. Sec., Dr. John M. Beffel, 3200 Clybourn Street, Milwaukee.

Nebraska February Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, Feb. 9, 1910. The number of subjects examined in was 13; total number of questions asked, 130; percentage required to pass, 75. Only one candidate, a graduate of Lincoln Medical College, 1906, was examined, and he passed with a grade of 86.8 per cent. Twenty candidates have been licensed through reciprocity since Jan. 1, 1910. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Denver Homeopathic College	(1906)	Colorado
Northwestern University Medical School	(2, 1908)	Illinois
College of Physicians and Surgeons, Chicago (1905) (1906)	(1907)	Illinois
Jenner Medical College	(1909)	Illinois
Rush Medical College	(1886)	Indiana
Bennett Medical College	(1908)	Missouri
Keokuk Medical College	(2, 1895)	Iowa
Keokuk Med Coll, Coll of Phys. and Surgs	(1906)	Iowa
University of Michigan, College of Medicine	(1909)	Missouri
Tufts College Medical School	(1907)	Maine
Barnes University (1903)	(1906)	Missouri
St Louis College of Physicians and Surgeons	(1899)	Missouri
Creighton Medical College	(1909)	Iowa
University of Vermont, College of Medicine	(1898)	Vermont
Royal University, Paris, Italy	(1890)	Kansas

Florida April Report

Dr. J D. Fernandez, secretary of the Florida State Board of Medical Examiners, reports the written examination held at Jacksonville, April 2-5, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. The following colleges were represented.

PASSED

College	Year Grad	Per Cent
University of Alabama	(1909)	85.2
University of Arkansas	(1908)	83
Howard University	(1907)	93
Atlanta College of Physicians and Surgeons (1907) 75, (1908) 75, (1909) 75		
Medical College of Georgia	(1892)	75
[illegible] Medical College	(1893)	80.8
Chicago Medical College	(1875)	75
College of P & S, Indianapolis	(1883)	75
University of Iowa College of Medicine	(1881)	76.8
University of Maryland	(1909)	85.2
Harvard Medical School	(1908)	92.2
[illegible] Medical College	(1896)	75.6
[illegible] Medical College	(1892)	82
[illegible] University College of P & S	(1889)	73.5
[illegible] Medical College	(1908)	92.1
[illegible] Medical College	(1871)	75
University of Pennsylvania (1885) 77.2	(1896)	75
Jefferson Medical College (1902) 81.7	(1906)	91.2
Vanderbilt University	(1905)	86.5
University of the South	(1907)	78.7
University of Tennessee	(1909)	80.5
Memphis Hospital Medical College	(1908)	75
Medical College of the State of South Carolina (1881) 75; (1909) 82, 84.7		
University of Vermont	(1892)	75
University of Munich, Germany	(1878)	85.5
University of Havanna, Cuba	(1908)	77.3

FAILED

College	Year Grad	Per Cent
Georgia College of Eclectic Medicine and Surgery	(1891)	47.7
Atlanta College of Physicians and Surgeons	(1909)	56.4
Medical College of Georgia	(1906)	64
Meharry Medical College	(1909)	67.7
Gate City Medical College	(1903)	60.8
University of Havana, Cuba	(1908)	77.3

The following questions were asked:

ANATOMY

1 What bones enter into the formation of the skull? 2. Name the bones of the hand. 3. Describe the diaphragm and name its openings. 4. Give the boundaries of scarpa's triangle and name its contents. 5. What nerves supply the tongue and give function of each? 6. Give origin, course and distribution of the left pneumogastric nerve. 7 Name the branches of the arch of the aorta. 8. Describe the pulmonary artery. What function does it perform? 9. Name the muscles of the abdomen. 10. Name the muscles of the orbit and give function of each.

PHYSIOLOGY

1. What is the difference between serous and synovial membranes? Name the serous membranes. 2 What is the difference between a secretion and an excretion? Name three of each. 3. Describe the process of breathing. How does the blood become oxygenated in the lungs? 4. Describe the mechanism of the production of the voice, and how is the pitch changed from one key to another? 5. Describe the vision. Why does the pupil dilate and contract? 6. Describe the general arrangement of the cerebrospinal axis and the functions of the white and gray matter. 7. What is the effect of the pneumogastric nerve on the heart? 8. What are the component parts of blood and the function of each part? 9. Describe the action and relative time of action of each of the valves of the heart. 10. How and where are carbohydrates converted, during digestion?

SURGERY

1 Give symptoms and treatment of shock 2. What are the sources of wound infection? 3. What are the constitutional symptoms in severe burns, and what is the treatment? 4 Give treatment in case of large, irregular foreign body in the eyeball. 5. Give symptoms and treatment of chronic suppuration of the middle ear. 6 Give diagnosis between fracture of lower end of humerus and dislocation of forearm backward. 7 How would you reduce a subcoracoid dislocation? 8. Give symptoms and treatment of fracture at the base of the skull. 9. What is the most common site of fracture of the clavicle and how would you treat it? 10. Give symptoms and treatment of cholelithiasis.

GYNECOLOGY

1 Give indications and contraindications for the use of the curette 2 State under what conditions hysterectomy for cancer of the uterus is not justifiable; how determined, and give treatment in inoperable cases. 3. Give symptoms, diagnosis and differential diagnosis for submucous fibromyoma. 4 Give causes, symptoms and treatment for various forms of dysmenorrhea. 5. Differential diagnosis of ascites from ovarian cyst. 6. Describe in detail operation for complete laceration of perineum, involving rectovaginal septum. 7 Describe operation for removal of intraligamentous myoma. 8 Give description as to treatment of abscess of the cul-de-sac of Douglas. 9 Give symptoms of pelvic hematocele? 10. Outline symptoms of torsion of pedicle of ovarian cyst.

MATERIA MEDICA—THERAPEUTICS

1 What is incompatibility in medicine, and what are the different kinds of incompatibles? Give an example of each. 2. Why should you prescribe the salts of the alkaloids instead of the alkaloids themselves? 3. Mention three drugs used in the treatment of intermittent fever State how each controls this disease 4 Give the theory of the alkaline treatment of rheumatism. 5. What remedies would you employ to correct anemic conditions, and how are they used. 6. Define an antiseptic agent Mention two important intestinal antiseptics, the diseases in which they are indicated and explain how they are used 7 How should ophthalmia neonatorum be prevented and how treated? 8 In what conditions may cathartics be useful in the treatment of diarrhea or dysentery? 9. Name some conditions in which the bromids are indicated and state your method of giving them in large doses 10 The dose of medicine given by the mouth being 1 grain, what would be the equivalent dose for hypodermic use and what for administration by the rectum?

OBSTETRICS

1 What are the boundaries and dimensions of the outlet of the pelvis? 2 Name the presumptive and positive signs of pregnancy. 3 Give leading points in the diet and hygiene of pregnancy 4 Define ovum, spermatozoon, embryo, fetus, abortion 5. On what grounds is it proper to produce an abortion? 6. What should the obstetrician's bag contain? 7 Describe the formation of the placenta and give its function 8 If called to give evidence in a court of justice, how would you determine whether rape had been committed? 9 What is the significance of albuminuria in pregnancy? Its treatment 10. Describe the proper treatment of a shoulder presentation.

CHEMISTRY

1. Define the terms, chemical affinity, valence, decomposition of compounds, the nascent state and basic substances. 2. Express in chemical equation the reaction resulting from the combination (in solution), of sodium carbonate and calcium chlorid. 3. Mention the properties of nitrogen. 4. What remedies are usually employed in treating an acute case of phosphorus poisoning? 5. How would you treat a case of bichlorid of mercury poisoning? 6. What are the local and constitutional symptoms of carbolic-acid poisoning? 7. Enumerate the domestic remedies used as antidotes in poisoning by caustic potash and caustic soda. 8. What is the general mode of obtaining alkaloids? 9. How do you determine the nature of a white precipitate thrown down by boiling a specimen of urine? 10. Describe the method of preparing Haine's test solution for sugar and how used.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

THE MEDICAL SECTS*

In the reconstruction just sketched no allusion has been made to medical sectarianism. We have considered the making of doctors and the increase of knowledge; allopathy, homeopathy, osteopathy, have cut no figure in the discussion. Is it essential that we should now conclude a treaty of peace, by which the reduced number of medical schools shall be so pro-rated as to recognize dissenters on an equitable basis?

The proposition raises at once the question as to whether in this era of scientific medicine, sectarian medicine is logically defensible; as to whether, while it exists, separate standards, fixed by conditions under which it can survive, are justifiable. Prior to the placing of medicine on a scientific basis sectarianism was, of course, inevitable. Every one started with some sort of preconceived notion, and from a logical point of view one preconception is as good as another. Allopathy was just as sectarian as homeopathy. Indeed, homeopathy was the inevitable retort to allopathy. If one man "believes" in dissimilars contrary suggestion is certain to provide another who will stake his life on similars; the champion of big doses will be confronted by the champion of little ones. But now that allopathy has surrendered to modern medicine, is not homeopathy borne on the same current into the same harbor?

The modern point of view may be restated as follows: Medicine is a discipline in which the effort is made to use knowledge procured in various ways in order to effect certain practical ends. With abstract general propositions it has nothing to do. It harbors no preconceptions as to diseases or their cure. Instead of starting with a finished and supposedly adequate dogma or principle it has progressively become less cock-sure and more modest. It distrusts general propositions, *a priori* explanations, grandiose and comforting generalizations. It needs theories only as convenient summaries in which a number of ascertained facts may be used tentatively to define a course of action. It makes no effort to use its discoveries to substantiate a principle formulated before the facts were even suspected. For it has learned from the previous history of human thought that men possessed of vague preconceived ideas are strongly disposed to force facts to fit, defend, or explain them. And this tendency both interferes with the free search for truth and limits the good which can be extracted from such truth as is in its despite attained.

Modern medicine has therefore as little sympathy for allopathy as for homeopathy. It simply denies outright the relevancy or value of either doctrine. It wants not dogma, but facts. It countenances no presupposition that is not common to it with all the natural sciences, with all logical thinking.

The sectarian, on the other hand, begins with his mind made up. He possesses in advance a general formula, which the particular instance is going to illustrate, verify, reaffirm, even though he may not know just how. One may be sure that facts so read will make good what is expected of them; that only that will be seen which will sustain its expected function; that every aspect noted will be dutifully loyal to the revelation in whose favor the observer is prepossessed; the human mind is so constituted.

It is precisely the function of scientific method—in daily life, politics, engineering, medicine—to get rid of such hindrances to clear thought and effective action. For it, comprehensive summaries are ultimate in the future, not in the past; we shall attain them, if at all, at the end of great travail; they are not lightly to be assumed prior to the beginning. "Science believes slowly; in the absence of conclusive demonstration its mien is humble, its hold is light. It should not teach dogmas; on the contrary, every utterance must be put to the proof. One should not train disciples, but form observers; one must teach and work in the spirit of natural science."[1]

Scientific medicine therefore brushes aside all historic dogma. It gets down to details immediately. No man is asked in whose name he comes—whether that of Hahnemann, Rush, or of some more recent prophet. But all are required to undergo rigorous cross-examination. Whatsoever makes good is accepted, becomes in so far part, and organic part, of the permanent structure. To plead in advance a principle couched in pseudo-scientific language or of extra-scientific character is to violate scientific quality. There is no need, just as there is no logical justification, for the invocation of names or creeds, for the segregation from the larger body of established truth of any particular set of truths or supposed truths as especially precious. Such segregation may easily invest error with the sanctity of truth; it will certainly result in conferring disproportionate importance on the fact or procedure marked out as of pivotal significance. The tendency to build a system out of a few partially apprehended facts, deductive inference filling in the rest, has not indeed been limited to medicine, but it has nowhere else had more calamitous consequences.

The logical position of medical sectarians to-day is self-contradictory. They have practically accepted the curriculum as it has been worked out on the scientific bases. They teach pathology, bacteriology, clinical microscopy. They are thereby committed to the scientific method; for they aim to train the student to ascertain and interpret facts in the accepted scientific manner. He may even learn his sciences in the same laboratory as the non-sectarian. But scientific method cannot be limited to the first half of medical education. The same method, the same attitude of mind, must consistently permeate the entire process. The sectarian therefore in effect contradicts himself when, having pursued or having agreed to pursue the normal scientific curriculum with his students for two years, he at the beginning of the third year produces a novel principle and requires that henceforth the student effect a compromise between science and revelation.

Once granted the possibility of medical dogma, there can be no limit to the number of dissenting sects. As a matter of fact, only three or four are entitled to serious notice in an educational discussion. The chiropractics, the mechano-therapists, and several others are not medical sectarians, though exceedingly desirous of masquerading as such; they are unconscionable quacks, whose printed advertisements are tissues of exaggeration, pretense, and misrepresentation of the most unqualifiedly mercenary character. The public prosecutor and the grand jury are the proper agencies for dealing with them.

Sectarians, in the logical sense above discussed, are (1) the homeopathists, (2) the eclectics, (3) the physiomedicals, (4) the osteopaths. All of them accept in theory, at least, the same fundamental basis. They admit that anatomy, pathology, bacteriology, physiology, must form the foundation of a medical education, to use the words broadly so as to include all varieties of therapeutic procedure. They [illegible] relative to pathology or physiology, there is thus [illegible] one proper science of the structure of the human body and of the abnormal growths that affect it. So far they make no issue as against scientific medicine. Much is involved in agreement up to this point. The standards of admission to the medical school, the facilities which the schools must furnish in order effectively to teach the fundamental branches are the same for all alike. A student of homeopathy or of osteopathy needs to be just as intelligent and mature as a student of scientific medicine: and he is no easier to teach: for during the first and second years, at least, he is supposed to be doing precisely the same things.

---

* Extract from Chapter X of the Flexner report to the Carnegie Foundation for the Advancement of Teaching. A copy of the complete report may be obtained by sending 17 cents for postage to the Carnegie Foundation, 576 Fifth Ave., New York City.

[1] Orth, Johannes. Berl. klin. Wchnschr., xliii, p. 818.

At the beginning of the clinical years, the sectarian interposes his special principle. But educationally, the conditions he needs thenceforth do not materially differ from those needed by consistently scientific medicine. Once more, whatever the arbitrary peculiarity of the treatment to be followed, the student cannot be trained to recognize clinical conditions, to distinguish between different clinical conditions, or to follow out a line of treatment, except in the ways previously described in dealing with scientific medicine. He must see patients and must follow their progress, so as to discover what results take place in consequence of the specific measures employed. A sectarian institution, being a school in which students are trained to do particular things, needs the same resources and facilities on the clinical side as a school of scientific medicine.

Sectarian institutions do not exist in Canada; in the United States there are 32 of them, of which 15 are homeopathic, 8 eclectic, 1 physiomedical, and 8 osteopathic. . . .

HOMEOPATHIC COLLEGES

None of the fifteen homeopathic schools[3] requires more than a high school education for entrance; only five[4] require so much. The remaining eleven got less—how much less depending on their geographic locations rather than on the school's own definition. . . .

On the laboratory side, though the homeopaths admit the soundness of the scientific position, they have taken no active part in its development. Nowhere in homeopathic institutions, with the exception of one or two departments at Boston University, is there any evidence of progressive scientific work. Even "drug proving" is rarely witnessed. The fundamental assumption of the sect is sacred; and scientific activity cannot proceed where any such interdict is responsible for the spirit of the institution. The homeopathic departments at Iowa and Michigan are in this respect only half schools—clinical halves. For their students get their scientific instruction in pathology, anatomy, etc., in the only laboratories which the university devotes to those subjects, under men none of whom sympathize with homeopathy. Their disadvantage is increased by the fact that the instruction is adapted to students who have had one or two years of college work. The general argument in favor of higher standards is here reinforced by the consideration that the homeopathic students should certainly qualify themselves for the only grade of scientific instruction that the two universities offer.

Of complete homeopathic schools, Boston University, the New York Homeopathic College, and the Hahnemann of Philadelphia alone possess the equipment necessary for the effective routine teaching of the fundamental branches. None of them can employ full time teachers to any considerable extent. But they possess fairly well equipped laboratories in anatomy, pathology, bacteriology and physiology, a museum showing care and intelligence, and a decent library. Boston University deserves especial commendation for what it has accomplished with its small annual income. . . .

In respect to hospital facilities, the University of Michigan, Boston University, and the New York Homeopathic alone command an adequate supply of material, under proper control, though modern teaching methods are not thoroughly utilized even by them. The Iowa school controls a small, but inadequate hospital. All the others are seriously handicapped by either lack of material or lack of control, and in most instances by both. . . .

The dispensary situation is rather worse. Iowa and Ann Arbor have little opportunity. Of the others, Boston University alone has a really model dispensary, comparing favorably in equipment, organization and conduct with the best institutions of the kind in the country. The New York Homeopathic, the Chicago Hahnemann, and the Philadelphia Hahnemann command material enough. The others lack material, equipment or care; in some instances they lack everything that a dispensary should possess.

Financially, the two state university departments and the New York homeopathic schools are the only homeopathic schools whose strength is greater than their fee income. All the others are dependent on tuition. Their outlook for higher entrance standards or improved teaching is, therefore, distinctly unpromising. . . .

In the year 1900 there were twenty-two homeopathic colleges in the United States; to-day there are fifteen; the total student enrolment has within the same period been cut almost in half, decreasing from 1909 to 1009[9]; the graduating classes have fallen from 413 to 246. As the country is still poorly supplied with homeopathic physicians, these figures are ominous; for the rise of legal standard must inevitably affect homeopathic practitioners. In the financial weakness of their schools, the further shrinkage of the student body will inhibit first the expansion, then the keeping up of the sect.

Logically, no other outcome is possible. The ebbing vitality of homeopathic schools is a striking demonstration of the incompatibility of science and dogma. One may begin with science and work through the entire medical curriculum consistently, exposing everything to the same sort of test; or one may begin with a dogmatic assertion and resolutely refuse to entertain anything at variance with it. But one cannot do both. One cannot simultaneously assert science and dogma; one cannot travel half the road under the former banner, in the hope of taking up the latter, too, at the middle of the march. Science, once embraced, will conquer the whole. Homeopathy has two options: one to withdraw into the isolation in which alone any peculiar tenet can maintain itself; the other to put that tenet into the melting pot. Historically it undoubtedly played an important part in discrediting empirical allopathy. But laboratories of physiology and pharmacology are now doing that work far more effectively than homeopathy; and they are at the same time performing a constructive task for which homeopathy, as such, is unfitted. It will be clear, then, why, when outlining a system of schools for the training of physicians on scientific lines, no specific provision is made for homeopathy. For everything of proved value in homeopathy belongs of right to scientific medicine and is at this moment incorporate in it; nothing else has any footing at all, whether it be of allopathic or homeopathic lineage. "A new school of practitioners has arisen," says Dr. Osler, "which cares nothing for homeopathy and less for so-called allopathy. It seeks to study, rationally and scientifically, the action of drugs, old and new.

ECLECTIC COLLEGES

There are eight eclectic schools.[10] One of them—that in New York City—requires the regents' medical student certificate, i. e., a four year high school education, for admission; the Cincinnati school must require an equal preliminary education of students expecting to practice in Ohio, others taking the matter into their own hands. Just how the instruction is thus accommodated to various levels is not clear. The remaining six schools have either nominal requirements or none at all.

None of the schools has anything remotely resembling the laboratory equipment which all claim in their catalogues. The Cincinnati institution possesses a new and attractive building, thus far meagerly fitted out; the New York school has a clean building with a chemical laboratory in which elementary chemistry can be and apparently is taught properly. It has little else, a small room for the microscopic subjects, but no adequate equipment for teaching them; a few thousand books, mostly old; a few models, a lantern, etc.—and this is the most satisfactorily equipped of all the eclectic institutions. . . .

---

[3] Hahnemann (San Francisco), Hahnemann and Hering (Chicago), state universities of Iowa and Michigan, Southwestern Homeopathic (Louisville), Boston University, Detroit Homeopathic, Kansas City Hahnemann, New York Medical College for Women, New York Homeopathic, Pulte (Cincinnati), Cleveland Homeopathic, Hahnemann (Philadelphia), Atlantic Medical (Baltimore).

[4] State universities of Iowa and Michigan, Detroit Homeopathic and the two New York schools.

[9] Jour. Am. Inst. Homeopathy, 1909, No. 11, i, 537; The Journal A. M. A., Aug. 14, 1909, pp. 556, 557, gives figures somewhat lower: 884 instead of 1009, 209 instead of 246. The discrepancy does not alter our interpretation.

[10] One each at Los Angeles, Kansas City (Kansas), St. Louis, Lincoln (Nebraska), Cincinnati, New York City, and two at Atlanta.

So far as sectarian creeds go, there is, of course, no reason why these schools should be elaborately equipped for scientific instruction. They talk of laboratories, not because they appreciate their place or significance, but because it pays them to defer thus far to the spirit of the times. Culpable indeed they are, however, for their utter failure to make good what their own tenets prescribe. The eclectics are drug mad; yet, with the exception of the Cincinnati and New York schools, none of them can do justice to its own creed. For they are not equipped to teach the drugs or the drug therapy which constitutes their sole reason for existence.[11]

OSTEOPATHIC COLLEGES

The eight osteopathic schools[12] fairly reek with commercialism. Their catalogues are a mass of hysterical exaggeration, alike of the earning and of the curative power of osteopathy. It is impossible to say on which score the "science" most confidently appeals to the crude boys or disappointed men and women whom it successfully exploits. "In no case has a competent osteopath made a failure in his attempt to build up a paying practice. . . . His remuneration, counted in dollars, will be greatly in excess of what he could reasonably expect in most other lines of professional work."[13] "It is only fair to say that many of our graduates are earning as much in single months as they were formerly able to earn by a full year's work."[14] "The average osteopath has a better practice than ninety out of every hundred medical practitioners."[15] "A lucrative practice is assured to every conscientious and capable practitioner."[16] "The graduate who does not make as much as the total cost of his osteopathic education in his first year of practice is the exception."[17] Standards these concerns have none; the catalogues touch that point very tenderly. At the parent school at Kirksville an applicant will be accepted "if he pass examinations in English, arithmetic, history and geography;" but if he should fail to meet these lofty scholastic requirements, he may be admitted anyway. In Massachusetts—the most homogeneously educated state in the Union—the Cambridge school diplomatically posts that "a diploma may be accepted or an examination be required if deemed advisable by the directors"—the word "is" being conspicuous by its absence; the Pacific College, "chancing it," finds that "most make good."

Whatever his notions on the subject of treatment, the osteopath needs to be trained to recognize disease and to differentiate one disease from another quite as carefully as any other medical practitioner. Our account of the sect proceeds wholly from this point of view. Whether they use drugs or do not use them, whether some use them while others do not, does not affect this fundamental question. Whatever they do, they must know the body, in health and disease, before they can possibly know whether there is an occasion for osteopathic intervention, and if so, at what point, to what extent, etc. All physicians, summoned to see the sick, are confronted with precisely the same crisis: a body out of order. No matter to what remedial procedure they incline—medical, surgical, or manipulative—they must first ascertain what is the trouble. There is only one way to do that. The osteopaths admit it, when they teach physiology, pathology, chemistry, microscopy. Let it be stated, therefore, with all possible emphasis that no one of the eight osteopathic schools is in position to give such training as osteopathy itself demands. The entire course is only three years. In so simple and fundamental matter as anatomy—assuredly the corner-stone of a "science" that relies wholly on local manipulation—they are fatally defective. At Kirksville the accommodations are entirely unequal to the teaching of its huge student body. Hence the first year is devoted to text book study of anatomy, part of the second year to dissection; at Kansas City they consider that the student dissects better if he has learned anatomy first; hence dissection comes in the latter half of the course, being completed just one half year before graduation. The supply of material is also scant; the school had had one cadaver early in the fall and was looking ahead to a second the latter part of the winter. The Los Angeles college has a small room with five tables for a student body numbering 250; it solves the difficulty by giving separate squads two hours a week each. At Philadelphia the department of anatomy occupies an outhouse, whence the noisome odor of decaying cadavers permeates the premises. Other subjects fare even worse. A small chemical laboratory is occasionally seen: at Philadelphia it happens to be in a dark cellar. At Kirksville a fair sized room is devoted to pathology and bacteriology; the huge classes are divided into bands of 32, each of which gets a six weeks' course, following the directions of a rigid syllabus under a teacher who is himself a student. At Cambridge pathology comes in the last year. A professor in the Kansas City school said of his own institution that it had practically no laboratory at all; the Still College at Des Moines has, in place of laboratories, laboratory signs; the Littlejohn at Chicago, whose catalogue avers that the "physician should be imbued with a knowledge of the healing art in its widest fields, and here is the opportunity,"[18] has lately in rebuilding wrecked all its laboratories but that of chemistry without in the least interfering with its usual pedagogic routine.[19] . . .

The mercenary character of osteopathic instruction is nowhere more conspicuously displayed than in the dispensaries, designed in theory to turn a humanitarian impulse to educational account. The osteopathic schools insert a cash nexus: the patients almost always pay. At Kansas City students give treatment to patients who pay three dollars a month; those paying more are treated by the professors. At Kirksville two dollars a treatment is charged. The cases are mostly chronics, an instructor being present at the first treatment; afterward, only if summoned. At Los Angeles the cheapest obtainable treatment is three dollars for "examination" and one month's treatment before the class; at Des Moines the "professor administers to high priced patients, the students to others."

The eight osteopathic schools now enroll over 1300 students, who pay some $200,000 annually in fees. The instruction furnished for this sum is inexpensive and worthless. Not a single full-time teacher is found in any of them. The fees find their way directly into the pockets of the school owners or into school buildings and infirmaries that are equally their property. No effort is anywhere made to utilize prosperity as a means of defining an entrance standard or developing the "science."[20] Granting all that its champions claim, osteopathy is still in its incipiency. If sincere its votaries would be engaged in critically building it up. They are doing nothing of the kind. Indeed, in none of the sectarian schools does one observe progressive effort even along the lines of its own creed. And very naturally: dogma is sufficient unto itself. It may not search its own assumptions; it does well to adopt from the outside, after forced restatement in its own terms.[21]

In dealing with the medical sectary, society can employ no special device. Certain profound characteristics in one way or another support the medical dissenter: thus the primitive belief in magic crops up in his credulous respect for an impotent drug; again, all other procedure having failed, what is there to lose by flinging one's self on the mercy of chance? Instincts so profound cannot be abolished by statute. But the limits within which they can play may be so regulated as to forbid alike their commercial and their ignorant exploitation. The law may require that all practitioners of the healing art comply with a reasonably rigorous preliminary educational standard; that every school possess the requisite facilities; that every licensed physician demonstrate a practical knowledge of the body and its affections. To these terms no reasonable person can object; the good sense of society can enforce them on reasonable and unreasonable alike. From medical sects that can live on these conditions, the public will suffer little more harm than it is destined to suffer anyhow from the necessary incompleteness of human knowledge and the necessary defects of human skill.

---

[11] The physiomedical sect can be dismissed in a note. It had three schools in 1907; only one, that in Chicago, is left. There were 149 physiomedical students in 1904; there are now 52; there were 20 graduates in that year, 15 in 1909.

[12] One school is found in each of the following cities: Chicago, Des Moines, Kirksville (Missouri), Kansas City (Missouri), Philadelphia, Cambridge (Massachusetts), and two at Los Angeles.

[13] Catalogue, Pacific College of Osteopathy, 1909-10, p. 9.

[14] Catalogue, Los Angeles College of Osteopathy, 1909-10, p. 9.

[15] Catalogue, Central College of Osteopathy, 1908-9, p. 22.

[16] Catalogue, Philadelphia College of Osteopathy, 1909-10, p. 48.

[17] Catalogue, Massachusetts College of Osteopathy, 1909-10, p. 10.

[18] Bulletin, June 15, 1909, p. 7.

[19] This school teaches medicine as well as osteopathy. It offers instruction in materia medica and therapeutics, practice of medicine, and yet it is a three year school.

[20] At the Pacific College of Osteopathy alone were two workers doing some research.

[21] In this fashion homeopathy handles sero-therapy as a case of similars.

Miscellany

Feeding Undiluted Citrated Milk.—Eighty consecutive cases of wasting infants fed on undiluted citrated milk are reported by Dr. Frederick Langmead (*Proc. Roy. Soc. Med.*, May, 1910). The method of adding sodium citrate to cow's milk was first advocated by Sir Almroth Wright, based on the influence which calcium salts have been proved to exert on coagulability *in vitro*, the softness and fineness of the curd varying directly with the amount of the sodium citrate used. The method was first used with diluted milk, but investigation showing the disadvantages of dilution, Langmead employed the process without dilution of the milk in cases in which artificial feeding was unavoidable. The babies in most instances being to a greater or less extent subnormal or in various stages of malnutrition or maldevelopment, the table of Holt as to quantity and intervals of feeding, at first followed, was found not to answer well and Langmead found it important to start well below the theoretically adequate amount and to feel his way from week to week. Having decided on the amount and frequency of the feedings, to each ounce of milk ordered, 2 gr. of sodium citrate were added in the form of a watery solution of such strength that 1 dram was added to each feeding. The mother was then instructed to bring the milk to the boil and then to add the solution. This served to sterilize the milk, and it has been found that the clot of citrated milk thus brought to the boil is finer than that which has been pasteurized or merely warmed. Langmead's experience with the citrated undiluted milk in the first two weeks of life is very small, and although it was serviceable in some cases he would not be disposed to employ it, as before the age of two weeks the stomach has been only slowly developing and acquiring tolerance for coagulated casein. Citration is gradually lessened at about five months and can usually be omitted at about six months. One of the chief advantages of the method is its simplicity, much manipulation with its attendant risks and mistakes being avoided. It applies most forcibly to the hospital class of patients, for whom it is also suitable on account of its cheapness. The disadvantages of dilution, the bulkiness of the feed, the complexity of the monthly variations, the dangers of artificially preserved or thickened cream, or of giving food containing too little fat, are all evaded. There is no danger of scurvy. Langmead has been struck by the firmness of the muscles of babies fed by this method, as contrasted with others—a better guide to the state of the nutrition than is the weight.

Preventing Blindness in New York.—The first annual report of the committee on the prevention of blindness of the New York Association for the Blind shows that its work since its organization in 1908 has been largely educational. Thousands of pamphlets intended for the lay public on the prevention of blindness in infants were distributed, not only in New York, but in other states on request. They have been circulated largely among members of the medical profession, health officers, graduate nurses, social service workers, at national and state conventions, and the articles have been printed in public magazines and the daily press. During the year a lecture tour was made and public addresses with lantern slide exhibitions were given in many of the larger towns of the state and in other states. A loan exhibit of photographs of children blind from ophthalmia neonatorum was circulated throughout the state. Among the recommendations of the committee for legislation, which are also those of the committee of the American Medical Association, was one for the distribution by boards of health of the prophylactic for ophthalmia neonatorum, a 1 per cent. solution of silver nitrate in colored glass tubes or ampoules, and one for earlier notification of births, that is, within thirty-six hours. The committee for the present year desires the cooperation of the various states doing the same line of work. The Russell Sage Foundation donated the sum of $5,000 to further the experimental work in the prevention of blindness, and this grant has been renewed for the present year. The late Richard Watson Gilder was president of the association and the late Samuel L. Clemens was a member.

Sanitation in Cuba.—An interesting article in the current issue of the official bulletin of the Cuban Department of Sanitation and Charities (*Sanidad y Beneficencia*, January-February, 1910) is an illustrated one showing the technic of fumigation of houses and other buildings to rid them of yellow fever and malarial mosquitoes. The method now adopted is that used in Mexico. The buildings to be fumigated are covered with large canvases, lashed and battened down, and cracks and crannies sealed with paper pasted over them until the whole building is hermetically sealed. The fumigation is then accomplished by burning sulphur and pyrethrum. Several factories and even whole blocks are prepared for fumigation at the same time, and with a sufficient force of laborers this is done in a few hours, so that the occupants of a house, hotel, factory or other business place are deprived of the use of their premises for only a few hours. Before using this method it sometimes took several days to fumigate premises. Mosquito inspections are kept up all over the island and the figures for 1909 show that over a million and a half of inspections were made. There were no cases of yellow fever during 1909, but twenty deaths occurred from *ictero grave*, and it is explained that twelve of these patients were not declared to be yellow fever immunes. A report with table on malaria in the island shows 723 deaths from that cause in 1909 as against 4,107 in 1900, together with a detailed report of vaccinations, which shows that smallpox has fallen from first to eighth place as a cause of mortality in the island and that there was only one case in the latter half of 1909, and that was imported. Tables on vital statistics covering the whole island analyze in an interesting manner diseases, deaths and marriages by ages, nationalities, occupations, etc., and show the number of legitimate and illegitimate births, and the work of sanitation and sanitary engineering performed. There are also in the bulletin a number of papers on subjects of scientific and general interest, the whole showing that the department is up to date and doing good work in public health and sanitary matters.

Hygienic Measures in Public Offices.—In the offices of the public printer in Washington general hygienic measures and precautions are employed which might be profitably followed in all large offices. By special arrangement with the health officers of the city, employees in whose families contagious diseases exist are reported to the office, and such employees are quarantined or asked to move temporarily from their residences, or placed on their honor not to nurse or enter the apartments of the sick. Tuberculous employees are urged to take sanitarium treatment, and leave of absence is obtained for them. Cuspidors are sterilized with live steam for each eight hour shift. Water-closet seats and floors of the offices are scrubbed with soft soap, hot water and mercuric chlorid solutions and the latter allowed to dry on the floor. All telephone mouthpieces are wiped out daily with a solution of thymol and oil of eucalyptus in olive oil. Garbage cans are collected, emptied and sterilized with live steam daily. Drinking cups are collected and sterilized several times daily. The floors are swept after sprinkling with sawdust saturated with thin spindle oil and mixed with common salt. When employees are found to have genitourinary diseases they are dismissed from the service. Towels in the lavatories are changed three times a day. Employees injured or becoming ill while on duty are treated in the emergency room, and may call in their own physicians if desired. A card system of all patients treated is kept.

Case of Holoacardius Acephalus. A case of holoacardius acephalus has been reported by Harry Jackson (*Tr. Chicago Path. Soc.*, April 1, 1910). The case occurred in the practice of Dr. A. E. Budde, Norway, Mich. The mother was 19 years of age and the pregnancy a second one of nine months' duration. The diagnosis had been pregnancy with tumor. A normal, viable, 3½ pound male child was delivered, followed by the supposed tumor, which showed a body and two legs, the head and arms being absent. The legs were of uneven length. There were no toes. Two cm. from the anterior extremity of the body was a hernial sac at the site of the umbilicus which contained coils of small intestine, and to the sac the cord was attached. Two cm. from the posterior extremity on the ventral surface was a small penis like structure. There was no anal opening. The radiograph showed a fairly well-developed skeleton. There were eight ribs on each side of the vertebral column of 14 vertebræ. The scapulæ were present but there were no clavicles or bones of the arms or skull. Having no heart, the specimen was dependent on the heart of a twin fetus for its circulation. The two fetuses had their origin in a single ovum as is evidenced by the single placenta and single chorion.

Book Notices

Modern Medicine. Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. VII, Diseases of the Nervous System. Cloth. Price, $6 net. Pp. 969, with illustrations. Philadelphia: Lea & Febiger, 1910.

This is the last volume of this work. It has taken about three years to complete the publication, and in view of the magnitude of the undertaking, it hardly seems possible that the seven splendid volumes could have been issued in a shorter time. The authors of the present volume are: L. F. Barker ("Introduction to Diseases of the Nervous System"); E. Bramwell ("Sclerosis of the Brain and Diseases of the Meninges"); Charles W. Burr ("Neurasthenia; the Traumatic Neuroses and Psychoses"); E. F. Buzzard ("Diffuse and Focal Diseases of the Spinal Cord"); Joseph Collins ("Topical Diagnosis of Disease of the Brain, Aphasia"); Harvey Cushing ("Tumors of the Brain and Meninges; Hydrocephalus"); Gordon M. Holmes ("Diseases of the Peripheral Nerves"); Smith Ely Jelliffe ("Migraine, Neuralgia, Professional Spasms, Occupation Neuroses, Tetany"); D. J. McCarthy ("Paralysis Agitans, Chorea, Choreiform Affections, Infantile Convulsions"); Colin K. Russell ("Combined Diseases of the Spinal Cord"); B. Sachs ("Amaurotic Family Idiocy"); E. C. Southard ("Acute Encephalitis and Brain Abscess"); W. G. Spiller ("Diseases of Motor Tracts"); W. P. Spratling ("Epilepsy"); E. W. Taylor ("Diseases of the Cerebral Nerves"); H. M. Thomas ("Diseases of the Cerebral Blood-Vessels"). It would be out of the question to review critically the monographic articles of all these contributors; it must suffice to point out again, as has been done in the case of the preceding volumes, that each contributor is qualified by special study to write on the subject or subjects assigned to him. That the contributors in general are leading men is apparent to any one at all familiar with the present state of the general literature on diseases of the nervous system so far as this country, Canada and Great Britain are concerned. We note that the consideration of mental diseases has been omitted. There are 37 plates, many of them of great value, as well as a number—not very large—of figures in the text. The present volume in every way measures fully up to the high standards of the previous volumes. In addition to the volume index there is an index to the whole work; this general index covers more than 50 pages and seems to be a comprehensive one. There is no authors' index.

Viewed as a whole, "Modern Medicine" is a production of great merit and usefulness. The various parts are well balanced; the editors have been uniformly fortunate in the choice of contributors; the result is a reliable and comprehensive picture of the knowledge of general medicine of our time. The editors and publishers have rendered the English-speaking medical world a large service.

Die forensische Blutuntersuchung. Ein Leitfaden für Studierende, beamtete und sachverständige Aerzte und für Kriminalisten. Von Dr. Otto Leers, Assistent der königlichen Unterrichtsanstalt für Staatsarzneikunde an der Universität zu Berlin. Price, 8 marks. Pp. 212, with illustrations. Berlin: Verlag von Julius Springer, 1910.

To compare the manner of conducting examinations in medicolegal cases by the officials of any fair-sized German city with the procedures employed under the prevailing system of coroners and coroners' physicians in this country, would be ridiculous. Only when political or financial prominence demands special investigation do we see anything resembling a scientific handling by experts who are usually called in after police, coroners and undertakers have spoiled everything possible. Therefore we fear that Leers' concise monographs on medicolegal blood examinations will not have so large a clientele in America as in countries that have fewer cases to investigate and more officials competent to investigate them.

It is an excellent treatise on the subject, giving a full and clear statement of methods and their proper valuation, in surprisingly small space. All standard means of studying blood and blood-stains for legal purposes are described, including not only the chemical, physical and microscopic procedures, but also the technic of the biologic methods by means of the precipitin, complement-fixation and anaphylaxis reactions. About one half the book is given to these biologic methods, and a good bibliography adds much to its usefulness. The author has evidently planned to supply the needs of students and physicians who are taking a course of instruction in medicolegal methods, and has succeeded admirably in this; at the same time the book will be useful to those wishing to learn the value assigned to the newer methods by an expert; it will also be a starting-point for special consideration of the application of existing methods in any case calling for detection or identification of blood or tissue proteins.

Surgery, Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume V. Cloth. Pp. 1274, with illustrations. Price, $7 net. Philadelphia: W. B. Saunders Co., 1909.

In this, the fifth and last volume of this work, is found the most complete and comprehensive exposition of the subject of surgery of the vascular system (by Matas) that has appeared in any language. It is practically a monograph on the subject, comprising as it does the first 350 pages of the volume.

Surgery of the pericardium and heart, arteriorrhaphy, arteriovenous anastomosis, aneurismorrhaphy, together with all the recent experimental work done along these lines, are very thoroughly covered. The chapter is a model of completeness and one of the most valuable of the entire system. Following is a chapter on the "Surgery of the Female Genito-urinary Organs" which is a more complete exposition of the subject than is usually found in works of this kind. Among the newer subjects which are found discussed in this volume may be mentioned "Surgery of Accidents," "Surgery of the Parathyroid Bodies," "Intracranial Surgery of the Auditory Nerve," "Local and Subarachnoid Anesthesia," "Surgery of the Infectious Diseases" and "The Legal Relations of the Surgeon."

The authors, editors and publishers are to be congratulated on the excellence of their work and the whole profession [illegible] having been favored with such a master [illegible].

Education in Sexual Physiology and Hygiene. A Physician's Message. By Philip Zenner, Professor of Neurology in the Medical Department of the University of Cincinnati. Price, $1 net. Pp. 126. Cincinnati: The Robert Clarke Co., 1910.

This book, intended more particularly for the public, is significant both as a message and a sign. As a message it brings to the people the mature thought of one of the ablest members of the medical profession on a subject of fundamental importance to society. It gives an account of an actual experiment, a demonstration of natural and beneficent sex culture in a public school. It teaches, furthermore, what ought to be taught in families as well as in schools, namely that sexual disease in the individual is the unit of social disease in the race. From this starting point the book treats of means that the medical profession has already recognized and that the public is beginning to recognize as the only logical method of solving the great problem that lies at the foundation of social welfare. As a sign of the times the book is especially significant. It reveals in its pages the fact that our schools for the masses are already taking up this question. It shows, furthermore, that the medical profession is giving careful study to these great sociologic problems and is issuing popular books of scientific value on questions that have too generally been left to ignorant and irresponsible writers. And, finally, it is a sign that the agitation conducted by the social purity associations and the eugenic organizations of the country is bearing worthy fruit. The style is lucid, while the subjects are plainly but delicately treated. It is a work that physicians can recommend when consulted, as they frequently are, about teaching the young on sex questions. It ought to be in the hands of every school teacher and parent.

Lehmann's Medizinische Atlanten. Band vii. Atlas und Grundriss der Röntgendiagnostik in der inneren Medizin. Herausgegeben von Dr. med. Franz M. Groedel, Bad Nauheim. Cloth. Pp. 3.8 with 297 illustrations. Price, 24 marks. München: J. F. Lehmann's Verlag, 1909.

This work is not intended as a complete exposition of the subject for the use of the expert in Röntgen technic, nor does it take up the question of the use of the *x*-ray as a therapeutic agent, but is intended for the internist who uses the *x*-ray as an aid in the diagnosis of internal conditions. In the opening chapter is a brief description of the necessary apparatus, tubes, tables, screens, etc., with directions for their care and use. The various organs are then taken up and considered in detail, first the normal relations and then the pathologic conditions. Considerable attention is given to diseases of the heart and of the stomach and the value of orthodiagraphy in the diagnosis of the former and of the use of bismuth in the latter are well brought out. The changes which occur in the skeleton in connection with general diseases such as cretinism, myxedema, rachitis, Barlow's disease, osteomalacia, osteitis deformans, toxigenic osteoperiostitis, syphilis, tuberculosis, the arthritides, acromegaly, etc., are also presented. The work is extensively illustrated with 114 cuts in the text and an atlas of 173 autotypes and 122 photographs. A bibliography of thirty odd pages completes the work.

Studien über die bei Peritonealen Infektionen Appendiculären Ursprungs Vorkommenden Sauerstofftoleranten sowie Obligat Anaeroben Bakterienformen mit besonderer Berücksichtigung ihrer Bedeutung für die Pathogenese derartiger Peritonitiden. Von Birger Runeberg, Assistenzarzt an der Chirurgischen Universitäts-Klinik zu Helsingfors. Paper. Pp. 303, with illustrations. Berlin: Verlag von S. Karger.

This is a careful study of the subject of peritonitis of appendicial origin. The author shows that the peritonitis in these cases is seldom due to a single form of organism and that the mere fact that but one variety of organism grew on the culture medium is no indication that the peritonitis was due to a single infection. In most of the cases he finds a multiple infection and shows that the reason why they have usually not been found is that they are anaerobic in their nature and therefore do not grow under the ordinary cultural methods. Even in those cases seen early with a slightly turbid serous exudate which ordinarily have shown no bacterial growth and which consequently have been classed as toxic or chemical peritonitis, he finds numerous organisms of various kinds if suitable cultural methods are employed. Naturally, the organisms found are those present in the intestine but they do not all live nor are they found in the same relative numerical proportion in the peritoneal exudate as in the intestine. The work contains much valuable information.

What You Ought to Know About Your Baby. By Leonard K. Hirshberg, M.D. A Handbook for Mothers on the Care and Feeding of Infants, with Questions and Answers. Expressly Prepared by the Author. Cloth. Price, 50 cents. Pp. 97. New York: The Butterick Publishing Co., 1910.

The *raison d'être* of this book is sufficiently expressed in the preface, that as "more and more the doctor is interpreting it to be his mission to teach people how to keep well. And the place to begin is with the babies." In a graphic and forceful way Dr. Hirshberg explodes old theories, superstitions and customs in regard to the rearing of babies, and points out the sensible, the modern way of carrying out this responsible duty and the inculcation of correct habits up to the period of adolescence. The causes of the common but dangerous diseases of childhood and the way to avoid them are explained in a practical way, and the responsibility of parents, through misguided affection and coddling, lack of knowledge or carelessness, for their occurrence is emphasized. The questions and answers at the end of each chapter bring to the consciousness of the reader in a pointed, concrete way the things to be avoided and the things to be observed. It is a practical book and will help in the education of the public in health matters.

The Conquest of Disease Through Animal Experimentation. By James P. Warbasse, M.D., Surgeon to the German Hospital, Brooklyn. Cloth. Price, $1 net. Pp. 175. New York: D. Appleton & Co., 1910.

This little book is a timely publication and is commended to those who wish a logical, conservative and rational presentation of the case for animal experimentation. The book is based on addresses given before the New York Academy of Medicine, the Medical Society of the County of Kings, and the Brooklyn Institute of Arts and Sciences; it contains papers on "The Study of Living Animals," "What is Meant by Animal Experimentation," "The Technic of Animal Experiments," "The Meaning of Pain" and "The Relation of Animal Experimentation to Physiology, Surgery, the Practice of Medicine, Hygiene and Diseases of the Lower Animals." The book is recommended to county societies for distribution to the public, and for public libraries. It is especially suitable for school libraries. Dr. Warbasse deserves the thanks of medical research workers for the preparation of this volume.

Handbuch der Serumtherapie und experimentellen Therapie. Ein Handbuch für Klinik und Praxis. Herausgegeben von O. Wolff-Eisner, Berlin. Paper. Price, 12 marks. Pp. 408, with illustrations. Munich: J. F. Lehmanns Verlag, 1910.

This book consists of short and concise articles by a number of the more prominent active workers in the field of immunology and experimental therapy. The object is to provide the clinician with an authoritative source for ready reference in regard to serotherapy, vaccine therapy, organotherapy, etc., in their immediate practical bearings. The various chapters are written by men who have made the subjects discussed the object of personal study and investigation. The theoretical discussion is limited to the explanation of the underlying principles of the various methods. There is no question but that the practitioner will find this a useful book; it will help him to a better understanding and utilization of the results of progress in biologic science so far as they concern therapeutics.

Atlas der Anatomie des Mediastinum im Röntgenbilde. Von Dr. Friedrich Albin Hoffman, o. ö. Professor und Direktor der medizinischen Poliklinik an der Universität Leipsig. Cloth. Twenty-five radiographic plates. Price, 12 marks. Leipsic: Dr. Werner Klinkhardt, 1909.

This atlas consists of 25 plates, nearly life size, of Röntgenographs of the chest taken at definite angles through the body so as to present to view, as it were, the contents of the thorax from every possible direction.

The author correctly believes that the normal anatomy should be studied from the viewpoint of the *x*-ray plate before the attempt is made to study the pathologic picture and the object of these plates is to furnish some reliable data covering this particular portion of the body. The plates are very good, although they have lost somewhat in clearness of detail by repeated printing, a loss which is partially compensated for by the descriptive diagrams and explanatory text accompanying each plate.

Hygiene of Pregnancy. By C. H. Harris, M.D., Higginsville, Mo. Paper. Price, 10 cents. Pp. 23.

This little pamphlet, intended for prospective mothers, after giving practical advice and instruction in regard to the diet, the value of fresh air, care of the skin, bowels, the breasts, the clothing to be worn and the correct attitude of mind to be cultivated during pregnancy, then takes up the subject of the approaching labor and the preparation for it and for the newly born baby, its outfit and its hygienic care, the bath, feeding, sleep, dressing, necessity of open air, observation of the weight, the desirability of a quiet environment for the young child, weaning, etc., and closes with some sensible hints in regard to the rearing of the baby during its first year.

PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS. With Special Reference to Diagnosis and Treatment for General Practitioners and Students. By Sherman G. Bonney, M.D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver. Second Edition. Cloth. Price, $7 net. Pp 955, with 243 illustrations. Philadelphia: W. B. Saunders Co., 1910.

In our review of the first edition of Bonney's work, we expressed the opinion that it was one of the best works on the subject of tuberculosis. The second edition contains a careful conservative review of newer developments and five new chapters are added. It is the work of an experienced clinician, which makes it particularly valuable to the practitioner, and being the work of one author, it possesses a unity which is often lacking in systems.

CONSUMPTION: ITS PREVENTION AND HOME TREATMENT. A Guide for the Use of Patients. By H. Hyslop Thomson, M.D., Medical Superintendent Liverpool Sanatorium. Cloth. Price, $1. Pp. 75, with illustrations. New York: Oxford University Press, 1910.

This little book is written to be a guide for the use of patients. The author is medical superintendent of the Liverpool Sanatorium and a series of lectures delivered to patients in this institution form the basis of this volume. It contains a clear, simple statement of what tuberculosis is, how it is transmitted, and how patients must live to get well. Its simplicity, directness and good sense ought to make it a useful guide for curable consumptives. It is not intended to take the place of the physician but to supplement his directions.

Society Proceedings

OHIO STATE MEDICAL ASSOCIATION

Sixty-fifth Annual Meeting, held at Toledo, May 11-13, 1910

(*Continued from page 1897, Vol. LIV.*)

President's Address: The Relation of the Medical Profession to the Public

DR. W. H. SNYDER, Toledo: It is manifestly impossible for so complex and necessary a science as medicine to live without a certain amount of easy articulation with the public. If the profession had not lived so much within itself, but, rather, had spread its ideals and discoveries before the public, antivivisection, Christian science, osteopathy, optometry and mental healing could not have gained ground, except with those who are mentally incompetent. Well-known weekly and monthly magazines have during the past two years probably done more to educate people along correct lines of medical thought than any other single agency. They reach a larger number of people, who are largely visualists, and must see in cold print what is intended for them to know, and, too, are regarded as stating the case more impartially than physicians would. I prophesy that the time will come when the medical profession will be compelled to print a magazine for lay circulation along these very lines, and I suggest that the association seriously consider the establishment of a bureau at Columbus, which would constantly be influencing the public thought through the newspapers, magazines and public addresses.

One of the lamentable things in Ohio is the condition of the state institutions, especially those for the insane; the most that can be said for them is that they are houses of detention and not hospitals. The medical profession of the state should take it on itself to submit a list of medical men available as superintendents for this work, and recommend to the legislature that some action be taken which will lead to an adoption of executive and medical supervision. Too much attention is paid to the per capita cost per year, rather than to the results from a medical standpoint.

The association should adopt the plan of the parent organization of having a president-elect, and an earnest inquiry should be made into the virtues of the plan for medical defense, such as had been adopted by the [illegible] Academy of Medicine.

The Principles of Medical Defense as Applied to the Ohio State Medical Association

DR. WILLARD J. STONE, Toledo: Since most so-called malpractice suits against physicians arise from misunderstanding or for purposes of extortion, a solid defense by a firm of attorneys experienced in such work is usually enough to dampen the ardor of any ill-natured or unscrupulous lawyer. Physicians who are members of such an organization are more careful in opinions expressed regarding the work of their associates. The defense deals only with civil actions brought against members of the society; no attempt is made to excuse negligence or culpability. In such cases physicians are allowed to settle the matter in hand as seems best to the executive committee and the attorneys. In all states which have so far tried the plan, it has proved successful from a financial point of view. It furnishes members a cheap insurance, but not for profit, and such a feature greatly increases membership in the state organization. The number of malpractice suits has been decreased at least 25 per cent. in states which have adopted the medical defense feature.

LEGISLATIVE NOTES

Condemnation of Benzoate, Etc.

A motion was carried deprecating the use of benzoate of soda and similar chemical preservatives in the preparation of foodstuffs intended for human consumption, and urging on Congress such modification of the Food and Drugs Act as will make their use impossible.

A telegram was sent to the governor of the state urging him to use his power of veto against the optometry bill.

Eugenics and the Sterilization of Criminals

The committee on vasectomy reported that a bill providing for the sterilization of habitual criminals had been prepared, but was buried in committee. The laity is little less informed on the need of such legislation than is the medical profession itself. The idea of human sterilization is repugnant to the average man, and unless he studies the subject carefully and also learns what has been done, he will turn from any such proposal in disdain. He has little patience with the reasonable proposal to emasculate the habitual criminal. It is the opinion of this committee that the subjects of parenthood and race culture, the so-called science of eugenics, should receive vastly more attention than is accorded to it in the reading and study of the average physician or the thinking of the average layman. It can be assumed as an axiom that there can be no interference with life after the union of the cells concerned in reproduction; all that can be done is to provide for the [illegible] environment and education. The only means we have to [illegible] the evil which threatens to engulf us in the relative [illegible] reproduction in the inferior and [illegible] classes is to [illegible] in some way the multiplication of the former and to [illegible] it in the latter. Nature [illegible] unfit in all living species [illegible]. [illegible] subject to the same law. We [illegible] have not in our own [illegible] preserve and [illegible] coming into [illegible]. [illegible] relative death-rate [illegible] means vast [illegible] is [illegible] it is Nature [illegible] genus of [illegible]. [illegible] recommended that the [illegible] legislation be [illegible] in [illegible] channels for the [illegible] of the [illegible] and the people, and that a bill embodying the [illegible] of habitual criminals be [illegible] at the next session of the state legislature.

National Department of Health

A resolution was passed endorsing the bill introduced in the Senate by Senator Owen to establish a national department of public health.

A Section on Sanitary Science and Hygiene was organized.

Trend of Laboratory Diagnosis in the Past Ten Years

Dr. Francis Carter Wood, New York: The time has come when it is absolutely necessary for the practitioner of medicine and the laboratory specialist to unite in their work, if the patient is to receive the best treatment, and medicine is to be advanced along practical lines. In the past, many laboratory investigations have been of little value, because they lack direct application to live conditions and are much too theoretical. The practitioner who had no laboratory training was hampered in the diagnosis and treatment of his cases. The tendency is, even now, noticeable, in medicine, to place the treatment of a few infectious diseases in the hands of men whose training has chiefly been of a laboratory nature, examples of which may be cited, the application of tuberculin and the vaccine therapy. Laboratory methods consist of those which the practitioner himself should regularly employ, and those which, on account of their very complication, must be carried out in a fully equipped laboratory and only by specially trained men. However, the physician must have full knowledge of the relative value of the laboratory and clinical symptoms. In some diseases the laboratory findings are of the utmost importance; in others of relatively small value. The subcutaneous injections of tuberculin, the Von Pirquet, Moro and Detre tests, require a somewhat extensive experience to use and interpret them intelligently. This is also true of the therapeutic use of tuberculin. The vaccine treatment of Wright should be confined to men who have had special laboratory training and experience. Many of the unsuccessful cases recorded and some of the unfortunate results that have been obtained by the use of the vaccine therapy are undoubtedly due to the injudicious employment of this method in unsuitable cases.

Another important method in diagnosis and treatment, which must be carried out by laboratory men, is the Wassermann reaction. This test I consider as possibly the most important laboratory contribution to diagnosis of the past ten years. It is of great importance in the inspection of wet nurses, in quieting those who suspect, without reason, that they may have contracted syphilis, and life insurance companies might with advantage use the test in doubtful cases. Certainly those who give a positive reaction could not be considered ordinary risks.

But laboratory and instrumental methods by no means replace the clinical history and careful examination of the patient. In probably 90 per cent. of persons treated in general practice the use of laboratory methods adds but little to diagnosis or treatment, but in the remaining 10 per cent. such tests might be of vital importance. Especially is this true of persons to be treated by the newer sera or bacterial products, where an absolutely accurate diagnosis is necessary. The main fact to be kept in mind is that the time has come when there can be no separation of the clinical and laboratory aspects of medicine, and patients have a right to demand every means which will give them the best hope of cure.

Trivialities and Progress

Dr. John F. Binnie, Kansas City, Mo.: A consideration of many apparently self-evident principles, observations and investigations and of the benefits accruing from their recognition is not only interesting but will encourage one to pay more attention to common sense in an age when we are liable to be swamped by the flood of weird technical terms and [illegible] processes constantly flowing from the laboratories. While exact laboratory and experimental work is an absolute essential in progress, unfortunately too common though [illegible] of the laboratory [illegible] the clinical study [illegible] to [illegible] the laboratory [illegible] or [illegible] clinical or [illegible]

From the earliest days the milkmaid knew that her milk would sour unless her pans were thoroughly cleansed and scalded; the housewife knew the preserves were safe if, after being thoroughly boiled, they were kept free from air pollution; the plainsman knew that his jerked meat if well dried was an assured asset. And yet surgeons were blind to the significance of these observations until the researches of Pasteur were published in France and applied to practical surgery by Lister in Glasgow. In early operation for rupture opposing edges were brought together and sutured; now all successful operations for inguinal hernia aim at the restoration of the canal by securing apposition of surfaces instead of edges. The whole principle of the closure of hernial openings is based on the fact that it is much easier to gum two sheets of paper together by their faces than by their edges. Such principles are so absurdly simple that it seems almost an impertinence to mention them, and yet surgeons were blind to them. The marvelous advance of bacteriology has been rendered possible by the simple discovery of the separation of the bacteria in a solid culture medium.

Some Germans recently discovered that a ganglion is the result of a colloidal degeneration of connective tissue, and that bursæ seem to have a similar origin. Comparison of the histology of ganglia, bursæ and joints show the three structures very similar if not practically identical. Nélaton and others were struck by the fact that non-union of fractured bones was commonly due to interposition of muscle, etc., between the fragments, hence in cases of ankylosis of the lower jaw they excised the temporo-maxillary joint and filled the osseous defect with a flap of tissue from the temporal muscle. John B. Murphy put these things together with the spark of genius. Why would not similar degeneration take place in flaps of tissue made to envelop opposed sawn surfaces of bone? The result is a new chapter added to surgery, viz.: arthroplasty. Sprains are no longer treated by complete rest, but by means of adhesive strips strain is taken off the injured structures and the patient thus protected and urged to use the injured joint, with the result that the active movement of the parts encourages absorption of the exudates and encourages nutrition while discouraging the formation of crippling adhesions and callosities. In vascular surgery the observation of the mesentery of the frog showed that where the blood stream slows the corpuscles congregate and the circulation stops, because the mesentery so quickly dries, but if kept moist in salt solution it can be observed uninterrupted; the fact that an eye kept open and dry will develop conjunctivitis; that where a loop of intestine is pulled out it quickly loses its normal luster, becomes dry and later covered with lymph, so that it readily adheres to almost anything with which it comes in contact—all these things our predecessors were blind to. Physicians will protect exposed abdominal contents with dry gauze, than which there could be no material better adapted to dry the delicate peritoneum and produce the phenomena of inflammation. If the gauze be wrung out of warm salt solution, or, better, out of warm liquid petrolatum, then it becomes a real protection not only against infection but against evaporation. That the Criles and the Carrels have succeeded in arteriorrhaphy where their predecessors failed lies in the fact that the successful experimenters prevented evaporation and drying of the intima, recognizing the fact that blood will circulate on the intima of a vessel when that intima is moistened, and that any delicate serous or mucous membrane exposed to the air becomes dry by evaporation and so inflamed. The rest of us had looked at the blood circulating in the frog's mesentery and had known of the necessity of keeping the mesentery moist lest the circulation stop; but we were not [illegible] we could not see the obvious and so failed in progress.

Ulceration of the Larynx Following Intubation in Membranous Croup

Dr. J. M. Phillips, Columbus: Out of four hundred and eighty cases I have observed this sequel twelve times. The exciting cause is undoubtedly the pressure which the tube exerts on tissues already lowered in vitality as a result of diphtheritic inflammation, and while the metal and hard rubber tubes seem equally apt to produce ulcers, undoubtedly a tube which is too large or which is awkwardly or forcibly introduced is more likely to produce ulceration than one which fits exactly and is introduced by a skilled hand. The early symptoms are not easy to recognize. In one class of cases when the tube is removed the child is unable to obtain a single inspiration, or else shows rapidly increasing dyspnea, making a reintubation necessary in a few hours, in which cases the ulcers have probably already formed and the larynx is swollen and softened. In a second class the patient does nicely for several days, then gradually develops the symptoms of laryngeal obstruction, and operative interference becomes imperative. At first I believed the dyspnea was due to a reflex spasm of the vocal cords, but, having an opportunity to examine with the laryngoscope, I saw the cords open, but the larynx was partially occluded by a collapse of its anterior wall. The softening of the cricoid and thyroid cartilages, which have to bear the greater part of atmospheric pressure during inspiration, permits them to collapse during inspiration as a result of this external pressure. In all cases after ulceration is well advanced the most pronounced symptom, and one almost pathognomic of ulceration, is the repeated coughing up of the tube, the expulsion of which is followed immediately by intense dyspnea or even asphyxia. In hospital practice most of these patients die from bronchopneumonia, due to aspiration into the deeper bronchi of pus from the ulcerating surfaces. In private practice most of the patients cough up the tube and die from asphyxia before the physician can reach them. The treatment is unsatisfactory. Six patients with suspected ulceration recovered when treated by sedatives and by removing the tube quickly or allowing it to be coughed up. Under expectant treatment there were six deaths from bronchopneumonia and one from asphyxia, and one recovery with partial stenosis of the larynx. After tracheotomies there was one death from asphyxia, two recoveries and one child which died of measles after wearing the cannula five months.

DISCUSSION

DR. THOMAS HUBBARD, Toledo: In these days of antitoxin intubation is practically a lost art. The tendency now is to wait longer than one would in the pre-antitoxin days: consequently it is the most desperate class of cases that have intubation. These cases of deep ulceration and complications following intubation have been due to mixed infection rather than pure diphtheritic infection. Shurley of Detroit, in 400 cases, was able to study 30 for five years after intubation, and in only a few was there even the symptom of hoarseness. In other words, the slight erosions from the calcareous deposits on the tube rarely result in permanent injury. The size of the tube is important, not as regards the child's age, but the actual condition encountered, a smaller tube sometimes being required on account of the extreme swelling. Also the matter of introduction and extraction is most important. The old tubes, after the original methods of O'Dwyer, were the most perfect and satisfactory.

Pleurisy, Both as a Complication and as a Sequel of Lobar Pneumonia; Diagnosis and Treatment

DR. JAMES M. ANDERS, Philadelphia: While it is universally conceded that pleurisy is the commonest complication of the pneumonic process, it should be regarded as a complication only when the dry plastic variety is of marked severity, or pleurisy is accompanied by sufficient effusion to be easily demonstrable by means of the physical signs. There are instances of pleurisy of the plastic variety that clearly precede the development of a pneumococcal infection of the lung, and this class of cases has not received the measure of consideration that it would seem to merit. It is often difficult to distinguish such cases from those presenting identical signs, without the tendency to merge into pneumonic features; but an examination of the blood usually reveals a leukocytosis. The systemic prostration is greater and the temperature range higher than in non-pneumococcic pleurisies. It is well in suspects to attempt to demonstrate the pneumococcus in blood cultures. With regard to pleural effusions in children, as related to lobar pneumonia, two points deserve special notice: first, as compared with adults, purulent effusions from all causes are more frequent relatively than serous; and second, during early childhood not less than 75 per cent of empyemata are due to the pneumococcus, according to the figures of Netter, Blaker and others.

The question of its bacteriology [illegible] is important. The pneumococcus is often found in a state of purity, but it may also occur mixed with the streptococcus, the staphylococcus, the tubercle bacillus and rarely with other organisms. These facts have a practical bearing on the diagnosis, prognosis and treatment. Exploration with a needle in doubtful cases may be demanded, but shock, even of the slightest degree of intensity, is badly borne by pneumonia patients and a small needle is to be preferred. A gradual fall of temperature in pneumonia rather than crisis, is often due to [illegible] pleuritis.

The general features of pleuritic [illegible] are more or less indefinite. In a complication, the temperature usually falls by lysis and an irregular fever continues, [illegible] for weeks in unrecognized cases. Empyema as a sequel is usually easy to detect; irregular fever returns, the prostration increases, and there is [illegible] of the [illegible]. Spontaneous rupture should not be awaited. Exploratory operations will not only clear the diagnosis, but also [illegible] the cure in a majority of cases. It is of the utmost importance to avoid the use of drugs that are depressant in [illegible] pneumonia cases. Counter irritation in milder cases, and complete putting to rest of the inflamed structures are necessary. The treatment of empyema is surgical. Sometimes moderate doses of the tincture of the chloride of iron is apparently efficacious.

(To be continued)

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-sixth Annual Meeting, held in Washington, D. C., May [illegible]

(Continued from page 185, Vol. LIV)

Case of Resection of Dorsal Spinal Nerve Roots for Gastric Crises of Tabes

DRS. J. J. THOMAS and E. H. NICHOLS, Boston: Aside from the case reported by Förster and Küttner, one other case has been found in the literature, reported by Bruns and Sauerbach, both operations having been done in the summer of [illegible] and both followed by complete relief. Our patient was a man 32 years old, a widower, with one healthy child, a girl [illegible]. The birth of this child was followed by three or four miscarriages of unknown cause. Syphilis was denied. The gastric crises began about eight years before, and in [illegible], 1905, the abdomen was opened, but nothing abnormal was found, except a few adhesions of the [illegible] to the gall-bladder, which did not pull on the stomach. These adhesions were freed. The attacks continued and he again entered the hospital, Aug. 3, 1908; at that time the attacks came at intervals of one week to one month and lasted from one to ten days with severe pain and vomiting, accompanied usually by diarrhea. There had been no loss of control of the bladder but some diminution of sexual desire. No lancinating pains, no difficulty [illegible] in walking or standing, but very slight ataxia in movements of legs with eyes closed. Hypotonicity in legs well marked. Pupils moderate size, regular and equal, reacting with accommodation, but not to light. Patellar and Achilles jerks equal and present. At this time he had become habituated to the use of morphin and was taking [illegible]. The attacks continued, gradually becoming more frequent, [illegible] a week passed without one. In August, [illegible], the [illegible] serum test for syphilis was positive.

At the time of operation the weight [illegible] 145 [illegible] fallen to [illegible] [illegible] ished on the chest from the third to [illegible] abdominal reflexes were lively. The [illegible] peared [illegible] present [illegible] roots were cut. After the operation for a time there was some twitching of the abdominal muscles at times and pain about the chest, which gradually disappeared. He vomited once while still in the hospital after taking seven [illegible] by mouth and once after his discharge after eating beans, but neither time was there any pain, nor was the vomiting persistent, being over within an hour. There was the same condition on examination, but an absolute loss of the sense of touch and pain from the level of the sixth rib to three fingers breadth above the umbilicus and from this area no abdominal reflexes could be obtained, but it was present and increased on irritating the skin of the lower abdomen. The man regarded himself as cured of his crises, but had not gained in weight and was attempting to diminish his morphin and had reduced it to ½ of a grain a day.

DISCUSSION

DR. J. K. MITCHELL, Philadelphia: How does Dr. Thomas justify the diagnosis of locomotor ataxia with knee jerks still present? In the last year I have seen one case of tabes in which gastroenterostomy was done and two cases in which operation was done for gastric crises and two in which gallstones were hunted for. Presumably in none of these cases did the surgeons take the pains to examine either the knee jerks or the eye reflexes.

DR. P. C. KNAPP, Boston: I must confess that theoretically I am somewhat skeptical about the results of operating on the posterior roots for the gastric crises of tabes, because of the physiologic fact that the nerve supply of the stomach is dependent very much more on the vagus than on the sympathetic. Dr. Thomas' success, however, led me to have another patient, whose case is very similar to his, operated on by Dr. Blake a day or two ago. In answer to the objection Dr. Mitchell raised to the diagnosis in Dr. Thomas' patient, I would say that in the last few years, as well as previously, I have seen many cases with pretty clear tabetic symptoms but with retained ankle jerk.

DR. H. CUSHING, Baltimore: I would like to make an arrangement with Dr. Mitchell whereby I could turn over for his collection a list of cases of the kind he mentions of which I have cognizance in return for a list of cases of brain tumor long treated for gastric headaches. Just a day or two ago a patient, a woman who had very persistent crises with great pain, was transferred from the medical to the surgical side for operation, but when I saw her I decided to delay operation, as she was absolutely free from pain. I do not think any surgical cases of disease reported after they have been done a month really convey a fair general impression as to what the author's results are.

DR. J. COLLINS, New York: I am very much in favor of the operation in cases that are intractable. In reference to knee jerks being present in tabes, I would say that in 10 out of 20 cases of tabes the knee and ankle jerks are present.

DR. F. X. DERCUM, Philadelphia: A man seen by me many years ago, long before we had resorted to the examination of the cerebrospinal fluid and the Wassermann test, had frightful suffering, apparently crises of tabes, though the knee jerks were retained. There was no marked disturbance of sensation anywhere, but there were markedly contracted pupils. The patient was a user of morphin, but on being persuaded to do without hypodermics 48 hours he had a good pupil, which responded to light. In other respects the symptoms varied somewhat. There were symptoms of a gastric nature. Dr. Keen excised a small gastric ulcer and the man recovered. I believe that this operation promises something in an otherwise very serious affection.

DR. J. [illegible]: I agree with Dr. Collins that we frequently make the diagnosis of tabes in the presence of knee jerks and ankle jerks. The reflex of the pupils was absent to light, although retained at first, and the man had marked hypotonicity, which I thought was fully as important to tabes as ataxia, and I felt justified in calling the case one of tabes. I made the Noguchi test and it was positive for syphilis. The count of the cerebrospinal fluid was not made. At operation there was found a marked degeneration of the roots.

Oculomotor Palsies Due to Vascular Constriction in Cases of Brain Tumor

DR. HARVEY CUSHING, Baltimore: Oculomotor and particularly abducens palsies more or less fluctuating in degree often occur in cases of tumor and are included among false localizing signs. Various explanations have been offered for their occurrence. Contrary to the usual anatomic description, these nerves underlie the lateral branches of the basilar artery, which have a rubber band effect and so constrict the nerves as to block their transmission of impulses. The condition is most apt to accompany tumors of the posterior fossa.

A New Type of Pressure Myelitis

DR. GRAEME M. HAMMOND, New York: Author's observation is based on the study of seven cases. The pathologic conditions of this disease seem to consist of the development of an enormous amount of new bone tissue, which is spread over a number of vertebræ and adjacent rib ends, obliterating all articulations and giving the affected vertebræ and ribs the appearance of being one single piece of bone. The development of new bone also occurs within the vertebral canal and gives rise to compression of the cord, causing both sensory and motor symptoms, but eventually leading to the most intense rigidity of the entire voluntary muscular system below the level of the lesion. There was gradual development of the "bible back" or forward curvature of the vertebral column seen in spondylose rhizomelique, but in none of the cases was there any evidence of rheumatism.

DISCUSSION

DR. B. SACHS, New York: I have seen a number of cases that have offered some difficulty in diagnosis, particularly in trying to make the differential diagnosis between such conditions as described and a simple myelitis. Within the last few months I have had two cases of absolute spinal rigidity. An *x*-ray picture was taken in one case and showed a condition very much like the one presented by Dr. Hammond. In this patient, a man of about 35, the rigidity of the spinal column was absolute from the third or fourth cervical vertebra to the very end of the spine. In fact, there was no movement possible of the body, except slight movement of the head forward and a slight lateral movement of both sides. There were extreme contractures and atrophies. The man as he now lies in bed has his knees so completely contracted that you can hardly put a hand between the posterior surface of the thigh and the posterior surface of the calf, the legs are locked together and there is absolutely no motion of any part of the leg, except of the toes. The atrophy is more extreme than I have ever seen it in any case of ordinary spinal origin. There is hardly a bit of tissue left; the skin seems as the bone. So far as the diagnosis is concerned I am not ready to suppose this represents an entirely new type of disease. I think these cases are closely related to the spondylose rhizomelique type. I hope that in all these cases of mysterious spinal disease an *x*-ray picture will be taken, for nothing is more serviceable in case of mysterious spinal disease in reaching a diagnosis when medical signs are wanting.

DR. D. J. MCCARTHY, Philadelphia: My feeling is that we are dealing in these chronic cases of rigidity of the spine with not only a factor involving the bone and cartilages, but an involvment of the spinal dura on its external surface, and this should be examined very carefully microscopically. It is more rational to suppose that where you have an extensive process it would more likely be due to inflammatory changes in the dura; a condition localized to one group of joints. The bone changes are secondary and are not the primary disease.

DR. W. G. SPILLER, Philadelphia: I have not quite understood from Dr. Hammond the distinction between the type he has described and that which von Bechterew describes. Von Bechterew makes a distinction between his forms and those of Marie. There are in this connection two other kinds of disease. They are not likely to cause confusion in diagnosis, but they are interesting to mention. Eight or ten years ago Dr. Mills and I reported a case of a man who was paralyzed and had rigidity of the spinal column. We found that the dura was firmly adherent to the bodies of the vertebræ throughout the whole course of the spinal canal, and in removing the cord it had to be cut away inch by inch. I recently had an interesting case in a man who developed paralysis and exaggerated reflexes of his lower limbs. The disease gradually progressed upward, involving his left arm and then the other arm, and the course of the disease was only a few weeks. I found a growth on the outside of the dura which under the microscope shows probable endothelioma. This is the first case I have seen of real endothelioma developing primarily between the dura and the bodies of the vertebræ.

Dr. G. M. Hammond: In regard to the case Dr. Sachs spoke of, I think there is no doubt that it is a case of spondylose rhizomelique; he has the muscle changes which go with such conditions. In none of my cases was there any ankylosis of the hip joints, or atrophy. The rigidity was a muscular spasticity just as we see in a myelitis of the crossed pyramidal tract with the attendant symptoms of clonus, Babinski reflex and exaggerated reflexes. This persisted until rigidity had become great. All these patients die. Not so with the cases of spondylose rhizomelique; many of the patients live on for years. I agree with Dr. McCarthy that the bone changes are secondary. In all the cases the first symptom elicited was the curvature and rigidity of the spine coming on three or four years before the first spinal symptom was apparent. In regard to the changes of the dura spoken of by Dr. Spiller, in the only case I have had a chance to examine the dura it showed no adhesion. So I doubt whether adhesions of the dura have anything to do with the symptomatology of this condition. It simply seemed to me that on account of the increase in the body tissue the spinal cord is gradually compressed and destroyed, and these patients die. I do not think it tallies at all with any of the cases described by von Bechterew. It may not be a new disease, but it is new to me and I have no doubt that when attention is called to it we will find a good many cases of similar type, but it is not that of spondylose rhizomelique.

Cyst (Possibly Traumatic) of Spinal Meninges Removed by Operation, with Recovery of Patient. Location of Centers for Testicular Sensibility

Dr. Charles S. Potts, Philadelphia: A farmer, aged 42, received a blow on the back eighteen years before coming under observation. No serious symptoms were caused at that time. Two years before admission to the hospital (12-8-09) he began to have attacks of severe shooting pains in the left hypochondrium. During the attacks the lumbar muscles of the left side were thrown into spasm. At this time a girdle pain extending through the umbilicus was also present. A few months before admission first noticed difficulty in walking. Examination showed a very ataxic gait. Muscular power of the legs good. K.J. plus, A.J. plus. Babinski on the right side. The cremaster reflex was present on the left side but absent on the right. Abdominal reflex absent. Station poor, heel-to-knee test poorly performed, unable to recognize the direction of passive movements of the toes. An area of possible hyperesthesia and hypalgesia extending about four inches below the right groin. Both testicles completely insensitive. Sphincters normal. The laminæ of the sixth, seventh, eighth, ninth and tenth thoracic vertebræ were removed. A soft growth, pronounced by the pathologist to be a traumatic cyst, was found extending subdurally from the lower angle of the wound (first lumbar segment) upward for about three inches. Complete disappearance of pain. Testicular sensibility returned and there was nearly complete disappearance of all the other symptoms.

Tumors and Cysts of the Spinal Cord and Its Envelopes

Dr. Charles K. Mills, Philadelphia: I will present the histories of three cases of intraspinal disease. The first was one of tumor of the lower cervical region; the second was a cyst of the thoracic region similar to those which have been described under the designation of circumscribed serous meningitis; the third was a sarcoma involving the cauda equina and lumbosacral roots, and to some extent the cord. The chief points of interest in the case of subdural cervical endothelioma were the exact localizing phenomena present—early pain at the upper pole of the growth as indicated by its distribution, the moderate but distinct atrophy and loss of power in the hands and fingers. Compression of the pyramidal tracts as shown by paresis and exaggerated reflexes in the lower extremity and impairment of the reflexes in the upper extremity on the side of the tumor. Anesthesia in the case was [illegible] and chiefly confined to tactile loss in the posterior portion of the hand and forearm. After the operation contraction of the pupil and ptosis or pseudo-ptosis were present, these apparently being caused by injury or section of communicating branches to the sympathetic.

The case of thoracic "cyst" was distinctly in its symptoms like those which have been described as instances of circumscribed serous meningitis. It was localized by hypalgesia, the upper limit of which was two or three inches above the umbilicus. Severe and persisting pain both in the back and in front of the lower extremities at first without and later with complete paralysis in both extremities, exaggerated reflexes including the Babinski response, with bladder and rectal involvement were the most marked manifestations. After evacuation of the cyst the pain was for a time relieved, the patient recovered the use of his limbs so that at first coarse movements and afterward the movements of the toes could be performed. He suffered, however, from serious cystitis and delirium, probably dependent on toxemia. He made what might be termed a partial recovery, but relapsed.

In the third case, that of sarcoma of the cauda equina and lumbosacral roots, the early manifestations were pain of an extremely severe character, which affected the back and the extremities first on one side and then on the other. In this case the anesthesia which developed indicated involvement of the posterior nerve roots, at first of the sacral and later of roots higher up, as high as the second lumbar. They were distinctly root areas, not segmental or of the [illegible] neural type. The patient eventually was completely paralyzed with marked atrophy, paralysis of the sphincters, and the whole train of phenomena showing destructive implication of the nerve roots originating from the lumbosacral spinal cord. The cord itself was also apparently involved by pressure or extensions of the lesion.

DISCUSSION

Dr. W. G. Spiller, Philadelphia. The case of circumscribed serous spinal meningitis reported by Dr. [illegible] Musser and myself was the first of its kind reported. The patient is now in perfect health, except that she occasionally has a little pain in the back, possibly from catching of some fibers. There is no possibility of diagnosing a circumscribed serous meningitis from a tumor. As Oppenheim has pointed out, there will be variation with the fluctuation of the fluid in the dural canal.

Dr. G. Jacoby, New York: I present two specimens. One was taken from a man who suffered with symptoms of gradually increasing pressure paralysis and [illegible] disturbance of sensation for a period of ten or twelve years. He was able to walk to the hospital but had marked weakness in both lower extremities. There was sufficient sensory disturbance to enable us to make a diagnosis of probable extradural tumor at the sixth dorsal vertebra. At operation we found at this sixth dorsal segment an enchondroma growing from the body of the vertebra into the spinal canal compressing the cord, so that the cord was attenuated to simply a thread. The second patient was operated on by Willy Meyer and a glioma removed from the cord substance. In this case the entire history of disease was only three months. The first symptoms were weakness of the lower extremities which increased so that there was spasticity and paraplegia and all the symptoms of complete pressure paralysis of the cord. The tumor in this case was the size of a large cherry-stone.

Dr. G. L. Walton, Boston: With regard to the level of anesthesia as determining the position of the spinal tumor, one very practical point is to be borne in mind, namely, that the accumulation of fluids, whether in the cord itself or in the membranes, is likely to produce symptoms which may be erroneously credited to the tumor itself. [illegible] in the majority of cases the point selected for operation would err in the direction of being set too high rather than too low. Thus, if we always follow this rule we may be misled as in a case in which I recently had occasion to advise operation. In this case severe pain in the lower back and extending down the thighs was rapidly replaced by paraplegia with numbness extending nearly to the umbilicus. Finding it hard to credit the tumor itself with such rapid growth I was guided rather by the initial pain, and advised removing the tenth and eleventh dorsal laminæ. Operation at this point disclosed the upper limit of the tumor, above which the cord was apparently normal. If the cord had been exposed at the level indicated by the level of anesthesia, its normal appearance would have led to the erroneous conclusion that no tumor existed. I am inclined to credit accumulation of fluid with the rapid extension of symptoms.

Dr. J. J. Thomas, Boston: I agree with Dr. Spiller in reference to diagnosing circumscribed serous meningitis from tumor. In regard to the point of differential diagnosis between growths of the spinal cord, whether from the pia or dura, I confess that I have less confidence in our ability to differentiate them exactly. In the case that Dr. Walton referred to I was rather opposed to operation because of the intense character of the symptom, coming on suddenly, which seemed to him to point to total destruction. Within two or three days the man became completely paralyzed in both sensation and motion.

Dr. H. T. Patrick, Chicago: The upward movement of the umbilicus when the patient, lying with his arms folded across his chest, raises his head from the pillow, known as Beevor's sign, is of service in diagnosis in spinal cord tumors. The recti muscles are not paralyzed but the muscles below are paralyzed and the umbilicus makes an excursion of a half inch or even more.

Dr. E. Jones, Toronto, Canada: I was Dr. Beevor's assistant for a few years and I would add two points to what has been said of Beevor's sign. In some cases you will get it obliquely, not only drawn upward, as one of the muscles is paralyzed below, but sometimes obliquely to the right or left which gives a clue to the side of the tumor. Further, in cases of congenital dystrophy with paralysis the umbilicus is drawn downward.

Dr. M. A. Bliss, St. Louis: I have had quite a distinct case of circumscribed serous meningitis. A laminectomy was done, then a second laminectomy, when an endothelioma was found.

Dr. C. K. Mills, Philadelphia: I am not altogether satisfied with the term circumscribed serous meningitis or with the explanation which is involved in the use of this term. In the case which I reported I think it quite possible that there was more than was apparent. The probabilities are that there is a universal serous meningitis and possibly chronic meningitis with, perhaps, two or three pockets where cystic foci appear, as in the present case. The differentiation between intrapelvic and spinal tumors can usually be made. We simply have not been careful enough.

Fracture of the Bodies of the Fourth, Fifth and Sixth Cervical Vertebræ with Injury of the Spinal Cord

Drs. W. H. Swan, Colorado Springs, C. A. Powers, and H. T. Pershing, Denver: A man, aged 70, fell from a horse, striking on his forehead. There was immediate motor and sensory paralysis below the neck with evacuation of bladder and bowel, without loss of consciousness. Extreme shock, followed for some months by improvement, without restoration or ability to stand, sit alone or turn in bed. Daily catheterization was done with no ill effects. Eczema which was present rapidly disappeared on the anesthetic skin up to a sharp line of demarcation, then slowly cleared above. There was greater mental activity and happier mental state during about 18 months than before injury, probably due to relief from unpleasant sensations. Death took place 28½ months after injury from uremia. Operation was considered and rejected on account of patient's age and the improbability that a remediable lesion would be found. Fixation of head was deemed inadvisable. The dried preparation of the cervical spine of this patient shows no lesion of the arches or articular processes but a moderate crushing of three bodies which could not have been remedied by operation. Localization diagnosis was based on retention of power in deltoids and biceps with paralysis of both triceps muscles which indicated a lesion of the seventh cervical segment. Faradic tests indicated almost complete escape of anterior gray horns and anterior roots. Autopsy showed the bodies of the fourth, fifth and to a lesser extent the sixth cervical vertebræ to have been fractured by a crushing force but the fragments united in normal position. The arches and articular processes showed no injury. Preliminary histologic examination shows the usual ascending and descending degeneration.

DISCUSSION

Dr. H. N. Moyer, Chicago: This case follows the general rule that the fifth cervical is the most frequent seat of these cervical fractures. So far as operation is concerned, this case rather favors operation. The value of operation in these cases is unquestioned. The distinguishing features for the neurologist is to understand if there is extrinsic pressure. The hematomyelia is not, of course, to be operated on. I do not wish to be understood as saying that this old man of 70 ought to have been operated on. I am speaking of the broad general principle of operation. I believe it to be a sound rule to fix the cervical vertebræ where you have a fracture if you don't operate. In all the cases I have seen I have recommended fixation.

Dr. H. T. Pershing: When it comes to a question of operation in a case of this kind you have to consider the individual patient and the advantage of accomplishing anything. In this case, of course, we could not have reached the seat of fracture in the bodies and done anything with them. The risk from the operation *per se* is very great and, of course, with this particular man would have been very much greater. There were many things aside from his age which made it necessary to be very cautious about operation. The question of fixation was discussed very carefully and very earnestly and it was decided in the negative, mainly on account of the absence of rigidity and pain; the disposition of the patient after being warned was to keep his head still on the pillow. Also because of his temperament it would have been very difficult to make him submit to fixation.

(To be continued)

NORTH DAKOTA MEDICAL ASSOCIATION

Twenty-third Annual Meeting, held at Grand Forks, May 10-11

Under the Presidency of Dr. J. E. Countryman

Officers Elected

The following officers were elected: President, H. H. Healy, Grand Forks; secretary, Dr. H. J. Rowe (re-elected), Casselton.

Benefits of Organization—President's Address

Dr. J. E. Countryman: So many members of the profession do not appreciate the many advantages of a meeting of this kind, where for the time being we can lay aside the cares of the profession, where we can absorb knowledge, one from the other, get new ideas, rub elbows with the other fellow and go home with new incentives to do better work and accomplish greater things. When a physician thinks it unnecessary to belong to his district society or to take some interest in the affairs of his state organization, or, in short, thinks there is nothing further for him to learn, then he is unable to make such use of his talents as should be expected and demanded of him by his patients. During the past year we were favored by a series of addresses from Dr. J. N. McCormack of Bowling Green, Ky. His remarks were timely and will be productive of much good, and the thanks of this Association are due to him and also to the American Medical Association, under whose auspices it was made possible to carry out this line of work. I particularly wish to call your attention to the subject of medical legislation. We have reached a period of our growth when we must reach out for that, which under all rules of right and justice, must be considered our due. The medical profession is great enough to secure the passage of just laws, if you will only make up your mind that it is an individual as well as a collective work by the members of this society. We must get into practical politics. In addition to a new law for the Board of Medical Examiners, we particularly need a new State Board of Health law.

A great deal of interest has been manifested throughout the state during the past year in preventive medicine. The work of the Anti-Tuberculosis Society and the Public Health League is to be especially commended and such work can not fail to impress the public at large that the medical profession is interested in their welfare other than from a mercenary standpoint. A wide spread interest on the part of the profession generally in work of this kind will do more than any other agency to remove antagonism to needed legislation.

Owen Bill

The Owen Senate Bill 6049, providing for the establishment of a Department of Public Health was heartily endorsed, and representatives in congress were urged to use their best efforts to secure the passage of the bill.

Official Journal

The committee on the publication of a medical journal reported that no feasible plan had been found that would give the association a creditable publication at present, and recommended that action be deferred but that investigations be continued with a view of finding plans by which a state publication can be had that would be a credit to the Association.

Education of Public on Health

The following resolutions were adopted and sent to the Superintendent of Public Instruction:

> Whereas, Health officers and physicians generally encounter antagonism to the proper enforcement of sanitary laws and regulations, owing to the lack of knowledge in hygienic matters on the part of the laity, and
>
> Whereas, Many diseases, in the light of present day scientific knowledge, are often unnecessarily transmitted from one person or place to another, and
>
> Whereas, In our opinion the best place to disseminate and popularize the knowledge necessary to prevent preventable disease is the public school; be it
>
> *Resolved*, That preventable diseases should be taught more extensively in our schools.

Public Health Leagues

The Committee on Public Health reported that public health leagues had been organized in a number of places throughout the state and that there was considerable interest manifested in the discussion of tuberculosis, water supply and typhoid fever, sanitation with special reference to water and milk supplies, contagious diseases, insects as carriers of disease, the importance of having a clean city, medical inspection of school children, scarlet fever, the visiting nurses, etc.

Serum Disease or Serum Anaphylaxis

Dr. G. F. Ruediger, University: Serum disease, as manifested in man, and serum anaphylaxis observed in experimented animals seem to be one and the same reaction. The intensity of the reaction depends on the sensitivity of the person or animal receiving the injection, on the size of the dose and to some extent on the serum injected. Certain precautions should always be observed in the injection of base serum into man. Where there is a history of asthma or of a previous injection of horse serum, the danger should be explained to the patient and friends. Except in urgent cases, a small quantity, such as 0.5 c.c., should be injected for the initial dose, waiting several hours before a second injection is given. This is to allow the immediate reaction to take place, which, if there will be such a reaction, would be less severe after a small injection than after a large one. After recovering from this reaction more serum can be given with safety. The required amount of antitoxin should always be given in the smallest possible bulk of serum. All the serum required in a case should be given within a short space of time so as not to allow time for hypersensitivity to develop.

Legislative Advances

Prof. E. F. Ladd, State Food Commissioner: I believe that through the workings of our food, drug and sanitary laws, something has been accomplished which will be of benefit to preventive medicine, that our people are better nourished now, that flagrant food adulteration is no longer tolerated; that chemical preservatives or germicides are not permitted; that saccharin is not allowed as a sweetening agent in place of sugar; that our meats are no longer embalmed with sulphites or borates; that formaldehyd finds no place in our [illegible] supply of milk; that many badly decomposed products only fit for the crematory are no longer prepared for the table of our laborers; that our beverages are now coming to be more nearly what they are represented to be; that substitution of both imported and domestic drugs is no longer practiced; that drugs must be true to name and of proper strength, that many fake remedies have been exposed and the people shown their true value; that our food supply is better taken care of under our sanitary laws; that food products are not now exposed, unprotected, to the germ-laden dust and filth of the streets; that it is fast becoming a disgrace to tolerate flies where food products are handled and merchants and dealers are protecting their places against the intolerable nuisance of flies, one of the greatest disease distributors of our time. There is no question that cold storage is a most desirable means of preserving for a limited space of time articles of food, but the introduction of cold storage and its monopolization by a few has brought about conditions which may have had an unfavorable influence on the nourishment and health of our people. The use of chemical preservatives in food products is an old question, but nevertheless, it continues to be prominent in the public mind for the reason that there are those who are persistent in using certain classes of chemical preservatives or antiseptics in various food products, while, at the same time there are others putting up and selling the same class of products without the use of preservatives of any kind. It is now almost universally conceded that the use of formaldehyd is dangerous; that the use of boric acid or hydrofluoric acid is not to be commended; that salicylic acid should be condemned; that sulphurous acid of sulphites should not be used in meats, candies, corn, etc. The general sentiment of those who have studied the matter most thoroughly is that the use of benzoate of soda, sulfurous acid and saccharin is not to be commended and that their use should not be permitted in food products to be used indiscriminately by the general public.

The general consensus of opinion, on the part of the physicians throughout the state, is that preservatives of all classes in food products, beverages, etc., should be discouraged. Drugs differ from food in that drugs and medicines modify some vital action but do not supply food material to sustain that vital action, it is hard to understand how we can endorse the use of drugs in foods and beverages, which drugs are commonly employed in medicines. The human body is not a mere machine unacted upon by the material which passes through it. The cells of the human body are living protoplasm sensitive to the same influences which would destroy the protoplasm of bacteria or micro-organisms. How can we then logically reason that poisons, antiseptics, germicides, which will destroy bacterial protoplasm, shall in no way modify or affect the tissues of the living body, the most highly organized of all protoplasm.

The consensus of opinion of the North Dakota physicians as set forth in Special Bulletin 14 shows that 157 out of the 171 physicians reporting would not allow the use of chemical preservatives such as are named in any article of food. [illegible] out of the 171 would, under no condition, permit of the use of benzoate of soda in foods which are intended for the use of invalids or infants. In fact, there was only one physician of the 171 who would permit of the use of benzoate of soda in food products unrestricted, and leave it to the public to determine whether or not they desired to purchase the article. Unfortunately, there are found in nearly every state some men who have in some manner secured the degree of M.D., who are either failures in the practice of medicine and so have turned to quackery and fraud, or have purposely adopted this easy method of securing money by preying on unfortunate sufferers or on those who are easily misled and made to imagine that every little ache or pain is to be nursed until life to them is almost unbearable. If the medical association of each state had a committee to look after matters of this kind, it would not be long before society would be rid of these despicable specimens of humanity who are bringing discredit on the noblest profession of our fair land.

Other Subjects Discussed

The papers submitted were varied and of scientific value and the topics provoked much discussion which was participated in by many of the practitioners. The discussion of the medical practice act was intensely interesting and while there was divergence of opinion as to how it could best be attained, yet the unanimity in the purpose of getting together to accomplish the end sought was the crowning feature of the debate.

AMERICAN SURGICAL ASSOCIATION

Annual Meeting, held in Washington, D. C., May 3-5, 1910

(Continued from page 57)

Tests to Determine Efficiency of Collateral Circulation Before Attempting Permanent Occlusion of Large Arteries.

The points covered in this paper by Dr. R. Matas, New Orleans, are contained and elaborated on in a paper read in the Section on Surgery of the American Medical Association, and which will be published in The Journal.

Case of Hepatico-Duodenal Anastomosis

Dr. George Emerson Brewer, New York: The patient was admitted to the hospital suffering from acute cholecystitis. Following a cholecystectomy, there occurred extensive sloughing of the wound and a complete biliary fistula. At the end of 75 days, as no bile was passing into the bowel, the abdomen was reopened and the fistula followed down to the common hepatic duct. As no trace of a common duct could be found, even after reflecting the duodenum and exposing the head of the pancreas, it was assumed that it had been destroyed by the suppurating process which followed the primary operation. A rubber drainage tube, three inches in length, was introduced into the hepatic duct and also through the duodenum by a stab wound at its upper border, and was secured in these two situations by two purse-string sutures. A mass of omentum was then wrapped around the tube, extending well beyond its introduction in the hepatic duct and duodenum, with a view to create a new common duct, after the manner suggested by Sullivan. The abdominal wound was closed, a small cigarette drain being allowed to remain at its upper angle. From that time no bile appeared in the wound. The bowels moved on the third day as the result of an enema, and the stools contained an abundance of bile. The reconstructed duct continued to functionate until after the man's discharge from the hospital, some four or five weeks after the last operation. Since then he has had two or three attacks of fever, associated with jaundice, which would disappear in two or three days. At the present time he is still jaundiced, although some bile is present in the stools.

Dr. Alexander H. Ferguson, Chicago: Since the observation that if all the bile is directed into the hepatic flexure of the large bowel the patient does not suffer from the lack of bile, I have followed this technic in at least half a dozen cases with extremely gratifying results.

Dr. Joseph C. Bloodgood, Baltimore: I wish to report an anastomosis of the small intestine by opening the transverse colon as in posterior gastroenterostomy, sewing a long loop of the small intestine through the transverse colon, and suturing it to the gall-bladder.

Case of Resection of Pancreas

Dr. J. M. T. Finney, Baltimore: I wish to record the successful removal of a primary solid tumor of the pancreas. The operation involved the resection of the entire middle portion of the gland, leaving only a small piece of the head and the tail respectively, and necessitating a reunion of these segments by suture. The statistics of the operation for primary tumor of the pancreas are as follows: Of the 17 cases recorded in the literature 12 occurred in females and 5 in males. Carcinoma occurred 10 times, sarcoma 1, fibroadenoma 2, cystic adenoma once. Of the 17 patients 9 recovered and 8 died. In two instances the pancreas had been reported as having been removed *in toto*. Three times the gland was completely divided into two parts and the remaining portion sutured. All three patients recovered.

DISCUSSION

Dr. M. L. Harris, Chicago: A policeman was shot by a 38-calibre bullet which entered just below the twelfth rib on the left side and was found just beneath the skin a little to the right of the median line between the eighth and ninth ribs. The track of the bullet was from before backward through the right lobe of the liver, the lesser curvature of the stomach, the middle of the pancreas, practically bisecting the organ, and the left kidney. The stomach was sewed up, then the pancreas, and as close an approximation of parts made as possible. Drainage front and back. A fistula resulted, but closed in about three months and the patient fully recovered.

Dr. Willy Meyer, New York: I have had two cases in which the tail of the pancreas was tightly adherent to the existing tumor, and here I put a piece of chromicized gut around it and divided the distal end with the Paquelin cautery. Both patients recovered.

Dr. Rudolph Matas, New Orleans: I wish to report a cause of thrombosis of the splenic artery involving the pancreatic arterial supply, causing degeneration of the organ from the head to the tail, associated with multiple tumor formation in the spleen. The spleen and three-quarters of the pancreas were removed and the patient recovered from the operation, dying about three years later from a slow fever.

Congestion of the Lower Lobe of the Right Lung an Early Symptom in Appendicitis

Dr. John B. Roberts, Philadelphia: There is a possibility of a secondary congestion of the lower part of the right lung in a considerable number of cases of acute appendicitis in its early stages. This condition may be a possible aid in the diagnosis of acute appendicitis when the symptoms of the latter are not yet very definite. Appendicitis, and perhaps other intra-abdominal inflammations, may cause atelectasis of the right lung, or a true congestion, because of the insufficient action of the diaphragm on the right side. The early congestion of the right lung, which is found in the early stages of appendicitis, might also occur from inflammation of the gall-bladder or cellulitis around the upper pole of the kidney.

Vaccine Therapy as an Adjunct to Surgery

Drs. John B. Deaver, John C. Da Costa and D. B. Pfeiffer, Philadelphia: In addition to its well-known and satisfactory use in suppurative affections of the skin and other forms of minor chronic infection, this form of treatment has been used as an adjunct in the treatment of more severe surgical infective conditions. Vaccines did not prove of service in three cases of streptococcic septicemia in which the treatment was begun late. Four patients with severe staphylococcic septicemia recovered, improvement in each case beginning with the iniation of the vaccine treatment. Eight patients with severe septic intoxication without demonstrated bacteriemia were treated by drainage and vaccines. Two were *in extremis* when treatment was begun and died shortly afterwards. The remainder recovered. Five of the cases were streptococcic infections.

Improvement was also noted in a miscellaneous group of cases comprising persistent sinuses, cystitis, thrombosis, etc. Not all cases, however, gave a definite response. The dosage varied from 25,000,000 to 750,000,000. The sicker the patient and the less satisfactory the response, the smaller and less frequent should be the dose. Streptococcus also was used in smaller dosage than staphylococcus. Specific vaccine treatment has not proved of benefit in the later stages of streptococcic septicemia. Staphylococcic septicemia has been treated with most favorable results at all stages. Septic intoxications without demonstrated blood invasion in a majority of the cases display general and local improvement under the use of vaccines, if given early, the later the treatment, the less certain and satisfactory the result. Localized and persistent suppurating lesions are sometimes markedly benefited by vaccines. Surgical procedures for the relief of infectious conditions should be reinforced by vaccine treatment, which should be begun as early as is consistent with the case, and preferably by autogenous organisms.

Therapy by Bacterins and Tuberculins in Mixed Suppurative Bone and Joint Disease

Drs. DeForest Willard and B. A. Thomas, Philadelphia: We have now had two years of experience in the treatment by bacterins of tuberculous bone and joint diseases, complicated by mixed pyogenic infections. The feature of the treatment consists in the alternation of bacterin and tuberculin inoculations in the mixed suppurative type of the disease, as spinal caries, tuberculous hip-joint disease, etc. We do not contend that bacterin therapy is a "cure all," nor that when indications for surgical intervention exist, they can be disregarded and active immunization substituted. However, the accessory employment of bacterin and tuberculin in certain cases stimulates the tissue cells of the organism to the production of specific antibodies to assist the bodily defenses in antagonizing and combating the given infections. Bacterins, particularly tuberculin, are invaluable aids in competent hands, and when so treated such patients do better than those treated without bacterins: their detention in the hospital is shortened, and complications, if they occur, are fewer and less severe. Studious observations of the clinical symptomatology have always sufficed to control the treatment, the opsonic index proving not only impractical, but unreliable.

DISCUSSION

Dr. J. M. T. Finney, Baltimore: In a case of chronic colon bacillus infection of the bladder, after every other method had failed, injections of vaccine were followed by the most astonishing results, the bladder symptoms all practically disappearing.

Dr. George M. Sternberg, Washington: It is impossible to doubt that vaccine treatment is beneficial in a certain class of cases, but it is difficult to understand why it should be. You have a certain specific microorganism in the blood in large numbers producing toxic products, and why the introduction of a comparatively small number of the same microorganisms under the skin should have such a potent effect in arresting the progress of the disease is inexplicable.

Dr. L. L. McArthur, Chicago: Treatment with the autogenous vaccine of the colon bacillus in several cases of essential hemorrhage from the kidney has been productive of a cure, and I consider this a most beneficial treatment in this condition.

Dr. John B. Murphy, Chicago: Essential hemorrhage of the kidney and essential hemorrhage of the uterus occurring in girls under 20 with tuberculous histories respond marvelously to proper dosage with tuberculin. Great assistance is rendered by this treatment in cases of bone tuberculosis. As a stimulant, and as an aid to surgical tuberculosis, I know of nothing so good when the treatment is carefully administered.

Dr. Joseph A. Blake, New York: I have been employing the vaccine treatment in chronic infections and have found the autogenous vaccines of great benefit.

Dr. Arthur Dean Bevan, Chicago: I have been particularly interested in the application of the vaccine treatment to tuberculosis of the kidney and mixed infection of tuberculosis of the colon, and, although I know of patients who under good management with this treatment have gone on to recovery, I know of patients who recovered without the vaccine treatment.

Dr. Francis B. Harrington, Boston: I have seen some cases in which autogenous vaccines have been of great benefit, and also some cases in which they were productive of great harm.

Dr. Harry M. Sherman, San Francisco: With regard to the vaccine treatment, we have had no success with the streptococcus infection.

Dr. Emmet Rixford, San Francisco: I wish to mention a patient with tuberculous anal fistula, tuberculosis of the spinal cord, and tuberculosis of the wrist, who under treatment with tuberculin was completely restored to health. It has been two years since the treatment. There is now no sign of tuberculosis, and the patient has gained 40 pounds in weight.

Dr. James E. Moore, Minneapolis: I have been disappointed in the serums for the treatment of acute infections. In tubercular cases I have had better results. It is very essential that these treatments should be carried out only by those who know how to use them.

Dr. Charles H. Mayo, Rochester: I have had very little experience with the vaccine treatment, but I have had one case of colon bacillus infection of the bladder and kidney in which the autogenous vaccine proved of benefit.

The Etiology of Cancer Based on Clinical Statistics

Dr. Isaac Levin, New York: My investigations are based on a clinical study of 4,000 cases of carcinoma and sarcoma collected from several large hospitals in the country. The greater frequency of the disease in women is due to the prevalence of cancer of the uterus and the female breast. The other organs become affected more frequently in men, which fact may be due only to the greater subjection of the latter sex to the different injurious influences of civilized life. Cancer, while considered to be a disease of an advanced age, appears, according to this investigation, to occur in many instances in people who have not yet reached middle age. Child bearing does not seem to have any direct connection with the causation of cancer. Another point of interest is the fact that American Indians rarely contract the disease. The data on the influence of occupation in the etiology of the disease were very defective and no conclusion could be derived from them. The presence of a preceding local disease in the organ affected with cancer, while of certain importance, cannot be considered as the main etiologic factor. Hereditary disposition does not seem to have an influence on the causation of the disease sufficient to warrant the great dread of the lay public before this hereditary trait. It appears evident that a local trauma or previous disease of the affected organ is of less importance in the causation of cancer than the increased vulnerability and lessened resistance of the organism caused by the ever increasing strain of modern life. This is certainly the only explanation that may be offered for the increasing frequency of the occurrence of cancer in civilized communities.

Review of One Hundred and Twenty Resections of the Rectum for Cancer

Dr. William J. Mayo, Rochester, Minn.: The ages varied from 27 to 81 years. There were done by the perineal route 38 operations, by the posterior route 56 and by the abdominal route 26 operations. Three deaths occurred from exhaustion more than four weeks after operation, one from pulmonary embolus, and one from apoplexy. The mortality in the whole series of 120 cases was 20.16 per cent. Four patients are alive and well after 5 years; 13, after 4 years; 63, after 2 years; 102, after one year, and 18 out of 82 operated on less than one year ago.

DISCUSSION

Dr. Arthur Dean Bevan, Chicago: After an experience in some 20 cases of the Kraske operation, we do not employ a single ligature. As we come to the tissues on the sides of the incision freeing the rectum, massive 10-inch or 12 inch clamps are put on the tissues. With the employment of these clamps there is less risk of hemorrhage and a greater saving of time than if an attempt is made at ligation.

Dr. Joseph C. Bloodgood, Baltimore: One of my first cases (operation about six years ago) was such that we were able to save 3 inches of the anus and rectum, making a suture of the sigmoid which was brought down, and this patient is well and has perfect function.

Dr. Alexander H. Ferguson, Chicago: In some of these cases I have resorted to the combined operation in two stages to advantage. Open the abdomen, take the proximal end of the bowel, make an artificial anus, invert the distal end into the rectum—that would be one operation; then, when the patient is in good condition, remove the rectum from below, the bowel being already inverted giving ready access to the mass. By the use of clamps without ligatures the operation can be done in a few minutes.

Dr. Joseph A. Blake, New York: I have had more experience with the combined operation than with any other. I have done 12 consecutive operations without any mortality. The mortality is less, if a permanent colostomy is done.

Dr. G. E. Armstrong, Montreal: In the low cases in which the sphincter has been involved I have sometimes succeeded in getting a satisfactory sphincter by bringing the upper ends down through the lower fibers of the gluteus maximus. One patient operated on ten years ago now has perfect control.

Case of Choriocarcinoma Occurring in a Patient with an Infantile Uterus

Dr. A. Primrose, Toronto: The tumor removed presented the characteristic elements of a choriocarcinoma with a very large proportion of Langhans' cells showing metaplasia and mitosis. A few isolated masses of the syncytium were also present.

Prognosis and Operative Treatment of Fracture of the Base of the Skull

Dr. Joseph Ransohoff, Cincinnati: Of 190 cases occurring during the last ten years in the Cincinnati Hospital, 124 were fatal. Of 42 patients with non-reacting pupils, 41 died. In 5 years there were 19 operations, trephining or decompressive, with 7 recoveries. There will always be a large mortality connected with basal fractures; death resulting from primary shock, brain laceration or hemorrhage. Thirty-seven per cent. of the fatal cases end within 6 hours or less and 56 per cent. end within 12 hours. It is not probable that the mortality of this class of cases can ever be reduced with or without operation. They are primarily fatal. Twenty-three per cent of the fatal cases end during the second day. They are the cases in which the coma is not profound; in which the pupils are not fixed; in which the breathing is not stertorous and in which there is not complete muscular relaxation. With a slow full pulse and lumbar puncture, indicating hemorrhage and increase of intracranial pressure, a trephining operation is indicated. In the doubtful cases an operation is indicated. In this class of cases, where facilities for the major operation of trephining are not at hand, repeated lumbar puncture should be essayed. This procedure may be destined to take the place of decompressive operations. There is a large group of cases in which there is complete consciousness or in which there is a somnolence or milder degree of coma, and in whom the concomitant symptoms do not indicate a grave intracranial trauma either to the brain or its vessels. The pupils, though uneven, react; involvement of one or more cranial nerves may be evident. The symptoms singly or collectively are not ominous at any time. Eighty per cent. of this class of cases have a tendency to get well with or without operation. The patients should not be operated on unless the symptoms indicate an increase of intracranial pressure from hemorrhage, beginning cerebral edema or distinct localizing (cortical) symptoms. There is a distinct class of cases in which operation is indicated. There are cases which, seemingly not severe in the beginning, grow progressively or suddenly worse, showing signs of increased intracranial pressure. Decompressive operations may save a considerable proportion of them. It has yet to be determined where the trephining should be done to obtain the best results. Since most fractures involve the anterior or the middle fossa, subtemporal trephining is doubtless the procedure oftenest indicated. When, however, an hematoma in the mastoid or occipital region indicates an involvement of the posterior fossa, the operation should be subtentorial. To relieve the subtentorial tension by an opening made in the temporal region is illogical and may be dangerous. I attempted it recently in a cerebellar tumor, the site of which could not be determined. The patient succumbed within two weeks with symptoms of bulbar paralysis.

Dr. Frank E. Bunts, Cleveland: In an ordinary case of fracture of the base of the skull in which the blood pressure can be obtained, a beginning choked disc and edema and hemorrhage in the brain are detected, the decompression operation should be performed, and in many such cases we may expect altogether beneficial results.

Dr. G. E. Armstrong, Montreal: If in these cases the pressure is substantial as indicated by the respiration, aspiration of the cerebrospinal canal may prove very injurious.

A Method of Overcoming the Shortening in Old Fractures Treated by the Open Method

Dr. Edward Martin, Philadelphia: The method consists in using a long, strong canvas strip pocketed in the middle and looped at the ends. The bones at the seat of fracture are freed, the pocket is slipped over the proximal end of the distal fragment, the ends of the canvas strip are carried in the long axis of the limb, and in the loops is fixed a cord to which are attached the weights. By thumb pressure the bone is kept from angling out of the wound, and weights up to 100 pounds or even more, are attached to the rope. In from three to five minutes the shortening is overcome. Only those structures which interfere with proper placement are stretched, and this is done so thoroughly that there is but slight tendency to the reproduction of deformity.

Dr. Richard H. Harte, Philadelphia: A pulley similar to that used on boats, a double and single pulley, is the best type of extension. These should not be close together, but enough line between them to allow of manipulation of the limb by the operator. After the ends of the bone are exposed, disengage the bands of tissue by the employment of steel elevators. It is important to do as little damage as possible to the tissues. I do not consider silver plates strong enough to hold the bones in position and therefore would always advise the use of a heavy steel plate, such as that suggested by Lane.

Dr. Albert J. Ochsner, Chicago: A method which we use almost entirely consists in the slow stretching of the muscles, instead of the rapid stretching, and the only thing that is peculiar about the method is the application of rubber adhesive strips to as high a point above the seat of fracture as is possible. For instance, instead of applying the rubber adhesive up to the fracture, it should be applied over the entire length of the thigh, then, with no more than 24 pounds of weight, we have, in every fracture where there has not been a union, been able to stretch the muscles sufficiently to replace the fractures without making a resection of the ends. In cases in which there is a union in malposition the muscles will stretch to a marked extent. It is important to use two Lane plates with two screws at each end in order to keep the bones from slipping.

Dr. Harry M. Sherman, San Francisco: I use two hanks of yarn applied as perineal straps, the weight coming on the tuberosity of the ischium. On the foot is put another hank of yarn. The pulling on the bones has been measured, and over 200 pounds of weight have been applied in some cases without injury to the ligaments of the ankle or knee, and that is sufficient to pull out any tissue interfering with the approximation of the bones.

Fracture Dislocations of the Os Innominatum

Dr. Harry M. Sherman, San Francisco: Simple uncomplicated fracture of the pelvic bones is not of necessity a serious lesion, and healing can be expected in an ordinary way as after a fracture of a bone of an extremity. The really serious lesion is the complication of injuries to the bladder, the intestines or the vascular system. Injuries to the bladder are more likely to occur when the fracture has been due to antero-posterior compressive force. Injuries to the urethra are more apt to occur when the fracture was due to transverse compressive force. The present indications are to open at once the space of Retzius and make a reverse catheterization and perineal section with lateral incisions in the groin and perineum for drainage of all areolar planes. With this technic the mortality should be reduced to about 33 per cent. as against 60 per cent.

Dr. Arpad G. Gerster, New York: I have had a case of fracture of the female pelvis on the left side in which there was no injury to the urethra, although it was compressed to such an extent by a solid blood clot that retention followed and had to be relieved for 15 or 16 days by the use of the catheter. There was no other injury present and the woman recovered. Another case was one in which there was fatal hemorrhage following fracture of the pelvis. Postmortem revealed extensive laceration of one of the common iliac arteries and subperitoneal hemorrhage.

Momburg's Method of Artificial Anemia by Suprapelvic Constriction

Dr. Arpad G. Gerster, New York: The method consists in the application of the Esmarch principle to the waist and to the abdominal aorta, which thus, by the superposition of from two to six turns of the elastic cord, is compressed against the lumbar spine. The apprehension that the necessary amount of constriction might damage the gut has not been justified by experience. The interruption of the aortic blood current is regularly followed by a marked rise of the blood pressure and its restoration by a still more marked cardiac depression, which, in patients afflicted with arterio-sclerosis, myocarditis, or even well compensated valvular lesion, may attain alarming proportions. Hence, Momburg's method is not suitable in these cases. In healthy and young individuals, however, its use is free from danger. The method's greatest utility for life-saving has been demonstrated in postpartum hemorrhage, where it affords the advantage of an easy and prompt control of the loss of blood.

Dr. Joseph Ransohoff, Cincinnati: I have seen this method pursued in one case, and in this no ill effects resulted from its employment.

Dr. Rudolph Matas, New Orleans: I have pursued some experiments among students with this method, but found that a fair test of it could not be made unless the patient was anesthetized in order to gain complete relaxation. From our very imperfect experiments, however, it was shown that in all weak hearts you are liable to have prompt failure; instead of noting the usual increase in blood pressure, there will be a fall, and this, we feel, indicates an inability on the part of the heart to keep up. I would not advise the use of the Momburg constrictor in any patients suspected of having any cardiac irregularity, but believe it will prove of great benefit in producing artificial anemia in strong, robust individuals without being followed by any ill effects.

Operative Treatment of Tumors of the Hypophysis

Dr. A. E. Halstead, Chicago: The routes of approach previously advocated have been the intracranial and the extracranial. I propose what I term the oro-nasal route, which I employed successfully in one case. It is a modification of the infranasal method of approach, but is without the trauma and disfiguration which must follow the König operation.

DISCUSSION

Dr. S. J. Mixter, Boston: I wish to present a case operated on by the route suggested by Kanavel. There was a large cyst in the hypophysis filled with cholesterin and holding about one and a half to two ounces of fluid. The patient made a good recovery after the operation and his vision, which before was extremely poor, has been benefited.

Dr. Harvey Cushing, Baltimore: The various means of approach to the hypophysis do not make so much difference as does the matter of dealing with the structure when it is brought into view. The growth often becomes malignant, as is true of long-standing trouble with the thyroid, and it is conceivable that it cannot be removed entirely. In fatal cases it has often been found that only a mere fragment of the growth has been taken away. The operation, in the first place, has for its object the relief of pressure; the symptoms can be combated by the mere removal of the lower part of the sella turcica and the splitting of the capsule of the gland.

Dr. A. B. Kanavel, Chicago: Concerning the technical procedure in Dr. Halstead's cases, in the first one particularly, the view could not have been better. The operation was very quickly done, the anterior wall of the sphenoid sinus quickly removed, the bulging sella turcica opened, and a tumor protruding into the sinus was removed without difficulty. In the second case the sella turcica did not bulge into the sinus; it was seen with more difficulty and was arrived at by anatomic deductions. In two cases there was considerable hemorrhage, and I would suggest the elevation of the head during the operation. In the majority of cases it will only be necessary to remove the vomer and the anterior portion of the sphenoid in order to come down on the sella turcica.

Benign Bone Cysts, Osteitis Fibrosa; Giant-Cell Sarcoma and Bone Aneurism of the Long Bones

Dr. Joseph C. Bloodgood, Baltimore: The so-called benign bone cyst may present itself in five forms: First, as a medullary cyst without any definite gross lining; second, as a similar cyst with a definite connective tissue lining which is easily stripped from the bony capsule; third, as a medullary mass of fibrous tissue with a small cyst; fourth, as the same medullary mass of fibrous tissue without any cyst formation; and, fifth, as multiple medullary cysts. Among 89 cases on record 69 belong to the variety of true localized bone cyst or osteitis fibrosa. The other 20 cysts have different etiologic factors; for example, cysts in enchondroma, in pure myxoma in giant-cell sarcoma, in osteitis deformans; cysts due to subperiosteal ossifying hematoma, and callous cysts. The so-called bone aneurism is a much less frequent tumor and is distinctly malignant. It is a hematoma due to hemorrhage in the most malignant form of medullary, spindle, round or mixed-cell sarcoma, and I am of the opinion that in this stage of the tumor metastasis has already taken place, so that no harm could come from mistaking such a tumor for a bone cyst or giant-cell sarcoma. I have seen three cases, one of which was not saved by the highest amputation; in the second case amputation was refused; the third case was first treated as a bone cyst; amputation was done later, but the patient died of metastasis.

DISCUSSION

Dr. Rudolph Matas, New Orleans: In one case in which, after removal of a giant-cell sarcoma from the humerus, there was a large cavity, I used about an ounce and a half of Mosetig cement, and the patient later developed extreme symptoms of iodoform poisoning from which he recovered in 10 days and the arm healed with a perfect contour of the bone. I believe that in the bismuth paste we have a most valuable means of filling up cavities.

Dr. William L. Rodman, Philadelphia: I recall a case operated on in 1889 for large giant-cell sarcoma of the lower jaw by free chiseling and curettement, but without removal of the maxilla. The patient lived for more than ten years after this operation, and may be alive to-day.

Dr. Joseph A. Blake, New York: I had a case of sarcoma of the fourth finger. A simple operation in this case proved most satisfactory, and now, three years since operation, there is a normal phalanx.

Dr. Harry M. Sherman, San Francisco: In my experience salt solution poured into these cavities a little in excess just before the last stitches are taken is as good as any other material for filling. It is replaced by blood and obviates the necessity of putting in any foreign body.

Dr. Dudley P. Allen, Cleveland: Some years ago I removed the lower jaw of a patient for giant cell sarcoma, leaving but a small portion of the substance of the jaw. I used a splint to hold the teeth in place. The patient recovered entirely and is now well.

Dr. William S. Halsted, Baltimore: In a case of myxoma of the humerus, although the disease involved the bone from one end to the other, there was no cyst and no fibrous tissue. The bone was excised four years ago excepting for a strip posteriorly and at the lower end, and the entire cavity carefully swabbed out with phenol. The patient made a good recovery and had a strong humerus, but there were implantation recurrences in the soft parts on two occasions. The patient is now perfectly well.

Dr. Nathan Jacobson, Syracuse: I recall a case of giant-cell sarcoma of the jaw in which I did a partial excision of the upper jaw for giant cell sarcoma about 25 years ago. The patient is still living. There was never any recurrence. In my experience in those cases of giant cell sarcoma where there is reasonable cleaning out there is seldom a recurrence of the growth.

Dr. A. Von Eiselsberg, Vienna: In such cases as these we are in the habit, before finishing the operation, of pouring boiling water into the wound in order to destroy all the germs, and have found it a most satisfactory method

Diagnosis and Surgical Treatment of Esophageal Diverticula

Dr. Charles H. Mayo, Rochester, Minn.: Most cases of esophageal diverticula are pharyngo-esophageal. The condition is confined to adults. Dysphagia is the most common symptom; cough and dyspnea are common. Distended sacs are often visible in the neck and can be emptied by pressure. The condition is disclosed by probing and by radiograph of the bismuth-distended sac. H. S. Plummer's method of diagnosis is a combination of the technic of Mixter and Dunham, as used in stricture. The patient swallows a silk thread which passes into the intestine. The Plummer perforated acorn probe passed on the thread gives the depth of the pocket and location of its neck. Gastrostomy for temporary feeding may be necessary. Operation is by lateral oblique incision; blunt dissection; exposure of sac and excision; closure by suture; rubber tissue drain. There have been 8 patients in the Rochester clinic; 6 operated on successfully and 2 not operated on.

DISCUSSION

Dr. Samuel J. Mixter, Boston: I have operated in 3 cases of esophageal diverticula. When operation is not done, by the passage of very large bougies or probangs by means of a string guide a sufficient dilatation of the spur can be caused to allow the passage of food sufficient to keep the patient alive. I have about half a dozen such cases now.

Dr. George W. Crile, Cleveland: I wish to record two cases of operation for esophageal diverticula, in both of which recovery resulted.

Dr. John B. Murphy, Chicago: The enucleation of the sacs of diverticula is not a difficult matter in itself, but it leaves a large cavity, and it is difficult to avoid the danger occurring from leakage at the suture, infection from the mouth, and particularly the action of the salivary glands on the loose connective tissue of the mediastinum. I believe not opening the sac at all is the only safe procedure.

Dr. George E. Brewer, New York: The presence frequently during the day of an accumulation of thick, tenacious mucus which the patient will regurgitate to get relief is a characteristic symptom of esophageal diverticula. My own experience has been limited to 3 cases and one operation, on a woman, 80 years of age, who had lost 50 pounds through starvation. She made a perfectly good recovery from the operation.

Dr. Albert Vander Veer, Albany: I would refer to two cases of esophageal diverticula, one in a physician who refused to have an instrument passed and who subsequently died of an acute pneumonia; the other occurring in a woman, about 50 years of age, in whom it was impossible to get into the stomach with any form of instrument, and I therefore did a gastrostomy. The patient made a splendid recovery. She now alternates between tube feeding and the natural method.

Some Observations Regarding Thoracic Surgery on Human Beings

Dr. Willy Meyer, New York: I have operated in 10 cases with the help of my differential pressure apparatus for affections of the pleura, lung and esophagus. In the case of two young patients, 6 and 11 years old respectively, who had suffered for years from bronchiectatic abscess symptoms, and were bad risks, I extirpated a lobe of the lung in each case, but neither recovered. Three times exploratory thoracotomy was done for cancer of the esophagus with recovery. In order to do good surgical work when operating for a malignant stricture of the esophagus I have found it necessary to get the scapula out of the way and, therefore, propose as a preliminary operation the Schede-Friedrich flap operation, by which the entire shoulder girdle is turned up, thus permitting the surgeon to make his incision into the thoracic cavity wherever required; often two incisions are necessary.

The only hope of operative success in cases of esophagus cancer lies in early operation, certainly before the intimately adherent pneumogastric branches are involved, and the first step of each operation should be to free these nerves. Their involvement will more or less decide the operability or inoperability of the given case. Up to the present time resection of the esophagus has a mortality of 100 per cent.

End-to-End Intestinal Anastomosis by the Invagination Method

Dr. C. L. Gibson, New York: End-to-end intestinal anastomosis by telescoping one segment into the other has been practiced from time immemorial, but at present has no recognized position in surgery. As a result of animal experiments and five successful cases I believe that with my present technic it furnishes a method for which there is a demand, particularly in the surgery of the lower end of the colon. The technic is as follows: The upper cut edge of the gut is seized with two Kocher clamps and introduced into the lumen of the lower end and maintained there by an assistant. The extent to which it is feasible to accomplish this invagination will vary. The gut is rotated about a quarter circle so that the non-peritoneal covered surfaces do not entirely approximate in the circumference. Eight to twelve interrupted silk sutures are introduced thus. A Lambert suture is begun on the lower segment, the needle issuing just short of the cut edge, on the upper segment the needle is introduced just above the line where the cut edge of the lower segment lies against the intact wall of the upper. When the knot is tied the free cut edge has been turned inward, and only the peritoneal surfaces are in contact. A continuous running suture is applied over this area further invaginating the first ones, the Kocher clamps being previously withdrawn.

Dr. Charles H. Mayo, Rochester, Minn.: The invagination method is a good one in the removal of tumors low in the sigmoid, at the upper rectum; in fact, it is about the only way you can get a union, to invaginate the upper end into the lower.

Abnormal Position of the Duodenum

Dr. G. E. Armstrong, Montreal: In the anomaly reported the duodenum ran to the right and then turned downward external to the hepatic flexure, ascending colon and cecum, and, merging into the jejunum, passed from without inward below the cecum into the small intestine area. The duodenum was completely surrounded by peritoneum. It had a long mesentery throughout and could easily be held two or three inches in front of the abdominal wall. The head of the pancreas, closely applied to the duodenum, was visible and palpable between the layers of the duodenal mesentery, and readily followed the duodenum when the latter was brought outside the body. There was no ligament of Treitz and no fossa duodeno-jejunalis. The condition is clearly one of arrested development. The cecum in this case did not mount upwards to the lower hypochondrium and did not pass in front of the loop of the duodenum. The cecum did not descend to its usual final resting place in the right iliac fossa. It was high, completely surrounded by peritoneum, very movable, and could be brought out through the epigastric incision and held eight inches in front of the body.

DISCUSSION

Dr. Maurice H. Richardson, Boston: I have observed a case in which the appendix, the gall-bladder, the liver and the ileocecal valve were on the left side, the spleen on the right side, and the heart on the right side.

Dr. Emmet Rixford, San Francico: I would put on record a case of failure of rotation of the primary intestine.

Dr. Leonard Freeman, Denver: I had a case in which acute dilatation of the stomach followed an unimportant pelvic operation, and which at autopsy showed the duodenum passing directly beneath the liver and firmly attached to the posterior abdominal wall and around the right side as far as the hepatic flexure of the colon.

Dr. Joseph A. Blake, New York: I have met with two cases of abdominal position of the duodenum.

Dr. Alexander Primrose, Toronto: I would emphasize the fact that these conditions of abnormality in the position of the duodenum may occur without giving rise to the slightest symptoms.

Dr. Joseph C. Bloodgood, Baltimore: I would record one other anomaly of the intestinal tract which I think must be very unusual, namely, absence of the appendix.

Medicolegal

Violation of Medical Practice Act by "Doctor of Vital Science"

The Supreme Court of Iowa says, in State vs. Adkins (124 N. W. R. 627), that, prior to having attained his majority, the accused had led a bucolic life, and thereupon entered a "college of psychic-sarcology" in Missouri. Three years were devoted to the study of psychology, neurology, hygiene, dietetics, biology, anatomy, diagnosis, and actual practice. Having passed an examination on all branches appertaining to the science of "vital healing" he was granted a "diploma," and the degree of "doctor of vital science" conferred on him. Equipped with "all the rights and privileges pertaining to said degree," he returned to his father's house with the benevolent design of curing "all diseases without drugs, medicines, or surgical operations."

Quite naturally he first directed his attention to the appendix, insisting that "no part of the body is useless, but it takes all and every part to make up the perfect machine." In the local newspaper he wrote eloquently of the wrongs perpetrated by modern surgery, and directed attention to his "own peculiar methods" of healing by "natural laws." "When people learn," he said, "what appendicitis really is, they will understand that the removal of the vermiform appendix by a surgical operation is a crime against Nature. Then surgical operations will be abandoned and rank thereafter as a cruel and barbarous practice—the outgrowth of ignorance and stupidity. . . . Appendicitis as well as most every kind of disease yields very readily to the vital science treatment, which . . . is applied by Dr. L. M. Adkins' own peculiar methods and there are evidences of remarkable cures. For testimonials and other information call on or address Dr. Adkins," etc.

Later on, in sympathetic exaggeration, he again undertook to turn people from the surgeon's knife to "vital science institute . . . where all manner of diseases are treated successfully. . . . Surgical operations to remove the appendix have been a costly experiment to humanity. Not only has the sufferer been subject to the torture of the surgeon's knife, from which many never recover, but, should life be continued, a recent discovery of medical experts shows that eighty per cent. of those who survive the operation for appendicitis afterwards go hopelessly insane. This hitherto unthoughtof calamity will bring sorrow and regret to the homes of thousands of the survivors of this terrible operation. While people are suffering and dying with appendicitis, the news is being carried to all parts of the country of the new method known as vital science, which cures appendicitis in almost every case. This method of treatment uses neither drugs nor surgical operations, but is in perfect harmony with Nature's laws. There is a place in this city where the vital science treatment is given, known as the vital science institute, where all manner of diseases are treated successfully. For further information call on or write Dr. L. M. Adkins," etc.

He testified that he had treated several patients, and thus described his method: "Our system of treatment is by manipulation, stimulating the nerve centers so as to increase their vital force, the action of the blood and also the action of the muscles and all of the organs of the body, stimulating them up to their normal action by physical contact."

Enough has been said to indicate that the young man, even though a genius in the healing art, both publicly professed and undertook to heal and cure the afflicted, and, as this was without first having procured a license from the state board of medical examiners, he was rightly convicted of practicing without a license; and the judgment is affirmed.

Essential to Charge of Unlawfully Issuing Prescription for Liquors

The Kansas City Court of Appeals says that the case of State vs. Hume (124 S. W. R. 1099) was begun by an information charging the defendant, a physician, with unlawfully issuing a prescription for intoxicating liquors, in violation of Section 3050 of the Revised Statutes of Missouri of 1899, but that the conviction was not warranted. No offense was charged in the information. The innocence of the defendant should have been negatived. The charge was so framed that while it charged the intoxicating liquor was to be used as a beverage, and not a medicine, by the man who obtained the prescription, it did not connect the defendant with a knowledge of that fact, or with a purpose or intent of its being so used. If an indictment should charge that a physician issued a prescription to a person for intoxicating liquor "to be used" as a beverage, it might very well be said, thus closely connected, that that was charging that the physician issued it for the purpose of its being used to get the liquor as a beverage. But here the matter of the charge of issuing the prescription was so disconnected from the use to which the liquor was to be put by the party obtaining it that, while the latter was well charged with the unlawful and guilty knowledge and intent, the physician was not included with him. As was said in another case, on the same subject, a distinction is observed and must be taken by the court in administering the statute's provisions, between the contemplated use of the prescription and the contemplated use of the liquor after it is procured.

Ancestral and Personal Disabilities No Defense to Crime

The Court of Appeals of New York says, in the homicide case of People vs. Coleman (91 N. E. R. 368), that certain affidavits, briefly summarized, indicated that the defendant had been a backward, sickly child, somewhat weak minded and morose, given to occasional periods of religious exaltation, suffering much from indigestion and headaches, and predisposed to pulmonary troubles; that his father was a dyspeptic; that there was tuberculosis in his mother's family; that his sister died of that disease; that his great grandmother was insane; that a paternal aunt had violent hallucinations; and that an uncle was a religious fanatic. But all these things might be true without connecting the defendant with any taint of insanity or defect of reason that rendered him legally irresponsible for his acts. Few human beings are physically or mentally perfect. A large percentage of the human race are the victims rather than the beneficiaries of their heredity. If there were no physical and mental defectives, there would probably be no crime. Such a family history as was ascribed to the defendant is not uncommon in criminal annals. There was an utter absence of evidence tending to show with reasonable certainty that the defendant at the time he killed his wife labored under any defect of reason which rendered him incapable of knowing the nature and quality of his act or of knowing that it was wrong. Measured by that legal test, the evidence submitted on the motion for a new trial was insufficient and the application was properly denied.

Waiver of Privilege as to One Physician a Waiver as to All

The Kansas City Court of Appeals says, in the personal injury case of O'Brien vs. Western Implement Manufacturing Co. (125 S. W. R., 804), that the plaintiff had two physicians attending his injuries, one of whom he introduced as a witness, who testified as to such injuries. The defendant called the other physician, and offered to prove by him the condition of the plaintiff's injuries at the time. On objection by the plaintiff, the witness was excused on the ground of his incompetency. This was error. Having introduced one of his physicians to prove the condition of his injuries, the plaintiff waived the privilege of the statute. It is universally held that this, being a personal privilege, may be waived. In Elliott vs. Kansas City, 198 Mo., 593, the court in passing on the question held that, where the privilege of the statute had once been waived, the waiver could not be withdrawn. The plaintiff's assumption was that notwithstanding the privilege was withdrawn by the introduction of one of his physicians, it was not waived as to the others. His position was not tenable. In the above case the court quotes with approval the holding in Morris vs. Railroad, 148 N. Y. 92. It is there said: "When a waiver is once made, it is general, and not special, and its effect cannot properly be limited to a particular purpose or a particular person. After the information has once been made public, no further injury can be inflicted on the rights and interests of the patient, as the statute was intended to protect, by its repetition at another time or by another person."

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below

Note.—In the *Boston Medical and Surgical Journal*, June 2, appeared an article on "Therapeutic Value of Lactic Acid Bacteria," by Dr. L. S. Medalia, which was abstracted in The Journal, June 18, 1910, p. 2095, No. 12, and was credited to Dr. Gilpatrick, whose article on "Gangrene Due to *Bacillus Aerogenes Capsulatus*" also appeared in the *Boston Medical and Surgical Journal*, June 2, but was not abstracted.

New York Medical Journal

June 25

1 Etiology and Symptomatology of Infantile Scurvy. J. P. C. Griffith, Philadelphia.
2 Pathology of Infantile Scurvy. C. A. Fife, Philadelphia.
3 Treatment of Infantile Scurvy. M. Ostheimer, Philadelphia.
4 Prognosis and Differential Diagnosis of Infantile Scurvy. T. Le Boutellier, Philadelphia.
5 Death by Lightning. J. Knott, Dublin, Ireland.
6 Roentgen Therapy in Gynecology. M. W. Griscom and G. E. Pfahler, Philadelphia.
7 A Clinician's Attitude Toward the Revision of the Pharmacopeia. W. Coleman, New York.
8 *Pharmacopeia Revision from the Standpoint of the Medical Teacher of Drugs. W. A. Bastedo, New York.
9 Physicians in Fiction. C. D. Spivak, Denver.

8. **Pharmacopeia Revision.**—From the point of view of the medical teachers of drugs, according to Bastedo, a large and comprehensive pharmacopeia is not of necessity a disadvantage, and, by allowing for diversity of opinion, may be an advantage. Medical teachers have a deep interest in the formulation of principles to govern the selection and standardization of preparations and their doses. For the revision, Bastedo suggests as desirable for teaching purposes the omission of confusing duplicates, and of crude commercial substances for internal use whose preparations are made of some different form of the drug; the simplification of mixed remedies; the standardization of doses of potent preparations strictly in accordance with the amount of drug represented; and, where practicable, uniform percentage strengths for all potent preparations of a given class. Further, the teachers would desire the addition of the genitive ending of the Latin name of each drug and the accusative ending for names of prepared objects, such as compound cathartic pills; also with each drug a list of its pharmacopeial preparations with their strengths.

It will be agreed, he says, that, for medical teaching, which must of necessity be in advance of the practice of the main body of the profession, the selection of drugs should be based on reliable pharmacologic and clinical data regardless of the extent of their use. But for a working formulary and book of standards, such as the pharmacopeia, the selection should be based on the extent of use as indicated by the prescriptions of practitioners in all parts of the country. The dropping from use of the inferior substances will depend largely on the establishment of more uniform and more scientific teaching.

Medical Record, New York

June 18

10 Placenta Praevia. E. P. Davis, Philadelphia.
11 *Deep Perineural Injections for the Relief of Trifacial Neuralgia and Sciatica. D'O. Hecht, Chicago.
12 Immunity in Tuberculosis Considered from Both the Experimental and Clinical Standpoint. F. M. Pottenger, Monrovia, Cal.
13 *Unusual Complications Occurring in Three Cases of Rhizomelic Spondylosis. E. M. Williams, Philadelphia.
14 Ileus Following Laparotomy. A. H. Levings, Milwaukee.
15 *The More Liberal Diet in Typhoid Fever. T. A. Claytor, Washington, D. C.
16 The Dowd Phosphatometer. J. H. Dowd, Buffalo.

June 25

17 *The Function of the Corpus Luteum, the Experimental Production of the Maternal Placenta and the Mechanism of the Sexual Cycle in the Female Organism. L. Loeb, Philadelphia.
18 The Affections Clinically Simulating Typhoid, with Special Reference to Brill's Disease. H. F. L. Ziegel, New York.
19 *Amebiasis, with Report of Forty-two Cases. W. Allen, Charlotte, N. C.
20 The Care of the Mammary Glands Before, During and after the Puerperium. J. H. Tebbetts, Hollister, Cal.
21 [illegible] in a Case of Hemorrhoids. M. I. Bodkin, Brooklyn.
22 [illegible]. G. Hunter and C. H. Weinberg, St. Louis.

11. **Perineural Injections for Trifacial Neuralgia and Sciatica.**—Hecht has treated 60 cases of trifacial neuralgia by deep injections of alcohol, 70 to 90 per cent with success. A total of 180 injections was given, an average of 3¼ injections, to subdue pain. Thirty-seven patients were distinctly benefited; eleven were improved; eight unimproved; four were aggravated. One patient was free from pain for a year and eight months; the shortest interval of freedom from pain was 2 weeks; several were free from pain for a year. If reinjected, pain was again subdued.

13. **Rhizomelic Spondylosis.**—Williams gives the histories of three cases of rhizomelic spondylosis in which there were great weakness of the muscles of both legs, with permanent unilateral toe-drop, sensory changes resembling those found in syringomyelia, and an unusual form of vertebral exostosis. A fact of importance is intermittence of the joint affections, they becoming almost well at times, and later being again involved.

15. **Typhoid Fever.**—Claytor pleads for a more liberal diet in typhoid. His patients are far more comfortable, not having that ravenous hunger that patients have when fed entirely on liquids, are not so profoundly nervous, and are better nourished. Neither hemorrhage nor perforation is more frequent than among those kept on liquids, and delirium is less pronounced. Convalescence is more rapid, and the patients return to a good general condition and a normal physical and mental state far more rapidly. The diet should be such as to keep up the body equilibrium as much as possible; it should be easily digestible, innocuous and palatable. Claytor allows soft boiled eggs, scraped meat, rice, scraped apple, custard, etc.

17. **Function of the Corpus Luteum.**—The principal features in the sexual cycle Loeb believes to be as follows: At a certain period the animal enters the period of heat; a few ovarian follicles rupture and become transformed into corpora lutea. In the early stages of their life, the corpora lutea constitute one of the factors initiating growth processes in the uterine mucosa by means of an internal secretion. If no pregnancy takes place, these proliferative phenomena are slight. If pregnancy does take place, the ovum adds a mechanical stimulus to the sensitizing action of the corpus luteum and a maternal placenta is produced. The ovum can be substituted by an indifferent foreign body. Within a few days this receptive period of the uterine mucosa is followed by a refractory period, in which the uterus no longer reacts to mechanical stimuli, notwithstanding the functionating of the corpus luteum. In this period the corpus luteum exerts a new function, it prevents the rupture of new follicles and prolongs artificially the period of the sexual cycle. During pregnancy some factor extends the life of the corpus luteum, and the period of the non-rupture of follicles is thus prolonged. At the end of the pregnancy, the corpus luteum degenerates, new follicles rupture, and a new cycle begins; the pregnancy as such does not, however, prevent a new rupture of follicles. If no pregnancy is present the factor that prolongs the life of the corpus luteum is absent. The corpus luteum degenerates much earlier and permits new follicles to rupture. The changes in the corpus luteum and in the uterus are accompanied by rhythmic changes in the ovarian follicles. The conception of this mechanism is not hypothetical, but rests on a secure foundation of experimentally established facts.

19. **Amebiasis.**—Of the 42 patients seen by Allen since April, 1908, 12 died, a fatality of 28 per cent; 16 of the 42 gave no history of frequency of the bowel movements; 10 out of 16 had bald tongue, which Allen believes to be indistinguishable from that of pellagra. Of 25 cases in which the hemoglobin was estimated, in 6 it was about 80 per cent., and in 19 below 80 per cent; in 1 the hemoglobin was below 40 per cent. In making a routine blood examination the presence of a moderate eosinophilia has repeatedly directed Allen's attention to the intestinal tract, with the result that amebas were found in the stools. Out of 29 cases in which differential counts were made, 14 showed eosinophilia of 5 per cent. or over, 2 between 4 per cent. and 5 per cent., and 11 below 4 per cent.; one case complicated by *Ascaris lumbricoides* showed 17 per cent.,

and one complicated by hookworms showed 5.2 per cent. In 1 case of combined amebiasis and ankylostomiasis the removal of the hook worms caused the eosinophilia to drop from 10 per cent. to 5 per cent. in 8 months. This leads Allen to believe that a moderate increase in the eosinophils will be found in over 50 per cent. of patients, if not less than 500 white cells be counted.

Since amebas can be grown in alkaline bouillon, the reaction of amebic stools may prove of interest. In 14 cases in which this point was noted, litmus paper showed 10 alkaline, 2 neutral and 2 acid; unfortunately, these acid stools were not tested with phenolphthalein. In this connection it is interesting to note that out of 35 cases *Trichomonas vaginalis* was present in 19 patients. In three patients a diagnosis of abscess of the liver was made; two of these left the hospital within 24 hours and were lost sight of; the third patient showed abscess at autopsy.

Although all known methods of treatment were tried by Allen, he is confident that not a single permanent cure has been effected. Hence, he concludes that treatment has been radically defective, or that the medical treatment of amebiasis is only palliative, and can hold out no hope of a permanent cure.

Boston Medical and Surgical Journal

June 23

23 *Dyspepsia and Indigestion Viewed from a Surgical Standpoint. J. C. Munro, Boston.
24 One Hundred and Seventy-two Patients Treated at the Massachusetts General Hospital for Inguinal Hernia in the Year 1905, with the End Results of the Operations. C. C. Simmons, Boston.
25 Arthrodesis and its Application in Infantile Paralysis of the Foot. W. R. MacAusland and B. E. Wood, Boston.
26 *The Effect of Tobacco on the Ear and Upper Respiratory Tract. H. O Reik, Baltimore.

23. **Dyspepsia and Indigestion.**—Munro urges the general practitioner to consider the probability of some simple surgical lesion of the abdominal viscera in his cases of persistent recurrent indigestion; that where such a lesion does exist, surgery is the safest and surest means at our disposal to bring about a permanent cure; that his neurotics with indigestion secondary to surgical lesions have the right of relief from their local trouble; that, finally, there is a type of dyspepsia most naturally ascribed to gastroduodenal ulcer, but which is really secondary to an appendicitis and which is curable to a degree not yet definitely determined by a simple appendectomy.

26. **Effect of Tobacco on Ear and Upper Respiratory Tract.**—From such facts as Reik has been able to collect it does not appear, at least it has not been proved, that tobacco causes any definite characteristic lesions of the nose, throat or ear. While it is possible that the excessive use of tobacco may, by indirect action, produce a toxic effect on the olfactory and auditory nerves, with resulting impairment of the sense of smell or of hearing, there is not at the present time any definite laboratory proof for such an opinion, nor is there sufficient clinical evidence to substantiate the belief. The ill-effects of tobacco smoke on existing diseases of the throat, arising from other causes, is established and is the same as would be observed from any other form of irritation.

That gastric and systemic disturbances may arise from excessive use of tobacco, in any of its forms, is unquestioned; the nicotin content of tobacco is a recognized poisonous substance and, in the process of smoking, there are evolved other injurious chemical products. Carbon monoxid is probably a more dangerous and injurious constituent of tobacco smoke than is nicotin, only a very fractional amount of which ever enters the tissues. If there is any more danger to be anticipated from cigarette than from cigar smoking it is to be looked for solely in the inhalation of the smoke; cigarette smoking without inhaling is no more injurious than is pipe or cigar smoking, probably not so much so, unless enormous numbers be smoked.

Lancet-Clinic, Cincinnati

June 18

27 Otitic Meningitis. L. D. Brose, Evansville, Ind.
28 The Trained Anesthetist. M. Porter, Dayton, O.
29 The Relation of Human and Bovine Tuberculosis. P. G. Wooley, Cincinnati.

Northwestern Lancet, Minneapolis

June 15

30 *Tetanus. A. E. Wilcox, Minneapolis.
31 Vaccine Therapy. H. L. Ulrich, Minneapolis.

30. **Tetanus.**—Wilcox emphasizes the importance of regarding a certain class of wounds with suspicion, and the results to be obtained from large, repeated, prophylactic injections of antitetanic serum and the value of intraspinal injections of magnesium sulphate to control the spasms, thereby assisting Nature in eliminating the toxins which have become fixed in the nervous tissues. He holds that the intraneural injection of antitetanic serum deserves a thorough trial in conjunction with the above.

Journal Indiana State Medical Association, Fort Wayne

May

32 *Estivo-Autumnal Malaria. G. D. Marshall, Kokomo.
33 Treatment of Pulmonary Hemorrhage. T. Potter, Indianapolis.
34 One Thousand Obstetrical Cases without a Maternal Death. S. Kennedy, Shelbyville.
35 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
36 Occipito-Posterior Positions. B. F. Kuhn, Elkhart, Ind.
37 Practical Considerations on the Bacteriology of the Gastro-intestinal Tract. J. P. Simonds, Indianapolis.

32. Abstracted in The Journal, Oct. 16, 1909, p. 1318.

Archives of Internal Medicine, Chicago

June

38 *Inflammation. E. L. Opie, New York.
39 *Hemoglobin of Colored Laborers in Panama. W. V Brem and A. H. Zeiler, Christobal, Canal Zone, Panama.
40 *Paroxysmal Hemoglobinuria. C. H. Neilson, St. Louis, and O. P. Terry, Lafayette, Ind.
41 *Adams-Stokes' Syndrome, with Complete Heart-block, Without Destruction of the Bundle of His. E. B. Krumbhaar, Philadelphia.
42 *Bone Metabolism, Especially the Pathologic Process, Etiology and Treatment of Osteomalacia. F. H. McCrudden, Boston.
43 *The Symptom-Complex of Acute Posterior Poliomyelitis of the Geniculate, Auditory, Glossopharyngeal and Pneumogastric Ganglia. J. R. Hunt, New York.

38. **Inflammation.**—Inflammation, says Opie, is a process which tends to render harmless an injurious substance; it has its site in the interstitial tissue of the body. This tissue consists of fixed cells and fibrillated substances and is penetrated by closed lymphatic vessels. With inflammation certain cells migrate through the wall of the blood-vessels of the part and enter the spaces within the interstitial tissue. Some of these cells are destroyed; others penetrate the endothelial membrane which forms the lymphatic capillaries and hence are carried by way of lymphatic vessels to the regional lymphatic nodes.

Bacteria and many other injurious substances are attacked and ingested by polynuclear leucocytes. These leucocytes are, in turn, ingested by large mononuclear cells (macrophages) which quickly appear at the site of inflammation. The origin of these mononuclear cells is still undetermined. Ingestion of polynuclear leucocytes and other cellular material is begun at the site of inflammation and completed in the regional lymphatic nodes.

The ability of phagocytic cells to remove injurious material is dependent on the possession of proteolytic enzymes. Peculiar to the polynuclear leucocytes is an enzyme which, like trypsin, exerts its digestive action in an alkaline medium. The serum of the blood contains an antienzyme which restrains the action of this enzyme should it be set free by disintegration of the leucocytes; the action of the enzyme is thus limited to the locality in which it accomplishes its proper function, namely, within the cell. When enzyme is set free in such quantity that it overbalances the antienzyme of the exuded serum, suppuration occurs, for the purulent exudate has in virtue of its unrestrained enzyme acquired the power to soften and erode the adjacent tissues.

The mononuclear phagocytes which appear in the late stages of acute inflammation, the similar cells which appear in the regional lymph nodes, and the cells of similar structure which constitute the greater part of tuberculous tissue contain an enzyme which, like pepsin, digests in the presence of acid. Such phagocytes are active at the site of inflammation, but their work is completed in the regional lymphatic nodes. Inflammation is the process by means of which cells and serum accumulate about an injurious substance and tend to remove or destroy it. This process does not include the regenerative changes which replace injured tissue by newly formed parenchymatous elements or by new interstitial tissue.

39. **Hemoglobin of Colored Laborers in Panama.**—Brem and Zeiler found that the average hemoglobin of healthy colored men of the tropics is about 83 to 85 per cent. The average hemoglobin of Barbadian and Jamaican laborers was 72.7 and 73.7 per cent., respectively; that of Martiniquans 55.2 per cent. Of 277 patients, 234, or 84.5 per cent., had malarial fever; 15.5 per cent. had pneumonia, typhoid, dysentery, liver abscess, tuberculosis, nephritis, etc. Uncinariasis was found in 36.1 per cent.; amebiasis in 24.5 per cent. The hemoglobin curve of malarial patients varies inversely with the number of previous attacks of malarial fever until a relative immunity or tolerance for the malarial poison is developed, when a rise of hemoglobin occurs. This rise does not take place in patients infected with uncinaria. Uncinariasis complicating malaria in colored men causes a reduction of hemoglobin, which averages 6 per cent. less than that of uncomplicated malarial infections. The complication causes more than double the proportion of anemic cases. Amebiasis without dysentery does not appreciably affect the hemoglobin curve. Conditions of life on the Isthmus of Panama do not in themselves affect the hemoglobin of colored laborers. Blood destruction is a question of infection only.

40. **Paroxysmal Hemoglobinuria.**—In the case presented by Neilson and Terry any severe chilling of the patient's skin caused a temporary hemoglobinuria, drowsiness, regurgitation of food and other minor symptoms to be mentioned later. The phenomena were produced either by a chilling of the general body surface or, what was more common, by the mere exposure of the hands and face to cold, damp winds, or by the wetting of the feet in cold weather. The phenomena were produced experimentally in the laboratory by dipping the patient's feet in water reduced to a temperature of 9 to 12 C., even when the general room temperature was 27 C. The object of the experiments was to determine the inhibitory effect of calcium chlorid on the hemolysis of red blood corpuscles by the patient's serum. While the authors do not state definitely that calcium chlorid when administered by the mouth does prevent this hemoglobinuria by foot-baths, they claim that in view of the inhibitory effect on hemolysis in the test tube they feel justified in concluding that if sufficient calcium chlorid could be introduced into the blood, and retained, no hemoglobinuria would occur.

41. **Adams-Stokes Syndrome.**—A careful study of a patient for 5 years and subsequent examination of the tissues concerned convinced Krumbhaar that Adams-Stokes' syndrome and complete heart-block can exist uninterruptedly for years with little or no lesion of the bundle of His. Whether in such cases there is a structural lesion or whether the difficulty is purely functional, has not yet been determined; but it is probable says Krumbhaar that there may in some cases be two or more contributing causes, both functional and organic. A possible explanation of the dissociation of auricle and ventricle in the present case may be that following a fibrosis of the sino-auricular bundle of Keith, the two chambers beat with independent rhythm rather than that the impulse was not properly conducted to the ventricle.

42. **Bone Metabolism and Osteomalacia.** The treatment of osteomalacia, according to McCrudden, depends on the individual case. He regards it as probably useless to resort to castration in a condition of non-puerperal osteomalacia or a very severe case of puerperal osteomalacia, and, in mild cases of puerperal osteomalacia, it is usually needless to resort to this operation. Good hygienic conditions should be relied on to improve a mild case and the patient should be advised concerning the dangers of rapidly occurring pregnancies. The recent results in bringing about artificial menopause by the x-rays leads him to suggest that this treatment might be tried instead of the more severe operation in a case in which sterilization seemed advisable.

43. **Herpes Zoster of the Cephalic Extremity.**—Hunt believes that we are justified in isolating a large and varied group of cases, characterized by herpes zoster of the cephalic extremity associated with facial palsy, auditory, glossopharyngeal and pneumogastric symptoms, and in regarding them as constituting a well-defined clinical picture. A number of syndromes are thus united in a symptom-complex, having a common etiology and pathology. He is convinced that cases belonging to this group are of much more frequent occurrence than might be inferred from the study of the literature. The reasons for which are to be found in the smallness and inaccessibility of the eruptive areas, making their detection difficult; or all traces of the eruption may have disappeared before the case comes under observation, when a retrospective diagnosis might be difficult or impossible.

It also seems probable, that some cases which are interpreted as rheumatic palsies of the face, palate and even the larynx, may belong to this group; as well as toxic unilateral palsies of obscure origin.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

May

44 Pathology and Diagnosis of Psychoneurosis. B Sidis, Portsmouth.
45 Microscopic Crystallization and Its Application to Chemistry and Therapeutics. H. J. Novack, Philadelphia.
46 Modern Views on Irregular Heart-beat (concluded). H. Sewell, Denver
47 General Considerations Regarding the More Common Operations on the Nose and Throat B. F. Walters, Philadelphia.
48 Can We Estimate the Disability of the Deaf? B. A. Randall, Philadelphia

Journal of Cutaneous Diseases, New York

June

49 The Study of Elastic Tissue in Epidermolysis Bullosa M. F. Engman and W. H. Mook, St. Louis.
50 *Meralgia Paresthetica S Sherwell, Brooklyn.
51 Syphilis. J. Grindon, St Louis.

50. **Meralgia Paresthetica.**—For about the last ten years of Sherwell's life, in the outer and lower two-thirds of his left thigh, after strenuous and long-continued exertion, as walking, riding and cycling, there has occurred in the region supplied by the external femoral cutaneous nerve, symptoms which he describes as follows: This region becomes the seat of a variety of perverted sensations, such as tingling, tenseness, or still more acute superficial tearing and darting pain, with numbing of sensation from the femoral exit of the nerve to a point just above the patella; this may be only a dull ache, but is usually more acute. It may begin as a glowing sensation also; the rest of the limb with its cutaneous envelope appears to be entirely normal; these symptoms soon subside on resting, sitting, or, better, lying down, but can be brought on readily by resumption of exertion. The painful sensations are like nothing so much as those of zoster, and it is Sherwell's belief that they are caused by the same mechanical means, viz., pressure on the nerve in its continuity, though probably not from the exudation pressure which occurs in zoster.

Sherwell is a healthy man over 60; so far as he knows he is physically sound and takes pleasure in protracted, and it may well be, extreme exercise of all kinds; the affection seems to be diminishing in intensity; for the last two years it has certainly not been so acute or prolonged. Sherwell has not changed his habits of exercise in the least. He frequently walks 5 miles, or even nearly double that distance, rather than use cars.

His conclusions as to the etiology of this condition are, in brief, these: that the condition comes from a constriction, or pinching, as it were, of the nerve as it passes through the tough fascia of a muscular individual; that that and the consequent irritation resulting therefrom, and possibly a transient exudation at the site of the constriction as well, between the sheath and nerve substance proper, causes all the symptoms; a temporary non-essential zoster as it were. The only aiding cause on which he lays any weight is a rheumatic tendency; a condition that may aggravate, as can be rationally concluded. Rest and perhaps slight massage produces rapid, though unfortunately, only temporary relief—not a cure.

Memphis Medical Monthly

May

52 The Army and Navy G. B. Thornton, Memphis
53 Intestinal Anastomosis E. J. Johnson, Yazoo City, Miss.

54 Pus and Crusts in the Nose. W. L. Simpson, Memphis.
55 Hemorrhoids: Local and General Anesthesia: Selection of Methods and Anesthetics. J. L. Jelks, Memphis.
56 Ankylostomiasis, or Uncinariasis. W. T. Pride, Memphis.
57 Imperforate Anus. F. M. Malone, Capleville, Tenn.

Western Medical Review, Omaha

May

58 Some Uses of Thyroid. F. W. Demaree, Roca, Neb
59 A Few Thoughts on Insanity and Eugenics. J. O. Hoffman, Orleans, Neb.
60 The Influence of the Sphenoidal and Ethmoidal Cells in Diseases of the Eye. J. M Patton, Omaha, Neb.
61 Syphilis of the Liver Report of Two Cases Simulating Gall stones. M. J. Ford, Omaha.
62 Eclampsia Infantum. E. E. Cone, Oxford, Neb.

St. Louis Medical Review

May

63 *Carcinoma of the Penis. W. E. Leighton, St. Louis.
64 The Practical Importance of the Wassermann Reaction. J W. Marchildon, St. Louis.
65 Scheherazade's Doctors. S. H. Brown.

63. **Carcinoma of the Penis.**—Of the 13 cases reported by Leighton, 7 came to operation; 1 patient was treated by simple amputation; another by amputation at the pubes with removal of the inguinal glands. The remaining five cases were so badly involved that no choice was left to the operator and a complete extirpation of the genitals with a dissection of the groin was made. Of these, one patient, far advanced, died on the fourth day from a pneumonia; another recovered and left the hospital, but a few weeks later suddenly dropped dead; autopsy by the coroner revealed no cause for the death. Another patient operated on four years ago is well and free from symptoms. The remaining two patients are well two years and one year, respectively, after operation.

Northwest Medicine, Seattle

May

66 The Theory of Immunity. F. Hinman, Spokane, Wash.
67 Truss or Operation in Hernia. W. F. Amos, Portland.
68 Acute Angulations and Flexures of the Sigmoid as a Cause of Constipation. W. H. Axtell, Bellingham.
69 Identity of the Criminal Established from Examination of Fatal Bullet. H. Power, Spokane, Wash.
70 Prognosis in Surgery. J. D. Sternberg, Portland, Ore.
71 Treatment of Corneal Ulcers by Suction Hyperemia. C. T Cooke, Seattle.
72 Tuberculin in the Treatment of Tuberculosis. C. S. Wilson, Tacoma.
73 Pyelitis in Infants. J. B. Manning, Seattle.
74 The Preparation of Macroscopic Specimens in Glycerin Jelly. H. V. Wurdemann, Seattle.

Archives of Diagnosis, New York

April

75 The Study of Tuberculosis. W. Porter, St. Louis.
76 Etiology and Diagnosis of Arteriosclerosis. F. E. Sondern, New York.
77 Significance of Abdominal Pain in Infants and Children. L. Kerr, Brooklyn.
78 Differential Diagnosis of the Spasmodic Respiratory Affections in Early Life. G. R. Pisek, New York.
79 Rectal Palpation in the Diagnosis of Acute Intra-abdominal Disease. G. E. Dickinson, Jersey City, N. J.
80 Diagnosis of Fibrosis Uteri. S. W Bandler, New York.
81 Prognosis in Tabes Dorsalis. T. A. Williams, Washington, D. C.
82 Multiple Malformations of the Central Nervous System (Porencephaly, Diplomyelia, etc.): Their Interpretation from a Clinical Standpoint. A. Gordon, Philadelphia.
83 Diagnosis of Primary Malignant Disease of the Choroid and the Retina. J. H. Woodward, New York.
84 Diagnostic Errors in Abdominal Surgery. J. H. Carstens, Detroit.
85 Lupus Vulgaris Mistaken for and Treated as Syphilis. G. M. MacKee, New York.
86 Adiposis Dolorosa. J. A. Booth, New York.
87 Total Ophthalmoplegia and Bilateral Facial Palsy. A. E. Eshner, Philadelphia.

Wisconsin Medical Journal, Milwaukee

May

88 Diagnosis and Treatment of Complications of Otitis Media Suppurativa. F. Pfister, Milwaukee.
89 Etiology of Middle Ear Disease. H B. Hitz, Milwaukee.
90 The Use of Tuberculin in 30 Patients Treated at the Blue Mound Sanatorium. C H. Stoddard, Milwaukee.
91 Tetany. A. L. Kastner, Milwaukee.
92 The Nourishment of Patients During Prolonged Illnesses. L. F. Ruschhaupt, Milwaukee.

June

93 *The Importance of a Study of Parasitology. B M. Allen, Madison.
94 The Practice of Surgery. R. Elmergreen, Milwaukee.
95 The Need of Physical Exercise in the Treatment of Tuberculosis. W. Fletcher, Salem.
96 The Medical Experiences of Benvenuto Cellini. A. W. Myers, Milwaukee.

93. **Importance of Parasitology.**—The subject of parasitology is one of great importance to medicine. A scientific knowledge of the structure, life history and habits of the parasites is of much value to the practitioner. Allen says that they consider this subject of such importance in Wisconsin that they are now giving at the university a course in medical zoology which deals primarily with the structure, reproduction and life history of parasites infesting man. It also deals with disease carriers, such as mosquitoes, flies and rats, and finally with venomous insects and reptiles.

Cleveland Medical Journal

June

97 Reactions of the Vasomotor Center. T Sollmann and J D. Pilcher, Cleveland.
98 Poisoning by Carbon Monoxid M Friedrich, Cleveland
99 Tuberculin in the Diagnosis and Treatment of Surgical Tuberculosis. W. G. Stern, Cleveland.
100 Routine Otoscopy in the Febrile Affections of Infancy and Early Childhood. A S. Maschke, Cleveland.
101 *Abdominal Section for the Removal of a Gauze Sponge which had Been Left in the Abdominal Cavity for Nine Months H. Robb, Cleveland.
102 Foreign Body in the Larynx. S. H. Monson, Cleveland.
103 The Coagulation Time of the Blood in Phlegmasia Alba Dolens and its Treatment. P A. Jacobs, Cleveland.
104 Spinal Anesthesia M E. Blahd, Cleveland.
105 What is Orthopedic Surgery? H. O. Feiss, Cleveland
106 Cervical Rib with Operation. C A Hamann, Cleveland

101. **Removal of Gauze Sponge from Abdominal Cavity.** The patient whose case is reported by Robb, complained of dysmenorrhea, menorrhagia and dragging pains in the lower abdomen, with frequent and burning micturition. On bimanual examination an adherent uterus could be made out posteriorly in the pelvis. Both Fallopian tubes and ovaries were enlarged and adherent. An abdominal section was performed. The adherent tubes and ovaries were removed after separation of a considerable number of intestinal and omental adhesions. Both tubes contained pus. During removal of the right tube and ovary the tube ruptured, allowing several drams of a purulent fluid to escape into the pelvic cavity. The pus was caught on a sponge and a couple of narrow gauze sponges were packed about the seat of the ruptured tube. The abdominal cavity was closed without drainage. There was a slight elevation of temperature for two days following the operation. Aside from this, however, the convalescence was uninterrupted. Twenty days after the section the cervix and perineum were repaired. Six weeks after the laparotomy the patient was discharged feeling well in every way.

In February, 1909, a little more than nine months from the time of operation, she was again admitted to the hospital complaining of some distress in the left lower quadrant of the abdomen. On bimanual examination a fluctuant movable mass, about the size of a closed fist, could be made out. Three days later the abdominal cavity was reopened through the line of the previous operation. The mass was found beneath the brim of the pelvis lying to the left of the median line, enveloped in a connective tissue like sac, and surrounded by the sigmoid flexure, the omentum, and several coils of the small intestines. During an attempt to separate the intestines from the mass the sac ruptured and a small quantity of purulent looking fluid escaped. At the mouth of the opening in the sac there appeared a whitish substance which proved to be a gauze sponge in a perfect state of preservation.

Old Dominion Medical Monthly, Richmond

May

107 Chorea and Choreiform Movement C W Barr [illegible]
108 Dementia Precox. Some Neglected Phases J K Hall, Morgantown, N C
109 Acute Unilateral Septic Infarct of the Kidney C R R[illegible] Richmond.
110 Experiences with Placenta Previa J H Hiden Pung[illegible] Va
111 Surgery of Infantile Life S McGuire, Richmond
112 The Diagnosis of Typhoid in Children. W L Harris, Norfolk, Va
113 The Uses of Radium in Medicine and Surgery. G W Drake, Hollins, Va.

Archives of Ophthalmology, New York

May

114 The Best Methods for the Diagnosis and Treatment of Ocular Tuberculosis. G S Derby, Boston.
115 A Stigmometric Card Test for Illiterates. P. Friedenberg, New York.

116 Etiology of Scleritis, Its Treatment and Results with Tuberculin. E. Török, New York.
117 Mydriatics and Miotics in Injuries of the Lens and Following Discission, to Hasten Dissolution and Absorption of the Lens Substance, and to Clear the Pupil Area of Fragments of Opaque Capsule. H. W. Wandless, New York.
118 Crescentic Ulceration of the Cornea, with Comments on the Value of Peroxid of Hydrogen in Their Treatment. J Dunn, Richmond, Va.

Iowa Medical Journal, Des Moines

May

119 Hygiene and State Medicine. M. L. Turner, Des Moines.
120 Quacks and Nostrums. S. Bailey, Mt. Ayr.
121 *The Movement Against Tuberculosis. J. W Kime, Fort Dodge.
122 *The Value of Tuberculin in the Treatment of Tuberculosis. F Albert, Mason City.
123 *Early Diagnosis in Tuberculosis. R. E. Conniff, Sioux City.
124 *The Pathology of Tuberculosis. E. W. Meis, Sioux City.
125 Preventable Blindness in the State of Iowa. H. B. Gratiot, Dubuque.
126 *Fallacies in Preventive Medicine. R. L. Elker, Leon.
127 Clinical Diagnosis. T R. Jackson, Albia.

June

128 Abdominal Contusions. L. W. Littig, Iowa City.
129 Tumors of the Female Breast. M. Emmert, Atlantic.
130 The Orthopedic Treatment of Infantile and Cerebral Paralysis. A Steindler, Des Moines.
131 Blood-Pressure Determinations in Life Insurance Examinations. F. Albert, Mason City.
132 Direct Laryngoscopy: Upper and Lower Bronchoscopy: Esophagoscopy. L. W. Dean, Iowa City.
133 Anatomy of the Tonsil. H. J H. Hoeve, Des Moines.
134 *A Traumatic Cataract Operation. W. S Windle, Oskaloosa.
135 The Upper and Lower Motor Neurons in Health and Disease. T B. Throckmorton, Chariton.
136 Cathartics in Surgical Cases. L. Schooler, Des Moines.

121, 122, 123, 124, 126. Abstracted in The Journal, July 17, 1910, pp. 229, 230.

134. **A Traumatic Cataract Operation.**—This case proved to be a traumatic extraction of a cataract in capsule, followed by results comparable to those of the Major Smith operation. At the age of 24, the patient received an injury to his right eye from a piece of steel which reduced its vision to 6/200, his left eye, however, remained normal. Three years ago, at the age of 67, while laboring on his farm, he stooped to clean his plow and bumped his left eye against a projecting iron bar. He immediately covered the wounded eye with his handkerchief and sought relief, arriving at Windle's office within half an hour after the accident. On separating the eyelids in the process of examination, a large fragment of the lens was found lodged in the cul-de-sac. A slightly irregular linear wound was observed in the upper, outer portion of the cornea near the limbus, about 8 mm. in length. No lens débris could be discovered remaining in the eye. The corneal chamber was not entirely collapsed. A large fragment of the upper, outer portion of the iris had been torn away, forming a large coloboma; no incarceration of the iris, however, had occurred. Examination by the ophthalmoscope later on revealed clear media, excepting a small fragment of lens-capsule remaining at its lower attachment. Windle claims that this case of traumatic expression of the lens in capsule is a silent yet forcible argument in favor of the Major Smith operation.

Journal Tennessee State Medical Association, Nashville

May

137 *The Higher Mission of the Doctor. J. L. Crook, Jackson.

137. Abstracted in The Journal, April 3, 1910, p. 1166.

Kansas City Medical Index-Lancet

May

138 The Medical Aspect of Mental Healing. J Punton, Kansas City.
139 Social Responsibility in Hospital Service. W T Cross, Columbia, Mo.
140 Presentation of a Case of Localized Meningitis. F. G. Neff, Kansas City.
141 Differential Points in the Character of the Bone Lesion in Tuberculosis and Acute Osteomyelitis, Rachitis and Syphilis. A. E. Horwitz, St. Louis.
142 State Care of Epileptics. M. L. Perry, Parsons, Kan.

Therapeutic Gazette, Detroit

June

143 The Value of Thyroid Extract in Aural Manifestations of Myxedema. S. M. Smith, Philadelphia.
144 Bacterial Vaccines. L. C. L. Miller, Detroit.
145 The Ratio of Blood-Pressure to Pulse-Rate in Croupous Pneumonia from a Diagnostic and Therapeutic Standpoint. H. A. Hare, Philadelphia.
146 *Treatment of Bone Tuberculosis. H. A. Wilson.

146. **Bone Tuberculosis.**—The method that has been resorted to in the Jefferson Hospital out-patient orthopedic department has been fixation to enable weight-bearing by the employment of the plaster-of-Paris bandage; it has the advantage of accurate fit and adaptation to the parts, it cannot be removed by the patient, it is capable of readjustment by replacement, and possesses all of the advantages and none of the disadvantages of similar appliances, whether made of steel or other material. Each individual joint has its peculiar condition requiring adaptation of fixation appliances.

Detroit Medical Journal

May

147 The Treatment of Lobar Pneumonia. C. F. Kuhn, Detroit.
148 Myelogenous Leukemia. C. E. Simpson, Detroit.
149 Random Medical Notes in Europe. G. Dock, New Orleans.
150 Radiography of Fractures. G. C. Chene, Detroit.
151 Need of Anti-tuberculosis Movements. E. B. Pierce, Howell, Mich.

American Journal of Urology, New York

May

152 Suprapubic or Perineal Prostatectomy—Which? F. Kreissl, Chicago.
153 Transplantation of Right Ureter into Appendix. G. L. Eaton, San Francisco.
154 The Treatment of Malignant Disease of the Prostate Gland. J. B. Bissell, New York.
155 Treatment of Malignant Disease of the Bladder. R H. Greene, New York.
156 Treating Gonorrhea by a New Method. J. B. McNerthney, Tacoma, Washington.

Alabama Medical Journal, Birmingham

May

157 Nutrition in Early Life. F. S. Mearn, New York.
158 Medical Association, State of Alabama. W. M. Wilkerson, Montgomery.

Journal Ophthalmology and Oto-Laryngology, Chicago

May

159 Labyrinthine Nystagmus. J S. DeMuth, Pittsburg, Pa.
160 Trachoma. C B. Wylie, Chattanooga, Tenn.

Atlanta Journal-Record of Medicine

May

161 Diphtheria and its Relation to the Laboratory. K. R. Collins, Atlanta.
162 Tenotomy. T. Toepel, Atlanta.
163 Acute Infantilism. H. Mell Hull, Atlanta.
164 Hydrophobia, Its Prevalence and Prevention. H R. Slack, Lagrange, Ga.
165 Radium: Its Use in Some Cases. T E. Oertel, Augusta.
166 Value of Gonococcic Vaccine in the Treatment of Gonorrheal Arthritis. W. L. Champion, Atlanta.
167 Penetrating Wounds of the Chest and Abdomen. C. C. Abell, Texarkana, Tex.
168 An Unusual Case of Pneumonia. J. E. Sommerfield, Atlanta.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

June 11

1 The Operative Treatment for Preventing the Destructive Renal Changes in Hydronephrosis and Pyonephrosis. H Morris.
2 The Physiology of the Human Labyrinth. S Scott
3 Ear Ornaments of the Masai and the Natives of Kikuyu. J Bland-Sutton
4 Spinal Anesthesia in Infants and Children. H. T Gray
5 Papilloma Causing Hydronephrosis in a Horse-Shoe Kidney. J Morley
6 Rat Bite Fever. G. S. Middleton
7 *Interesting Case of Triplets. G Aldridge.

7. **Interesting Case of Triplets.**—On examining a primipara aged 28, Aldridge found presenting outside the vulva the foot and leg of a fetus. This he was able to deliver quickly and easily and found it to be a male mummified fetus of about 6 months' development. On further examination he felt a bag of membranes bulging at the os uteri and the head of a child presenting. The os being fully dilated, Aldridge ruptured the membranes and in about an hour delivered the patient of a living female child of about 8½ months' development. He then placed his hand on the abdomen to express the placenta, and after waiting some time with no result he again examined

the patient. The uterus had contracted firmly, but he could feel through the os the foot of another fetus protruding. This was gripped by the contracted uterus, and the patient, although uneasy, was having no pain. After waiting an hour he examined again and found the os uteri dilating and the leg as well as the foot of a fetus presenting. Gentle traction seemed to bring on pains, and in about 20 minutes he had delivered the woman of another fetus (male, mummified) of about four months' development. The placentæ were removed with difficulty. The two male fetuses were attached to one placenta, while the living child had a separate one. This was apparently a case of two ova, one of them double.

British Medical Journal, London

June 11

8 Pernicious Anemia Having Changes in the Spinal Cord. W. H. White.
9 Subacute Combined Degeneration of the Spinal Cord, Simulating Disseminated Sclerosis. B. Bramwell.
10 The Darran Explosion from a Medical Standpoint. T. L. Llewellyn.
12 *Circular or End-to-End Suturing of Arteries. E. A. Smith.
13 The Mechanical Effects of a Massive Right-sided Pleural Effusion. A. C. Geddes.

12. **End-to-End Suturing of Arteries.**—The method of end-to-end suture of arteries described by Smith is an evolution of the method set forth in his recent book on blood vessel surgery. The suture material used is silk, for a vessel as large as the human femoral artery, No. 0000; for one the size of the radial about half that thickness. In addition, some fine chromicized catgut, No. 1 or No. 2, according to the size of the vessel, is required. The silk is used from the reel, and it is essential to thread the needle from the convexity of its curve toward the concavity. The catgut should for convenience be in straight lengths, that is, never have been wound on a reel. Smith uses an apparatus for sterilizing silk or catgut by superheated alcohol vapor. The suture method is an adaptation of the quill suture, the quill being represented by the chromic gut. The desideratum is to bring two endothelial surfaces together, yet to have a suture that penetrates every coat of the vessel, but causes a minimum of bare suture material to impinge on the lumen. The method is described fully by the author.

Clinical Journal, London

May 18

14 Tuberculous Disease. F. C. Wallis.
15 Asthma. H. B. Shaw.
16 Pituitary Extract and Some of Its Effects. L. Williams.

Medical Press and Circular, London

May 18

17 Epileptic Manifestations in Childhood. O. Moon.
18 *Tuberous Sclerosis. J. S. Fowler and W. E. C. Dickson.
19 The Ninetieth Birthday of Miss Florence Nightingale. E. S. McKee.
20 The Use of Balsams in the Treatment of Cystitis and Gonorrhea. H. I. Berger.

18. **Tuberous Sclerosis.**—Tuberous sclerosis is a rare developmental disease, interesting pathologically, because of the peculiar association of a characteristic nodular sclerosis of the cerebral cortex, and tumors of the kidney, heart, skin and other tissues. The case Fowler and Dickson record was an infant, aged 1 year, who had apparently developed in a normal fashion. It was suddenly seized with convulsions, lasting for several hours. It was in a semicomatose condition, with slight convulsive movement of the face. Lumbar puncture showed that the cerebrospinal fluid contained 40 lymphocytes per cm. Otherwise the examination was negative. The child remained in an apathetic condition for three weeks without the supervention of any further symptoms, and the cells disappeared from the cerebrospinal fluid. She then developed an empyema, which proved fatal. During the whole of the child's illness her appearance was indicative of cerebral mischief, but the symptoms, though at first suggestive of tuberculous meningitis, were too indefinite to admit of any diagnosis being arrived at.

On post-mortem examination the brain showed numerous hard nodules, mostly in the cerebral cortex, the arrangement of the convolutions of which was not appreciably disturbed, nor was the pia arachnoid adherent over them. These nodules, a dozen or more on each hemisphere, and varying from the size of a pea to that of a small walnut, consisted of neuroglial overgrowth, with corresponding diminution of the nerve elements proper. The surviving nerve cells were increased in size and showed all stages of degeneration and disintegration. Numerous smaller nodules projected into the lateral ventricles. In the right auricular appendix of the heart there were two small nodules of rhadomyoma, the histologic appearances of which corresponded to the classical descriptions of this very rare tumor. No lesions of special importance, apart from empyema, were found in any of the other organs.

Journal Tropical Medicine and Hygiene, London

May 2

21 *Observations on Malaria. G. A. Woltendale.
22 The Etiology of Zymotic Enteritis. (Epidemic Diarrhea.) R. Vincent.

21. **Malaria.**—To prevent mosquitoes from biting, Woltendale (who lays claim to be one of the first to suggest seriously the mosquito theory of infection) found a phenol lotion, 1 in 60 or 1 in 40, also ol. eucalyptol ʒi to glycerin or olive oil ℥ii, useful applications.

Glasgow Medical Journal

May

23 The Effects of Moderate Doses of Alcohol. W. L. Reid.
24 Symmetric Keratodermia of the Extremities. J. C. Gray.
25 Aplastic Anemia. J. Carslaw and J. S. Dunn.

June

26 Color Perception and Other Visual Functions in Their Practical Aspects. F. Fergus.
27 Myxosarcoma of Upper End of Tibia—Osteomyelitis of Lower End of Tibia. J. G. Andrew.
28 *Epilepsy in Some of Its Gynecologic Aspects. W. J. Rutherfurd.

28. **Epilepsy.**—When between 15 and 16 years of age, Rutherfurd's patient began to menstruate for the first time. For three or four years previous to this she had had a fit at fairly regular four-weekly intervals, without the occurrence at any of these times of any menstrual flow. She had never had fits of any sort before the age of about 12 years, but has had them with regularity ever since. These fits were preceded by a cry and were accompanied by loss of consciousness and biting of the tongue, but never to her knowledge had she lost control of the rectal or vesical sphincter. In such a fit she occasionally fell heavily and sustained injury. At present, unless when held in check by appropriate medicinal measures, the fit occurs with regularity every month about a week before the onset of the menstrual flow, and with the one fit the tendency exhausts itself and does not reassert its presence until a full lunar month has elapsed. For a year or two, however, she had a series of single intermenstrual fits occurring exactly midway between the two periods; this was only at the onset of menstrual life, and she has not exhibited the phenomenon since.

She has now had four children, and always during the amenorrhea of pregnancy and of lactation she has found herself free from the fits, which recurred again and presented all their usual phenomena on her weaning the child. Menstruation has always been regular and absolutely free from pain, and particular inquiry failed to reveal any story of pelvic pain or of blood-stained discharge occurring at the middle of an intermenstrual period at any time in her life. Rutherfurd holds that such cases as these teach us that our conception of what does and what does not constitute *Mittelschmerz* must undergo considerable modification. In this case there was no pain, and apparently no discharge at the mid interval periods, but their place was taken over a considerable time by recurring explosions of nervous energy of the nature of true epilepsy. The sequence of events as evolved in subsequent years proclaimed the real dependence of such manifestations on the cyclical pelvic changes, and established their claim to be regarded as a form of *dysmenorrhea sine dolore* of the intermenstrual type.

Annales de Gynécologie et d'Obstétrique, Paris

May, XXXVII, No. 5, pp. 257-320

29 *Ligamentopexy in Treatment of Retroversion of the Uterus. (Denudation des ligaments ronds dans le traitement des rétroversions utérines.) L. Chevrier.
30 Tubal Pregnancy Compelling Hysterectomy. (Grossesses tubaires faisant corps avec la corne utérine et nécessitant l'hysterectomie.) A. Couvelaire and J. Mouchotte.

31 Thrombosis Following Injection of Collargol. (Thrombus vulvo-vaginal survenu au troisième jour des couches peu après une injection intra-veineuse de collargol.) M. Potocki.

32 •Prefetal Dilatation of Vagina in Breech Presentation. C. Sauvage.

29. **Treatment of Retroversion of the Uterus.**—Chevrier prefers the modified Doléris technic for ligamentopexy and gives ten illustrations of the method, especially of the way in which the finger wrapped in gauze stretches the lips of the incision in the peritoneum, permitting the round ligament to be drawn through and the loop sutured after what he calls median reinforcement.

32. **Stretching the Vagina in Advance of the Fetus with Breech Presentation.**—Sauvage stretches the vagina with the Champetier de Ribes bag to facilitate delivery. In 32 cases it enabled spontaneous delivery in all but four instances. When forceps are required, this preliminary dilatation aids materially; done cautiously it does not harm the mother, while the advantage for the child is beyond question. In primiparæ it generally promotes delivery and seems to reduce by 25 per cent. the mortality of the children while they are in a better condition, not having suffered from the traumatism of compression from the soft parts. He advises it also for shoulder presentation in primiparæ, and in multiparæ if the child is large, and gives the details of 50 cases in which this vaginal prefetal dilatation was applied.

Annales de l'Institut Pasteur, Paris

April, XXIV, No. 4, pp. 241-336

33 •Experimental Research on Exanthematous Typhus. C. Nicolle.

34 Glossina Palpalis and Trypanosoma Cazalboui in Upper Guinea. G. Bouffard.

35 Acetic Aldehyd Not a Normal Product of Alcoholic Fermentation. Trillat and J. P. Sauton.

36 Yeast Fungi in Connection with Acetic Aldehyd in Alcoholic Fermentation. Trillat and J. P. Sauton.

37 Presence and Utility of Boric Acid in Respect to Vegetable Life. (Bore chez les végétaux.) H. Agulphon.

38 Vaccination Against Anthrax. (Sur la vaccination anticharbonneuse par des bacilles très virulents préalablement mélangés dans le bouillon-culture du bacille pyocyanique.) J. D'Agata.

33. **Experimental Research on Typhus.**—The most important results of the research reported are that it proved possible to reproduce typical exanthematous typhus in monkeys; and that the transmission of the disease by the louse that infests human beings was demonstrated.

Annales de Médecine et de Chirurgie Infantiles, Paris

May 15, XIV, No. 10, pp. 321-352

39 Rare Forms of Congenital Hydrocephalus. V. P. Jankovsky.

40 Physiologic Variations in Composition of Milk. (Les variations physiologiques de la composition du lait.) P. Lassablière. Commenced in No. 7.

Bulletin de l'Académie de Médecine, Paris

May 24, LXXIV, No. 20, pp. 435-444

41 Operative Treatment in Mental Disease. (De la méthode chirurgicale en médecine mentale.) Picqué and E. Schwartz.

May 31, No. 21, pp. 445-496

42 Removal of Bullet Loose in Lumbar Spinal Cavity. T. Tuffier and J. Lucas Championnière.

43 Epidemic Poliomyelitis in France and Elsewhere. (Apparition sous forme épidémique de la paralysie infantile à Paris et sa banlieue en 1909. Notions fournies par l'étude des épidémies des autres pays et par la pathologie expérimentale.) A. Netter.

44 Abortive Local Treatment of Syphilis. H. Hallopeau.

Bulletins de la Société de Pédiatrie, Paris

April, XII, No. 4, pp. 189-244

45 The Acetic Sublimate Stool Test for Digestive Disturbances. H. Triboulet.

46 Meyer's Phenolphthalein Test in Nephritis. G. Paisseau, L. Tixier, H. Triboulet and C. Périneau.

47 Recovery from and Recurrence of Chorea. H. Triboulet and C. Périneau.

48 •Aggravation of Scoliosis by Exercise. (Les scolioses que la gymnastique aggrave.) M. L. Ombrédanne.

49 Pyloric Spasm in Infants. (Quelques considérations sur le pylorospasme du nourrisson.) H. Dufour.

48. **Form of Scoliosis Aggravated by Exercise.**—Ombrédanne has noticed that when some of the vertebræ have become wedge-shaped so that scoliosis has developed, any attempt to bend the spine forward causes torsion. Scoliosis due merely to muscular insufficiency or deformity of the intervertebral disks, without deformity of the bone corrects itself as the spine is bent forward, and gymnastic exercise is the most essential factor in treatment. But in scoliosis with wedge-shaped vertebræ, the deformity increases as the spine is bent forward; every such movement aggravates the lesions and deformity and should be strictly forbidden.

Lyon Médical, Lyons

May 8, XLII, No. 19, pp. 989-1029

50 •To Render Dietetic Restrictions Less Onerous. (Gouter sans avaler.) P. Aubert.

May 15, No. 20, pp. 1030-1068

51 Sugars in Infant Feeding. (De l'emploi de lactose et de quelques sucres autres que le lactose dans l'alimentation courante du nourrisson.) M. Péhu and C. Porcher. Commenced in No. 19.

May 22, No. 21, pp. 1069-1108

52 Ligation of Common Carotid. Desgouttes.

53 Technic for Roentgen Ray Diagnosis of Gall-Stones. (La radiographie appliquée à la recherche des calculs biliaires.) F. Arcelin.

50. **Sham Feeding for Diabetics and Others.**—Aubert has found that diabetics and persons requiring a salt-poor diet are able to enjoy the pleasures of the table by apparently eating and chewing the food at will, but expelling it finally from the mouth, not swallowing it. He advises this for a time when such patients seem to feel the necessary dietetic restrictions too keenly.

Presse Médicale, Paris

May 28, XVIII, No. 43, pp. 401-408

54 Modern Diagnostic Methods Applied to a Cancer of the Bronchus and Lung. (Cancer broncho-pulmonaire.) L. Rénon, E. Géraudel and L. Marre.

55 Radiography of the Appendix Vermiformis. (Radiographies de l'appendice ileo-caecal sur le Vivant.) P. Aubourg.

June 1, No. 44, pp. 409-416

56 •Eclampsia and Morphin. J. Rouvier and Laffont.

June 4, No. 45, pp. 417-424

57 Paroxysmal Hemoglobinuria in the Horse Following Chilling. (Hémoglobinurie paroxystique à frigore du cheval.) A. Lucet.

58 •Ptosis of the Cecum. G. Lardennois.

59 Lesions and Pathogenesis of Microcystic Degeneration of the Ovaries. E. Forgue and G. Massabuau.

60 Advantages of Prolonged Anesthesia with Ethyl Chlorid: 75 Cases. M. Boureau.

56. **Eclampsia and Morphin.**—Rouvier and Laffont state that recovery was much more rapid and complete in their cases of eclampsia in which they used morphin, injecting 0.01 gm. at a time, repeated from 3 to 5 times at 3 or 4 hour intervals, supplemented by inhalation of chloroform and copious rinsing out of the stomach and intestine. They give the details of 2 cases, emphasizing the rapid subsidence of coma and the prompt recovery; with other measures the patients were several days recovering complete consciousness.

58. **Ptosis of the Cecum.**—Lardennois remarks that the disturbances from ptosis of the cecum have frequently been erroneously ascribed to wandering kidney, ovarian cysts, tubo-ovarian varicocele, displacement of the uterus, neuralgia or neuropathies, but once suspected the symptomatology is instructive. The pain, oppression and dragging down sensations are below McBurney's point, and the cecum may be felt as a soft, fluctuating tumor; it gives a relatively dull note on percussion during a painful attack, with gurgling sounds as the attack subsides. He adds that the pathognomonic sign is that when the contents of the ascending and transverse colon are pushed back toward the cecum, this causes pain in the right half of the pelvis, while the pain disappears if the contents of the prolapsed cecum are gently worked along from below upward, toward the colon. Dietetic measures, massage and exercise of the abdominal muscles are the main reliance in treatment for the milder forms, and he is convinced that many cases of supposed chronic appendicitis in which a cure was realized by massage and purgatives were in reality merely cases of ptosis of the cecum.

If in operating on an inflamed appendix the cecum is found much over 4 inches long, he advises fastening the cecum to correct any tendency to ptosis later. This should also be advised if the disturbances persist unmodified by medical measures and massage.

Revue de Chirurgie, Paris

May, XXX, No. 5, pp. 751-966

61 •Primary Sarcoma of the Articular Synovial Membranes. F. Lejars and H. Rubens Duval.

62 •Fatality During Momburg Belt Constriction. (Mort subite au cours de l'hémostase par le procédé de Momburg.) G. Gross and A. Binet.

63 Traumatic Radicular Paralysis of the Brachial Plexus. Vandenbossche.
64 *Continuous Oxygen Irrigation of the Abdomen in Abdominal Surgery. (Emploi du courant continu d'oxygène en chirurgie abdominale.) T. Weiss and L. Seneert. Commenced in No. 4.
65 Operative Treatment of Cancer of the Testicle. M. Chevassu. Commenced in No. 4.

61. **Primary Sarcoma of the Articular Synovial Membranes.**—The lesion develops very insidiously, it is extremely indolent and does not interfere with the movements of the joint; from 2 to 13 years had elapsed before operative treatment in the 16 cases on record. The results of conservative operations are not encouraging and Lejars deems amputation at once the wiser course or, at least, if the lesion shows signs of recurrence after a primary conservative operation. In the personal case reported and in 13 others the knee was the seat of the growth; in the others the ankle. The patients were between 20 and 40 years old in nearly every case. A history of trauma affecting the joint is mentioned in several instances.

62. **Fatality from Momburg Belt Constriction.**—In the case reported the rubber tubing was wound around the waist to prevent hemorrhage during disarticulation of the hip for a tuberculous process in knee and hip joint which had much debilitated the patient, a woman of 27, during the last two years. No abnormal sounds were heard over the heart. The constriction was applied very gradually and the operation terminated without mishap. The tubing was then unwound and in about a minute the patient collapsed. Autopsy showed the right heart acutely distended. This was favored by unsuspected fatty degeneration of the heart muscle and old mitral and aortic endocarditis. The case teaches the importance of applying and removing the tubing very slowly and cautiously to avoid sudden changes in the condition of the circulation. Willems has reported a case in which blood issued from mouth and nose during the belt constriction; Guinard, a case of blood-stained sputum; Pieri of intestinal hemorrhage; Kempf of gangrene of the thigh, and de Bovis, a fatality possibly due to the constriction.

64. **Continuous Current of Oxygen in Local Treatment of Abdominal Disease.**—The first part of Weiss and Seneert's communication was summarized in The Journal May 28, page 1829. They here give the details of sixteen cases out of a much larger mass of material to show the advantages of continuous irrigation of the interior of the abdomen with a constant flow of oxygen. It has abundantly demonstrated its usefulness, they say, as an aid to drainage, checking or preventing absorption from the abdominal cavity, stimulating peristalsis, especially when combined with proctoclysis, and exerting in general a stimulating action on the cardiovascular apparatus. They urge that it should rank with proctoclysis and lavage of the stomach as a routine measure in prevention and treatment of peritonitis, etc.

Revue de Médecine, Paris

May, XXX, No. 5, pp. 345-448

66 Nature of Osteomalacia. (Ostéopathie myélogène.) L. Bernard.
67 Mediastinal Pleurisy. J. E. Devic and P. Savy.
68 Epidemiologic Study of Acute Poliomyelitis. E. Job and J. Froment.
69 Inherited Syphilis and the Wassermann Reaction. I. Bertin and Gayet.

Berliner klinische Wochenschrift, Berlin

May 23, XLVII, No. 21, pp. 957-1000

70 *General Anesthesia by Means of Meltzer's Continuous Intratracheal Insufflation. C. A. Elsberg and H. Lilienthal.
71 *Modification of Technic for S. J. Meltzer's Method of Intratracheal Insufflation for General Anesthesia. E. Unger and M. Bettmann.
72 Three Cases of Congenital Inherited Paralysis of the Ocular Muscles. (Zur Kenntnis der angeborenen hereditären Augenmuskellähmungen.) H. Gebb and H. v. Voss.
73 Two Cases of Primary Gastric Sarcoma. W. Maschke.
74 Further Experiences with Intramuscular Injections of Menthol Eucalyptol in Bronchial and Pulmonary Disease. M. Berliner.
75 Congenital Cyanosis in Four Generations. (Morbus coeruleus bei vier Generationen.) O. Burwinkel.
76 Quantitative Determination of Inhibiting Body in the Wassermann Reaction. II. (Quantitative Hemmungskörperbestimmung bei der Wassermann'schen Reaktion.) J. Zeissler.
77 Experimental Research on the Action of Roentgen Rays on Young Cells. (Wirkung kleinerer und grösserer Röntgenstrahlenmengen auf junge Zellen.) H. E. Schmidt.
78 Partial Submucous Pyloroplastics. (Zur extramucösen Pyloroplastik.) W. Kausch.
79 Balneotherapy in Urinary Disease. Wasserthal.

70-71. **General Anesthesia by Intratracheal Insufflation.**—Unger and Bettmann have modified the Meltzer technic for respiration by intratracheal insufflation, the main feature of which is the use of a two-way tube carried down into the trachea to the bifurcation of the bronchi. This ensures constant evacuation of the used air (even without respiratory movements) which is the chief point of superiority of this over other technics for artificial respiration and for inducing differential pressure in the lungs in thoracic surgery. Instead of the apparatus devised by Elsberg for the purpose, they use an ordinary oxygen tank connected by a T tube with a Wolff flask containing a little ether, the flow of the mixed ether and oxygen being controlled by a valve. Their experiments with it have been encouraging. Elsberg reports two clinical cases in which the method with his apparatus was successfully applied in operative treatment of an abscess in the lung or pleura.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

May 19, XIII, No. 8, pp. 289-320

80 *Liver Abscess During or Consecutive to Typhoid. (Ueber Leberabscesse im Verlaufe und Gefolge des Typhus abdominalis.) E. Melchior. Commenced in No. 5.

80. **Abscess in the Liver in the Course of or Consecutive to Typhoid.**—Melchior critically reviews 94 articles that have appeared on this subject and tabulates the details of 25 cases of solitary abscess in the liver of typhoid origin. The prognosis is unfavorable when the abscess develops from spread of a typhoid cholecystitis or thrombophlebitis. The clinical picture of typhoid appendicitis resembles that of typhoid perforation of the bowel. In 5 cases the typhoid appendicitis was responsible for development of a pylephlebitic liver abscess, all fatal. Appendicitis complicating typhoid should be treated as under other circumstances; after the abscess in the liver has developed it is too late for an operation, as likewise when the abscess is of pyemic origin. With a solitary abscess, prompt operative treatment with ample outlet for the pus is showing constantly better results as the technic is being perfected. In the 12 operative cases all but 2 of the patients recovered, while only 2 recovered out of 9 patients under medical measures alone. Pneumonia in the superior lobe was observed as a complication in one case and severe diarrhea in another, but both patients recovered. The clinical picture of typhoid solitary abscess in the liver opens with high fever and pain in the liver region about two weeks after defervescence in a mild or moderate typhoid, generally in a male patient. In some cases there is a chill; jaundice is still rarer. The liver visibly increases in size and is usually tender. Contrary to what is observed with a pleural effusion, the excursions of the lower margin of the lung are not restricted. Typhoid cholecystitis generally comes on during the febrile phase of the typhoid and it is accompanied by symptoms of circumscribed irritation of the peritoneum, especially rigidity of the muscles over the gall bladder region. Exploratory puncture may be necessary; no harm resulted in the 8 cases in which it was done. The possibility of an abscess in the liver should be borne in mind when there is a history of a stay in tropical regions. Jaundice, especially when intense, speaks against a solitary abscess, but when the liver symptoms have persisted for two weeks or longer the evidence is in favor of a solitary abscess, as the other forms generally prove fatal before this.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 10, XL, No. 14, pp. 433-464

81 *Normal Blood Pressure in Children. (Praktische Bemerkungen über den Blutdruck und über Normalwerte des Blutdruckes im Kindesalter.) F. Seiler.

May 20, No. 15, pp. 465-496

82 *Analeptic Action of Alcohol in Pathologic Conditions. E. Alexandroff.

81. **The Blood Pressure in Children.**—Seiler is convinced that the general practitioner will find the blood pressure an important aid in the diagnosis and prognosis of pathologic conditions in children. He was hampered in his research on the subject by not being able to find any normal standard for the blood pressure in children of different ages and degrees of development, and consequently he has had a table of normal

standards compiled in his service. It represents extensive research and gives the age, the size in centimeters, the weight (with clothing) in kilograms, and the minimal and maximal findings with the Riva-Rocci and the Sahli instruments.

The table states that at the age of 2 and 3, the minimal Riva-Rocci findings range from 70 to 75 and the maximal from 75 to 80; at 4 and 5, minimal from 75 to 85 and maximal from 79 to 90; at 6 and 7, minimal from 72 to 87 and maximal from 85 to 95; at 8 and 9, minimal from 87 to 89 and maximal from 90 to 95; at 10 and 11, minimal from 87 to 90 and maximal from 93 to 96; at 12 and 13, minimal from 84 to 99 and maximal from 94 to 106; at 14 and 15, minimal from 88 to 98 and maximal from 93 to 104; and at 16 and 17, minimal from 95 to 110 and maximal from 103 to 120.

82. **Action of Alcohol During Febrile and Other Pathologic Conditions.** Alexandroff injected rabbits with diphtheria toxin or other infectious products and followed with injection of alcohol, the results confirming the effect of alcohol as observed in the clinic by Dennig, Hindelang and Grünbaum in respect to the injurious action of alcohol on the circulation during febrile conditions. The alcohol improves the respiration, he found, but this favorable effect is outbalanced by its unfavorable action on the circulation, the blood pressure dropping and the amplitude growing smaller although the pulse-rate may remain the same. The conclusions are that it is necessary to restrict the use of alcohol in febrile states, weighing in each individual case whether the euphoria that follows the use of alcohol outbalances the inevitable somatic injury.

Deutsches Archiv für klinische Medizin, Leipsic

XCIX, Nos 1-2, pp. 1-218. Last indexed April 16, p. 1344

83 Soap Crystals in Clay-Colored Stools. (Ueber die Seifenkristalle acholischer Stühle.) H. Boruttau and E. Stadelmann.
84 The Normal Eosinophile Blood Picture. (Ueber das normale eosinophile Blutbild.) J. Arneth.
85 *Variations in the Pulse-Rate Standing and Reclining. (Die Pulsfrequenz im Stehen und im Liegen.) R. Geigel.
86 Share of the Sympathetic Nervous System in the Innervation of the Head. (Beteiligung des sympathischen Nervensystems an der Kopfinnervation.) L. R. Müller and W. Dahl.
87 Changes in the Adjoining Endocardium with Aortic Insufficiency and Stenosis. (Veränderungen am Endokard der Pars aortica bei Insufficienz und Stenose des Aortenostium.) A. Wilke.
88 *Action of Epinephrin in Respect to the Tonicity of the Peripheral Vessels. (Adrenalinwirkung und peripherer Gefässtonus.) L. Lichtwitz and C. Hirsch.
89 Power of Hemoglobin to Combine with Oxygen. (Ueber das Hämoglobin in normalen und pathologischen Zuständen. II. Sauerstoffbindungsvermögen.) E. Masing and R. Siebeck.
90 *Traumatic Laceration of the Aortic Valve. (Traumatische Zerreissung der Aortenklappe, zugleich ein Beitrag zur Anpassungsfähigkeit des Herzmuskels.) E. Steinitz.
91 Gastric Digestion of Protein. (Ueber Proteolyse im Magen.) L. Kohlenberger.
92 Neutralizing Function of Ammonia in Urine. (Das Harnammoniak beim gesunden Menschen unter dem Gesichtspunkt einer ausschliesslich neutralisatorischen Funktion desselben, sowie die Bilanzverhältnisse zwischen Säuren und Alkalien im menschlichen Harn bei verschiedener Ernährung.) W. Klein and F. Moritz.

85. **Variations in Pulse Rate During Standing and Reclining.**—Geigel is convinced that unless the pulse is examined both as the patient stands and reclines the conclusions are liable to be erroneous as the rate may vary by 24 to 72 per cent. as the extremes; the average is under 30 beats. He has notes of the findings in 789 cases, the patients being examined in both positions. As a rule the pulse drops by 12 beats as the individual reclines. Even with exophthalmic goiter the pulse slowed by several beats as the patient reclined. It is his impression that unusually wide variations and acceleration of the pulse on reclining are signs of weakness of the heart. The effort of lying down may accelerate the pulse in some cases, he advises examination for this "negative" behavior on suspicion of heart disease, nephritis or neurasthenia, and urges double examination of the pulse, standing and reclining, in every clinical case.

88. **Action of Epinephrin on the Peripheral Vessels.** Lichtwitz and Hirsch removed the nerve controlling the vessels in the rabbit's ear and then tested the action of epinephrin on the vessels in this area. In all their experiments intravenous injection of epinephrin elsewhere had an exceptionally intense constricting action on the vessels in the region deprived of its nerves. Their experiments also showed the prompt antagonistic action of amyl nitrite. They suggest as a practical conclusion from their research that the continuous administration of small doses of a suprarenal extract offers prospects for successful treatment of paresis of the vessels in acute infectious diseases and also in postoperative collapse.

90. **Traumatic Laceration of the Aortic Valve.** One leaf of the valve was torn but the myocardium developed compensating hypertrophy which prevented serious disturbance from the isolated valvular lesion, permitting full earning capacity with heavy work for ten years when the symptoms of aortic insufficiency became more pronounced. The case is reported as a remarkable example of the way in which the myocardium can adapt itself to pathologic conditions.

Deutsche medizinische Wochenschrift, Berlin

May 26, XXXVI, No. 21, pp 969-1016

93 *General Anesthesia with Part of Circulation Shut Off. (Narkosen bei künstlich verkleinertem Kreislauf.) P. Franke.
94 Experiences with Various Types of Tuberculin in Treatment of Tuberculosis. G. Jochmann.
95 *Treatment of Chronic Congestion of the Brain. F. Lots.
96 *Favorable Influence of Roentgen Rays in Exophthalmic Goiter. (Zwei Fälle von Basedowscher Krankheit durch Röntgenstrahlen sehr günstig beeinflusst.) D. Kuchendorf.
97 Complement Content of the Blood with Cancer. (Ueber den Komplementgehalt des Blutes Krebskranker.) C. S. Engel.
98 *Improved Technic for Palpation of the Abdomen. A. Galambos.
99 *Experimental Stimulation of Milk Production and the Secretion of Milk in the Blazek United Twins. (Experimentelle Milchauslösung und Verhalten der Milchabsonderung bei den zusammengewachsenen Schwestern Blazek.) K. Basch.
100 *Thyroid Weakness and Sugar Hunger. (Schilddrüsenschwäche und Zuckerhunger.) A. Siegmund.

93. **General Anesthesia With Part of the Circulation Shut Off.**—Franke has applied the Esmarch bandage to the thighs or arms or both as a preliminary to chloroform anesthesia, according to Klapp's suggestion, and has been impressed with the advantages of thus shutting off the blood in these regions from the influence of the anesthetic, the anesthesia being induced with much smaller amounts of the drug than with the ordinary technic. The method cannot be used in case of varicose veins or eczema, joint and bone affections; it will evidently have to be restricted to healthy and vigorous limbs, but under these conditions he feels that it is destined to a wide sphere of usefulness, especially for correction of dislocations, fractures, incision of phlegmons and other brief operations. The patients passed under the influence of the chloroform without any phase of agitation and it was rare at any stage of the anesthesia. The breathing was always regular and there was no cyanosis nor salivation; the pulse rate increased a little after the band was applied and again when it was removed, in one case becoming a little irregular for 10 or 20 minutes. There was no vomiting in any case, either before or after the narcosis, and the patients roused in less than 10 or 15 minutes after suspension of the drug. The return to the circulation of the blood overladen with carbon dioxid exerted a pronounced stimulus on the respiration center, evidenced in each case by several deep breaths. There were no complaints of pain from the constriction. The bandage must be inelastic and applied according to Klapp's directions. (They were summarized in The Journal, Oct. 19, 1907, page 1408.) The aim is to shut off as much as possible of both venous and arterial blood; even one leg may answer the purpose. The pulse and general condition and the condition of the limb or limbs excluded from the circulation should be supervised every moment as with the Momburg belt constriction. A slight transient nervous disturbance was observed in one case in which the band had been left in place for two hours on both legs, and Grafenberg has recently reported thrombosis in 7 out of 75 cases in which the Klapp technic had been applied. The disturbances proved slight and transient, but they warn that vessels distended with blood are more liable to injury than when the Esmarch bandage is applied to a bloodless limb.

95. **Treatment of Chronic Congestion in the Brain.** Lots expatiates on the necessity for treating this condition by drawing the blood away from the head while striving to restore and enhance the elasticity of the middle coat of the cerebral arteries. For fifteen years he has been using a method of treatment which he thinks fulfills both conditions and he has recently had occasion to study the mechanism of its action on a young man with a large defect in the skull permitting direct observation of the behavior of the pulse. The treatment includes dry rubbing of the skin over the entire body with a coarse cloth, and trampling barefoot on a pile of fine gravel heated from below. This latter form of application of centripetal stimulation he calls *Kieslaufen*, "gravel

running," and every time it was applied the plethysmographic findings in the instructive case described showed the marked influence of the procedure in reducing the congestion in the head. It may be difficult to distinguish between the symptoms of congestion and those of anemia in the brain; everything that raises the blood pressure and tends to paralyze the middle coat of the arteries increases the disturbances in case of hyperemia in the brain while it reduces them in case of anemia. He warns that a history of syphilis in any case does not necessarily indicate that headache and vertigo are due to "brain syphilis"; they may be the result of simple congestion and mercury and iodid would only aggravate them. His barefoot "gravel running" can be repeated several times a day, up to a half hour each time.

96. **Benefit from Roentgen Rays in Exophthalmic Goiter.**—In the first of the two cases reported by Kuchendorf, part of the enlarged thyroid had been removed on account of cancer but there was prompt inoperable recurrence. Under Roentgen-ray exposures, however, the lesion retrogressed and with it the symptoms of exophthalmic goiter and after a month at Nauheim the patient, a young soldier, reported for duty and has been clinically in good health, with no signs of recurrence during the two years since. The results were equally good in the second case; the patient was a woman who had suffered from progressive symptoms suggestive of exophthalmic goiter for ten years, rebellious to the usual medical measures. As a last resort before thyroidectomy, the Roentgen rays were applied to the thyroid and heart four times each, and the palpitations subsided, as also the profuse sweats; the pulse became regular (78), the circumference of the neck is less by 3 cm. than before treatment, and the eyes no longer protrude so much, while the patient sleeps well and feels well and the dilated heart has returned to a normal outline. The last exposure was in February; whether the benefit attained is permanent or not, it was so striking that he calls attention to the case as suggesting a direct influence of the rays on the cardiac ganglia.

98. **Palpation of the Abdomen.**—Galambos depresses the abdominal wall with one hand, pushing the furrow thus made toward the organ to be examined. This relaxes the wall between the organ and the furrow so that the region is soft and more readily palpated. The hand must be pushed down gently into the depths, and the entire thickness of the wall worked down toward the organ in question. It is possible in this way almost to turn over organs to facilitate palpation.

99. **Milk Secretion in Both the Blazek United Twins After Pregnancy of One.**—See Berlin letter, July 2, page 39.

100. **Thyroid Deficiency and Sugar Hunger.**—Siegmund has encountered some cases in which an inordinate craving for sugar was the most striking sign of defective functioning on the part of the thyroid. He describes two cases in detail, one in a boy under 2, the other in a girl nearly 6. In both cases thyroid treatment restored conditions approximately to normal, emphasizing that the thyroid plays an important part in the sugar metabolism in certain cases. Children with this insatiable craving for sugar tolerate large amounts without the appearance of sugar or albumin in the urine. If thyroid treatment is not practicable they should be allowed all the sugar they crave, as it seems to mitigate the consequences of the thyroid insufficiency and seems to be an arrangement for defense in a certain form of thyroid weakness. The older child had suffered for years from severe diarrhea and was extremely debilitated; by the sixth day of thyroid treatment she walked several miles without fatigue, while the appetite became normal. He sometimes gave suprarenal juice in the place of the thyroid extract, finding that this advantageously supplemented the other. The benefit was equally striking in the second case, the children becoming absolutely transformed under the thyroid treatment.

Medizinische Klinik, Berlin

May 22, VI, No. 21, pp. 811-848

101 *Gonorrheal Epididymitis and its Treatment. C. Bruck.
102 Tuberculides. S. Gross.
103 The Pupil Reaction in Epileptic Seizures. (Beitrag zur Diagnose der Fallsucht.) F. Buchbinder.
104 Improved Technic for Staining Living Spirochetes. (Färbung der Spirochaeta pallida in vivo nach E. Meirowsky.) L. Zweig.
105 Modified Form of Turgo-Sphygmograph. (Ueber eine kompendiöse Form des Strauss'schen Turgo-Sphygmographen und Turgo-Tonographen.) F. Fleischer.
106 Advantages of the Uhlenhuth-Hune Antiformin Method for Determining Tubercle Bacilli in Sputum. K. Reicher.
107 Inhalation Therapy, with Special Reference to Mineral Saline Waters. (Ueber Inhalationstherapie mit besonderer Berücksichtigung der Soleinhalationen.) F. Krone.
108 *Treatment of Skin Diseases with Small Trephine. (Behandlung von Hautkrankheiten mit dem Hauttrepan.) P. Richter.
109 Mucous Casts in the Urine. (Zylindroide im Urin.) L. Bor
110 The Cobra-Venom Hemolytic Reaction. (Ueber die Kobragifthämolyse und die Much-Holzmannsche Psychoreaktion.) H. Selter and A. H. Hübner.

101. **Gonorrheal Epididymitis.**—Bruck expatiates on the importance of wearing a suspensory during gonorrhea and refraining from any excess which might aggravate the infection and lead to posterior urethritis. This is the more important as the majority of cases of epididymitis follow gonorrhea with inadequate treatment. The article issues from the university clinic at Breslau in charge of Neisser. In every case of acute febrile painful epididymitis the scrotum is sterilized with tincture of iodin and the tunica propria is incised; this relieves the pain at once and evacuates existing fluid. An alcohol dressing is then applied and if the fever subsides after a day or two gonococcus vaccine treatment is then instituted; this is especially useful in gonorrheal arthritis and epididymitis. The results have been particularly good in 50 cases of the latter. If there is no fever the tunica is not incised and the vaccine injection is made at once accompanying the first alcohol dressing. If the nodules do not subside, hot sand packs are applied for a few days to hasten absorption; if these fail, a dressing of adhesive plaster generally accomplishes the desired purpose. It is also the practice to give 3 mg. of atropin daily in every case of acute posterior gonorrheal infection to keep the prostate, seminal vesicles, etc., quiet and prevent dangerous retrograde movements. Even with already existing unilateral epididymitis, smaller doses up to 1 mg. daily are given for several days. This prophylaxis is not absolutely reliable, he remarks, but even if it succeeds in only a few cases the measure is justified as sterility is said to follow unilateral epididymitis in 40 per cent. of the cases and in 90 per cent. of the bilateral cases.

108. **The Skin Trephine.**—Richter has found extremely useful a small cylinder with a cutting edge. By twisting the cutting edge into the summit of a furuncle or other focus, the little disc of skin thus cut is easily removed and the scar left is minimal. This little skin trephine is also useful for obtaining blood for clinical diagnosis. He supplements the use of the trephine with a suction apparatus when the plug does not come away at once.

Münchener medizinische Wochenschrift

May 24, LVII, No. 21, pp. 1105-1160

111 *Rapid Instrumental Dilatation of the Cervix Uteri. (Entbindung durch rasche Erweiterung des Collum uteri.) M. L. Bossi.
112 The Third Left Convolution Plays no Part in the Central Mechanism of Speech. (Die linke dritte Stirnwindung spielt keine Rolle im zentralen Mechanismus der Sprache.) Niessl-Mayendorf.
113 *Superheated Air in Treatment of Erysipelas. (Behandlung des Erysipels mit heisser Luft.) C. Ritter.
114 The Meiostagmin Reaction with Cancer. (Die Meiostagminreaktion bei bösartigen Geschwülsten.) F. Micheli and F. Cattoretti.
115 Thirty Cases of Appendicitis within Two Months in a Boarding School. (Endemie von Appendizitis.) C. Hass
116 Premature Ossification of Costal Cartilages as Possible Roentgen Ray Injury. (Frühzeitige allgemeine Verknöcherung der Rippenknorpel eine Röntgenschädigung?) B. Wiesner.
117 Modification of the Wasserman Reaction. E. v. Dungern and Hirschfeld.
118 Intravenous General Anesthesia. (Zur Frage der intravenösen Narkose.) P. Sick.
119 *Prophylaxis of Uterine Cancer. (Gebärmutterkrebs und Aufklärung des Publikums.) F. Müller.

111. **Instrumental Dilatation of the Uterine Cervix.**—Bossi compares the various methods for rapid emptying of the uterus and states that nineteen years' experience with his metal bladed dilator has demonstrated that this method can be applied in nearly every case, even when there has been no change in the cervical passage, and without necessity for an assistant. The dilator has a natural labor-promoting effect as well as a mechanical action as it stimulates natural labor

contractions; but the obstetrician is not subject to Nature's caprices: with the steel dilator he is her master. The liability to laceration is the only objection to the method, and this injury is rare when the gravity of the cases demanding the rapid emptying of the uterus is taken into consideration. Even with spontaneous and forceps deliveries, he remarks, laceration is liable to occur, and cervical incisions cause deeper and certain lesions and danger of laceration of the uterus. None of the dilators in vogue has proved any improvement, he declares, over his original dilator, but it must be used strictly according to his directions, introduced under the guidance of the fingers, the fingers guarding the cervix while the dilator is in place; the blades should be spread only very gradually, and only during a pause between the labor contractions. He has applied the dilator in 480 cases and 454 of the mothers were saved and all but 60 of the children. The main point is to refrain from haste, except in extreme emergencies. He takes from 15 minutes to an hour and a half to dilate the cervical canal sufficiently for extraction of the child. This he does generally with forceps and at once; the cervix dilated in this way is liable to contract soon again. Chloroform can be given, he says, without harm, and general anesthesia is directly indicated in eclampsia requiring rapid emptying of the uterus. If the forcible dilatation is to be merely preliminary to spontaneous delivery, he places the patient in a horizontal position after a few energetic contractions have been observed and holds the dilator in place with a bandage, spreading the branches a trifle occasionally to keep up the stimulus, and removing the instrument when delivery is impending, replacing it if the contractions become weak again.

113. **Superheated Air in Treatment of Erysipelas.**—Ritter has applied the hot-air douche in treatment in 19 cases of erysipelas and states that the rapid recovery was striking. The jet of superheated air was applied to the spot for half an hour to an hour two or three times a day. Absorption is promoted to such an extent that there is generally a slight rise of temperature afterward. The lesions were usually on the face and neck; when other parts of the body were involved he used the hot-air box or chamber (or a hot flat-iron).

119. **Prophylaxis of Uterine Cancer.**—Müller gives an illustration of a circular which he hands to every patient and has printed on the back of the certificates, etc., he makes out. It states in display type that every woman should apply to a physician at once for examination in case of irregular bleeding, especially after marital intercourse and during the change of life and afterward, and in case of an ill-smelling discharge that looks like water in which meat has been rinsed. The text concludes with the statement that cancer of the womb is permanently curable but only by an operation done at the right time; that is, when the patient applies to a physician as early as possible.

Therapeutische Monatshefte, Berlin

May, XXIV, No. 5, pp. 225-280

120 *Importance of Absolute Repose in Treatment of Pneumonia (Zur Behandlung der Lungenentzündung.) Volland.
121 Importance of Silence in the Cure of Laryngeal Tuberculosis. (Zur Schweigebehandlung der Kehlkopftuberkulose.) E. Ebstein.
122 *Scabies and Nephritis. Braune.
123 *Operative Treatment of Diffuse Meningitis. G. Krebs.
124 *Treatment of Spasm of the Glottis by Exclusion of Milk from the Diet. (Behandlung des Stimmritzenkrampfes mit kuhmilchfreier Ernährung.) F. Fischbein and L. Langstein.
125 Behavior of Peroxids in the Gastrointestinal Tract. (Verhalten der Superoxyde im Verdauungstrakt.) K. Boas.
126 *Indications for Mercurial Treatment in Simple Atrophy of the Optic Nerve. (Indikation für die Quecksilberbehandlung bei der einfachen Sehnervenatrophie.) Schultz-Zehden.

120. **Absolute Repose in Treatment of Pneumonia.**—Volland has been teaching since 1893 the importance of absolute bed rest in the dorsal decubitus in pneumonia and pleurisy and declares that both theory and practice confirm the great value of this measure. He does not have the patient move at all and does not let him sit up even to be examined, not wishing to allow the weight of the consolidated lung to drag down on the diaphragm or pull on the sound parts of the lung. The pneumonic lobe loses all its elasticity and acts like a heavy weight, traction from which is liable to do serious harm to the blood and lymph vessels and to the air cells. He thinks the physician can judge of the case well enough without the necessity for thorough physical examination of the lungs. As the patient lies on his back the inflamed part of the lung has a firm support against the rear wall of the thorax and the patient feels easier in this position. Treatment should aim to relieve pain, promote expectoration but reduce the impulse to cough, keep the fever down with local cold applications and stimulate the heart at need.

122. **Scabies and Nephritis.**—Braune encountered three cases of nephritis accompanying scabies and discusses whether there is a causal connection between them or between the nephritis and the beta-napthol or balsam of Peru used in treatment of the scabies. In these and in a number of similar cases in the literature the nephritis did not develop until after the scabies had entered an eczematous stage. It seems probable that the scabies is able to aggravate an already existing nephritis but the matter is still obscure, and he urges systematic examination of the urine before, during and after treatment of the scabies in order to get an insight into the factors responsible for the nephritis.

123. **Operative Treatment of Diffuse Meningitis.**—Krebs' patient was a woman of 34 who developed middle ear disease with an insidious onset and perforation of the tympanic membrane by the end of three months. A large extradural abscess was evacuated two weeks later but symptoms followed typical of internal ear disease and meningitis, rapidly progressing to paralysis and coma and the patient was apparently moribund. The middle cranial fossa was opened and then the posterior; the cortex was congested and swollen but no suppuration could be found; on account of a tendency to hemorrhage from the sinus petrosus no attempt was made to open into the labyrinth. The meningitic symptoms rapidly subsided and recovery was soon complete. The case is cited as encouraging operative treatment in every case of meningitis originating in middle ear disease when the pulse and respiration permit the hope that the patient will leave the table alive. The case further warns that the findings in the cerebrospinal fluid are liable to be misleading and that lumbar puncture may be dangerous, as withdrawal of 2 or 3 c.c. of a slightly turbid fluid, which dripped slowly, was followed by immediate collapse requiring six hours of active measures for resuscitation. Kümmell has reported a case of traumatic meningitis with the fluid like thick pus and yet the patient recovered. Schlesinger has reported a case in which the meningitis became worse after lumbar puncture. Krebs lost three patients while waiting after exposure of the dura; he now makes a practice of incising the dura at once if there are signs of pronounced meningitis. The opening must be ample; hernia of the brain is equally liable with a small as with a large incision, so he makes a large crucial incision and on suspicion of an abscess in the brain inserts the scalpel at several points in the temporal lobe and cerebellum. He did not change the dressings for a week in the case reported. Saline transfusion of 500 gm. was made before and after the operation. The patient was discharged cured in three weeks but the pulse persisted small and fast for months longer.

124. **Treatment of Spasmophilia by Excluding Cow's Milk from the Diet.**—Fischbein insists anew that the change from cow's milk to a carbohydrate, starch diet is often a life saving measure with spasm of the glottis and general convulsions in the spasmophilic diathesis. He asserts that the prompt influence from this change in diet may differentiate disturbances from this cause when the symptoms otherwise suggest meningitis or otitis media. It is also useful in controlling the spasms in whooping cough. Langstein warns, however, that the starch diet may have a pernicious effect with infants suffering from severe gastrointestinal disturbances. Breast milk is alone permissible in these cases. He doubts further whether the spasms in whooping cough are amenable to this measure although conceding that they generally develop on the basis of the spasmophilic diathesis. Eckert has reported excellent results from lumbar puncture.

126. **Mercurial Treatment of Atrophy of the Optic Nerve.**—Schultz-Zehden reviews what has been written on experi-

mental and clinical injury of peripheral nerves by mercury, especially injury of the optic nerve, and then relates his experiences with mercury in treatment of atrophy of the optic nerve with and without an organic nervous affection. His conclusions are all in favor of a mild cautious course of mercurial treatment in simple atrophy of the optic nerve, and above all when there is a history of syphilis and the optic atrophy is the only symptom. Remission of the symptoms in tabes may also be realized under mercurial treatment if there is a history of syphilis, the Wassermann reaction positive or, if negative, a history of inadequate specific treatment, and when the state of nourishment and absence of physical and mental stress augur well for the treatment. The dosage should be mild and cautious, never pushing the mercury, and the field of vision and visual acumen should be constantly supervised.

Virchows Archiv, Berlin

May, CC, No. 2, pp. 193-384

127 Cancroids. A. Calderara. Commenced in No. 1.
128 Case of Lime Incrustation of the Lungs. (Fall von Kalkinkrustation der Lungen mit Fragmentation der elastischen Fasern.) G. A. Pari.
129 *Inhalation of Coal Dust by Children. (Ueber die Staubinhalation bei Kindern.) S. Shingu.
130 The Iron Reaction of Lime-Containing Tissues. (Zur Frage der Eisenreaktion kalkhaltiger Gewebe, insbesondere des Knochens.) M. Sumita.
131 Behavior of Bone Marrow During Children's Diseases. (Ueber das Verhalten des Knochenmarkes bei verschiedenen Erkrankungen des Kindesalters.) J. Lossen.
132 Permeability of Normal Intestine Wall for Minute Particles. (Ueber die Permeabilität der normalen Darmwand für kleine Körperchen.) W. C. A. Arbelter.
133 Tuberculosis of Parotid Gland. (Fall von Parotistuberkulose als Beitrag zur Frage der Genese der tuberkulösen Riesenzellen.) R. Klotz.
134 Two New Cases of Congenitally Abnormally Large Parietal Foramen. A. Maciesza.
135 Eye Changes with Leukemia. (Ueber Augenveränderungen bei der akuten und der chronischen Leukämie.) P. Verderame.

129. **Soot in Children's Lungs.**—Shingu examined the lungs from 22 children at Berlin to determine the presence of particles of coal dust, and found them constantly in all the children over 23 days old. The amount was not always proportional to the age.

Zeitschrift für Urologie, Berlin

May, IV, No. 5, pp. 231-400

136 Pathology of Gonorrhea in the Male. (Beiträge zur Pathologie der Gonorrhoe des männlichen Urogenitalkanals und seiner Adnexe.) G. Rost.
137 Incontinence of Urine from Urethral Stricture. (Zur Incontinentia urinae infolge von Striktur der Harnröhre.) D. Kokoris.
138 Blood Pressure in Diagnosis and Prognosis of Surgical Kidney Disease. (Bedeutung der Blutdruckmessung für Diagnose und Prognose chirurgischer Nierenkrankheiten.) C. Adrian.

Zentralblatt für Chirurgie, Leipsic

May 28, XXXVII, No. 22, pp. 769-792

139 *Technic for Change of Position of Enlarged Thyroid. (Zur Technik der Kropfdislokation.) C. Arnd.
140 *Etiology of Traumatic Ossifying Myositis. P. Ewald.

June 4, No. 23, pp. 793-816

141 *Improved Technic for Nephropexy. (Zur Operationsmethodik der Nephropexie.) L. Casper.

139. **Therapeutic Displacement of Enlarged Thyroid.**—In the case reported by Arnd, the left half of the goiter with the parathyroids had been removed, but mechanical disturbances persisted and increased, the lower right half compressing the trachea. Its operative removal seemed hazardous on account of possible injury to the remaining parathyroids. Arnd separated the enlarged thyroid from the trachea and ligated the superior artery. He then separated the sternomastoid from the cleidomastoid upward from the clavicle and pushed the smooth thyroid tumor through the resulting slit. It pushed through readily and was held firmly by the muscles without suturing.

140. **Etiology of Traumatic Ossifying Myositis.**—Ewald suggests that possibly the synovia forced into an adjacent broad fleshy muscle by the trauma may be responsible for starting the ossifying process. It seems to develop only under such circumstances.

141. **Nephropexy.**—Casper incises the fibrous capsule and shells the kidney out of its adipose capsule. He then pushes the capsule back and down, cutting it off about 1 cm. from the hilus in front, and cutting all the upper half in the [illegible]. The remaining rear half of the fibrous capsule is then folded together and sutured to the quadratus lumborum in such a way that the upper part of the kidney, or at least half of it, is brought beneath the costal arch. No suture is passed through the parenchyma of the kidney, but the two thongs the fibrous capsule sustain the kidney until adhesions develop between its rear raw surface and the quadratus lumborum and the front raw surface and the abdominal wall. He has performed this operation for wandering kidney in 19 cases, and for nephritis causing anuria, colics or hematuria in 10 other cases. One patient with extremely contracted kidney died. In all the other cases the kidney grew solidly to its environment.

Zentralblatt für Gynäkologie, Leipsic

May 28, XXXIV, No. 22, pp. 721-752

142 Question of Necessity for Legal Regulation of Artificial Abortion. (Zur Frage der Notwendigkeit gesetzlicher Bestimmungen für den künstlichen Abortus.) H. Peters and R. Blumm.
143 Local Anesthesia in Treatment of Endometritis and Abortion. A. Krantz.

June 4, No. 23, pp. 753-800

144 Improved Laparotomy Retractor. (Neuer Bauchdeckenhalter.) C. Logothetopulos.
145 Anaphylaxis in Etiology of Eclampsia. (Zur Theorie der Eklampsieätiologie.) J. Thies.
146 *"Prophylactic Method" in Treatment of Eclampsia. W. Stroganoff.
147 *Recovery from Puerperal Eclampsia After Decapsulation of the Kidney. (Ein durch Nierendekapsulation geheilter Fall von puerperaler Eklampsie.) K. Baisch.
148 *Isolation of Stumps of Uterine Adnexa in Laparotomies for Gynecologic Disease. (Neue Technik beim gynäkologischen Laparotomien.) E. Solms.
149 Obstetric Rachiotomy Superior to Decapitation. (Rhachiotomie – Rhachioklast.) V. Caliri.

146. **Prophylactic Method of Treating Eclampsia.**—Stroganoff reaffirms the efficacy of his method of treating eclampsia by keeping the patients under the influence of morphin, chloral and chloroform, with heat applied to feet and kidney region, milk by the rectum or mouth, and avoidance of any irritation. The details of his method were given in The Journal, July 3, 1909, page 86, and Sept. 20, 1902, page 733. The mortality of the mothers has been 6.6 per cent. and of the children 21.6 per cent. in the 400 cases of eclampsia in which this method has been followed. He here describes his experience with it in some test cases at Vienna, urging that its systematic application would reduce the mortality below 2 per cent. as he has done in several long series of cases, without any necessity for hastening delivery or for decapsulation of the kidney.

147. **Decapsulation of the Kidney in Eclampsia.**—Baisch commends decapsulation of the kidney as the most potent and reliable means of stimulating diuresis at our command. In a case reported in detail the primipara was apparently moribund; the eclamptic seizures, coming on after spontaneous delivery, were so severe that artificial respiration was required for a long time after each; the pulse was soon 120 to 130, the blood pressure 150 mm. and only 248 c.c. of urine with albumin 15 per thousand, were obtained in 19 hours. There were no further seizures after the decapsulation and the coma subsided at once; by night 100 c.c. urine with 3 per thousand albumin had been passed.

148. **"Isolation of the Stumps" of the Adnexa.**—Solms draws the stumps down into the small pelvis and shuts off the open abdominal cavity completely, providing for drainage at [illegible] with openings in the front and rear roof of the vagina. The fundus of the uterus is drawn over forward and fastened to the vaginal wall, incised for the purpose. The [illegible] that all raw parts are excluded from the peritoneal cavity and the secretions from the isolated stumps are [illegible] into the vagina. He says that the method can be applied to the uterus also after myomectomy, etc., and that it obviates danger of infection of the peritoneum from any processes in the genitalia.

Zentralblatt für innere Medizin, Leipsic

May 28, XXXI, No. 22, pp. [illegible]

150 The Heart Rhythm in Dogs and Cats Not Modified by Destruction of the Keith-Flack Node. (Bedeutung des Keith-Flackschen Knotens für den Herzrhythmus.) T. Jaeger (Chicago).

June 4, No 23, pp 569-600

151 *Combined Oxygen-Epinephrin Inhalation Method of Treatment of Bronchial Asthma. (Sauerstoff-Adrenalintherapie des Asthma bronchiale.) J Segel

151. **Oxygen-Epinephrin Treatment of Bronchial Asthma.**—Segel has an arrangement by which the patient inhales oxygen mixed with 1 c.c. of a 1 per thousand solution of epinephrin and reports two cases in which these inhalations promptly cured severe bronchial asthma, persisting since early childhood, refractory to all other therapeutic measures. The combined oxygen-epinephrin treatment gave remarkable relief in one or two applications and after thirty in the course of two months the cure seems to be complete. The first patient was a woman of 51, the other a girl of 16. A single sitting was followed by a night free from asthma, for the first time in years. The second patient is still taking one sitting a week. He declares that this simple inhalation method justifies the strongest hopes, and it should certainly be given a trial. He experimented with it on himself for weeks until convinced that the combined oxygen-epinephrin inhalations were free from any influence on the blood pressure and untoward by-effects.

Policlinico, Rome

May 22, XVII, No 21, pp 643-674

152 Cultivation of Leishman Bodies in Blood from the Spleen with Addition of Citric Acid (Sulla coltivabilita della Leishmania infantum nel sangue splenico infetto citratato.) A. Longo

May 29, No 22, pp 676-706

153 *Sodium Carbonate and Acetic Acid Seroreaction. (Su di una nuovissima e facile siero ed emoreazione col carbonato di sodio e l'acido acetico dilutissimi e sul suo insigne valore semiologico e prognostico.) F Rivalta. Concluded in No 23.

May, Surgical Section No 5, pp 193-240

154 Lipomas on Skull or Foot (Lipoma a sede rara.) G. Serafini.

155 Epithelioma Derived from Basal Cells. (Contributo alla conoscenza dell'epitelioma delle cellule basali.) V Gaudiani.

156 Experimental Research on Defensive Action of Constriction Hyperemia (Ricerche sulla azione difensiva della stasi.) M Almagia and B Tata.

153. **Acetic-Acid Seroreaction.**—Rivalta published in 1904 a method of distinguishing between transudates and exudates by the precipitation of the globulins in the fluid by a weak solution of acetic acid. If a drop of the fluid to be examined is dropped into a glass containing 100 c.c. of water with which two drops of glacial acetic acid have been mixed, the drop of organic fluid leaves a trail like a little smoke as it sinks down through the water. He now announces that this test slightly modified can be used for the diagnosis and prognosis in various conditions, the positive reaction in an extremely weak dilution of the acetic acid indicating the resisting powers of the organism, as estimated by the ability to produce globulins. In health serum gives the reaction at 1:150 or 1:300 but in pneumonia the figures were 1:400 up to 1:2500; in 19 cases of typhoid up to 1:900. The lower the figure the graver the prognosis as a rule, the increase of the globulins in the blood showing the active processes of defense going on. He describes the technic for both the serum and the blood test, but the former is simpler. While the blood is clotting, he mixes one drop of a saturated solution of sodium carbonate with 100 c.c. of distilled water and in another glass two drops of glacial acetic acid with 100 c.c. of distilled water. Then 0.5 c.c. of the serum is transferred to a test tube which is then filled to 10 c.c. with the sodium carbonate solution. This is the mother serum solution and a drop is taken on a glass rod, held vertically, and transferred to the acetic acid solution, it drops from the rod in the form of a white ring, best seen by artificial light. The serum is diluted again and again to determine the extreme limits of the reaction. He relates his experiences with it in a number of cases.

Hospitalstidende, Copenhagen

April 13, LIII, No 15, pp. 417-440

157 Two Cases of Multiple Syphilitic Atrophy of the Skin (To Tilfaelde af postsyfilitiske multiple Hudatrofier.) H Petersen

April 20, No 16, pp 441-464

158 Carbon Dioxid in Regulation of Lung Ventilation (Om Kulsyre som Regulator i Organismen og Aarsagerne til kirurgisk Shock.) A Krogh

April 27, No. 18, pp 489-512

159 Favorable Results of Roentgen Ray Treatment in 3 Cases of Hemorrhagic Uterine Myoma J Jensen. Commenced in No 17.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Die Röntgentherapie in der Dermatologie. Von Dr. Frank Schultz, Privatdozent, Oberarzt der Abteilung für Lichtbehandlung an der Kgl. Universitätspoliklinik für Hautkrankheiten zu Berlin. Paper. Price, 6 marks. Pp. 143, with 130 illustrations. Berlin: Julius Springer, 1910.

The Evidence of Plague Infection Among Ground Squirrels. By George W. McCoy, Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service. Paper. Pp. 8. Washington: Government Printing Office, 1910.

Diagnostisch-therapeutisches Taschenbuch der Tuberkulose. Ein Leitfaden für den praktischen Arzt. By Dr. D. Epstein, Kief, Russia. Cloth. Price, 5 marks. Pp. 143. Vienna: Urban & Schwarzenberg, 1910.

Tuberculosis or Consumption and How to Avoid It. Lessons for School Children. Provided by Dispensary Aid Society of Tuberculosis League of Pittsburg. Paper. Pp. 48, with illustrations.

Studies from the Rockefeller Institute for Medical Research. Reprints. Volume X. Paper. Pp. 277. New York: The Rockefeller Institute for Medical Research, 1910.

Die Orthopädie des praktischen Arztes. Von San.-Rat Dr Georg Müller, Berlin. Paper. Price, 8 marks. Pp. 258, with 151 illustrations. Vienna: Urban & Schwarzenberg, 1910.

Die Praxis der lokalen Anästhesie. Von Dr. Artur Schlesinger, Berlin. Cloth. Price, 5 marks. Pp. 160, with 22 illustrations. Vienna: Urban & Schwarzenberg, 1910.

New Patents

Recent Patents of Interest to Physicians

950065.	Surgical appliance. James N. Alexander, Pratt City, Ala
949749.	Microscope. Edward Bausch and W. L. Patterson, Rochester, N. Y.
949925.	Composition of matter to be used for the removal of superfluous hair. Cornelia J. Brown, Los Gatos, Cal
950435.	Obtaining proteocellulosic products. Henri L. J. Chavassieu, Lyons, France.
950436.	Separation of oxygen and nitrogen from liquid air. Georges Claude, Paris, France.
950139.	Water-purifier. Milton B. Cresswell, Des Moines, Iowa
950347.	Ozone generator. Robert W. Rice, Cleveland, Ohio.
950159.	Manufacture of trisodium phosphate with hydrated sodium carbonate. William E. Ridenour, Philadelphia.
950143.	Bandage. Earl H. Saxe, Lansdale, Pa.
950059.	Massage apparatus. Emma G. Sickels, New York City.
950121.	Cup or head for massage device. Charles M Siebert, Jr., Columbus, Ohio.
950357.	Extracting caffein. Heinrich Trillich, Munich, Germany
951044.	Combined hot-water bottle and syringe-reservoir. Sherman L. Axford, Burlington, Kan.
950738.	Nebulizer. Burton E. Baker, Hartford, Conn
950993.	Supporter. Mary M. Buchholz and M. A. Malloy, Spokane, Wash.
950658.	Opium ointment. Thomas H Cadenhead, Georgetown, Ga
951067.	Apparatus for recovering ether and alcohol. Charles Crepelle-Fontaine, La Madeleine lez Lille, France.
950816.	Respirator and the like. John Eriksson and P. M. Arvidson, Sollefteå, Sweden.
950484.	Attachment for poison-bottles. Lewis Inslee and C. M Hart, Amityville, N. Y.
950854.	Sanitary head-rest. Ernest E. Koken, deceased, St. Louis, Mo., W. F. Koken, executor
950822.	Hypodermic needle. Patrick J. McElroy, Cambridge, Mass
950514.	Abdominal belt and uterine supporter. Elizabeth M O'Mera, Providence, R. I.
950876	Sterilizer and water-heater. Albert R. Talbott, Ellis, Kan
950545.	Caster for operating-tables. Albert Taubert, New York.
950977.	Means for deodorizing and drying night-soil and the like. Ernest T. Welcome, Pittsburg, Pa.
40558.	Design, liquid-dispensing fountain. Frank W. Calvert, Narberth, Pa.
951560.	Surgical chair. Ilda Eaton, Aurora, Neb.
951634.	Compound of guaiacol and making same. Franz Elger, Basel, Switzerland.
951309.	Chiropodist's knife. Ammaroy Eskridge, Chicago, Ill.
951184	Catamenial bandage. Manly M. Gillam, New York City
13089.	Instrument for determining the position of an organ or the like within human bodies. J Gillet, Schoneberg, Germany.
951213.	Making sodium carbonate. Wilhelm Hasenbach, Mannheim, Germany
951564	Surgeon's and physician's case. Max P Hermann and C H. Wolff, Philadelphia
951413	Ozonizer. Oscar Linder, Chicago, Ill
951648	Abdominal fat reducing appliance. Albert M. Loughney, Seattle, Wash.
951195.	Otacoustic. Ernest May, Dusseldorf, Germany.
951285	Speculum. William Meyer, Chicago, Ill
951330.	Sanitary cuspidor for railway cars. John L. Oglebay, Rochester, Ind
951149	Artificial foot. James F Rowley, Chicago, Ill
951515	Attachment for physicians' operating tables. F H Solsem, Peterson, Minn
951749	Aspirator. Isidor Steiner, Munich, Germany
951160	Syringe. John W. Wainwright, New York City
951228	Decomposing salts. Jasper Whiting, Boston, Mass.
951789	Ozone generator. Frank M Ashley, New York City.
952307	Spirometer. Lysander D. Childs, Chester, S C
951989.	Artificial limb. James E. Hanger, Washington, D. C.
952248	Oxidizing atmospheric nitrogen. Henry Howard, Boston, Mass.
952365	Aseptic drinking cup. James G Sharon, Quincy, Fla
951803.	Pasteurizing apparatus. Henry E Weber, Canton, Ohio

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 3 CHICAGO, ILLINOIS July 16, 1910

THE RÔLE OF PEDIATRICS IN PREVENTIVE MEDICINE*

THOMAS S. SOUTHWORTH, M.D.
NEW YORK

Since my paper deals with no narrow specialty, but one which involves the application to youthful subjects of all the rapidly growing wealth of medical knowledge, I am aware that it will be a difficult matter to present the rôle of pediatrics in preventive medicine without trenching somewhat on the field of other speakers. As a specialty, it can scarcely be said to have been recognized in this country before the creation of a separate department for our distinguished colleague, Dr. Jacobi, at the College of Physicians and Surgeons of New York, in the year 1860. Before that time, and too largely thereafter, it was linked to obstetrics and diseases of women, with which subjects it had only a quasi connection, and in consequence its study was contracted and neglected. Having broken its bonds, however, and emerged from overshadowing obscurity, pediatrics to-day stands for the application of the same scientific methods of investigation to the immature organism of the child and the diseases to which it is liable, as are applied to the study of similar processes during mature adult life and the subsequent period of gradual senescent decay.

Nevertheless, although often referred to and practiced as a specialty, pediatrics belongs, not to the few, but essentially to all practitioners of medicine, for they, rather than the specialist, are called on to apply its teachings in family practice to the vast majority of infants and children.

To distort somewhat a well-known saying of Dr. Oliver Wendell Holmes, let me advance the view that preventive medicine, as applied to the child, should begin with the grandparents. Since, however, this carries me somewhat beyond the limits of the subject assigned to me, I must perforce begin with the birth of the child. Even at this starting point, the pediatrist finds himself disputing the territory at both ends of the social scale—at one end with the midwife, and at the other with the obstetrician. Great as is the disparity between both the knowledge and equipment of these two groups who assist in ushering infancy into this inhospitable world, suffice it to say that there is a growing feeling that greater effort should be made by both groups to secure maternal nursing, because their tenure of the field is sufficiently long to determine, often irreparably, the mode of the infant's nourishment. If breast feeding has been unnecessarily rejected, the pediatrist, when called in, must make the best of the situation as he finds it, but he cannot always retrieve the error. However, since in the majority of cases the family physician conducts the confinement and also subsequently cares for the child, we may assume that pediatric teaching governs the management of the infant from birth.

First and foremost, pediatrics deals with the nutrition of the infant, for unless it lives, science can do nothing further for its welfare. Aside from reasonable hygiene which so many healthy infants seem surprisingly able to do without, the first step in the preservation of life is suitable food. As the majority fed at the breast thrive and the more vulnerable among the infants were found among those artificially fed, early attention was inevitably centered on substitute feeding. Since cows' milk was the best available substitute for breast milk, every effort was made to render it more suitable.

The discovery of teeming myriads of bacteria in commercial milk led Soxhlet to propose sterilization, in the belief that to bacteria were due the noxious effects of cows' milk on the digestive tract of the infant. Pasteurization followed as an improved method of killing, but not necessarily rendering innocuous, the masses of bacteria with their toxins which abound in ordinary milk. Then followed the triumph of pediatric endeavor in the inauguration of the movement, destined to be world-wide, for the production of clean milk, the laurels of which we willingly share with other workers who have helped to make it a possibility. This work must suffer no abatement. Milk, fresh and uncontaminated, must be produced in increasing quantities for the use of all young children, yet even recently there have appeared those who, tinctured with commercialism and ignoring all other factors, have claimed for Pasteurization all that has been accomplished in the reduction of infant mortality. From the pediatric standpoint, the rôle of Pasteurization is and ever should be, to keep clean milk sweet until it is consumed, never merely to render a filthy milk somewhat less dangerous.

During the past decade, pediatric investigators have been restlessly and energetically active in perfecting infant feeding. The belief once cherished that an exact counterpart of human milk might be made from cows' milk was quickly shattered. Although normal infants throve in greater numbers on such mixtures, it was found that they must be adapted to the [illegible], the age, and the idiosyncracies of the individual infant. For such adaptations, rules of great value were formulated and proved, yet for the less normal digestions further studies seemed necessary. As a result, the theoretical structure on which infant feeding was first based has been torn down and rebuilt. The proteins, fats, and latterly the sugars and carbohydrates entering into the composition of bottle feedings, have been scrutinized, tested, and adjusted. As a consequence, it may now be confidently stated that the infant, fed intelligently according to modern American methods, has to-day a better chance both of life and well-rounded development than ever before in our history.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

As has been indicated, the purpose of nutrition is not only to preserve life, but to produce an uninterrupted and well-balanced development of the body. Gain in weight alone is not all that is required. Nature, as a rule, strives to do her work well, and if the conditions are favorable slights no part of it. But no workman can build well unless liberally supplied with proper material. The infant fed on condensed milk, for example, may be fat and apparently healthy, but Nature has been forced to do scamped work. In the usual dilutions, condensed milk is low in protein, lower in fat, and overrich in sugar. Such one-sided nutrition produces a development poorly fitted to withstand the effects of illness. Let it not be understood that this form of feeding is chiefly culpable. All artificial feeding holds this danger, partly because of its composition, partly because of the limitations of different infants in the digestion and absorption of individual elements in any food which replaces the natural breast milk. Such malnutrition, in greater or lesser degree, accompanies the ignorant home feeding, the carefully or carelessly yet faultily composed formulæ of many medical men, and the "just as good" substitutes of the patent-food makers. It is sometimes a question in my mind whether those errors of nutrition which are of lesser degree do not in their total produce more harm, since they are more frequent, less commonly detected, yet equally liable to leave their marks in some degree on their victims.

On the other hand, a body developed through proper, well-balanced nutrition, is not only less susceptible to diseases caused by bacterial invasion, but, if such occur, is better able to throw them off, and less liable to complications. When we realize the part played, not only by complications but by the other direct and indirect results of malnutrition in swelling the mortality figures among young children, the prophylactic importance of proper nutrition, in producing increased resistance becomes evident. Since we must all realize that the sturdy child possesses greater powers of protection and recuperation, it would hardly seem necessary to defend this principle; nevertheless innumerable instances of the effects of malnutrition present themselves to our minds.

With the marasmic infants digestive action is crippled, assimilation below par; slight errors in diet cause further disturbance; pulmonary diseases are readily acquired; hypostatic pneumonia is almost a specialty; furunculosis of a severe and debilitating type is not uncommon; suppurative conditions show little or no tendency to repair; the middle ear becomes affected on slight provocation; in the hot months, summer diarrheas more than decimate their ranks.

Rachitis, another form of malnutrition, varies so widely in the degree and distribution of its manifestations that the claim so often made that it is present in the large majority of bottle-fed infants seems to be substantiated when careful search is made. The classical bone changes, important as they are, do not manifest the sole influence of this common affection. The ligaments, the muscles, the nervous system, the respiratory tract and the intestine may likewise be affected and contribute to the symptomatology. Aside from such bone deformities as may influence the patient's appearance and bearing in later life, those of the thorax and pelvis are the most serious—the former increasing both the liability to and the danger from pulmonary disease; the latter, in the female, menacing in later years the life of both mother and child during parturition. The underdeveloped musculature of the rachitic child, causing him to creep long after he should have walked, keeps him longer exposed to the dust and draughts of the floor, and deprives him of normal exercise, which plays such an important part in healthy development. The underfed and unstable nervous system contributes through convulsions and laryngismus its own quota of danger, not only of death, but also of lasting paralysis if there be hemorrhage at the time of the seizures. The relaxed and disturbed intestinal tract of the rachitic furnishes frequently a favorable field for the development of serious enteric affections.

The third of this group, infantile scurvy, is happily so uncommon as to play a smaller part in infant morbidity and mortality than the other forms of malnutrition, but its comparative rarity increases the danger that it may not be recognized and receive appropriate treatment. No affection of infancy can, however, be traced with greater certainty to some deficiency in the elements of nutrition, and its increasing frequency from the too exclusive and prolonged use of proprietary foods warns us to be alert in its detection.

The pediatrist has a further important rôle, as the adviser of the mother in the care of her children. All that may be summed up under the comprehensive term hygiene is taught her either in answer to her questions or through the medium of the printed page. The influence of bathing, clothing, fresh air, exercise, and hours of sleep, in the building of a resistant body and in the prevention of disease, together with the necessity for their nice adaptation to the differing periods of infancy and childhood, need only to be mentioned to this audience to be appreciated.

It is also the privilege of the children's physician not only to treat disease, but to foresee and prevent it. Simple as seems this statement, an incalculable amount of benefit can be bestowed on humanity in this way. Aside from the countless ills which can be prevented by proper management of the feeding, anemia must be recognized and treated if the child is to escape the severer effects of the acute infectious diseases. Rachitis, already mentioned, which the parent invariably overlooks until its effects are marked and possibly irremediable, must be detected and checked. The prophylactic care of the teeth, so commonly neglected because of the division of responsibility with the dental surgeon, should be insisted on from their earliest eruption. Adenoids and hypertrophied tonsils, which are rarely brought to the attention of the throat specialist until they have already wrought injury to the child in one or more directions, should be recognized and removed. The popular view, so often advanced, that adenoids and tonsils will be outgrown, or that it is scarcely worth while to remove them since they may later recur, is, without question, the echo of evasive statements made by physicians, who, feeling themselves incompetent to perform these simple operations, were the more willing to defer them indefinitely.

In direct opposition to the views of certain rhinologic colleagues, I believe that the early removal of adenoid obstruction to nasal breathing favors the normal use and consequent expansion of the nasal passages, and lessens very materially the probability of the occurrence of those chronic hypertrophic obstructions within the nose which later make the removal of the adenoids ineffective in restoring nasal breathing. He believes that the view of the rhinologists, that conditions other than the adenoid are responsible for a large proportion of the mouth breathers, is due to the late age at which they see these patients, and that the opportunity to operate more frequently during the first and second years would soon cause a modification of their views.

Nor does our interest and supervision cease when the child passes from the home to the school, or, in the case of the less fortunate, to the workshop or the factory. Behind the educator, the inspector and the reformer, stands the pediatrist, who, from his more intimate knowledge of the child's development and limitations, directs their enlightened efforts for the betterment of conditions in these fields.

I have endeavored to outline briefly in the foregoing remarks the lamentable results of neglect, and the enormous opportunities of the pediatrist if he exerts a wise control over the growing organism of the child. The trite phrase that "as the twig is bent, the tree's inclined," had never truer application than to the youthful body. Pediatrics has reduced to a science this formative period of human life. Endless possibilities pertain to the conscientious application of our knowledge.

Extensive as is the debt which we owe to the laboratory and to the co-operation of other specialties, gratefully as we acknowledge their aid in combating disease and in insuring to the rising generation a better equipment for their struggle, nevertheless, the earliest and the ultimate responsibility falls on the children's physician, for to his hands they are confided by their parents, and on his judgment reliance is placed, not only to deal with the present, but to detect and remedy conditions and tendencies ere they assume a harmful or serious phase.

807 Madison Avenue.

THE NOGUCHI SERUM REACTION FOR SYPHILIS AS AN AID TO DIAGNOIS IN EYE LESIONS*

ALBERT E. BULSON, JR., B.S., M.D.
Professor of Ophthalmology in the Indiana University School of Medicine
FORT WAYNE, IND.

The serum diagnosis of syphilis as given to the world by Wassermann, Neisser and Brück[1] in 1906, has now become a well-established diagnostic method, generally used in all medical centers, and has proved of value in all fields of medicine.

The Wassermann method is an adaptation of the Bordet-Gengou phenomenon of complement deviation, in which the hemolytic system consists of a suspension of washed red blood cells of the sheep, hemolytic amboceptor made by immunizing rabbits to sheep's red blood cells, and as complement fresh guinea-pig serum. For syphilitic antibody the serum from suspected patients is used, and for antigen a watery extract of a liver of congenital syphilis known to be rich in *Spirochæta pallida.*

It has been pointed out that there is one factor of error in this method due to the fact that there is in human serum a variable amount of natural antisheep amboceptor which tends to produce hemolysis and hence a negative reaction in the presence of the smaller amounts of syphilitic antibody. To avoid this error Noguchi[2] has proposed a change in the hemolytic system. His modification consists in using human red blood cells, with antihuman serum from rabbits, instead of sheep's cells and hemolytic serum from rabbits as used by Wassermann. By the use of this antihuman hemolytic system the variable antisheep amboceptor of human serum is eliminated as a disturbing factor. Noguchi has also found it possible to prepare antigen, antihuman hemolytic amboceptor and guinea-pig complement, in the form of reagent papers which remain fairly stable so long as kept perfectly dry, thus simplifying the method without any sacrifice in accuracy. His views regarding the use of complement dried in paper have been modified within the past few months and now he considers it advisable to use the liquid complement whenever possible, the use of complement in paper to be reserved for emergencies.

The technic of the test is described in detail in Noguchi's work[3] and is quoted in brief as follows:

> Only about 2 c.c. of the patient's blood is needed and this may be obtained by puncturing the index-finger or lobe of the ear and collecting the blood in a small glass tube. The blood-clots and the serum separate in a few hours at room temperature. If the test is not to be made within two or three days the serum should be drawn off with a capillary pipette for storage.
>
> The corpuscle suspension can be prepared with the blood of a normal person. The blood is allowed to drop into a test tube of salt solution. The proportion should be one drop for each 4 c.c. The quantity of the suspension thus prepared is enough for one complete test, with some left over in case it is necessary to repeat the test. The suspension must be allowed to stand over night in a cool place, or is centrifugalized soon after collection, to separate the cells. The supernatant fluid is carefully poured off and replaced with a fresh salt solution and a suspension made by shaking. This operation removes the serum constituents, and especially the fibrin ferment, which often disturb the test. A 1 per cent. suspension of the washed corpuscles should be used.
>
> To facilitate the carrying out of the test a rack containing two rows of holes for the tubes should be used. For each test two tubes are required, one in the front row and its control in the rear row. There will also be two pairs of tubes to serve as positive and negative controls.
>
> Put into each of two small test tubes, front and rear, one drop (about 0.02 c.c.) of the serum to be tested from a capillary pipette. Add to each tube 0.1 c.c. of 40 per cent. fresh guinea-pig serum made by adding 1 part of complement to 1½ parts of 0.9 per cent. salt solution. In an emergency or where fresh complement cannot be obtained dried slips of paper, each containing two units of complement, may be substituted. To the front tube add the slip bearing the antigen. Then to both tubes add 1 c.c. of the 1 per cent. suspension of washed human corpuscles. Shake the tubes thoroughly from time to time to distribute the reagents evenly throughout the mixture as they dissolve out of the paper.
>
> With every series of tests it is necessary to carry out two sets of controls, and for this purpose four additional tubes will be necessary. To each of the first pair of these, one in the front and one in the rear row, is added one capillary drop of a syphilitic serum known to give a positive reaction. This will serve as a positive control. To the second pair add one drop of normal serum known to give a negative reaction, or the tubes may be left empty. This pair of tubes will serve as a negative control. Now put into each tube complement and into the tubes of the front row only antigen, adding finally 1 c.c. of the corpuscle suspension to each tube.
>
> Place the rack holding these pairs of tubes in a water-bath, thermostat, or warm place not over 37 C. The vest pocket is warm enough and convenient in an emergency when none of the above is at hand. Allow an hour from the time the mixture is made for the antibody to combine with the antigen and for complement to be fixed. If a water-bath is used, thirty minutes is a sufficient length of time. If dried paper complement

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Wassermann, Neisser and Brück: Deutsch. med. Wchnschr., 1906, xxxii, 745.

2. Noguchi: A New and Simple Method for the Serum Diagnosis of Syphilis, Jour. Exper. Med., 1909, xi, 392.

3. Noguchi: Serum Diagnosis of Syphilis, J. B. Lippincott, 1910

is used this period of incubation should be extended to twice as long as is the case when liquid complement is used. The contents of the tube are as follows:

Rear: Test serum + complm. (2 units) + 0 + corpuscle susp. 1 c.c.

Front: Test serum + complm. (2 units) + antigen + corpuscle susp. 1 c.c.

First incubation at 37 C. for one hour; then add to each tube, both front and rear, a slip bearing two units of amboceptor. Allow another two hours in the thermostat or one hour in water-bath. After final incubation the tubes should be kept at room temperature for a few hours before the results are recorded.

It is necessary to make certain that the tests in the control sets have been properly carried out. The pair of tubes containing normal serum (or without any serum) must be completely hemolyzed. These constitute the negative controls and show that the hemolytic system used is effective, and that the amount of antigen used is not by itself inhibitory of hemolysis. Next, the front tube of the positive control set, containing a known syphilitic serum, must show total inhibition of hemolysis, while the rear tube must show complete hemolysis. Thus we are certain by the rear tube that the syphilitic serum itself does not inhibit hemolysis, while the front tube, in which hemolysis is inhibited, shows the ability of syphilitic antibody to fix complement in the presence of the antigen employed.

These essentials having been fulfilled, the tubes containing serum for diagnosis can be scrutinized. In these tests hemolysis must be complete in the rear row, since antigen is not present and the amount of serum used should not be inhibitory. Should hemolysis be inhibited markedly, showing usually an anticomplementary action on the part of the patient's serum, this may be overcome by "inactivation" of the serum for thirty minutes at 56 C. (before commencing), after which it will be necessary to use four to five drops of the serum in the test. The time of inactivation for this purpose may be shortened to fifteen minutes (instead of thirty minutes) and three drops of the serum used in this instance. The anticomplementary action can be overcome also by the use of a larger dose of complement. In case inhibition is only slight in amount, the addition of 0.15 to 0.20 c.c. of a 40 per cent. complement mixture (mentioned already) can be used. The above irregularities are occasionally encountered in the test, especially during the summer months.

The tubes containing the serum for diagnosis and antigen, the front row of tubes, may be examined for final results. Here any degree of hemolysis may be encountered, from total inhibition to complete dissolution of corpuscles, depending on the presence or absence of syphilitic antibodies and the number of antibody units. With complete inhibition of hemolysis, the end reaction is easily interpreted, the corpuscles settling to the bottom of the tube with the clear salt solution above. Complete hemolysis likewise gives a result easy of interpretation, for the corpuscle mass is entirely dissolved, the hemoglobin going into solution and coloring the salt solution a deep reddish color.

By taking into consideration the bulk of corpuscles settling to the bottom of the tube and the amount of tinting of the supernatant salt solution, and by comparison with the positive and negative controls, the varying degrees of inhibition of hemolysis may be ascertained. In interpreting the result complete inhibition of hemolysis comparable with the positive control is called strongly positive, complete hemolysis, comparable with the negative control, is designated as a negative reaction. If 60 to 70 per cent. of the bulk of corpuscles is dissolved the reaction is doubtful and should not be taken into consideration for diagnosis. In a known specific case such slight inhibition would be an indication for further treatment as evidence of the continued presence of syphilitic antibodies in the patient's blood. If there is a faint degree of hemolysis, the main bulk of corpuscles being intact, the reaction should be called positive. A more intense hemolysis, with about 10 to 20 per cent. dissolution of the corpuscle mass, should be called weakly positive, while 30 to 40 per cent. hemolysis is designated as faintly positive. Neither the weakly positive nor the faintly positive reaction should be accepted as a definite diagnosis of syphilis without the presence of strong clinical evidence in favor of such a diagnosis. In case the reaction should be doubtful, the serum should be reexamined after a period of a week has elapsed, and if necessary several examinations in succession should be made. In all cases it is a wise precaution to take the blood for examination shortly before meal-time.

It may be stated here that all human serums gradually become anticomplementary after several days on standing, some more pronouncedly so than others. This change sets in much more rapidly at a higher temperature, such as that of a room, than at a lower temperature, such as that of a refrigerator.

In order to have a positive control test, whenever examining an unknown serum one must always have at hand a syphilitic serum known to give a positive reaction. For this purpose one has to obtain a good specimen, which can be preserved on ice for months. Should such a specimen become too anticomplementary on standing, one can remove this property by heating the serum at 55—56 C. for about fifteen minutes.

The method of titrating the antibody content of syphilitic serum in order to determine the exact strength of each specimen is fully described by Noguchi, as also the manner of preparing slips. Guinea-pig serum is used as complement and this should be used fresh, as after the serum is forty-eight to seventy-two hours old its activity is rapidly lost, even at refrigerator temperature if the serum is kept in a fluid form.

Antihuman hemolytic amboceptor is made by immunizing rabbits against human blood corpuscles. Large rabbits are injected with increasing amounts of washed human blood corpuscles five times in succession intraperitoneally, allowing a four-day or five-day interval between injections. Nine or ten days after the last injection the rabbit may be bled from the carotid artery, the blood collected in a tube and placed at room temperature for several hours before being transferred to the refrigerator. At the end of twenty-four hours the clear serum is collected by decantation and this should be titrated to determine its strength. Different rabbits react differently to amboceptor production and often a weak serum will be obtained after a long immunization, while at other times a powerful serum may be obtained after four injections. A good preparation will have a value of one unit in something less than 0.001 c.c. of serum; that is 0.001 c.c of serum or less will cause complete hemolysis of 1 c.c. of a 1 per cent. suspension of human erythrocytes when combined with an excess of complement, say 0.02 c.c. of fresh guinea-pig's serum.

Noguchi states that alcoholic extracts of certain tissues contain variable quantities of antigen for syphilis. There is more in heart, liver or kidney than in nervous tissues, so far as has been determined. The liver of a congenitally syphilitic fetus is one of the tissues richest in these antigenic lipoids. In the preparation of antigen the procedure is as follows:

Extract a mashed paste of liver, heart or kidney of man, ox, guinea pig, rabbit or dog with ten parts of absolute alcohol at 37 C. for several days. Filter through paper and collect the filtrate. Bring the latter to dryness by evaporation, and take up the residue with a small quantity of ether and add five volumes of acetone. A precipitate forms, which is allowed to settle to the bottom of the vessel and the supernatant fluid decanted off. This insoluble residue contains antigenic lipoids and its strength is estimated by taking 0.2 gram of the residue, dissolving it in about 5 c.c. of ether, and gradually adding 100 c.c. of physiologic salt solution to make an emulsion. If flocculent it may be filtered through paper to remove the precipitate. This opalescent emulsion is used for the fixation test to find out the quantity needed to cause complete inhibition of hemolysis when combined with a good syphilitic serum. Inhibition is caused by the coexistence or simultaneous presence of antigen and syphilis-antibody, and is of diagnostic value. Any quantity of the emulsion which is capable of causing complete fixation may be used for the test, but it is best to choose the maximum dose which is without inherent anticomplementary action.

Noguchi says that his method if properly carried out gives uniform and reliable results; but as the activity of the complement and the resistance of the red corpuscles sometimes vary according to their source and age, certain irregularities sometimes arise, which necessitate a knowledge of how to adjust relatively the quantities of these factors. There are no difficulties that arise which cannot be removed by the proper use of the several reagents, and definite and detailed information concerning the manner of eliminating error is given. Whether the active, old or inactivated serum is used is only a matter of personal choice, provided that the rules prescribed for active and inactive serums are observed.

Concerning the value of the serum test for the diagnosis of syphilitic conditions, Williams[4] states that by combining the figures obtained from numerous investigators comprising over 8,000 tests, an average of 75 per cent. positive reactions were obtained in all cases of hereditary and acquired syphilis. He has tabulated the results, which are given in Table 1.

TABLE 1.—POSITIVE REACTIONS IN 8,000 CASES OF HEREDITARY AND ACQUIRED SYPHILIS (WILLIAMS)

Stage of Disease.	% Positive.
Primary syphilis	70
Secondary syphilis	89
Tertiary syphilis	78
Early latent (late secondary symptoms)	51
Late latent (following tertiary symptoms)	47
Hereditary syphilis	95
Cerebrospinal syphilis	48
General paralysis	88
Tabes	63

Taking into consideration the fact that this includes tests made by various methods, some of which have been proved to be open to considerable error, it would seem that the value of the serum reaction has been thoroughly demonstrated.

Noguchi's method seems to be a distinct improvement over that of Wassermann or any of the other methods proposed for the reason that it is not so complicated and cumbersome; and the statistics seem to show that it is more accurate and more delicate. Thus, in a comparison of the Wassermann and Noguchi systems in 214 cases of syphilis and parasyphilitic conditions, as reported by Noguchi[3], the Wassermann system gave 183 and the Noguchi 211 positive reactions. Noguchi further states that in a series of 1,082 cases examined, in which there were a number of syphilis suspects, 802 positive reactions with the Noguchi test were obtained.

In a comparison of the Wassermann and Noguchi systems Fox[6] reports 210 cases examined with the percentages of positive reactions favorable to the Noguchi test. This series of cases included primary, secondary, tertiary, latent and hereditary syphilis, tabes, cases for diagnosis and non-syphilitic cases. In primary syphilis both the Wassermann and Noguchi tests showed 100 per cent. of positive reactions. In secondary syphilis the percentages of reactions were, Wassermann 97 per cent., Noguchi 100 per cent., in tertiary syphilis, Wassermann 71 per cent., Noguchi 84 per cent.; in latent syphilis, Wassermann 46 per cent., Noguchi 62 per cent.; in hereditary syphilis, Wassermann 100 per cent., Noguchi 100 per cent. (only one case reported); in tabes Wassermann 100 per cent., Noguchi 100 per cent. (three cases reported); cases for diagnosis, Wassermann 39 per cent., Noguchi 49 per cent. (53 cases reported). Of non-syphilitic cases, 2 cases out of 23 gave a positive reaction by Wassermann while 4 gave a positive reaction by the Noguchi test. One of these cases was afterward examined by Noguchi and gave a negative reaction.

In a similar series of cases reported by Kaplan,[7] out of 1,286 cases examined the positive reactions by the Wassermann test were 826 and by the Noguchi test 995.

Swift[8] in a carefully prepared article on "A Comparative Study of Serum Diagnosis in Syphilis," accompanied by numerous tables showing the number and kind of cases in which the serum diagnosis was tried, concludes that the Noguchi reaction is more readily applied and the materials are more easily procured and kept than with the Wassermann method. It is also more sensitive than the Wassermann reaction, though this increased sensitiveness sometimes causes a positive reaction with non-specific serums which gave a negative Wassermann reaction. Noguchi, however, states that these positive reactions with non-specific serum may be avoided by the use of inactive serum, and further that when one obtains a high percentage of positive reactions in non-syphilitic cases one should suspect that one is not doing the test properly.

Numerous investigators have attempted to determine the result of various forms of treatment on the syphilitic antibodies in the blood. It is known that the reaction frequently disappears after a short course of treatment, often to return again within a greater or lesser period of time. In some cases a positive reaction frequently persists in spite of treatment, and Noguchi states that in hereditary lues the reaction is difficult to get rid of, often persisting in spite of most vigorous interference. Frequent tests are necessary to determine whether further therapeusis is indicated. A positive reaction in a syphilitic case is an indication for additional treatment though it is not definitely established that the disappearance of the reaction is justification for the cessation of treatment.

It having been definitely established that by the serum test we are able to diagnose syphilis with more or less certainty, it is clearly evident that the test is going to prove of inestimable value to the ophthalmologist who constantly sees many cases of doubtful syphilitic origin. The method is used not only for the diagnosis of syphilis primarily but also as a guide to determine when treatment may be discontinued, or whether it should be resumed.

Up to the present time the reports do not show many eye cases in which the test has been used, though it is possible that some of the statistics in which the cases are grouped under the various types of syphilis may include some eye lesions. Noguchi reports only 29 cases of eye diseases in which his test was employed, and the table is here reproduced (see next page, Table 2).

In this series of cases it will be seen that nearly 50 per cent. of positive reactions were obtained. No reference is made to syphilitic history or the possible effect of treatment in causing a negative reaction in a case of syphilitic origin. Thus out of twelve cases of interstitial keratitis, which in a very large percentage of instances is of syphilitic origin, but eight positive reactions were secured. It would be interesting to know whether any of these negative reactions occurred in patients reasonably free from the possibility of syphilitic infection or whether treatment had anything to do with the results secured from the test.

---

[4] Williams: The Serum Diagnosis of Syphilis, Colorado Med., April, 1910.

[6] Fox: Jour. Cutan. Dis., 1909, xxvii, 338.

[7] Kaplan: Comparison of Noguchi and Wassermann Reactions. Table taken from Noguchi's Serum Diagnosis of Syphilis, 1910.

[8] Swift, H. F.: A Comparative Study of Serum Diagnosis in Syphilis, Arch. Int. Med., October, 1909, iv, 376.

TABLE 2.—CASES OF EYE DISEASES TESTED BY NOGUCHI BY HIS METHOD

	Cases Examined	+	—	±
Keratitis interstitialis	12	8	4	0
Iritis	6	4	2	0
Scleritis	1	0	1	0
Paralysis external rectus	1	0	1	0
Optic neuritis	1	1	0	0
Chorioiditis (exudative)	1	0	1	0
Optic atrophy	5	0	5	0
Acromegaly with ocular symptoms	2	1	1	0
Totals	29	14	15	0

From Dr. Swift's tables I have been able to select ten cases of eye diseases in which the data is more complete. They may be arranged as in Table 3.

An analysis of these cases shows only one negative reaction by the Noguchi test, which was also negative with the Wassermann test, and this case was one of ocular palsy accompanied by blindness, of questionable syphilitic history though the patient had had much antisyphilitic treatment for two years previous to the test. It is probable that the negative reaction in this case was due to the treatment, and that earlier in the history of the case the reaction would have been positive. In one case of iritis, with papular eruption, the initial lesion having been six months before the test, the Wassermann reaction was negative and the Noguchi reaction was decidedly positive. In the case of optic atrophy and blindness, in which syphilitic infection was denied, the Wassermann reaction was questionable, and the Noguchi reaction was weakly positive. Of particular interest are the four cases in which the history of infection is indefinite or infection is positively denied, and the lesion is doubtfully syphilitic from clinical symptoms and manifestations. In three of these cases the Noguchi reaction is positive and in the one that is negative the patient had much treatment for two years preceding the test. In all of the other cases there was a history of infection leading to the supposition that unless the patient had had much treatment the Noguchi reaction would be positive.

With a view to determining the clinical value of the serum test for syphilis in eye diseases and especially those of doubtful etiology I took up the work several months ago, and in carrying it on I have had the cooperation of my assistant, Dr. Norma B. Eles, and of Dr. C. G. [illegible], to whom I am indebted for valuable assistance. Owing to the difficulties encountered in satisfactorily carrying out the test and eliminating the common errors in technic bound to occur at first, it was only recently that our results have been considered in any sense reliable. It is frankly admitted that the absolute accuracy of the reported findings may be questioned on the ground that errors in technic are more likely to occur with those who are not specially skilled in hemolytic work, and who have not had the advantage of a long and varied experience. But in view of the scarcity of literature concerning the value of the tests in eye diseases I have thought our results in a limited number of cases worthy of report, though it is hoped that a subsequent report covering a very much larger number of cases, and reviewing the results secured by others, will throw still further light on what, it seems, must eventually be one of the most important diagnostic means at the hands of the ophthalmologist for diagnosing eye lesions of questionable syphilitic etiology.

In all of the tests, only a portion of which are reported, fresh guinea-pig serum was used as complement. The amboceptor, consisting of the serum from immunized rabbits, was obtained from the laboratory of the Memorial Institute for Infectious Diseases, Chicago, though in some of the tests amboceptor slips which originally came from Dr. Noguchi, of the Rockefeller Institute, were used. Our antigen, made from the alcoholic extract of the liver of a congenitally syphilitic fetus, was also obtained in the form of antigen slips which had been carefully standardized.

TABLE 3.—SWIFT'S CASES OF EYE DISEASES TESTED BY THE WASSERMANN AND NOGUCHI REACTIONS

Time Since Appearance of First Symptoms	Present Manifestations	Treatment	Wassermann	Noguchi
Four months.	Maculopapular; iritis.	6 weeks bichlorid pills.	+	+
Three months.	Papular; iritis.	Eighteen inunctions.	++	++
Five months.	Iritis	Four months.	+	+
Two years.	Conjunctivitis.	Fair.	+	++
Six months.	Papular; iritis.	Poorly.	—	++
Three years.	Iritis.	None	++	+
Denied.	Keratitis, myositis.	None	+	+
Denied	Optic atrophy; blindness.	Not stated	+—	+
Indefinite.	Ocular palsy; blindness.	Much in past two years.	—	—
Denied.	Syphilitic iritis.	Little.	++	++

Unfortunately the first tests, consisting of a number of cases, proved worthless owing to a poor quality of antigen, as well as one which had not been carefully prepared and standardized. In consequence some of these cases were either lost sight of when we finally got the tests working satisfactorily, or treatment modified the result. The ear, nose and throat cases, which were also studied in connection with the eye cases, are not considered in this paper.

The cases, with condensed history and results of test recorded, are given in Table 4.

An analysis of these cases shows that of the thirteen positive reactions ten were in patients giving no definite history of syphilitic infection, and only two of the eight showed other than eye lesions to indicate syphilitic infection. Seven of the number had received antisyphilitic treatment and probably to the treatment may be attributed some of the weak positive reactions secured.

Of the thirteen negative reactions six were in patients who gave no history of syphilitic infection and received no antisyphilitic treatment. One patient (Case 12) denied infection but presented many evidences of secondary manifestations of the disease and was kept on mercurial inunctions for a period of two years previous to the test and constantly improved under the treatment. She gave a negative Noguchi reaction and no doubt the vigorous mercurial treatment and absence of active syphilitic lesions prevented a positive reaction. The same is true of Patient 26.

The four patients giving a history of syphilitic infection and treatment of the same probably gave negative Noguchi reactions because of the effect of the treatment. The lesions existing at the time of the tests were probably not syphilitic.

The patients suffering from or having suffered from interstitial keratitis would be expected to be syphilitic, and hence the Noguchi reaction in such cases would be positive except for the inhibiting influence of the treatment. The test in those cases, therefore, would be essentially valuable as indicating whether or not treatment should be discontinued or resumed.

In the cases of iritis, except Case 23 (neuroretinitis, hemorrhages into the vitreous, and paralysis of eye muscles) there was no obtainable syphilitic history, no lesions other than those in the eye, and the cause was questionable. The serum reaction was considered satisfactory in determining the possibility of syphilitic etiology, and the results of subsequent treatment seem to establish the reliability of the findings. Thus in Case 11 the test was strongly positive and active antisyphilitic treatment not only produced marked improvement in the eye lesion but probably was responsible for a weakly positive reaction six weeks later. In Case 12, with unquestioned syphilitic lesions, and under active mercurial treatment for two years, the reaction was negative. This is considered an indication for cessation of treatment. Tests will be given later to determine whether treatment should be resumed. The active corneal ulcerations are considered as due to the effects of cicatricial changes in the lids producing mechanical irritation, and the introduction of non-syphilitic infection. Case 14, with no active lesion, is considered as requiring more antisyphilitic treatment owing to the positive Noguchi reaction. Case 18 is one that ordinarily would be diagnosed as syphilitic iritis, but the Noguchi reaction was negative and the patient promptly recovered on treatment other than antisyphilitic.

Various writers have asserted that the reaction frequently disappears after a short course of treatment, often to return again within a greater or lesser period of time. This would seem to be borne out by the results secured in the cases reported by Noguchi, Brück, Citron, Swift and others. In our cases treatment very evidently tended to cause a disappearance of the reaction, and those patients who had received considerable antisyphilitic treatment and exhibited no active lesions at the time of the test, showed a negative reaction. Positive reactions were reduced to weakly positive following active mercurial treatment. Whether a positive reaction will be obtained in these cases later, after an interval of rest in treatment, will be determined later. Noguchi says that in hereditary lues the reaction is difficult to get rid of, often persisting in spite of the most vigorous interference. In several of our cases of congenital syphilis we secured a negative reaction which was thought to be due to the inhibitory action of treatment. Noguchi also says that the reaction may return shortly after cessation of treatment, so that it may be necessary to make frequent tests to determine whether further

TABLE 4. AUTHOR'S CASES TESTED BY THE NOGUCHI METHOD

No.	Sex	Age	History of Infection	Manifestations	Treatment Before Test	Noguchi Reaction
1	F	34	Indefinite	Ectopia lentis. Opacities cornea due to old interstitial keratitis.	Some treatment for congenital syphilis.	—
2	F	14	Congenital	Interstitial keratitis. Numerous scars at corner of mouth and on face. Saddle-nose.	Much treatment for inherited syphilis.	
3	F	20	Congenital	Old adhesions of the iris. Blepharitis. Interstitial keratitis.	Now taking antisyphilitic treatment (Mercury)	
4	F	17	Congenital	Hutchinson teeth and other signs of congenital syphilis. Opacities of cornea. No active lesions.	Much antisyphilitic treatment.	—
5	M	13	Congenital	Granular conjunctivitis. Ulcer of the cornea.	Unknown.	—
6	F	21	Indefinite	Argyll Robertson pupil and optic atrophy.	None.	+
7	M	15	Indefinite	Scars of cornea. Adhesions iris. Nystagmus.	Questionable antisyphilitic treatment	
8	M	15	Questionable	Scars on cornea. Active phlyctenular conjunctivitis et iritis.	None.	—
9	F	14	Congenital	Saddle-nose. Scars corner of mouth. Interstitial keratitis 1 year ago.	Mercurials for several weeks 1 year ago.	—
10	F	26	Questionable	Neuroretinitis.	None.	—
11	M	40	Indefinite	Paralysis sixth nerve.	None (after a month's mercurial inunctions Noguchi reaction + ; after two months' treatment still +).	[illegible]
12	F	29	Denied	Maculopapular eruption; ulceration of pharynx and nose, and iritis two years ago. Old adhesions iris. Active corneal ulcerations.	Two years of active mercurial treatment (inunctions).	—
13	M	18	None	Hemorrhage into vitreous left eye. Obliterating endarteritis right eye with hemorrhages and dust like opacities in vitreous.	None (after a month's mercurial treatment and pilocarpin sweats Noguchi reaction [illegible]).	[illegible]
14	M	8	None	Interstitial keratitis one year ago. Ulceration tonsil and pharynx six months ago, smears from which showed *Spirochæta pallida*.	Mercury inunctions irregularly for one year. (After one month's continuous mercurial inunctions and injections Noguchi reaction [illegible]).	+
15	F	60	None	Third nerve paralysis. Neuroretinitis.	Mixed treatment and pilocarpin sweats for a week.	—
16	M	38	None	Central leukoma. Active iritis.	None.	—
17	M	25	None	Iridocyclitis.	None	—
18	F	24	None	Old adhesions and exudate closing pupil left eye. Active iritis right eye.	None	
19	F	64	None	Neuroretinitis and floating opacities in vitreous both eyes.	None.	—
20	M	31	None	Repeated hemorrhages in vitreous left eye for three years. Slight hemorrhages vitreous right eye. Obliterating endarteritis and hemorrhages in retina right eye.	K I irregularly for several months Mercury for past few days	—
21	F	35	Indefinite	Two attacks iritis in last six years. Mild attack iritis within last two weeks. History of two miscarriages.	Unknown.	—
22	F	47	None	Active episcleritis.	None.	—
23	F	31	Denied	Active ulceration nasal septum and iritis eight years ago. Return of ulceration two years ago. Iritis and interstitial keratitis now	Active mercurial treatment for three years. Six months of mixed treatment two years ago	[illegible]
24	M	54	None	Repeated subconjunctival hemorrhages both eyes for past three years.	Unknown. Probably antisyphilitic from description.	—
25	F	52	Indefinite	Aphasia and one-sided sensory paralysis and partial motor paralysis. Few small spots of disseminated choroiditis. History of one miscarriage.	Inunctions and large doses K I for six weeks (Has recovered from aphasia and paralysis.)	—
26	F	50	Negative	Large syphilitic ulcer left tonsil, smears from which showed *Spirochæta pallida* nine months ago. Old disseminated choroiditis right eye.	Almost continuous inunctions for eight months.	—

therapeusis is indicated. But he admits that it is not definitely established that the disappearance of the reaction justifies stopping treatment, especially as the reaction may be quickly affected by treatment.

In conclusion it may be said that the reaction is destined to be of value to the ophthalmologist as an aid in making a diagnosis, particularly in cases of doubtful origin, and also as a guide to selection of therapeutic measures. But to be reliable and hence of most value the test should be applied to those cases of which a reasonable complete history has been obtained; the reagents employed should be prepared in an accurate and careful manner; the technic as advocated by Noguchi and others should be accurately followed; and the interpretation of the results considered in the light of the experience and skill with which the tests have been made. The reactions should be verified, and control tests should be introduced as often as possible. Furthermore, all things being equal, the results will be most reliable and hence most valuable when done by those with facilities and training for hemolytic work.

ABSTRACT OF DISCUSSION

Dr. E. V. L. Brown, Chicago: One recent article in regard to this reaction might be quoted, namely, that of Alfred Leber, of Berlin, which covers some 300 cases of the Wassermann reaction. Many of the data coincide with those of Dr. Bulson; for instance, 231 cases of eye diseases suspicious of syphilis gave a positive reaction in 40 per cent., 71 cases of certain syphilis gave 79 per cent. of positive reactions, 22 cases of eye disease with metasyphilitic diseases, tabes, general paralysis and lues cerebri gave 82 per cent. of positive reactions. In 90 per cent. of 59 cases of hereditary eye lues there was a positive reaction. There were 82 cases of keratitis parenchymatosa, and of these 71 per cent. were positive. These included 63 per cent. of acquired and 11 per cent. of hereditary syphilis. In general, Leber states that the reaction is negative in 10 to 20 per cent. of syphilitic patients who have not been treated, and in 30 or 40 per cent. of those who have been treated. This very definitely restricts the application of the test. Leber has devised a complement deviation reaction for tuberculosis similar to the Wassermann reaction for syphilis. The technic is even more difficult than the Wassermann.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: The statistics quoted by Dr. Brown apply to the Wassermann reaction, while my paper is a consideration of the Noguchi reaction. I have reported comparative studies of the two reactions by competent observers and the statistics presented seem to show that the Noguchi reaction is more reliable. For instance in 216 cases of syphilis and parasyphilitic conditions, as reported by Noguchi, the Wassermann gave 183 and the Noguchi 211 positive reactions. In 1,082 patients examined by Noguchi, among whom there were a number of syphilitic suspects, 802 gave positive reactions. In another comparison of 210 cases of various kinds in which there were a number of nonsyphilitic cases and cases for diagnosis, the percentage of reactions was decidedly favorable to the Noguchi test. The Noguchi test, therefore, seems to be more accurate, and hence of much more value than the Wassermann test; but it must be remembered that the value of the Noguchi test depends in large measure on the virulency of the infection, the stage of the disease, the influence which antisyphilitic treatment may have had in altering the reaction, the reliability of the materials employed and the care and skill with which they are used, and the manner of interpreting the results.

In the so-called attenuated forms of syphilitic manifestation the Noguchi reaction may be but faintly positive, and the same may be true in the more virulent forms which have been actively treated with antisyphilitic remedies. In either case the findings are suggestive in aiding in the diagnosis and prescribing the line of treatment to be pursued. The reaction will prove of inestimable value in ophthalmic cases of doubtful etiology, particularly in certain fundus lesions, various ocular paralyses and the uveal disturbances, and in those cases of known syphilitic origin in which it is desired to determine whether antisyphilitic treatment should be resumed or not.

It seems to be proved that the Noguchi test is more delicate and less complicated to employ than the Wassermann, and probably more accurate. Its value, however, will be greater when carried out by one thoroughly familiar with hemolytic work and skilled in laboratory technic. Even then the interpretation of the results of the test will have greater value with added experience in its use. In my series of cases the results of the test, while subject to the possibility of some error, due to unfamiliarity with the work, seemed to point to definite conclusions, and the findings in most of the cases were either verified by the previous history, the character of the lesion, or the effect of the treatment. At a future session I hope to present the results of further study of the test in a much larger number of cases, as also to summarize the results of others who may be carrying on similar work.

THE RELATION OF ANIMAL EXPERIMENTATION TO OUR KNOWLEDGE OF PLAGUE *

GEORGE W. McCOY, M.D.
Passed Assistant Surgeon, U. S. Public Health and M. H. Service
SAN FRANCISCO

Comparatively few diseases of man are readily transmitted to laboratory animals. In plague, however, we have an infection that can be reproduced in many of the animals ordinarily used for experimental purposes. The question then arises as to whether we know more about this disease than we do about infections that are less readily transmitted to animals, and those that thus far have not been studied in the lower animals. In reply it may be pointed out how much more accurate knowledge we have of the essential cause of plague epidemics than we have of outbreaks of typhoid fever, scarlet fever, measles, typhus fever and others that might be mentioned. When plague is to be combated, there need be no speculation as to the source of the infection. The outbreaking is not to be attributed to such vague and indefinite sources as impure air, a bad water supply, or a mysterious contagious influence; but we know that the problem is the simple and direct one of eliminating the infected rodent. Attention may be called to the fact that, fortified by our knowledge of this disease, much of which has been gained by animal experimentation, we are able to take such effective measures against its spread that, at the present day, plague in a community may be promptly controlled and even eradicated. In substantiation of this statement, the epidemics that have occurred at various times in the past few years in Oporto, Rio Janeiro, Glasgow, Liverpool and other cities abroad, and in San Francisco and Seattle in the United States may be cited. It is not too much to say that without the knowledge of the disease gained from animal experimentation these sanitary victories would not have been won. It is quite true that, even with this knowledge, little can be accomplished unless we have the intelligent assistance and cooperation of the community afflicted. In contrast to the splendid achievements in the cities mentioned we may cite countries where plague annually claims an enormous toll of human life; for example, India, where fanaticism manifests itself in the form of a violent antagonism to the

---

* This paper is one of the series prepared for and reprinted by the Council on Defense of Medical Research of the American Medical Association for circulation among the public. Fourteen of these pamphlets are now ready, taking up the relations of animal experimentation to ethics, diagnosis, cancer, vaccination, the live stock industry, tuberculosis, typhoid, dysentery, plague, rabies, surgery, internal secretions, circulation of the blood, tropical diseases, etc.

sacrificing of lower animals for any purpose, even such a laudable one as the suppression of a disease that on several occasions has claimed over one million victims per year. In China, there is no such antipathy to the taking of life of the lower animals, but there is found an ignorance and apathy most effective in nullifying any efforts looking to an improvement of sanitary conditions and surroundings.

Our knowledge of the cause of plague dates from the work of Yersin[1] and of Kitasato[2] in Hong Kong. These investigators, working independently, discovered the micro-organism that has since come to be universally recognized as the cause of the disease. They isolated the organism from the sick and from the bodies of persons who had died of the disease. The opportunity of reproducing the infection in laboratory animals was requisite to complete the chain of evidence necessary to establish the relation of the germ to the disease.

Prior to the work of the investigators mentioned, epidemics of plague were attributed to telluric and climatic conditions, to soil infection and to other sources. As a result of these erroneous views, intelligent measures looking to the suppression of the disease were impossible. The vigorous quarantines that were inaugurated, by reason of the hardship they inflicted, defeated the very purpose for which they were established.

Since the discovery of the actual causative agent of the disease, *Bacillus pestis*, progress in solving many of the problems has been rapid, and it may be asserted without fear of contradiction that every material advance has been made possible by the facts demonstrated by means of animal experiments. The subject will be considered first in the more important aspect, namely, the infected rodent, by means of which the disease is transferred from place to place and is spread in communities; and second, in relation to the preventing of the infection of individuals and in curing the sick.

RELATION OF RODENTS TO PLAGUE

Prior to the discovery of the organism causing the disease, the association of rat epizootics with outbreaks of human plague had been noted by several observers. That the oft-cited biblical verses,[3] which mention "emerods" and "mice," really referred to the association of plague and rats cannot be demonstrated; and the other early records are also the subject of much difference of opinion. The actual relation between the disease in rodents and that in man, however, had never been established. It was most important to prove this point, and to discover the actual manner in which the disease was spread among the rodents, and if possible, the manner in which man was infected from rodents. To these problems several investigators turned their attention. It is needless to point out that these questions could not be settled without recourse to animal experiments.

The earlier workers had found the plague bacillus in the bodies of insects that had fed on the blood of animals sick of the disease but it remained for Simond[4] to actually convey plague from one animal to another by means of insects (fleas). Simond found that when fleas were placed on a plague-infected rat they drew blood containing the plague bacillus, and that by transferring these infected fleas to a healthy rat the disease could be transmitted. Subsequently certain observers failed to confirm this work, but as is so often demonstrated, one properly controlled positive result is of more value than many negative ones. Simond's work was confirmed by Verjbitski[5] who succeeded in transferring the infection from rodent to rodent by means of fleas and other insects. Verjbitski's results were verified for the most part by the investigators of the Advisory Committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute.[6] By means of an extensive series of experiments these observers found that plague infection would not spread among rats except in the presence of fleas. The same fact was found to hold good in the case of guinea-pigs. In other words, it was found that healthy rats and healthy guinea-pigs might be kept in close contact with plague-sick rodents, but that the disease was never transmitted to the well ones unless fleas were present. While this evidence was of great value in throwing light on the probable mode of transmission of the disease from rodents to man, or possibly from man to man, it was desirable to conduct experiments with animals more closely related to human beings, and for this purpose monkeys were used.[7] The monkeys were placed in cages in such a way as to simulate so far as possible the conditions under which man might be brought in relation to fleas from infected rodents. It was found that it was possible in this manner to convey plague to the monkeys.

Other most instructive and interesting experiments were performed by placing guinea-pigs in houses where plague cases had occurred, or where plague rats had been found. Many such houses were found to be infected as was shown by the fact that the guinea-pigs died of plague, and plague-infected fleas were found on them. In addition to these animal experiments, epidemiologic observations were carried out which together with the laboratory observations go far towards showing that, at least in India, the great majority of cases of plague are due to infection of man from rats through rat fleas.

Part of the work of this committee has been repeated by Kitasato[8] who reaches the conclusion that in Japan in the majority of cases the infection is conveyed in the same way as in India.

It may be thought that the presence of an epidemic among rodents under natural conditions would be manifested by so large a mortality among these animals as at once to make manifest the presence of the disease. Such, however, is not the case; it is exceptional to find a death-rate among the rodents large enough to attract the attention of the casual observer. With the exact knowledge of the mode of the conveyance of the infection and its relation to rats, the lines along which work must be performed to control an epidemic become well defined.

The demonstration of the relation of the disease in man to that in the rat, and the method of conveyance from the latter to the former, explain many of the facts long known about plague epidemics such as the lack of contagiousness, the gradual, [illegible] spread through a community and through a country.

The measures for the control of a plague epidemic do not come within the scope of this paper, but we may state that they are essentially the [illegible] ity of infected rats. We may be pardoned for emphasizing here what has been so often pointed out, that plague is not a "filth disease" in the ordinary sense of the term. Plague in human beings is definitely associated with the same disease in rodents, and ordinary sanitary measures have comparatively little influence on its spread. It can be controlled and prevented only by measures directed to the actual cause, the infected rodents.

---

[1] Yersin: Ann. de l'Inst. Pasteur, 1894, viii, 662.
[2] Kitasato: Lancet, London, 1894, ii, 428.
[3] I Samuel, vi, 5-11.
[4] Simond: Ann. de l'Inst. Pasteur, 1898, xii, 625.
[5] Verjbitski: Trans. in Jour. Hyg., 1908, viii, 162.
[6] Jour. Hyg., 1906, vi, 421.
[7] Jour. Hyg., 1906, vi, 461; 1907, vii, 452.
[8] Kitasato: Ztschr. f. Hyg. u. Infektionskr., Nov. 26, 1908, p. 279.

What has been said thus far refers particularly to the bubonic type of plague, which is by far the most common in all epidemics and in all countries. The pneumonic type of the infection is also very important, especially for the reason that it is directly contagious from person to person, and has claimed many physicians and nurses for its victims. This type of the disease was described by the German plague commission[9] and by Childe[10] and its origin traced to the same micro-organism that is responsible for the more common bubonic type. It would have been impossible to prove that the pneumonic form of the disease was due to the plague bacillus but for the valuable assistance rendered by the methods of animal inoculation. Only less important than the relation of rat plague to human plague is the relation of plague in ground-squirrels to the same disease in man. This is especially true in America, for it is established beyond question that cases of plague in human beings have been derived from ground-squirrel infection.[11] It would have been impossible to prove the presence of plague among ground-squirrels on the Pacific Coast without resorting to animal experiments. Who would have accepted the diagnosis of squirrel plague had it been based on morphologic and cultural studies alone? Certainly no trained observer and probably no intelligent layman. It has often been found that the demonstration of plague in laboratory animals carries to the mind of the layman a conviction that nothing else will.

In most countries and in most communities the announcement of the presence of plague is a signal for a violent denunciation of those who have discovered or announced the presence of the disease; and if one were compelled to rely on methods of investigation other than the inoculation of animals it is probable that skeptics would never be convinced. It is most gratifying, and an evidence of the rapid progress in sanitary matters, that since the first announcement of plague among ground squirrels on the Pacific coast[12] no voice has been raised to question the diagnosis.

Two methods of inoculating laboratory animals with plague are in common use. The one is by the use of the ordinary hypodermic syringe; the second, usually known as "vaccination" or Kolle's method, requires simply the shaving of the skin and the rubbing of the suspected tissue or culture on the shaven area. Neither method is painful.

Now as to the use of laboratory animals in establishing the diagnosis of plague in persons or in rodents: In the majority of cases of plague a probable diagnosis can usually be made by clinical and microscopic methods; but in other cases it is necessary to resort to animal inoculations. Especially in the case of plague in rodents, resort to animal tests frequently becomes indispensable, as the tissues are apt to be invaded by other micro-organisms which speedily outgrow the plague bacillus so that methods other than the inoculation of animals are likely to fail. It is obvious that in order that measures looking to the protection of persons may be taken a positive diagnosis is essential.

Animal experimentation is the only means at our disposal for determining the species that are susceptible to the disease, and thus learning which animals must be regarded with suspicion and which may be eliminated from consideration as possible agents in spreading the disease. This may be illustrated by two examples:

The first relates to the gopher, a very common rodent. When the squirrel-plague campaign was begun on the Pacific coast, the question arose as to whether it was necessary to destroy gophers as well as ground-squirrels. As a result of certain experiments that had previously been made with gophers at the Plague Laboratory, it was proved that the susceptibility of these rodents was so slight as to make it unlikely that any measures would need to be taken against them. Thus the lives of many of the little animals were spared without in any way lessening the value of the work from a sanitary point of view. It is only fair to say that farmers probably would have been much better satisfied had we not intervened in behalf of the little nuisances that are so destructive to certain crops.

Another field of usefulness of animal experimentation in relation to plague is illustrated by the following: In 1903, Simpson, a well-known student of the disease, made the assertion that the domestic animals and fowls found in Hong Kong, the meat of which was used for food, were susceptible to plague infection, and in his opinion constituted a possible source of danger. The determination of the facts in the case was obviously a matter of the greatest importance, and other workers took up the subject with the result that Simpson's findings were discredited[13] and a source of confusion and error was eliminated. It would have been out of the question to disprove definitely the erroneous statements without recourse to animal experiments.

Another field of usefulness of animal investigation in relation to plague is the search for a biologic agent that will cause an epizootic among rodents that will exterminate these pests but will not harm human beings or useful domestic animals. Unfortunately, up to the present time nothing fulfilling the requirements has been found. The usefulness of such agents can be determined only by conducting feeding experiments with rats and other rodents. The layman is very likely to be misled by the glowing advertisements of the biologic products that are on the market, and if they are used on a large scale with unfavorable results, a false sense of security is engendered and money is wasted that could have been spent profitably in other ways.

In the consideration of the relation of animal experimentation to the plague question, one must never lose sight of the fact that large numbers of rodents suffer from the disease in nature, and it is certainly no exaggeration to say that for each rat, guinea-pig or squirrel that has succumbed to the disease as a result of experimental inoculations, thousands of rodents have died of the same disease under natural conditions. The animal infected in the laboratory dies in peace and perhaps has his sufferings cut short by the merciful use of an anesthetic, while his brother infected in the ordinary course of events in nature is very apt to have his sufferings cut short only by the less merciful attentions of his cannibalistic comrades.

To follow to a logical conclusion the doctrine that animals should not suffer for the benefit of mankind would effectually put an end to the warfare against rodents; not only that conducted as a measure against disease, but as well that conducted by almost everyone on purely economic grounds. Traps and poisons are not merciful in their effects, and those who deplore the sacrifice of animal life made necessary by the advance of science would probably not hesitate to take measures looking to the destruction of the rat that has the pantry or the granary for the field of his activities.

---

[9] Deutsch. med. Wchnschr., 1897, xxiii, 301.

[10] Childe: Brit. Med. Jour., 1897, i, 1215.

[11] Jour. Infect. Dis., Dec. 18, 1908, p. 487; Pub. Health Rep., Jan. 14, 1909, p. 27.

[12] Pub. Health Rep., Sept. 11, 1908, p. 1289.

[13] Jour. Hyg., 1908, viii, 209.

PROPHYLAXIS AND TREATMENT

The matter of prophylactic measures that may be used to prevent plague infection or reduce the liability to it are clearly of great importance. The question of artificial immunization to plague is a subject that has received the attention of a number of observers. Haffkine's work along this line has given us a valuable weapon in the combating of plague. He injects killed cultures of the plague bacillus into persons with the object of creating a degree of immunity to the disease that would enable one to resist the invasion of the infecting organism. The method has been widely used in India and less extensively elsewhere. There is some difference of opinion as to the value of the procedure, but there is a very general agreement that no harm is done when the prophylactic is used with proper care. An unfortunate accident which occurred in connection with the use of Haffkine's prophylactic has materially interfered with its wider use. This accident was the infection of a number of persons with tetanus at the time of inoculation. The matter was made the subject of a rigid investigation and the evidence indicated that the tetanus was due to the accidental contamination of a vial of the prophylactic while the latter was being prepared for use by a native assistant. Even had the accident been due to the improper preparation of the agent it simply would have pointed out the necessity for the utmost care in the manufacture of the prophylactic.

Haffkine and Bannerman[14] in reviewing the work with Haffkine's prophylactic show clearly that there is a much reduced case incidence among the inoculated, and a startling reduction in the mortality of those in whom inoculation has failed to prevent infection. A particularly striking series of cases reported by Haffkine[15] is that of a large series of numbered prisoners who were confined in a jail where plague prevailed. Those who bore even numbers were inoculated, while those having odd numbers were not inoculated. Among the uninoculated there occurred ten cases of plague, six of which were fatal; while among the inoculated there were three cases, all very mild and all of the patients recovered. Other series of almost equally striking cases might be cited. Forsyth,[16] in an analysis of the figures of many thousands of cases, shows that the plague incidence among the inoculated was less than one-third of that among the uninoculated, while the mortality among those who had received the prophylactic was only 17 per cent.; and among those who had had no previous treatment it was 45 per cent. In other words, the chances of dying of plague were about eight times as great for those who had not received the prophylactic treatment. Numerous other reports of the same tenor might be adduced to demonstrate the value of the measure.

Strong[17] advocates the use of living but attenuated cultures of the plague bacillus for the purpose of immunizing persons. This method has not been largely used, but the evidence that exists is in favor of the procedure.

The whole subject of artificial immunization has been developed in relation to plague as well as in relation to other diseases by means of experiments on lower animals, especially rats and guinea-pigs.

Now let us state very briefly what animal experimentation has enabled us to do for the person actually stricken with the disease. In 1895 Yersin, Calmette and Borrel[18] found that after animals were injected with killed cultures of the plague bacillus, the serum of the animals so treated acquired the power of preventing the development of plague in animals that were simultaneously infected, and in curing animals already sick. The serum for this purpose is now on the market as an article of commerce. It has been used in thousands of cases of the disease in all parts of the world. There is a general agreement of opinion that when administered in sufficient doses and sufficiently early in the disease, it constitutes a very efficient remedy. Unfortunately the cases are rarely diagnosed early enough to give the patient the full benefit of the serum. Chocksy[19] says:

> "Much depends on the early and free use of the serum. In patients injected on the first day or within a few hours of the onset of the symptoms one injection of 100 c.c. followed by another after six to eight hours and then if necessary by a third, after a similar interval would cut short the attack if the case be not pneumonic, malignant or septicemic."

There is very good reason for believing that with the exception of the use of the serum, treatment has scarcely any influence on the course of the infection.

Laboratory animals must be used in the preparation and the testing of prophylactics and the curative serum. No other method is available, and to prohibit animal experimentation would immediately and effectually stop all work and all progress along these lines as well as along other lines of investigation of plague.

CONCLUSION

To review briefly, we may say that in the past by means of animal experimentation there has been demonstrated the cause of plague, the means by which it is conveyed in nature from animal to animal, and from lower animals to man. At the present time we have effective means of controlling outbreaks of the disease, and of curing many of the sick. So much has been accomplished in the past that we may fairly hope that later investigations will still further extend our knowledge of the disease.

If I might be permitted to suggest the lines along which we may expect progress they would be as follows:

1. The discovery of methods of rodent extermination more perfect than those we now have.

2. The development of a prophylactic agent that could be used without inconvenience on a large mass of the population.

3. The preparation of a curative serum, potent enough to make it useful even in late cases of the disease.

4. The discovery of a reliable method of early diagnosis of human cases without awaiting the results of culture and inoculation experiments. This will probably be in the nature of a test similar to the ocular reaction in typhoid fever or the cutaneous reaction in tuberculosis.

---

[14] Haffkine and Bannerman: Brit. Med. Jour., 1898, ii, 856.

[15] Haffkine: Brit. Med. Jour., 1899, ii, 11.

[16] Forsyth: Lancet, London, 1903, ii, 1646.

[17] Strong: Philippine Jour. Sc., 1907, ii, 159.

[18] Yersin, Calmette and Borrel: Ann. de l'Inst. Pasteur, 1895, ix, 589.

[19] Quoted by Strong, Philippine Jour. Sc., 1907, ii, 291.

5. The circumstances governing the alterations of virulence of the bacillus.

All progress in the directions indicated will have to come about as a result of experimental work done on lower animals. Will any reasonable person say that this work must be stopped because it requires the sacrifice of even a large number of rodents? Shall the achievements of the past, splendid though they are, be the measure of what we shall know about this disease that claims so many victims and causes such enormous commercial losses? I believe that these questions may be left safely to the judgment of any unbiased person.

THE FILTERING CICATRIX FOR CHRONIC GLAUCOMA

WITH A REPORT OF CASES IN WHICH OPERATION WAS PERFORMED BY THE METHOD OF LAGRANGE *

ALLEN GREENWOOD, M.D.
BOSTON

Ever since the general acceptance of von Graefe's classical operation of iridectomy as the best operative treatment in the majority of cases of glaucoma, ophthalmic surgeons have observed that, in cases of chronic glaucoma, a more permanent benefit was often obtained in those in which, through some fault in technic, a cystoid scar resulted. Such a scar usually came about as the result of some entanglement or prolapse of shreds or tags of iris, with evidences that the anterior chamber communicated with the cystoid cavities by fistulous tracts. This observation led to deliberate attempts to produce such scars, and some operators advised leaving a bit of iris tissue somewhere in the wound for this purpose. Others, like de Wecker, Priestly-Smith and Critchett, while acknowledging the possible benefits, pointed out the dangers of infection and sympathetic disturbance from this procedure. In spite of this warning, several operators have recently advocated this method of making fistulous cystoid cicatrices, the most radical being Maher,[1] who, after making the usual incision, drags a section of the underlying iris from its attachment and leaves the loop prolapsed, to be cut off several days later, in such a manner as to leave a tag of iris in either corner of the wound. To lessen the danger in such cases, Herbert[2] advised covering the prolapse with a conjunctival flap made at the time of the incision. Holth[3] also tries to minimize the dangers by his new operation called "iridencleisis antiglaucomatosa," which he describes at length with its various incisions and modifications of iris treatment. The modification which he esteems the highest, and which he considers gives the best results, is that of subconjunctival incarceration of iris tissue combined with extrasphincteric iridectomy. He reports some excellent results and clearly establishes the possibility of creating a fistulous passage between the anterior chamber and the subconjunctival spaces with a reasonable amount of certainty. Holth's operation is far safer than Maher's and a step forward, but it remained for Lagrange to work out the possibility of obtaining filtering or fistulous scars free from iris tissue.

Ophthalmic surgeons, who have been accustomed, in operating for cataract, to make their incisions far enough back to get a good conjunctival flap, had noticed that the flap often remained edematous or even bleb-like for some time after healing had taken place, and in a few cases, for years after, with the added observation that pressure on the eye would increase the edema or bleb with a decrease in tension and a partial emptying of the anterior chamber. Herbert especially called attention to this, and the explanation is found when one reads McKechnie's[4] most excellent article on the healing of variously placed cataract incisions.

Lagrange[5] reasoned that if this occasional undesirable sequel of flap extraction, with its fistulous communication between the anterior chamber and subconjunctival space, could be brought about in all cases of iridectomy for chronic glaucoma, the likelihood of future increases of tension would be greatly lessened, and the cure produced by the iridectomy made more permanent. The description of the operation which he therefore devised and called sclerecto-iridectomy, with the very excellent cuts, has been repeated so often that it is unnecessary to give a full description here.

Briefly, it consists in a sclerocorneal incision well into the angle of the anterior chamber, with the knife held, in cutting out, with the edge slightly backward so as to bevel the sclera and make a broad conjunctival flap. Then with the conjunctival flap pulled down over the cornea, a portion of the beveled edge of the sclera is cut off with curved scissors, the amount varying with the degree of plus tension, as experience shows that the greater the tension the less the amount necessary to remove. A good iridectomy is then made and the conjunctival flap replaced after all iris tissue has been freed from the angles of the incision. In regard to this latter point, Lagrange holds that his operation has not been properly performed if any entanglement of iris tags occurs. He reported some very encouraging results. I have performed the Lagrange operation now nine times and have not found it especially difficult or very disturbing to the eye, the amount of traumatism being less than one would expect. I find the curved modification of de Wecker's iris scissors the best to cut the beveled sclera.

Herbert,[6] in describing his wedge isolation operation, says:

> The term filtering should be restricted to smooth, even scars, which evidently allow aqueous to pass through them, but which present no dark points which we can accept as fistulous openings. The fact of filtration is shown by the edematous condition of the overlying conjunctiva, and particularly by the fact that pressure on the eye causes a marked increase of this edema, often amounting to a bleb and a marked lowering of the tension of the eye.

This operation I have never tried, as the operation of Lagrange appealed to me as being less complicated and more likely to give a permanent result. Herbert claims that his operation creates a true, filtering cicatrix, but that the operation of Lagrange creates a subconjunctival fistula. Granting that this statement be true, it still would seem to me that a tiny, subconjunctival fistula, or group of fistulas, would be more likely to remain permanent than microscopic filtering spaces in scleral scar tissue.

---

* Read in the Section on Ophthalmology of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Maher: Ophth. Rev., July, 1909.

[2] Herbert: Tr. Ophth. Soc. U. Kingdom, June, 1903.

[3] Holth: Ann. d'ocul., May, 1907.

[4] McKechnie: Arch. d'ophth., May, 1909.

[5] Lagrange: Arch. d'ophth., August, 1906.

[6] Herbert: The Filtering Cicatrix in the Treatment of Glaucoma, an Improved Operation, Ophthalmoscope, June, 1907.

[7] Henderson: Ophthalmoscope, December, 1907.

Thomson Henderson,[7] in an article, written from the standpoint of a pathologist, on the so-called filtering cicatrix, described the processes of healing of corneal wounds, especially those made at the limbus, pointing out the fact that "after an incision into the anterior chamber, whatever its position, or method, or formation, the endothelial cells go along with internal margin of the wound and so come to seal it off. Once the growth of endothelium is complete, the wound is no more a filtering cicatrix, but is shut off from the anterior chamber by a layer of new-formed endothelial cells, which proceed to lay down a new homogeneous membrane between the cut surfaces of Descemet's membrane." It is this endothelium that precludes, according to Henderson, all possibility of a permanent filtering cicatrix following any operative incision, however devised. He says in concluding:

> I would emphasize the fact that the success of operation in glaucoma does not lie in a "filtering" wound but in the accompanying iridectomy. The reason of the beneficial and curative action of iridectomy in glaucoma is accounted for by the fact that the cut iris surface, forming the base and pillars of the coloboma, never undergoes any reparative process, but always remains a raw, open wound, as when first severed, so acting as a permanently open filtering area through which the aqueous fluid can drain away. The efficacy of this drainage area depends on the operation being done before atrophy of the iris stroma has progressed too far.

He seems to make out a very clear case against the permanence of the filtering scar as defined by Herbert, but does not disprove the possibility of the fistulization of an iris-free cicatrix. He does not explain away the observation of the several operators who have seen cicatrices, without macroscopic evidences of fistulization, that would allow the emptying of the aqueous into the subconjunctival spaces following pressure on the globe.

Abadie[8] has also expressed a pathologist's disbelief in the filtering cicatrix, asserting that in simple section of the iris must be sought the true remedial agent. He regards it as established that "(1) Lagrange has so far failed to furnish satisfactory proof that simple chronic glaucoma can be cured by sclerectomy; and (2) glaucoma cured by sclerectomy or by iridosclerectomy might equally well have been cured by iridectomy, a simpler and less dangerous operation."

Dr. Doyne[9] reported a favorable case done before the surgeons at the Oxford Congress by Lagrange, but does not mention the ultimate success as to filtration.

Dr. J. E. Weeks[10] presented four cases to the Section on Ophthalmology at New York Academy of Medicine, stating that the operation impressed him favorably.

Thompson[11] presents very clearly and concisely the gist of the controversy on the so-called filtering cicatrix. He says: "Nothing in ophthalmology could well be of greater importance than the determination whether or not an iris-free filtering cicatrix can be made in the corneo-scleral margin, when operating for chronic glaucoma." He then goes on to describe the claims of Herbert and Lagrange, who, by their operations, are trying to establish a permanent path for the passage of aqueous from the anterior chamber into the subconjunctival tissue. He then gives Henderson's views as to the impossibility of making a permanent, iris-free, filtering scar, such as Herbert claims to obtain.

Lagrange[12] steps into the arena again, with a very able defense of his operation. In regard to the cystoid cicatrix, he makes the following very timely remarks: "A cystoid cicatrix, obtained at the price of an entanglement of the iris, is unwelcome and dangerous, and one should aim at creating a cicatrix fully as filtering as the cystoid one, without the uveal tract participating in its formation." He insists on going with the section through the ligamentum pectinatum iridis and dividing the insertion of the ciliary muscle, so as to establish a communication between the lymph spaces of the choroid and the anterior chamber. He shows that von Graefe and de Wecker both understood the usefulness of the filtering cicatrix, but he gives to de Wecker the credit of having brought into prominence the value of this cicatrix. He also shows that de Wecker was opposed to the entanglement of iris in the efforts to obtain such a cicatrix. He goes on to describe the utility of the filtering cicatrix, and shows that "when it occasionally follows a simple iridectomy it is the result of the hypertension of the eye, and does not occur in chronic glaucoma without the hypertension." In such cases of glaucoma he states that iridectomy has no value, or but a passing one, because the lips of the wound fall into apposition, either immediately after the incision or more or less quickly after the section has been made. "Dieresis must be replaced by exeresis, since by the former it is impossible to produce a definite filtering cicatrix, which, on the contrary, one can get readily by exeresis of the sclerotic." He says:

> My operation of sclerecto-iridectomy has the primary advantage of opening up a communication between the choroidal space, on the one hand, and the aqueous chamber on the other. It satisfied, therefore, the wants of those who believe that chronic glaucoma largely depends on the obliteration of this space. In the second place, it does away with the obstruction of the angle of the anterior chamber, when such exists, and lastly, it establishes a communication between the aqueous chambers and the perichoroidal space and the meshes beneath the conjunctiva.

He describes three varieties of the filtering cicatrix based on the amount of sclera removed and the result of such removal. In the first variety there is the simple thinning of sclera; the second is the so-called subconjunctival fistula; and the third variety, in which there is ampulliform elevation of the conjunctiva added to the fistulization, resembles a cystoid cicatrix, but without the entanglement of iris. Lagrange states that since he began to operate on patients with a view of obtaining this form of the cicatrix he never has seen the least damage result from the operation.

Lagrange,[13] in a communication made to the Paris Ophthalmological Society, reports cases of simple sclerectomy giving successful results, which he considers more convincing proof of the value of the filtering cicatrix than cases of the combined operation, and especially is this true of the cases, like Valude's,[14] yielding good results where a previous simple iridectomy had failed. In concluding, Lagrange advises simple sclerectomy in cases having a tension of + 1 or less, reserving the combined operation for those having a greater tension. Later, Lagrange[15] answers M. Abadie's objections to the operation of sclerecto-iridectomy, giving new clinical proofs in support of his claims.

Weekers and Heuvelmans[16] demonstrated, by experimentation on the eyes of rabbits, that it was possible to obtain a filtering cicatrix. They concluded from their experiments that it was necessary to excise a portion of

---

8. Abadie: Arch. d'ophth., January, 1909.
9. Doyne: Ophthalmoscope, June, 1908.
10. Weeks: Arch. d'ophth., May, 1908.
11. Thompson: Ophthalmoscope, February, 1908.
12. Lagrange: Arch. d'ophth., February, 1908.
13. Lagrange: Arch. d'ophth., August, 1908.
14. Valude: Ann. d'ocul., May, 1908.
15. Lagrange: Arch. d'ophth., November, 1908.
16. Weekers and Heuvelmans: Arch. d'ophth., November, 1909.

the whole thickness of the sclera, and as near the cornea as possible, in order to obtain a fistulous opening. They also state that it is necessary to do an iridectomy in most cases to prevent the inclusion of iris tissue in the opening.

Rochon Duvigneaud,[17] in discussing the Lagrange operation, and describing two cases, insists that the third variety of the Lagrange filtering cicatrix must be obtained if permanent reduction of tension is aimed at, that the simple thinning of the sclera obtained in the first variety is in no sense a filtering area, and that the improvement obtained in cases of chronic glaucoma, having such cicatrices, is due solely to the accompanying iridectomy. Apropos of the first variety of the Langrange cicatrix, Bettremieux[18] has endeavored to lessen the resistance of the sclera by grooving it near the cornea, without opening the anterior chamber.

Holth[19] describes a modification of the Lagrange operation, in which a modified Dr. Vacher punch forceps is used to remove the bit of scleral tissue. He tried taking the rounded piece of scleral tissue from the posterior lip of the wound, but finally decided to follow the method of Lagrange and take it from the anterior lip, using the punch forceps instead of the scissors.

Holth considers that the following three conditions must be fulfilled before an operation for the cure of glaucoma by the production of a fistulous cicatrix can be considered to have answered the purpose for which it was devised. He postpones publication of his results until sufficient time has elapsed to allow of their being fulfilled in a series of cases:

1. There must be conjunctival edema over and around the scleral wound, showing the presence of a subconjunctival fistula.
2. The tension must be constantly normal or subnormal, as shown by the tonometer.
3. For two years after the operation, the visual acuity and fields (which often improve to a marked extent) must not become worse than they were before.

Finally, Holth expresses his opinion that, although the classical iridectomy is still indicated in acute glaucoma, yet Lagrange's idea was a most happy one, and that anterior subconjunctival sclerectomy is destined to be the basis of all the future surgical treatment of chronic glaucoma.

Major Elliott[20] concedes that Herbert and Lagrange have proved their case, but considers that "the operation of Herbert is a difficult and complicated procedure, and that the operation of Lagrange, while less difficult, offers some risks," while the operation he advocates can be easily performed, and without the same risk. Briefly, his operation consists in trephining at the limbus with a 2-mm. trephine, leaving the button in place, or removing it with the trephine or scissors and forceps. In most of his cases the button was removed, and in some, twenty-one out of fifty, a small button of iris was removed. Fifty patients were operated on, and in no case up to the time of publication had the operation failed to relieve tension.

In another article[20] Major Elliott reports four cases showing the evidences of a filtering cicatrix a long time after operation; the first, eighty-six days; the second, three and one-half years; the third, seven and one-half years; and the fourth, ten years. The last two of these appeared to owe their filtration to tiny fistulization. His communication, he states, is simply a preliminary note on a new operative procedure for the establishment of a filtering cicatrix in the treatment of glaucoma. At the December meeting of the New England Ophthalmological Society, Dr. Verhoeff[21] presented a circular punch based on the principle of the bicycle tire punch, which will remove a button of sclera at one or both ends of a sclerocorneal incision, with a minimum of traumatism. He first cuts a conjunctival flap, which is pulled down over the cornea, and a sclerocorneal incision is then made with a keratome. The little rounded guard of the punch is then slipped into the wound, and to one corner, when by screwing down the sharp-edged cylinder, the button is cut and removed with the instrument. A small extrasphincteric iridectomy is then made. Fergus[22] also recommends a similar modification of Lagrange's operation by using the trephine, which is applied far enough back to avoid opening the anterior chamber, to which he adds a modified cyclodialysis obtained by pushing a repositor between the exposed ciliary body and the sclera, until its point comes into the anterior chamber. He has, therefore, modified the operation of Heine rather than that of Lagrange. Stephenson[23] reviews the use of the trephine in the treatment of glaucoma, calling attention to its advocacy by Argyll-Robertson thirty-four years ago, and later by Blanco and Frölich. These operators removed the scleral piece posterior to the ciliary body, while Fergus, Elliott and Verhoeff, now remove the disc from a point nearer to the limbus.

In 1905, Heine brought out his operation of cyclodialysis for the establishment of a passage for the escape of aqueous from the anterior chamber into the suprachorioidal space, and in the discussion of the question of a filtering cicatrix it would seem proper to bring up the question of this operation, which, however, could hardly be compared with the true filtering cicatrix, in that the passage of aqueous into the suprachorioidal space, following cyclodialysis, has been proved to be only temporary. The operation, however, is of value in certain classes of cases in which a sudden emptying, or partial emptying, of the anterior chamber is unwise. In such cases, Heine's operation should not constitute the whole treatment, but should be employed preliminary to a Lagrange, or some of its modifications. It is especially indicated in cases in which there is a high degree of tension with a marked sclerosis of the retinal arteries and consequent danger of hemorrhage, and particularly in those cases in which the fellow eye has been lost by reason of such an accident. Weekers[24] reports on five cases, in which Axenfeld operated after Heine's method, and which gave disappointing results in that the tension fell only to rise again. The operation devised by Fergus may prove to be a modification of the Heine, with the advantage of more permanent results. Fuchs has tried trephining, but operating away from the cornea, and only found that temporary relief was obtained. He has also tried Heine's operation, but has given it up as it did not permanently cure the condition, and as on pathologic examination it was shown that in cases in which cyclodialysis had been performed cicatrization completely occluded the spaces between the anterior chamber and the perichorioidal space. Arnold Knapp[25] reports a number of favorable results following the use of Heine's operation in his hands, but the general opinion of surgeons who have tried the operation seems to be that it is not permanent enough in its effects to generally replace iridectomy for chronic glaucoma, while the Lagrange operation, or some of its modifications, seems to be growing in favor.

---

[17] Duvigneaud Rochon: Arch. d'ophth., March, 1908.
[18] Bettremieux: Clin. Ophth., August and September, 1907.
[19] Holth: Ann. d'ocul., July, 1909.
[20] Elliott: Ophthalmoscope, December, 1909.
[21] Verhoeff: Ophthalmoscope, March, 1910.
[22] Fergus: Ophthalmoscope, February, 1910.
[23] Stephenson: Ophthalmoscope, February, 1910.
[24] Weekers: Klin. Monatsbl. f. Augenh., August-September, 1907.
[25] Knapp, Arnold: The Operative Treatment of Glaucoma by Cyclodialysis, The Journal A. M. A., Sept. 4, 1909, liii, 765.

CASE 1.—*History.*—The patient, F. M., aged 23, watchmaker, came to me Sept. 13, 1907. The case is especially interesting on account of the youth of the patient. The family history is also interesting in that the mother, at the age of 46, came to me with absolute glaucoma of the right eye, which, not yielding to iridectomy twice performed, required removal. Outside of glaucoma in the mother, there is no other family history of importance in the case. For three months before the patient came to me, the sight of the right eye had gradually failed with occasional attacks of discomfort, and the constant appearance of a rainbow around lights. On waking up in the morning both eyes were slightly congested, but this passed off in a very few hours.

Examination.—This showed the right eye vision equal to perception of light and perception of movements in the temporal field only. Tension + 1, and the pupil slightly dilated with anterior chamber shallow. The fundus showed a cupping of the disc amounting to three diopters with the retinal arteries pulsating. The left eye showed a vision of 20/30, field of vision normal, pupil slightly dilated and anterior chamber slightly shallowed, tension possibly slightly above normal, but difficult to determine owing to inability to compare with the normal eye. The fundus showed a cupping of about two diopters. Arterial pulsation only on pressure. In both eyes the optic discs were unusually large with the cupping sharply at the edge of the disc and sclera, with the vessels disappearing momentarily, entirely, in both eyes. The right eye showed entire loss of the nasal field up to the middle line.

Pilocarpin was immediately ordered and arrangements made for the patient's admission to a hospital for operation. The pilocarpin reduced the tension in the right eye, and contracted the pupils well, improving the vision in the right eye to counting fingers at two feet, in the temporal field, and improving the left eye to a vision of 20/30.

Operation.—On September 18 a Lagrange operation was performed on the right eye, and as this was the more advanced as to the glaucoma, only a small portion of the beveled edge of the sclera was removed. A moderate-sized iridectomy was performed and the large, well shaped conjunctival flap was easily replaced. I was surprised at the ease with which the conjunctival flap could be pulled down over the cornea, out of the way, allowing an iridectomy to be performed as easily as after a keratome incision. A week later the same operation was performed on the left eye, and a large sized piece of sclera removed. In this eye I also obtained a very good iridectomy and reposition of the conjunctival flap.

Postoperative History.—The healing was uneventful and unaccompanied by any entanglement of the iris in the wound. The edematous condition of the conjunctival flap was, of course, very marked, especially in the left eye. This condition of localized edema, which could be increased on manipulation of the eye, persisted for several months, and was present when the patient was seen Jan. 20, 1908, at which time the left eye showed a vision of 20/20, with a —2 cyl., axis 90°. The right eye could count fingers at two feet, in the temporal field, and in both eyes the tension was normal or even subnormal. The patient had returned to his work at the watchmaker's bench. I saw him again March 1, 1910, more than two years after my last record, and found the following conditions: The right eye, which looked perfectly white and quiet, still retained the same amount of vision, and had a normal tension. The line of incision showed very plainly as a bluish mark from 0.5 to 1 mm. in width, extending a little less than the length of the original incision. Just to the left of the center of this bluish line, there was a round bluish opening with a refracting center, as though a bubble of air were caught just under the conjunctiva. It had a diameter of 1 mm. and I felt that this represented a distinct fistulous opening into the anterior chamber. There was no surface elevation of tissue over this spot, but the conjunctival tissue represented by the original flap was slightly and evenly edematous, with a slight increase of this condition following pressure on the lower part of the eye. Continued pressure, however, did not create anything like a bleb or visibly decrease the fluid in the anterior chamber. The left eye showed, with his glass, a vision of 20/15. The eye was perfectly white and quiet with normal tension and no sign of conjunctival edema, and the incision showing as a bluish line rather wider than that in the right eye but having no appearance of fistulization.

In this case it is evident that the glaucomatous condition has been entirely relieved, though it is questionable if there is any filtration, at present, through the cicatrix of the left eye. It seems justifiable to suppose, however, that the marked filtration which was present for more than three months after operation allowed a more permanent cure from the iridectomy. The right eye, however, shows, after over two years, most of the evidences required to prove the presence of an iris-free filtering or fistulous cicatrix. My previous experiences with miotics and simple iridectomies for such advanced cases as represented by this right eye would lead me to expect a steady decline in vision instead of the complete maintenance of a vision which this patient insists is of great help to him.

CASE 2.—*History.*—The patient, Mrs. G. H., gave a negative family history. For several years the sight in her right eye had been gradually failing up to Dec. 15, 1907, when she was stricken with a very severe attack of capillary bronchitis, and on the following day developed an acute attack of glaucoma in this right eye.

Examination.—When I saw the patient, December 16, I found the right eye in condition of acute glaucoma, with entire loss of vision, steamy cornea, with greenish pupillary reflex, tension + 3, and eye very much inflamed with conjunctival chemosis and extreme pain. She was coughing incessantly and in view of her condition it was considered inadvisable to operate. Physostigmin (eserin) was accordingly prescribed to be used every three hours, and under this the pain ceased, the pupil contracted to nearly normal size, the cornea became less steamy, and the patient could discern movement of the fingers at two or three feet.

Operation.—No further improvement in vision took place, however, and the patient's condition improving, a Lagrange operation was performed on both eyes Jan. 2, 1908. The performance of the operation was very difficult on the right eye owing to the shallowness of the anterior chamber and excessive hemorrhage. The operation on the left eye was performed with no difficulty, and seemed advisable on account of the finding of slight cupping of the disc and shallowness of the anterior chamber, with a slightly larger pupil than one would expect in a woman of her age. There was, however, no increase of tension, but the eye was evidently in a condition to develop glaucoma easily. The healing was uneventful in both eyes, with appearance similar to those described in the first case. The right eye, however, at the end of three weeks developed some increased tension and pain, and there were no signs of escape of aqueous into the subconjunctival space. A second Lagrange operation was then performed to the temporal side of the original one.

Postoperative Condition.—This resulted in reduction of tension, which has remained up to the present time, though the eye has only perception of light, practically no increase of vision having been obtained from either operation. The patient was seen again March 1, 1910, over two years after the performance of the operations. The left eye showed perfectly quiet and white with no conjunctival edema, and good clean coloboma without entanglement of the iris in the wound, and the line of incision showing as a bluish-grey area, about 0.5 mm. wide, extending nearly the full length of the original incision. There was no sign, however, of fistulization, to the naked eye. The vision with a — 3.50 sph. combined with a + 1.12 cyl., axis 175°, is 20/20. The right eye showed a regular, continuous, bluish line along the site of both incisions, varying from a millimeter in width down to nothing. At the point where the two incisions came together, and also at the nasal end of the first incision, there was some entanglement of iris. There was no sign of conjunctival edema, but there was a small, bluish cystoid scar at the nasal side containing some iris tissue without other signs of a fistula. The tension was normal, and there was absolutely no pain or discomfort.

The other Lagrange operations which I have performed are so recent that I will not detail them, but simply state that all four, up to the present, show the conjunctival bleb indicative of aqueous escape into the subconjunctival spaces. They were all performed in cases of simple glaucoma in which no history or signs of previous acute or subacute attacks had ever been present, and in which the vision and fields were much reduced, and the discs cupped and atrophic; the results so far have been most encouraging as to improvement in a vision which had been steadily failing under the careful use of miotics. I should state here that in neither of my two reported cases, which now are over two years old, has any miotic been used since the Lagrange operation, nor has any been used since operation in the newer cases, so that all the improvement and maintenance of vision must be ascribed to the operation.

From my reading coupled with my personal observation, I feel reasonably sure that the Lagrange operation, or one of its modifications, has come to stay because it is a distinct advance in our operative treatment of chronic glaucoma, in that it makes the effect of an iridectomy more marked at first, and more permanent later, thus keeping the vision existing at the time of operation much longer than can be hoped for from miotics, simple iridectomy, sclerotomy or cyclodialysis.

101 Newbury Street.

ABSTRACT OF DISCUSSION

DR. JOHN E. WEEKS, New York: From the reading of the first paper of La Grange, the proceeding that he described impressed me favorably and at the first opportunity I began performing the operation. I have operated after this method in glaucoma, I think, 37 times. The operation is an iridectomy made in the manner which is at the present time classical and, in addition, the excision of a small piece of sclera. The incision is made by means of a Graefe cataract knife, making a large conjunctival flap. The operation itself is not a difficult one, in my opinion. The incision can be made so obliquely that, by grasping the conjunctival flap and pulling it forward, the piece of sclera to be excised can be exposed and rapidly excised by means of the curved scissors. I have watched very carefully the results of this procedure, and I have been very favorably impressed by it. Only a short time since a patient came to my office on whom I had operated some three years ago, and I found in that case that there was an actual filtration cicatrix in each eye. I had operated on both eyes. I found that the conjunctiva over the site of the iridectomy was somewhat raised, edematous, and by pressing on the eye the edematous condition could be increased slightly. Such is not the case in all the patients on whom I have operated, by any means, but the various cicatrices as represented by La Grange have been observed in the cases in which I have operated. First, in some of them the surface was perfectly smooth and the incision was filled by a cicatrix which showed no irregularities; second, in others there was some irregularity in the cicatrix, but not any evidence of filtration, third, there were still others in which the evidence of filtration was perfectly clear and pronounced. I know that the observations of Henderson and his histologic experiments seem to negative the claims of La Grange. Henderson concludes that the scar fills so that it entirely blocks the incision, and that no filtration results. This is true, I think, in many of the cases, but not in all. We have, then, in this operation, an iridectomy which is usually as efficient as an iridectomy made in any other way, and in addition the formation of a cicatrix, which may be a filtrating cicatrix in some of the cases at least. Moreover, if the tension does recur it is very much later in the cases in which a simple iridectomy has been performed. While at one time my impression was that I should revert to the ordinary iridectomy, at present I am of the opinion that I shall continue to use the operation of La Grange.

DR. H. GIFFORD, Omaha: I do not think that we need waste any time in discussing the possibility of making a filtrating cicatrix; that is to say, a cicatrix or opening that will stay open, between the anterior chamber and the subconjunctival tissue. I think all of you have seen, as I have, these blebs remain after an iridectomy performed in the various ways, or after cataract operations, and if you will begin massage after iridectomy and keep it up you will keep up such a bleb. But the question whether that will lower the tension of the eyeball permanently is a different one. In many cases in which I have seen this bleb left the tension has gone up, just as it has in other cases. In one case I had a beautiful bleb which stood up in bold relief in both eyes, but the poor man's tension kept up and the sight went down until he finally killed himself. So that it remains to be seen, and it will take a good deal of time for us to tell, whether anything is gained by this cutting out the sclera. Theoretically one would expect to find the shreds of connective tissue going across this opening and filling it up; but even if it does not the question of its effect on the tension is still, I say, an open one.

DR. ALLEN GREENWOOD, Boston: Holth in his article says that no case is successful unless the tension has remained normal for two years and unless at the end of two years there remains evidences of a filtering scar. This result Holth has undoubtedly obtained, according to his written description of the cases in which he has operated, and I feel confident that, in the few cases I have seen, the tension has remained down better than after the ordinary iridectomy, particularly in the cases in which the tension before the operation was considerable; and it is in those cases, as La Grange has pointed out, that you get the best results. I do not mean in cases in which there has been any inflammatory disturbance of the eye. Most of my patients have had no inflammatory signs of glaucoma; simply a cupping of the disc, with slight increased tension or occasionally plus one or over. In regard to doing the operation, it is simply an addition to the ordinary iridectomy made with the flap incision, and the cutting off of the small bevel of the sclera adds practically little to the operation itself, and I think it is an operation that for certain cases has come to stay. I think that all of you will be doing it later.

I have thus in my paper presented as briefly as possible the different operations recently devised for making the effects of glaucoma operations more permanent by efforts to establish a filtering cicatrix, or what might be better termed a subconjunctival fistulization of the sclerocorneal scar. Since writing my paper I have done additional La Grange operations, so that in all fifteen eyes have been operated on with only the happiest results. The later operations show even more clearly earlier evidences of fistulization than did those done at first. In cases in which the iris follows the aqueous out of the incision the iridectomy is done first, and then the sclerotomy follows.

Eucalyptus Oil in Treatment of Hookworm Disease. P. Wijn writes from Ngawi in Java that the number of patients with ankylostomiasis is constantly increasing in the island. During 1907 such patients formed 4 per cent. of all applying to the Policlinic, and the proportion is becoming larger yearly. But he has found a method of treatment which seems to act much quicker and more reliably than the male fern or thymol. He prescribes:

℞	gm.	
Olei eucalypti	2|5	gr. xl
Chloroformi	3|5	gr. liv
Olei ricini	10|	℥iss

This is taken three times a week in two doses, with a two-hour interval, in the morning, fasting, with a dose of castor oil the day before. The patients are allowed to go home each day after their medicine has operated. A single course of the kind proved effectual in nearly every instance, and never more than two were required. His communication is published in *Janus*, March, 1910, xv, 178.

ANOMALOUS SCARLET FEVER

A REPORT OF THREE EPIDEMICS*

WILLIAM THOMAS CORLETT, M.D., L.R.C.P. LOND.
Professor of Dermatology and Syphilology, Western Reserve University

AND

HAROLD NEWTON COLE, Ph.B., M.D.
Resident Physician, Lakeside Hospital
CLEVELAND

During the past decade there have occurred in Lakeside Hospital three epidemics of what is thought to be anomalous scarlet fever. In each of these epidemics the disease might have passed unrecognized or at least some doubt might have been entertained as to its nature, had not one or more typical cases occurred which acted as a diagnostic control. These epidemics were characterized by the mildness of the attack, the benign course of the disease together with the suppression or complete absence of the exanthem together with some other of the more important symptoms.

The first epidemic occurred in the winter of 1904-5 and started in the children's ward, but before strict quarantine and disinfection terminated its spread, the medical and surgical wards likewise contributed until eighteen cases were observed.

REPORTS OF CASES

CASE 1.—A child admitted with some slight ailment was observed to have a faint rash on the neck and face which soon disappeared, although a redness of the fauces persisted somewhat longer. There had been but a slight rise in temperature and the case attracted no special attention.

CASE 2.—A child aged 3 was admitted to the surgical service with tuberculosis of the knee. On November 30 the knee was aspirated and iodoform emulsion was injected. December 1 the temperature, which had been about normal, registered 103 F.; it became normal again on the 2d, and the following day again arose to 103. On the 4th a slight reddish, papular rash noticed over the trunk with flushing of the face. This was thought to be due to iodoform poisoning. Further examination, however, brought to light changes in the fauces; and the tonsils were red and slightly swollen. Three days later, December 7, the night nurse on duty in this ward came down with a typical infection of scarlet fever of moderate severity, whereon both were immediately isolated. The child ran a mild course with slight desquamation and was discharged Jan. 13, 1905.

CASE 3.—The case of the nurse above mentioned ran a typical course of moderate severity. It is noted that differential blood-count showed a marked increase in eosinophils.

CASE 4.—A child, aged 11 months, was in the surgical service for a hare-lip operation. Some time after the operation it was noticed that the temperature, which had been normal, suddenly arose to 103 but returned again to the normal two days later. Three days after this, December 4, it registered 101 and the next day the face was flushed, except around the mouth, and a slight rash could be made out over the body. There was also inflammation of the throat. The child was isolated, and three days later the rash had disappeared. The temperature at this time was 99. Desquamation had already begun around the neck. From this time the temperature became irregular and later a discharge was noticed from the left ear. The notes of the case show that the child was discharged well, Jan. 11, 1905.

CASE 5.—A hospital nurse, aged 19, complained of a headache, was chilly with a sore throat on December 4. On the afternoon of the same day the left tonsil was red and puffy with pin-point white spots. The temperature was 101.6. The next morning she still had headache and vomited once after taking magnesium sulphate. The tonsil being still "puffy and sore" the patient was taken to the operating-room to have it incised when one of us was asked to see the case. A diagnosis of scarlet fever was made and the patient isolated. Previous to this no rash had been seen although a slight itchiness of the skin had been complained of. At the time of our examination, however, a pinkish velvety rash could be made out on the sides of the neck and upper part of the chest. The face was deeply flushed, except about the mouth. The following day the rash was well out and of typical appearance. It then became patchy and began to fade two days later. Both tonsils became covered with a grayish exudate and general glandular enlargement was present. Throat cultures showed the staphylococcus and streptococcus. Blood count on December 4 showed eosinophilia 8 per cent.; no other change noted. The case thenceforth ran an uneventful course.

CASE 6.—A hospital nurse, aged 29, on December 8, complained of chills, sore throat, headache and vomiting. These however, were not very severe and she continued on duty. Her appetite seemed unimpaired. Two days later the face, shoulders and outer aspect of arms were found to be flushed. The tonsils were slightly enlarged and injected and the tongue coated. The following day the erythema had assumed a blotchy appearance and was limited to the regions first involved. It did not extend and was followed by a slight branny desquamation on the arms and face. During the whole course the temperature did not go above 99.

CASE 7.—A child, aged 4, was admitted to the hospital December 6 suffering from acute bronchitis; while in the ward the temperature ran from 99 to 100. On December 21 the child had a slight erythema on the trunk, legs and face and the tonsils were red and swollen. The next morning the rash was faint, the tongue was coated and the tonsils were very large. By the 25th the rash had disappeared; although the patient was under close observation no appreciable desquamation followed. The urine showed a faint trace of albumin from December 12 to December 24. The temperature was never above 100.

CASE 8.—The patient, a child aged 3, on surgical service was operated on for club-foot on December 6, and on the 7th the temperature arose to 100.5 and remained between that point and normal until December 14. On that day, although the patient had not formerly complained, the temperature arose to 102.5 and there was a slight reddish punctate eruption over the body with the face flushed, excepting the circumoral region. The tongue later presented a strawberry appearance and the tonsils were large and red. There was a general glandular enlargement. On the 20th desquamation began and the child was discharged well one month later.

CASE 9.—A nurse, on duty in the infected ward, had scarlatina accompanied by arthritis, which was not severe. Her case ran a typical course. The patient made an uneventful recovery.

CASE 10.—A laborer, aged 30, was admitted to the surgical service for a herniotomy. On December 20, four days after admission, there was a slight rash on the body with an injected throat and large, red tonsils. The tongue was swollen and coated, glands enlarged. On January 1, desquamation started and patient was discharged January 16. At no time was the temperature above normal excepting on December 29, when the wound became infected and the temperature remained above normal for a few days. The leucocyte count was 23,000, eosinophiles 11 per cent., blood cultures negative.

CASE 11.—A miner, aged 28, had been admitted to the hospital on September 4 for paraffin injection of the nose. On December 22 the patient had swollen tonsils, a suggestive tongue and a very slight, pinkish, macular rash on the body, the macules being from $\frac{1}{8}$ to $\frac{1}{2}$ an inch in diameter with a slight erythema between them and looking somewhat like measles. There was no enanthem on the buccal mucosa, no nausea, sore throat or fever; but the patient had some headache and general glandular enlargement. On December 21 there was a slight desquamation on the right hip which lasted only a few days; no desquamation was noticed elsewhere. The urine showed a faint trace of albumin from December 23 to January 10; the temperature was never above 99.

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

CASE 12.—The patient, a nurse aged 20, on December 14 had some headache, sore throat and felt feverish, vomiting four times. On examination there was a slight erythema of the arms, over the region of the scapulæ and on the face, except the circumoral region. The patient also had a coated tongue and swollen, red tonsils covered with a slight exudate. The glands were not enlarged. By the 20th the rash on face and arms had faded, having appeared nowhere else, and on December 28, there was a very slight desquamation present on the areas involved. The nurse was discharged January 9, having never had a temperature above 100 and that only during the first night. The urine showed a faint trace of albumin up to January 6.

CASE 13.—A nurse, aged 23, on December 15 had headache, sore throat, and felt chilly and feverish. The next day there was a slight rash on the chest and neck with a temperature of 100.5. The tongue was swollen and coated, and the tonsils red and enlarged. The glands about the neck showed enlargement. By the 20th the rash had disappeared but no desquamation followed. On the 24th the throat again became sore and the glands enlarged and tender with a rash over the whole body. Then typical desquamation appeared, and the patient was discharged January 10. Except during the first night the temperature was never above 100. The urine showed a faint trace of albumin for a few days.

CASE 14.—A maid employed in the hospital, aged 25, on December 22 had a sore throat, headache, backache and was nauseated. She continued to work until two days later, when on examination she showed a flushed face, except the circumoral region, with erythema over the chest and shoulders. The tongue was large and coated, papillæ prominent, tonsils red and swollen and glands generally enlarged. The erythema was entirely gone by December 27, but the patient never had the slightest trace of desquamation. The urine showed a faint trace of albumin from December 25 to the 29. There were no casts. The leucocyte count was 13,600, eosinophiles 13 per cent., throat cultures gave staphylococci and streptococci. The temperature was never above 99 nor was the pulse over 100.

The remaining cases in this epidemic showed nothing unusual except that they were very mild and comparatively of short duration. The points mainly to be noted in this epidemic are the following:

1. The relatively large numbers of adults, chiefly nurses in the infected wards. Of eighteen attacked, eight were adults, six were nurses or otherwise employed in the wards, and two were adult patients exposed while in the wards.

2. The benign character of the infection and its short course, (average being 3.9 weeks from appearance of rash to end of desquamation). The only constant symptoms that could be regarded as at all typical were the onset and the congestion of the fauces. The cutaneous manifestations, with two exceptions, are evanescent and alone insufficient for the purpose of diagnosis.

The second epidemic began in April, 1907; there were eleven cases reported, although the case notes were found much less complete than in the first epidemic. As nearly as can be ascertained the epidemic began in the children's ward as an indefinite sore throat with no distinct or constant cutaneous manifestations.

Convalescence, however, was more protracted than that observed in the first epidemic and even a larger proportion of adults were attacked. The following cases are chosen as the most typical examples of this epidemic.

CASE 15.—A nurse, aged 20, was admitted to the isolation pavilion April 19, 1907, after having had a slight sore throat, headache and malaise since April 16. On examination there was a diffuse rash over the entire body, general glandular enlargement, tongue coated, tonsils injected and the right one enlarged. There was nothing abnormal in the heart or lungs. The rash disappeared by April 22 and desquamation, which was never very profuse, did not start until May 1 and lasting until July. The temperature was never above 99.5, excepting at one time, when it went up to 100.3. The pulse was never more than 110; urine was negative. The patient was discharged July 1, 1907.

CASE 16.—A nurse, aged 21, on July 13 complained of sore throat, weakness, nausea, cold perspiration and fever. The next day she noticed an eruption and on examination there was found a marked erythema with edema of the face. There was a strawberry tongue, throat swollen, tonsils covered with a membrane, glands all palpable. The cutaneous rash and the membrane in the throat were gone by May 18 and desquamation started lasting until July. The temperature on admittance was 104 and pulse 120, both of which came down to normal in four days. No complications were noted, excepting a slight trace of albumin in the urine. Cultures of the streptococcus were obtained from the throat.

CASE 17.—A nurse, aged 20, with previous history of rheumatism and chorea, had been on duty in the infected ward. On May 9 she complained of weakness, sore throat and malaise. On the 10th a rash was noted on the chest, arms and neck and on examination there was a faint erythema over the entire body, with a strawberry tongue, swollen tonsils covered with a heavy membrane and general glandular enlargement. The throat swab showed only streptococcus. The rash was gone by the 13th and desquamation began about a week later, being finished by July. The patient developed a slight arthritis and myocarditis. The temperature remained about 101 until the 15th. The urine showed a faint trace of albumin.

CASE 18.—A nurse, aged 19, awoke on May 9 with a slight sore throat, nausea, malaise and slight fever. The next day a rash was noticed and on examination the patient had a very slight erythema over the entire body with a negative tongue and injected throat and tonsils. The superficial glands were slightly enlarged. Desquamation began on the 25th, lasting until July, although never very extensive. The urine showed a faint trace of albumin; there were never any casts. The temperature was 100 on the first day, after that normal.

CASE 19.—A nurse, aged 20, on May 4 complained of severe sore throat, nausea and malaise. Early in the afternoon an eruption first appeared on chest and neck. The following day a general marked erythema was present with glandular enlargement, tongue large, swollen, reddened, and throat greatly congested. The rash had disappeared on the 19th, and the throat was normal by the 21st. Desquamation began June 1 and lasted until July 17, although never very profuse. The temperature on admission was 102, but soon fell to normal where it remained. The urine showed a faint trace of albumin.

In this epidemic, as in the one preceding, there developed no serious complications or fatal results. The features to be noted are the sudden onset with marked involvement of the fauces and comparatively high temperature followed by a varying degree of the exanthem. There was a rapid subsidence of all symptoms followed by a retarded but protracted period of desquamation.

What may be termed the third epidemic occurred in 1909. Although but three cases were observed they furnished features that are thought worthy of mention.

CASE 20.—A child, aged 9 months, was on the surgical service for cervical adenitis, being admitted Oct. 31, 1909. It had some discharging sinuses which were being packed with iodoform gauze, and on March 21 the child developed a slight scarlatiniform rash with a temperature of 100. The rash was faint, atypical, lasting only three days. There was no nausea or vomiting. The throat was congested and reddened, while the tonsils were enlarged. At first the case was regarded as an iodoform rash, but as the patient had 7 per cent. of eosinophiles in a differential count of 200 cells she was isolated and while in isolation had a typical desquamation and double otitis. The urine also had a faint trace of albumin.

The temperature never went above 100 until the otitis developed.

Case 21.—The child in the next bed to the patient last described came down three days later with a typical scarlet fever. She was a girl aged 3, in the hospital for acute anterior poliomyelitis. The rash was marked and typical, with a temperature of 103, rapid pulse, vomiting, severe sore throat and a considerable enlargement of the tonsils. Two days later the rash faded and the case ran a typical course of desquamation with eventually a complete recovery.

Case 22.—A nurse, aged 24, was nursing the child with obscure so-called iodoform rash. Two days later she was taken off duty because of a sore throat and a feeling of malaise and headache. The throat was very red and edematous, the tonsils greatly swollen so that they met in the median line. They were partially covered with a membrane but showing no diphtheria bacilli. The glands were not enlarged, except those of the neck. The temperature was 100 on admittance, 103 two days later and afterwards never above 100. On December 1 the patient vomited several times but the tongue was never typical. The leucocyte count was 19,000; differential showed no eosinophilia; urine was negative. The patient never showed any rash or desquamation, but considering her symptoms it was deemed justifiable to place her in this list.

CHARACTERISTIC FEATURES

The most striking characteristics in this series of 32 cases occurring in three epidemics were the following:

1. *Erythema.*—There were three cases in which erythema was very slight; in one it was absent and in one it was confined to small areas and very evanescent. Two of the patients with slight erythema had it confined to the neck, shoulders and arms. It may be well to mention, in passing, that one patient had a secondary erythema.

2. *Temperature.*—This varied from normal to 105 F. Four patients never had a temperature above 99, two never above 100, and the remainder ran between 100 and 105, most of them, however, between 100 and 102.

3. *Desquamation.*—There were six cases in which the desquamation was typical and one in which it was faint but general. One patient never showed any desquamation except around the neck; another none except on the right hip. There were two in whom it was confined to the face, arms and shoulders and three never showed any desquamation.

4. *Urine.*—In only two cases was there absence of all signs of nephritis, while all the others had a faint trace of albumin; and in one case, there were casts. Two of the three patients showing no desquamation had a faint trace of albumin for a few days.

5. *Angina.*—Practically every patient in this series had a severe angina, seven of them also showing presence, more or less, of a membrane in the throat.

6. *Blood.*—The only changes noted were a marked increase in the number of leucocytes in a few cases, and in a number of instances the differential blood count showed a high percentage of eosinophiles, which is in accord with the observations of Van den Berg[1] and Kotschetkoff.[2]

LITERATURE OF THE SUBJECT

In the literature dealing with this special phase of scarlet fever, namely, the absence of exanthem with little or no rise of temperature together with other manifestations characteristic of a faint type of the disease, we find as far back as 1839, Taupin[3] observed, during the course of his internship at the Hôpital des Enfants Malades, an epidemic of five cases of scarlet fever in two of which there was no eruption. The year previously Eiselt[4] published an account of a severe case of scarlet fever in a girl of 20, in which there was no eruption, although the girl had a marked desquamation associated with anasarca. She eventually recovered.

Buttura[5] in 1857, was called on July 10, 1856, to see a young man who suffered from a well-marked scarlatinous angina. The eruption was copious and the disease followed a course typical of scarlet fever. Four days later a little girl in the same family developed croup; angina marked but no eruption throughout the course of the disease. Five days later on June 20 a little brother also developed intense characteristic anginous symptoms; the odor from the mouth was pronounced. No eruption could be observed at any time. Convalescence was prompt in all three. There were no sequelæ.

Buttura then enters into a discussion concerning the opinions of authors in regard to the possibility of scarlatina without eruption, and reviewed the literature of this subject at some length. He states that in September, 1829, there reigned in the village of Seine-et-Oise an epidemic of so-called common angina. Careful study by the local physician led to a diagnosis of scarlet fever with predominant mouth (throat) symptoms. In the Château de Villeroy, inhabited by Comte Frant and his family, thirteen persons were affected, and of these, five presented a special angina without eruption.

Trousseau observed scarlatinous angina without eruption of the skin in 1828, at Cour-Cheverny. The diagnosis was made on the strength that a boy had distinct scarlet fever with eruption. Three sisters of the boy developed fever, angina, but no eruption.

He states that Dr. Carrère observed during an epidemic at Saint-Dié (Vosges) during the winter of 1842-1843, 34 cases of scarlet fever with an eruption in 23 only, and in the majority of these it was very slight. The disease ran a benign course. In one case of scarlatinous edema with albumin in the urine; no sign of eruption appeared, although all the other symptoms of scarlet fever with angina were present.

Bouché (of Vitray) reported four cases of scarlet fever as follows: The first was typical scarlet fever without eruption; the next a typical case with eruption; the third was again without an eruption and the fourth again a usual case. Two of the cases were without eruption. The diagnosis was made from general symptoms and the presence of eruption in the other two cases occurring in the same house.

Legroux reported a case of scarlet fever in a chlorotic woman in whom the eruption could barely be made out. The eruption was likewise scarcely perceptible in an infant of four days who is supposed to have contracted it from the mother, who had scarlet fever on the second day of puerperium. The nurse had an angina without fever or redness of the skin at the time that the scarlet fever terminated in the infant.

In another house a boy had ordinary scarlatina; the sister developed a marked angina, with pronounced scarlet eruption and died. During the course of this affection the mother, her infant, and a young woman of

---

[1] Van den Berg, J. B.: Arch. f. Kinderh., 1898, xxv, 321.

[2] Cabot, R. C.: Clinical Examination of the Blood, New York, 1897, p. 177.

[3] Taupin, Charles: Essai sur la scarlatine sans exanthème, Thèse, Paris, 1839; abstr. in Jour. conn. méd.-chir., vii, 151-154.

[4] Eiselt, J. N.: Fall einer Febris scarlatinosa sine Exanthemate, Med. Jahrb. d. k. k. oesterr. Staates, Wien, 1838, New Series, xv, 212.

[5] Buttura, C. A.: Des fièvres éruptives sans éruption et particulièrement de la scarlatine sans exanthème, 1857, Paris.

24 contracted angina with pseudomembranous plaques, with fever, but without eruption, lasting six days. Three days after the death of the child, the grandmother and the father presented guttural angina, slight fever, characterized by a bright redness, but no swelling.

During an epidemic in Berlin, Dr. Helft observed cases in which no eruption appeared although all the other symptoms prevailed, occurring in families in which scarlet fever was present.

In an epidemic of scarlet fever at Loudon (Vienne) from March to September, 1841, Mondière reported that in one case of very severe angina the eruption was confined to the feet and hands only. In other cases no eruption appeared.

During the epidemic at Loches, 1835, Renaud observed three cases of scarlet fever in one family. Two children developed typical cases of the disease when the third one was stricken with all the severe symptoms that the others had shown, but at no time during the attack did it develop the slightest sign of an eruption. The course of the disease was quite severe in this case, but the child recovered.

Berrand further states that Krauss of Tübingen reports having observed scarlet fever without eruption in the proportions of 1 in 3. The cerebral symptoms predominated in these cases. He states that Dr. Machintosh reported three cases as follows: Child was taken with vomiting; condition did not improve; coma alternating with spasms, death ensued. On the day this child was buried another in the family was taken in the same manner; developed the same symptoms; marked convulsions and death. The third child was also taken. It, however, developed a typical scarlatina rash. No doubt the other two children died from scarlatina without exanthemata.

About the time Bettura's article appeared Bauer[6] reported an epidemic of 20 cases, among them being that of a boy who had, he thought, a very severe scarlatina, yet developed no observable eruption at any time. The patient eventually recovered after having had a postscarlatinal arthritis.

Anderson,[7] Banks,[8] Whelan,[9] Robinson,[10] Dreyfus,[11] and [illegible] and Wetherill,[12] also reported similar cases about this time, all agreeing that in their experience scarlatina at times existed with absence or sparseness of the eruption as well as other symptoms of scarlatina. At such times it is impossible to make a diagnosis were it not for the fact that an epidemic of scarlet fever is in progress.

Furthermore, Gosselier[13] in 1881 made a diagnosis of scarlatina in two children aged 30 months and 6 years respectively, despite the fact that they had no eruption, desquamation or throat symptoms. He based his diagnosis on the following grounds: that the children were ill for some time, the illness in each case being with fever and repeated vomiting followed later by large amounts of albumin in the urine; and that it was at a time when scarlet fever was very prevalent in the town and quite fatal. Furthermore several cases of scarlatina without exanthemata had been observed. In 1892 Baiss[14] reported three cases in one family with the following history: The first child was found to have a temperature of 102; the next day the temperature was normal, but the child had a slight sore throat and some enlargement of the glands of the neck; otherwise it seemed to be well. There was desquamation later, however, and a few days after the beginning of the child's illness a second child was seized with more severe symptoms, and with an eruption which resembled measles. At this time the third child became ill with a typical scarlatinal eruption accompanied by jaundice. Were it not for the last case it would have been difficult to diagnose correctly those preceding.

Lee[15] reports sixteen cases, occurring in four families in which four adults and twelve children inhabited the same building. The series is noteworthy because of the absence of the exanthem as well as some other symptoms. In the first two only was any rash observed. The first patient when seen had a fast pulse, temperature 101, strawberry tongue, characteristic rash and sore throat. In five patients the glands were neither swollen nor tender. Only three had sore throat and only two vomited. The temperature in all ranged from 101 to 102; the pulse in the children, from 140 to 148, and in adults from 130 to 134. The following sequelæ were noticed: One patient developed diarrhea, two bronchitis, and in two only was there desquamation. In two after some exposure there followed swelling of the submaxillary glands with rise of temperature and accelerated pulse. One woman, contracting the so-called scarlatina five days after labor, had puerperal fever.

Warry[16] reported an interesting epidemic of 150 cases of scarlatina with sore throat but with an absence of rash. The entire epidemic both in regard to those having rash and those without rash were found to be due to the milk supply. The author believed the cases without an exanthem to be scarlatina for the following reasons:

1. Many of the patients had desquamation during convalescence.
2. Others had kidney complications.
3. Several had arthritis.
4. Several developed otitis.

Further, it may be interesting to note that scarlatina without fever has also been recognized not infrequently and corresponds more or less with some of our cases.

D'Amore[17] reports several cases and Brunard in the past year states that he has observed a number of cases about Brussels. He mentions in particular three cases, in children, which occurred in one family. They ran an afebrile course and were mild, yet all three had typical scarlatina complications.

McClanahan[18] at Woodhull, Ill., also had the opportunity of studying afebrile scarlatina in a series of 150 cases. Many of his cases also were notable on account of the absence or mildness of the exanthem and other symptoms.

---

[6] Bauer, F.: Beitrag zum abnormen Verlauf des Scharlachfiebers, [illegible] 1889, xiii, 97.

[7] Anderson, W. J.: Some Anomalous Cases of Scarlatina, Lancet, London, 1884, i, 27.

[8] Banks, [illegible] Hosp. Gaz., Anomalous Scarlatina, 1888, [illegible]

[9] Whelan, J. H.: Modified and Anomalous Scarlatina, Lancet, London, 1888, ii, 759.

[10] Robinson, C. H.: Scarlatina Sine Eruptione, Lancet, London, [illegible]

[11] Dreyfus, [illegible]: De la scarlatine [illegible] à propos de trois cas observés dans la même famille, Gaz. hebd. de méd., 1884, Series 2, xxi, 490.

[12] Wetherill, Horace G.: A Series of Unusual Cases of Scarlet Fever, [illegible] New Jersey, 1888, p. 225.

[13] Gosselier, [illegible]: Kurzer Bericht über drei Fälle von anomalem Verlauf [illegible] Scarlatina, Prag. med. Wchnschr., 1881, vi, 385.

[14] Baiss, J. R.: Some Anomalous Cases of Scarlet Fever, Boston Med. and Surg. Jour., 1892, cxxvi, 620.

[15] Lee, W. R.: Med. News, Philadelphia, 1892, p. 186, Scarlatina sine Exanthemata.

[16] Warry, J. K.: Special Report on a Recent Outbreak of Scarlatina and Sore Throat Disease in Upper Clapton, Practitioner, London, 1892, xlix, 63.

[17] D'Amore, L.: Scarlatina apiretica, contribuzione alla casuistica, Progresso med., Naples, 1895, ix, 25.

[18] McClanahan, W. S.: Some Peculiarities in a Mild Epidemic of Scarlet Fever, Peoria Med. Jour., 1896, i, 339.

He says that in December, 1892, he was called to see a patient with a temperature of 101, pulse 100, restless and complaining of itching. She had red faucial and buccal membranes; the tonsils had a fibrinous deposit over them, no strawberry tongue. By the next day restlessness had disappeared but there was a typical scarlet fever eruption although the temperature and pulse were normal. In another twenty-four hours the throat was clear, the rash and all other evidences of scarlatina had disappeared and the patient had no further trouble.

From this time until 1893 he saw about 150 cases. The fauces were involved in every case, as was the presence of the strawberry tongue. In about one-third of the cases there was no eruption. In six of them it resembled that of rubeola and in three the surface was nearly scarlet, red, smooth and glossy but without the minute points seen in the scarlatina rash. In the remainder the exanthem was the ordinary scarlet fever rash except that its stages were of shorter duration.

Twenty of the cases were followed by otitis; this occurred irrespectively of the other symptoms. The temperature seldom rose above 102, and this fever rarely lasted longer than three days; in fact, in the majority, the temperature was normal by the third day. At times the disease appeared to be contagious, at other times not.

Rodger y Piza[19] had the opportunity of observing an interesting case. In a certain family there was a child who ran through a typical course of scarlatina. Rodger y Piza was suddenly called in to see a younger child who had had a high fever for twenty-four hours and was voiding dark urine. The latter on examination was found to contain blood, epithelial cells, casts and much albumin. The hematuria lasted for thirty days. On the twelfth to the fourteenth days there occurred a slight furfuraceous desquamation on the face and upper part of the chest and forearms. From the presence of scarlet fever in the house Rodger y Piza had not the slightest doubt that this was a case of scarlatina *fruste*, so called by Trousseau, only one symptom of scarlet fever being present.

THE VARIATIONS OF SCARLET FEVER

From the foregoing it seems evident that what is known as scarlet fever varies greatly in its clinical manifestations. In a violent form it may cause death within a few hours, or in its mildest form it may be evanescent and difficult to recognize. As to the *materies morbi* which gives rise to scarlet fever we know nothing positively, nor of its mode of invasion. From the epidemics herein reported as well as others cited it would appear that the toxin varies in different outbreaks. From our observation it does not appear that mild infections beget malignant strains, or the reverse. Furthermore it should be remembered that in epidemics of a severe type atypical cases occur as frequently as in those of mild type.

From the fact that the tonsils are involved at a very early stage, and from the constancy with which this symptom has been noted, it would seem that the infecting agent gains access through these glands, as claimed by Dawson[20] and Lemoine.[21]

It seems unwise, therefore, with our imperfect knowledge concerning the etiology of scarlet fever, to regard these aberrant forms, which point strongly to some aberration of the exciting cause, as distinct affections. In 1894 Duke[22] endeavored to establish a "fourth disease" in the infectious exanthemata, but the consensus of opinion does not substantiate this claim. Our observations show that the most constant symptoms are the angina and slight nephritis, while an increase of eosinophiles in the blood was observed in a considerable number of our cases. Other phenomena are usually present even in atypical forms of the disease, but they are inconstant and subject to wide variation.

1935 Euclid Avenue.

ABSTRACT OF DISCUSSION

Dr. W. L. Baum, Chicago: I think that all of us who have had much experience with scarlet fever realize the great difficulty attendant on a correct diagnosis in these atypical cases. In Cook County Hospital in Chicago a number of cases have caused much controversy among the health authorities, the attending physicians and physicians in general practice. In attempting to reach a diagnosis in these cases we have paid particular attention to the blood examination rather than to the local manifestations of the disease, and in our blood tests we have not laid so much stress on the absence of eosinophilia as on the differential blood count. We have elaborated somewhat on the theory propounded by Tillotson; that is, we have paid especial attention to the increase in the polynuclear nutritives, and so positive have we become that on that point alone do we exclude or admit the cases. We have had cases so mild that they would otherwise have escaped recognition. On the other hand, we have had cases in which the skin and throat manifestations were so manifest and pronounced that one would be led to the positive diagnosis of scarlet fever, and yet, on account of the presence of some other factor, such as a wound infection, a contrary diagnosis was established on the basis of the blood count. About three years ago I remember seeing a child with a small scalp wound, and at the same time there suddenly developed a slight temperature and sore throat, together with an erythematous rash commencing over the shoulder and extending to the sternum and other parts of the body. There seemed to be no question that the case was one of scarlet fever. When I saw the child on the following day, I was induced to make a blood count on account of the presence of the wound on the head, and as a result of the findings scarlet fever was excluded. In the meantime, the child had been quarantined in the scarlet fever ward, and six days later it developed true scarlet fever, which proved fatal. I am convinced that it is on the basis of these blood counts that the differential diagnosis in these doubtful cases of scarlet fever can be made more positively than by any other means known at the present time.

Moving Pictures of the Internal Organs. The *Zeitschrift für Röntgenkunde* opens the year and its twelfth volume with an article by C. Kästle, H. Rieder and J. Rosenthal on the kinematographic reproduction of the physiologic movements of the stomach. They describe the apparatus for the purpose and give a series of the moving pictures and also a composite view of the stomach in normal conditions and in a case of cancer. They found that a fold forms in the stomach wall above the pylorus and protrudes inside, the fold of the stomach wall growing longer and longer, the tip curving around more and more toward the pylorus outlet. As the movements of this fold are traced in the moving pictures it is seen that the fold appears like a kind of shovel, and forces the contents of the stomach out through the pyloric outlet, after which the fold retrogresses, to form anew and go through the same procedure again. In a case in which cancer was suspected the rudimentary protrusion and behavior of this fold confirmed the presumptive diagnosis of some serious disturbance in the physiologic movements of the stomach. The authors assert that this "bioroentgenography" is destined to prove valuable in the diagnosis of pathologic conditions.

---

[19] Rodger y Piza, Ramon: Un caso de escarlatina frustada, Rev. balear de cien. med., Palma de Mallorca, 1903, xxiv, 27.

[20] Dawson, W.: Med. Chron., Manchester, 1893-4, xix, 217.

[21] Lemoine, G. H.: Bull. et mém. Soc. méd. d. Hôp. de Paris, 1895 and 1896; Gaz. Hôp. de Paris, Nov. 25, 1895, p. 1337.

[22] Duke, Clement: Lancet, London, 1894, i, 791.

SPONTANEOUS RUPTURE OF THE EYEBALL

A PHENOMENON OF GLAUCOMA *

E. C. ELLETT, M.D.
MEMPHIS, TENN.

Author's Case.—Mr. S. C., aged 68, resident of Kentucky on a visit to Memphis, had been given a letter of introduction to me by Dr. J. M. Ray of Louisville. On the night of Dec. 9, 1904, about 9 o'clock, I was called to see him on account of a sudden pain in his left eye, accompanied by bleeding. He had undressed and retired, and afterward felt a desire to go to stool. His bowels moved without straining, and he again retired. After lying down he began to bleed from the left eye, and immediately to experience a severe pain. I found him still suffering such pain as to require half a grain of morphin to relieve him. The eye showed a large clot protruding from a rupture in the cornea, the corneal wound being about 10 mm. long. Oozing of blood was still going on, and the eye was so painful that pressure could not be applied. The bleeding continued for an hour and a half, finally ceasing from the effect of ice pads lightly applied or the morphin, or else spontaneously. A light dressing was then applied, and on December 12 the eye was enucleated.

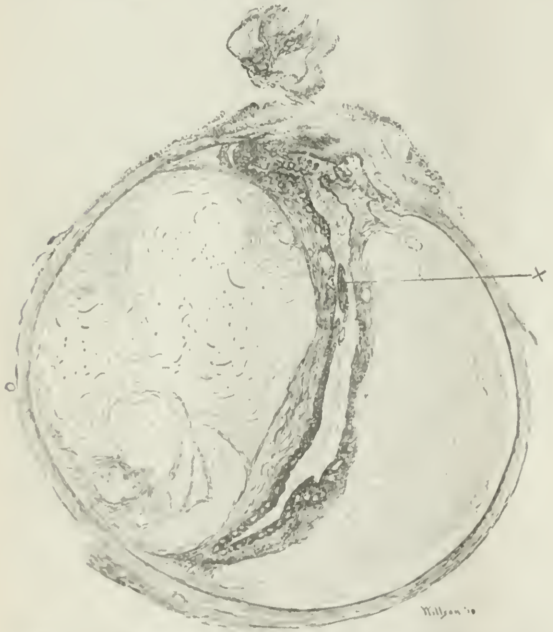


Fig. 1.—A section of the globe under low power. The swollen corneal tissue infiltrated with round cells is seen, with a mass attached to it composed of blood and ocular membranes. The tear in the cornea can be located by tracing Descemet's membrane. The clot in the center of the ball is formed by folds of the chorioid. At X is a portion of the retina. Between the chorioid and sclera is a large hemorrhage which has detached both chorioid and retina, pushing the latter forward against the iris. The lens is not seen. The section passes well to one side of the disk.

The previous history of this patient is gathered from Dr. Ray's notes, of which he has kindly sent me extracts. Dr. Ray had seen the patient, aged then 65, first in 1901, for an iritis in the right eye. This subsided with vision 20/30. The left eye in December 1901, showed floating opacities in the vitreous, incipient cataract and some plastic deposits on the anterior capsule, with synechiae. The patient counted fingers at two feet. In 1904 Dr. Ray saw the patient again, with increased tension in the left eye, ciliary injection and hazy cornea. The condition was controlled by physostigmin (eserin), and operation was declined. A few weeks before I saw the patient Dr. Ray examined the eye again. The iris was almost completely adherent to the lens, and looked muddy; the cornea was normal, eye blind, and there was some ciliary injection and lacrimation, tension normal. There was extensive destruction of the framework of the nose, and an old specific history.

To return to what I can relate from personal observation, there was marked arteriosclerosis, urine and heart normal. No cause for the rupture was discovered. There was no history of any sort of injury or straining or effort, if we accept the patient's statement that he had not strained at stool. The eye had been a little red and painful for two or three days, and it is reasonably sure that this was due to or accompanied by an increase of tension, judging from the history as related, and the microscopic appearance of the nerve-head, as subsequently determined. The eye was enucleated under ether and without any accident. The socket healed in the usual time.

The right eye was found to be the seat of an incipient cataract, vision 20/80, with — .75 S. with — .50 Cyl. Ax. 140° = 20/40, add × 3 S. = J. iii. The retinal veins were tortuous and indented by the arteries; arteriosclerosis was present. The nose and pharynx both showed evidences of former specific ulceration, in the shape of extensive scars.

The patient died in the summer of 1909, and as far as could be ascertained the right eye remained good. The cause of death was not learned.

The eye was sent to Dr. Brown Pusey, to whom I am indebted for the report on the condition of the eye, as follows:

"Macroscopically a section in the antero-posterior diameter shows a hernia of the ocular contents through the center of the cornea. The retina and chorioid are detached except at the nerve-head, and these tissues make up the mass of the hernia. The space between the sclera and the detached chorioid and retina is occupied by blood (Fig. 1). The head of the nerve shows deep cupping.

"Microscopically the corneal tissue shows inflammatory changes of marked degree. The tissue is edematous and there is a great increase of cellular elements. There is no necrotic material such as one would find in an ordinary ulcer. The tissue of the limbus region shows the same changes; the new cells here are mononuclear cells. The arteries of the limbus region have markedly thickened walls, and in one set of sections marked inflammatory changes are seen in the outer wall of a large vein (periphlebitis). The prolapsed tissue is made up of vitreous, iris, chorioid, and retina, and all of them are edematous and full of blood. There is little to be made out of a study of the iris, chorioid, and retina, except the fact that the iris and chorioid are the seat of a great increase of cellular elements, and the vessels show marked thickening of the walls. (Figs. 2 and 3).

"The most striking changes found in the tissues are the changes in the cornea and the changes in the blood-vessel walls. These changes probably explain the bursting of the eyeball and the hernia of its contents."[1]

The peculiar features of this case (I had never encountered a similar one, and Dr. Ray, a practitioner of much larger experience, apparently also had never seen a similar one) led to some search into the literature of the

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Dr. Pusey adds that in his opinion the cornea ruptured first, and the blood-vessels later from the sudden lowering of intra-ocular pressure. The probable sequence of events will be discussed later, but it would be well to say now that in forming an opinion from examination of the sections one must take into consideration the fact that the eye was not removed for several days after rupture, so that the inflammatory changes in the cornea had time to occur after rupture and before the eye was removed. It cannot be argued from the sections that the cornea was pathologic at the time of rupture.

subject. In all, twenty-two cases have been collected, one reported in 1879 (Cheatham), one in 1881 (Vergely), and the others since 1899. The references quoted by Coppez of cases reported by Baster, Kyll, and Flemming, could not be found. The cases of McKenzie, if they are the ones referred to on page 449 of his book,[2] also quoted by Coppez, are cases of perforating corneal ulcer and not at all similar to the condition under consideration.

The following are the abstract reports of the twenty-two cases referred to:

VERGELY'S CASE.[3]—A woman, 78 years old, with failing vision for three years, and opacity of the right cornea, arose one night and made an effort to urinate, after three days of pain in the right eye. A severe pain was felt in the right eye, followed by a free flow of blood from it. This was found to proceed through a tear in the center of the cornea. The bleeding ceased spontaneously, and the ball atrophied. Vergely thinks that the eye was glaucomatous, and that an intraocular hemorrhage occurred, which raised the tension sufficiently to rupture the cornea. The left eye showed a cataract.

COPPEZ'S CASE.[4]—A man, aged 69, had double chronic glaucoma. The right eye had been iridectomized, and showed cupping and atrophy of the disk, with impaired vision and contracted field. The left eye, not operated on, was almost totally blind. The left eye subsequently ruptured during a violent fit of anger, the rupture being characterized by severe pain and free bleeding. The eye atrophied and was removed nine months later. The lens was absent, the chorioid and retina detached, but not expelled.

PROFESSOR COPPEZ'S CASE (quoted by H. Coppez).—A man, aged 65, had absolute glaucoma in the quiescent stage. Leaning to look under his bed, he was seized with a severe pain in the eye, followed by a free hemorrhage. A central rupture of the cornea was found, from which the ocular contents protruded. The eye atrophied. As this eye had not been seen immediately before the accident, it is not certain that the cornea was not ulcerated.

WIBO'S CASE.[5]—A woman, aged 65, with the left eye normal, had absolute glaucoma, with exacerbations in the right eye, controlled by pilocarpin. A whitish infiltration extended from the center of the cornea toward the periphery. During a slight effort the eyeball ruptured, and with a profuse hemorrhage the ball emptied itself of its contents and membranes. A horizontal tear occupied two-thirds of the corneal diameter, with ulcerated borders. Evisceration was performed.

VILLARD'S CASES.[6] *Case 1.*—The patient, aged 65, had simple chronic glaucoma in the right eye. One month after the first examination an attack of acute glaucoma occurred, for which an iridectomy was performed. A year later the eye, which had been comfortable, but had become blind, again became painful and an ulceration of the cornea was observed. This ulcer became infected and the ball ruptured suddenly with hemorrhage and such severe pain as to cause the patient to lose consciousness. The ball atrophied, and about eighteen months later the patient died from softening of the brain.

Case 2.—The patient, aged 74, had absolute glaucoma of the left eye, with pain and hyphemia. Fourteen months later the conditions were about the same, with the addition of superficial ulceration of the cornea. The lower portion of the cornea was slightly bulged. Rupture of the cornea occurred, with subsequent atrophy.

Case 3.—The patient was a man aged 65, with traumatic corneal ulcer, hypopyon, chronic dacryocystitis and increased tension. During an effort at defecation the ball ruptured at the site of the ulcer, severe hemorrhage occurred and expulsion of the ocular contents. The ball atrophied.

VERHOEFF AND SPALDING'S CASE.[7]—A man, aged 61, had glaucoma, diagnosed as secondary. After two attacks of acute glaucoma, treated medically, he was free from pain for two years. He then had a third attack of glaucoma, at which time the cornea showed a complete yellowish infiltration. Enucleation was refused, and after five weeks the eye ruptured while the patient was quietly talking to his wife. The ball was enucleated. The ocular contents and membranes were found to be extruded. The edges of the corneal wound were infiltrated with polynuclear leucocytes. The globe contained a small round celled sarcoma.

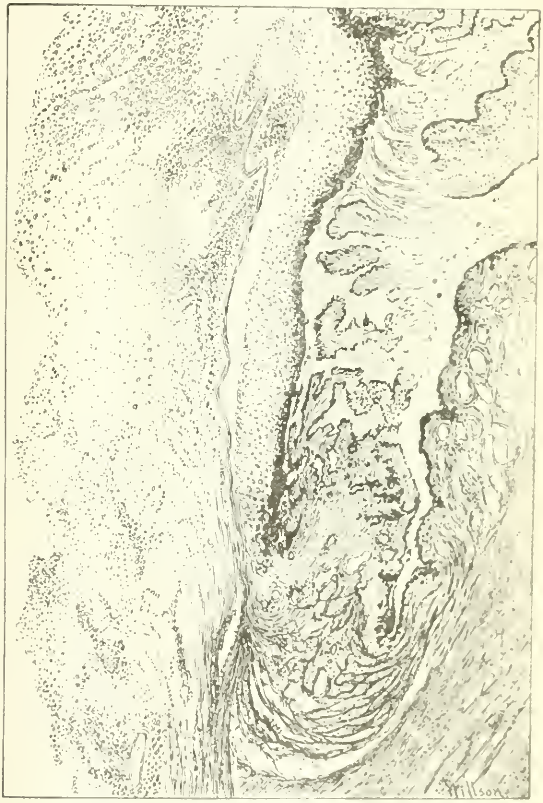


Fig. 2.—The iris, ciliary body, cornea and angle of the anterior chamber are shown under higher power. The thickening and infiltration of the cornea, the tear in the cornea and the detachment and [illegible] of the ciliary body are shown.

MILLIKIN'S CASE.[8]—The patient was a woman aged 68, blind from absolute glaucoma in both eyes. While she was quiet in her room one eye ruptured, producing a vertical tear of the cornea, extending into the sclera above. Profuse hemorrhage and subsequent atrophy occurred. There was no history of any corneal disease.

ZIMMERMAN'S CASE.[9]—A healthy woman, aged 56, had a corneal ulcer involving one-half the corneal thickness and almost its entire area, in an eye previously damaged by glaucoma. Without apparent cause the ball ruptured, the tear being horizontal and about 7 mm. long. A large hemorrhage, carrying with it the crystalline lens, occurred. The ball was enucleated.

---

[2] McKenzie: A Practical Treatise on Diseases of the Eye, Philadelphia, 1865.

[3] Vergely, P.: Bull. Soc. d'anat. et physiol. de Bordeaux, 1881, ii, 214.

[4] Coppez, H.: Sur les ruptures spontanées du globe oculaire dans le glaucome, Arch. d'Opht., October, 1908, xxviii, 609.

[5] Wibo, M.: Presse méd. Belg., Bruxelles, 1909, lxi, 193.

[6] Villard, H.: Arch. d'Opht., December, 1908, p. 768.

[7] Verhoeff and Spalding: Arch. Ophthalmology, 1901, xxx, 389.

[8] Millikin, B. L.: Tr. Am. Ophth. Soc., 1899, p. 488.

[9] Zimmerman, M. W.: Ophth. Rev., 1899, xviii, 141; Ophth. Rec., April, 1902.

Terson's Case.[10]—A woman, aged 71, with chronic glaucoma in the left eye for eight years had been blind one year. She had many attacks of pain. A vertical rupture of the cornea was found, with protrusion of the contents of globe. The patient had experienced a violent pain in the eye after going to bed, but this subsided and she went to sleep. An hour later she awoke to find that a hemorrhage had taken place. The protrusion was cut off and the ball healed.

Gama Pinto's Case.[11]—A woman, aged 63, had absolute glaucoma in the left eye. The right was also glaucomatous, and was operated on (iridectomy) with good results. The cornea of the left eye ulcerated later. After two weeks the cornea ruptured, followed by a profuse hemorrhage and expulsion of the ocular contents and membranes. The eye was enucleated.

Cheatham's Case.[12]—A woman, aged 65, born blind in the left eye, for four years had been subject to attacks of severe pain lasting several weeks. During such an attack the ball ruptured, the lens escaped and a profuse hemorrhage followed. The ball was enucleated and the retina and chorioid found to be detached and the ball filled with clotted blood.

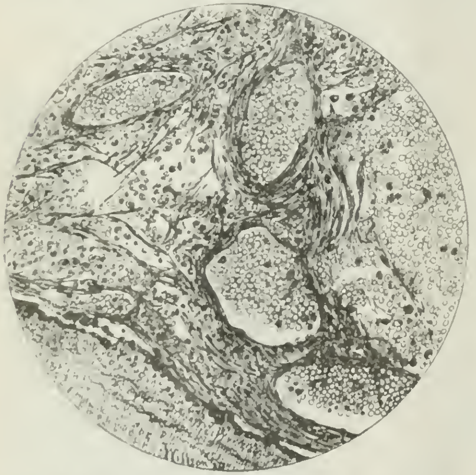


Fig. [illegible].—A section to show the chorioidal vessels under higher power.

[illegible]'s Cases.[13]—*Case 1.*—The patient was a man, aged 70. The right eye was lost from trauma. For ten months he had had attacks of acute glaucoma in the left eye. In both eyes [illegible] the diagnosis being absolute glaucoma with cataract in the right eye, and recurrent glaucoma in the left. The lens was extracted from the right eye with loss of a "quantity of vitreous and blood." In the left eye sclerotomy, and later iridectomy, was performed. The right eye atrophied. [illegible] years after the operation the left eye ruptured with violent pain, hemorrhage and loss of the lens and vitreous. The cornea was ruptured parallel with its circumference. The protruding mass was excised and the eye became quiet.

Case 2.—A man aged 75 had glaucoma in the right eye for [illegible] years, during which time he had undergone iridectomy. Rupture of the ball occurred with hemorrhage and extrusion of the ocular contents. Excision of the protruding mass was followed by atrophy of the ball.

Lissigyn's Case.[14]—A woman of 65, blind for a year, had severe hemorrhage with a rupture 4 or 5 mm. long in the lower third of the cornea; described as a perforating ulcer due to glaucomatous degeneration.

Gilfillan's Case.[15]—A woman, aged 87, with paralysis agitans and poor mental and physical condition and arteriosclerosis, had senile cataract and large corneal opacities in each eye, but no staphyloma; no note as to tension. While lying in bed she experienced a sharp pain in the left eye, and when the house surgeon reached her there had been a large hemorrhage from the eye, with expulsion of the lens and prolapse of the iris. The protruding mass was cut away and the eye healed. The rupture was in the center of the cornea and large enough to permit the lens to escape.

Fage's Case.[16]—A man had absolute glaucoma, with exacerbations, in the left eye. At one visit for such an attack the cornea was noted to be sound. Two and a half months later he returned with a horizontal central rupture of the cornea, 3 mm. long. There was no escape of the ocular contents, though the anterior chamber was filled with blood and clots lay in the corneal wound. Enucleation was performed.

Shepherd's Case.[17]—A woman, aged 81, had chronic glaucoma in one eye for a few years. The eye was blind and for a week had been painful. One night the ball burst across the middle of the cornea, this being followed by free hemorrhage and partial escape of the ocular contents. The eye was removed. The cornea did not show any evidences of ulceration.

Ingalls' Case.[18]—A woman, aged 89, had been blind in the right eye for two years. Following a severe pain the eye ruptured, with free hemorrhage and protrusion of the iris through a rent in the lower half of the cornea. The eye was removed and the whole contents found to have been expelled. The margins of the corneal perforation were smooth and not ulcerated.

Hauenschild's Case.[19]—A woman, aged 28, with apparently normal eyes, was seized with a violent pain in her right eye. The next day there was widespread subconjunctival and subpalpebral ecchymosis, and slight exophthalmus. The anterior chamber was entirely filled with blood. The eye was blind. When the blood was absorbed a rupture was seen in the sclera, 1 mm. above the corneal border, into which the iris had prolapsed. The rupture was 6 mm. long and concentric with the corneal border. The blood was absorbed and the eye shrunk. The other eye was normal.

Houdart's Case.[20]—A man, aged 72, was blind in both eyes from glaucoma. The right eye was affected also with a cataract and had been blind four years. While working in a stooping position cutting grass, the patient was suddenly seized with a frightful pain in the head, vision seemed red, and he fell unconscious to the ground. Three hours later the cornea was found to be ruptured through the middle, an abundant hemorrhage had occurred and the lens and probably other ocular contents had escaped. No intervention was allowed.

Ball's Case.[21]—Ball merely mentions that he has seen such a case.

It will be noticed that the patients, with one exception (Hauenschild), were old people, aged from 56 to 89. Indeed, with the single exception of Zimmermann's patient, aged 56, none were less than 63. In two instances (Fage and Ball) the age is not mentioned. Hauenschild's case is evidently in a different category from all the others, and, excluding this case, the patients were all the subjects of chronic glaucoma. In many of them this was established before the rupture of the eye; in others the subsequent examination or previous history makes the presumption of glaucoma plainly justifiable. The hemorrhage in all cases proceeded from the vessels of the chorioid, and the rupture of the ball occurred in the cornea. In nearly all of the cases these phenomena were spontaneous, there being usually no apparent cause, such as trauma or straining. We might profitably consider this condition, since the number of cases reported indicate that it is not so rare as not to be of general interest, and inquire how it happens, when and why it may happen, and what is our duty in case it does happen.

---

[10] Terson, A.: Ophth. Rec., 1901, x, 47.

[11] Pinto, Gama: [illegible] d'ophtalmologie, 1906, v, 52.

[12] Cheatham, W.: Louisville Med. News, 1879, vii, 292.

[13] [illegible], C.: Ann. d'oculist., [illegible], xxxvii, 27.

[14] Lissigyn: Aug. Gesellsch., 1900. Cf. Coppez, H.: Bull. et mém. Soc. franç. d'Opht., 1908, xx, 287.

[15] Gilfillan, W. W.: Tr. Ophth. Soc., New York, Acad. Med., Arch. Ophth., 1902, xxxi, 66.

[16] Fage: l'Opht. prov., February, 1909; abstr. in Ophthalmoscope, January, 1910, viii, 41.

[17] Shepherd, Cyril: Ophthalmoscope, 1909, vii, No. 7.

[18] Ingalls, J. W.: Tr. Am. Ophth. Soc., 1909.

[19] Hauenschild: München. med. Wchnschr., 1900, No. 31; abstr. in Ann. Ophth., 1900, ix, 657.

[20] Houdart: Clinique Opht., July 26, 1906; abstr. in Ophthalmology, January, 1907, and Ann. of Ophth., xv, 603.

[21] Ball, J. M.: Modern Ophthalmology, Philadelphia, F. A. Davis and Co., p. 118.

In inquiring how spontaneous rupture of a glaucomatous eye comes about, we find a difference of opinion among those who have observed it. Some assert that the rupture of the cornea is primary, and due to the perforation of an ulcer, or the traumatic rupture of an ulcerated or otherwise weakened cornea, the resulting lowered tension permitting the unsupported intra-ocular vessels to break, with resulting hemorrhage. Others contend that the intra-ocular hemorrhage is primary, and that the increased tension causes rupture of the cornea, which may or may not have been previously weakened by disease.

Whichever view we consider, it can be justified by analogy, which is well, since in a given case one cannot always be sure of the sequence of events. In favor of the idea that the rupture of the cornea is primary and the hemorrhage secondary, the occurrence of chorioidal hemorrhage during a cataract extraction could be cited. Here we see the rupture of the chorioidal vessels occur when the corneal incision and evacuation of aqueous has lowered the pressure which supports the vessels. In support of the other theory, that the hemorrhage is the primary event, the occurrence of cerebral hemorrhage might be regarded as analogous. With or without apparent exciting cause, but presumably accompanying an increase of blood-pressure from some cause, the diseased vessel breaks. The question now arises whether a hemorrhage from the choroidal vessels can increase the intra-ocular pressure to such a point that rupture of the cornea will follow. Among those who have reported cases a difference of opinion is found. Villard, Verhoeff and Spalding, Valude (discussing Terson's cases, q. v.), Gama Pinto, Bialetti and Lissigyn, express themselves more or less emphatically to the effect that the sequence of events is, first, the rupture of an ulcerated cornea, and then the hemorrhage. Verhoeff and Spalding, in particular, question the possibility of a hemorrhage raising the pressure enough to rupture the cornea, since the intra-ocular pressure is already as great as, and dependent on, the blood-pressure. A rupture of an intra-ocular vessel, then, does not, according to these observers, increase the intra-ocular tension. On the contrary, Wilo, Gilfillan, Millikin, Fage and Ingalls think that the hemorrhage preceded, and presumably caused, the rupture in the cases they observed. Shepherd says that the cornea in his patient was normal, and to the best of my belief it was so in my patient as well.[22]

In cases not observed before rupture it may be hard to tell, since all of the ulcerated corneal tissue may be torn away by the passage of the blood and vitreous through the rent. While the pathologic report on the case here shows the [illegible] signs of ulceration of the cornea, the fact that enucleation was not done till five days after the rupture gave a sufficient interval to permit these changes to have taken place after the accident. In this connection I would call attention to the appearance of the microscopic sections.

In reference to the point raised by Verhoeff and Spalding, we now believe that the intra-ocular fluids are not secretions, but the product of a filtration process. Such a filtration can take place only when the pressure in the blood-vessels, whence the fluid comes, is greater than the pressure within the eyeball, into which the fluid filters. The intra-ocular pressure cannot exceed the blood-pressure, but, on the other hand, it would seem that the blood-pressure must exceed the intra-ocular pressure. It has been shown experimentally[23] that when the intra-ocular pressure is raised to 50 mm. of mercury filtration ceases. This would indicate the intravascular pressure always is about twice that of the normal intra-ocular pressure. If this is correct, then blood escaping into the eye with a *vis a tergo* equal to the intravascular pressure could exert sufficient force to rupture a weakened cornea.

The occurrence of this distressing accident is predicated on the existence of several conditions. A study of the reported cases would justify one in saying that these conditions are glaucoma, vascular disease and probably an ulcerated or otherwise weakened cornea.

Glaucoma, on theoretical grounds, would not appear essential to the occurrence of this accident, but, in fact, it is present with too great regularity to be regarded as a coincidence. The vascular changes, with increased blood-pressure, necessary to produce the condition in question, seem always to produce glaucoma, a fact easily understood in the light of the now general appreciation of the close relation between glaucoma and vascular disease.

The vascular changes have been more often inferred than demonstrated in the reported cases. While arteriosclerosis is often mentioned as being present, the conditions of the blood-vessels in the enucleated eye are mentioned only by Coppez and Ingalls. Degenerative and proliferative changes in the blood-vessels of the retina and uveal tract are described by these writers, those in the uveal tract being the ones that concern us most. The changes described and illustrated in my own case may be regarded as typical.

It is well known that hemorrhage into a glaucomatous eye may occur without producing rupture of the cornea. Such a case is described by [illegible],[24] and they are probably not very rare. They are sometimes erroneously referred to as cases of hemorrhagic glaucoma.

In the absence of the necessary conditions of vascular degeneration and increased blood-pressure, the cornea can be ruptured or destroyed in a glaucomatous ball without precipitating a hemorrhage. The commonest example of this is when an operation involving corneal section is performed for the relief of glaucoma. In addition to these common instances, two cases have come under my notice which still further illustrate this point.

---

[22] It is interesting to note that at the end of the abstract of Houdart's case appearing in the Annals of Ophthalmology (xv, 603), the reviewer doubts the possibility of any intra-ocular hemorrhage having sufficient force to cause a rupture of the cornea, and thinks that the hemorrhage was probably spontaneous, but the corneal rupture almost certainly caused by the patient striking the eye when he fell unconscious to the ground.

[23] Niesnamoff: Arch. f. Ophth., [illegible]. Quoted by Parsons: The Pathology of the Eye, New York, 1906, ii, 967, G. P. Putnam's Sons.

[24] [illegible]: Arch. f. Augenh., September, 1906, lvi, 1; abstr. in Arch. Ophth., 1907, xxxvi, 375.

A woman, aged 60, without manifest vascular disease, was attacked with glaucoma in the right eye in September, 1907. Although repeatedly advised by her physician to be operated on she would not consent. I was asked to see her on July 13, 1909, and found the whole cornea destroyed, its place being occupied by the iris, covered with granulations. Enucleation was performed without accident.

A little boy, aged 5, was brought to me for an injury to his right eye from a fall. I found buphthalmia and extensive corneal rupture. There was no intraocular hemorrhage, doubtless owing to the normal condition of his blood vessels. The eye was enucleated.

This is an occurrence, then, that must be put in our category of possibilities in cases of chronic glaucoma of the subacute or chronic congestive type. Simple glaucoma apparently does not cause it, and acute glaucoma would probably cause a scleral ectasia (ciliary staphyloma) instead.

The indications for treatment are briefly stated. The eye is lost and in general should be removed. If not it will atrophy. There is no exception to this in the reported cases in which the eye was not removed. No sympathetic trouble seems to have been so far observed to follow the retention of an eye so damaged, one cause of its non-occurrence being the advanced age, and consequent short subsequent lives, of the unfortunate patients.

Randolph Building.

ABSTRACT OF DISCUSSION

Dr. J. M. Ray, Louisville, Ky.: I saw the case reported by Dr. Ellett and had the man under my care for a long while before Dr. Ellett saw him, first at his home, when he was suffering from iritis in one eye, and later on in the other. It continued to recur at long intervals first in one eye and then in the other, up to the time I last saw him. Each attack of iritis was accompanied by increased tension. The iris presented a number of adhesions to the lens capsule and was atrophic. The cornea would become hazy during these attacks and the vitreous contained floating particles. The inflamed condition of the iris and the opacities in the lens and vitreous interfered with a satisfactory ophthalmoscopic examination. The patient while under my care showed nothing more unusual than a relapsing iritis of a subacute character, accompanied by increase of tension during the attacks only. Stigmata of former specific disease in pharynx and nose were present. I advised him to have an iridectomy done, not so much because of tension, which was never very great at any time I saw him, but to check the relapsing iris inflammation that was leading to degenerative changes in the ciliary body and choroid. I can see very well how an acute glaucoma could have developed between the time I last saw him and the time of Dr. Ellett's visit. I believe that tension in an eye otherwise degenerated from an old iridochoroiditis could have produced sufficient interference with the nutrition of the cornea to lead to its rupture, and then the hemorrhage, occurring as a result of the removal of the normal resistance on the walls of the sclerosed retinal and choroidal vessels.

It would seem to be impossible that the tension in an eye from rupture of a blood vessel in its interior could be greater than the pressure in the blood vessel that was the seat of rupture. Therefore knowing the great resisting power exerted by the ocular tunics, it seems unreasonable for such a condition to take place in an eye where the ocular structures are of normal resistance.

From a consideration of the report made by Dr. Ellett and the eye as I saw it, it appears to me an ideal case for the occurrence of such a condition. Relapsing attacks of iritis were attacks accompanied by glaucomatous symptoms, with, eventually, degenerative changes in all the ocular structures, [illegible] to which acute hemorrhagic glaucoma are liable to occur. While I feel sure the patient did not suffer from [illegible] the changes preceding the fulminating glaucoma were such as would interfere seriously with the nutrition of his cornea and make it less resistant to an acute attack of tension.

Three weeks before he was seen by Dr. Ellett he presented some ciliary injection, no great tension, a degenerated iris, and a hazy cornea. I gave him a letter to Dr. Ellett, fearing he might have trouble while on his visit to Memphis. I have no note of the arterio-sclerosis, but his family physician had been treating him for rheumatism. He died most probably from cerebral hemorrhage, as near as I could get at the facts on inquiry.

Dr. S. L. Ledbetter, Birmingham, Ala.: Last fall, at the meeting of the Southern Medical Association, at New Orleans, I read a paper in which I reported a case of double glaucoma with ruptures occurring at an interval of a year. The case was first seen by Dr. Sibley, of Birmingham, and the eye removed after the rupture. Just one year later I was called to see the same patient under similar circumstances; the ball had ruptured. The history, as I got it, showed clearly an inflammatory glaucoma. There had been a history of severe pain for two or three days, with intense pain just before the rupture, and when I saw the case there was a wide, open wound, and the ball was filled with clot. The patient was an elderly woman, 65 years of age, with probably arteriosclerosis. I learned that she died two or three months after the last operation. I do not know the cause of death. The case was interesting to me because of the history of having lost both eyes from the same condition. The attending physician told me he had seen her but once or twice before sending for me; that the eye was in an inflammatory condition, with a haziness of the cornea. Dr. Ellett was at the meeting at New Orleans, but left before I read my paper, so I do not charge him with any negligence in not mentioning my case.

Dr. R. H. T. Mann, Texarkana, Tex.: I agree with Dr. Ray that the intraocular hemorrhage had nothing to do with the rupture of this cornea, or it does not ordinarily. I have a patient, a physician, who came into my office with a degenerated eye and said: "I want to show you something very peculiar about this eye." He held his head down, and immediately the anterior chamber filled with blood. I do not know the cause of it, but he said it had been so for years. He could produce the hemorrhage at any time. I could not see the back of the eye. I advised him to have it enucleated. He still has the eye. I have seen it a number of times. It certainly shows to me that the blood in the eye would not produce the rupture.

Dr. E. C. Ellett, Memphis, Tenn.: Since the presession reprints appeared Dr. Lewis H. Taylor has written to call my attention to a case which he reported to this Section in 1908 (*Tr. Sect. on Ophth.*, A. M. A., 1908, p. 125) in discussing Dr. Black's paper on "Cardiovascular Diseases." This was overlooked because titles were consulted in searching for other case reports. Dr. Taylor's case was one of repeated intraocular hemorrhages, with resulting increase of intraocular pressure and rupture of the ball, somewhat different in character from the other cases which I have quoted. In addition to one case reported by Dr. Verhoeff, which I have quoted, he has called my attention to another case of rupture associated with chorioidal sarcoma reported by him in the *Archives of Ophthalmology*, 1904, xxxiii, No. 3. He has also protested against what I had to say in regard to his views on the question of whether the corneal rupture or the hemorrhage was the primary incident. I am glad to quote from his letter, and to say that it was far from my intention to misrepresent anyone, nor can I see that I have done so:

> In your discussion of the case of rupture of the cornea due to intraocular sarcoma reported by Dr. Spalding and myself, I think you give a wrong impression as to our view in regard to the cause of the rupture. In the first place we did not come to a positive opinion as to whether the hemorrhage was primary or secondary, but at that time simply regarded it as more probable that it was secondary. You state that 'a rupture of an intraocular vessel then, does not, according to these observers, increase the intraocular pressure.' What we actually said was that 'it is doubtful if an intraocular hemorrhage would appreciably increase the pressure in an eye already under a high tension, for the increase in pressure could be no greater than the difference between the pressure of the blood within the ruptured vessels and the pressure already present in the eye.' What we meant by this was that since the eye had been under an extremely high tension for several weeks, as indicated by the clinical history, the added pressure due to an intraocular hemor-

rhage would probably be too slight to explain the rupture of the cornea if the latter was intact, and if the latter was ulcerated it would be more reasonable to suppose that the ulcer was due to high tension. You imply that we did not know that the intraocular pressure of a normal eye is much less than the blood pressure. This fact is of course known even to a tyro, and the above quotation shows that we were aware of it. You will be interested to know, however, that I later definitely determined that the hemorrhage was primary in this particular case. I am sending you a reprint in which I explain this (page 248, Case 3). In this paper I also report another case of the same kind (Case 2) which I am sorry that you could not have included in your list. In this paper also you will notice that I call attention to the ease with which an intraocular sarcoma may be overlooked in an eye filled with blood, and I have no doubt that many have been so overlooked. In regard to spontaneous rupture of the cornea in glaucoma in general I am sure that the hemorrhage may be either primary or secondary, but as to which is the more frequent I am still undecided."

LUTEIN EXTRACT IN THE TREATMENT OF DECREASED MENSTRUATION AND THE PREMATURE MENOPAUSE

ELLICE McDONALD, M.D.
NEW YORK

Disturbances of menstruation are always difficult of treatment. The factors which cause and control menstruation are so little known and understood that treatment is largely empirical and experimental. Investigation into the function of the ovary and its influence on menstruation and pregnancy are, however, beginning to shed new light on these processes, and give hope of the relief of these conditions by scientific treatment.

INTERNAL SECRETION OF THE OVARY

The function of the ovary and the effect of its internal secretion are becoming better understood, and the influence of the corpus luteum on menstruation and pregnancy are now being studied experimentally in animals.

Brown-Séquard[1] appears to have been the first to suggest an internal secretion for the ovary and supposed that it was concerned in the secondary sexual characteristics. Since then many investigators have sought the presence and mechanism of the production of this internal secretion. Gustav Born[2] first suggested the hypothesis that the corpus luteum of the ovary was a gland with an internal secretion which affected the uterus and presided over the nidation and development of the ovum. Fraenkel,[3] by means of extensive experiments claims to have maintained Born's hypothesis that the corpus luteum is a gland with an internal secretion and that the corpus luteum causes the menses. He claims that as the corpus luteum is an organ sharply defined from the rest of the ovarian substance, and surrounded by connective tissue, histologically it resembles a gland, being similar to the liver or suprarenal. He holds that there is no essential difference between the true and false corpora lutea, which are ovarian glands controlling the nutrition of the uterus from maidenhood to menopause and causing insertion and development of the fertilized egg, and menstruation when the egg remains unfertilized.

TROPHIC INFLUENCE OF CORPUS LUTEUM

These facts are upheld by a long series of his experiments on rabbits, in which he found that if the corpus luteum was destroyed during the early part of pregnancy, while embedding of the ovum was in process, pregnancy always terminated. The trophic influence of the corpus luteum, carried by the vessels, is exercised on the uterus and is necessary to the insertion of the egg. The influence of the so-called false corpus luteum was also determined on non-gravid animals by burning them out, when temporary atrophy of the uterus occurred. Also, in a number of non-gravid [illegible] at operation the corpora lutea were burned out, with the result that menstruation remained absent for one or two periods.

Daels[4] attacks Fraenkel's conclusions as being too sweeping. He denies the hypothesis of a specific function of the corpus luteum in regard to the embedding and development of the ovum. He also denies that the development of the corpus luteum, with its internal secretion, produces menstruation or that maturation of the follicle and menstruation are in a regular relation to each other.

While Fraenkel's conclusions are sweeping and can be maintained only by facts very difficult of proof, Daels' denial of the value of his work in its entirety is unjustified, and it may be considered proved that while maturation of the follicle and the secretory action of the corpus luteum may not cause the menses, at least menstruation is much influenced by it. We know undoubtedly that menstruation cannot occur without the ovaries and that the formation of the corpus luteum is a periodic affair, and may be of the same periodicity as menstruation. It is probable, therefore, that the corpus luteum may have an action on the uterus as a hormone, or "chemical messenger." Just as the injection of dilute mineral acid into the duodenum provokes a secretion of pancreatic juice, so the secretion of the luteum may stimulate the uterus to menstruation or aid in embedding the ovum.

Kleinhaus and Schenck[5] have brought additional evidence of the influence of the corpus luteum on [illegible]. Their experiments show that, after the embedding of the ovum, destruction of the corpus luteum does not cause interference with the pregnancy; but before the ovum is embedded, termination of the pregnancy usually occurs.

INFLUENCE OF THE OVARY ON UTERINE NUTRITION

Carmichael and Marshall,[6] from their experiments on rabbits, also show the great influence of the ovary on uterine nutrition. They state that removal of the ovaries in young animals prevents the development of the uterus and Fallopian tubes. These remain in an infantile condition, but otherwise, the growth and general nutrition of the animals seems unaffected. They state that removal of the uterus in the adult animal does not give rise to any degenerative change in the ovaries if the vascular connections of the latter are intact. Bond,[7] however, claims there is evidence that there is a substance, a clear watery saline fluid, of low specific gravity, which is elaborated in the uterus between menses, which stimulates the growth of the corpora lutea, and that its absence favors overgrowth of the lutein tissue in the ovary. Holzbach,[8] however, has shown that the ovaries will persist in their function in women after removal of the uterus, and that an adequate amount of ovarian tissue, capable of function, was found in four patients, reexamined several years after the operation of hysterectomy.

Rebaudi[9] had also shown that the removal of the ovary is prone to cause a compensatory [illegible] in the other glands of internal secretion. He removed the ovaries in animals and found within two weeks a gradual progressive hypertrophy of the islands of Langerhans in the pancreas. He then found that when the corpora lutea alone were destroyed with the cautery, the changes occurring in the islands of Langerhans were essentially similar to those which occurred when the whole ovary was removed. He presents this as direct proof that the corpora lutea are organisms of internal secretion, and that they represent the main, if not the only, tissues of the ovary having an internal secretion.

---

[1] Brown-Séquard: Compt. rend. Soc. de biol., 1889.
[2] Born: Quoted by Fraenkel, Arch. f. Gynäk., 1903, xviii, 438.
[3] Fraenkel: Arch. f. Gynäk., 1903, lxviii, 438.
[4] Daels: Surg., Gynec. and Obst., [illegible], 1908.
[5] Kleinhaus and Schenck: Ztschr. f. Geburtsh. u. Gynäk., 1907, lxi, 2.
[6] Carmichael and Marshall: Brit. Med. Jour., Nov. 2, 1907.
[7] Bond: Brit. Med. Jour., July 21, 1906.
[8] Holzbach: Arch. f. Gynäk., 1906, lxxx, 2.
[9] Rebaudi: Gynec. mod., Dec. inter., 1908.

INFLUENCE OF THE THYROID AND SUPRARENAL GLANDS ON SEXUAL CHARACTERISTICS

The influence of the thyroid amongst glands of internal secretion on the menstruation and sexual characteristics is not unknown. Disturbances of menstruation are common with exophthalmic goiter. Patients under my care have had menstrual disturbances following thyroid medication for obesity. The menstrual flow was more profuse, and in some cases, twice monthly. Galante[10] reports three cases of goiter in which there was marked change in the menstruation following galvanization of the thyroid gland.

The suprarenal gland has been shown in a forcible manner by Bullock and Sequeiria to have an influence over sexual development. Several cases in which the suprarenal was the seat of a tumor were collected, and showed that there was marked precocious sexual development in children, with development of the uterus and secondary sexual characteristics.

These evidences of the effect of the glands (other than the ovary) with an internal secretion, show that it is possible that compensatory action may occur in the absence of the direct ovarian or lutein internal secretion.

OVULATION

The time of ovulation is not, as a rule, synchronous with menstruation, but rupture of the follicle may occur at any time in the menstrual cycle. Leopold and Ravano,[11] from the investigation of 95 cases at operation, found that in only 59 did ovulation occur at the same time as menstruation, so that it is possible that ovulation may occur at any time in the month. Villemin[12] states that rupture of the follicle usually occurs ten or twelve days before menstruation, and that the period after rupture corresponds to the production of the corpus luteum. These facts are interesting in determining the time at which lutein therapy should be applied each month.

It is obvious, therefore, that the consensus of opinion of experimenters and investigators is that even if the corpus luteum of the ovary is not the cause or exciting stimulus of menstruation, at least this internal secretion of lutein has a distinct influence on the production of menstruation. Therefore, it is possible that if this lutein or corpora lutea is supplied to the organism, menstruation may be influenced in some degree. With this aim, numerous investigators have obtained corpus luteum extract of the ovary from animals, with the hope of being able by opotherapy to influence menstruation and particularly, the surgical menopause.

Sfameni reported good results with the lutein extract, and Ferroni[13] made a study of the effect of injections of corpora lutea of the ovary in animals, and reported much better results from the lutein alone than when the whole ovary was used. He believed that the effect of the injected corpora lutea was cyclic, and that there was cyclic and metabolic change. Magalhaes[14] also reported good results with the lutein extract clinically. Many others have reported good results.

CLINICAL EXPERIMENTS

With the hope of being able to benefit some of the persistent cases of premature and surgical menopause, I have been for nearly five years experimenting clinically with a desiccated extract of corpora lutea of the ovary of cows, obtained by skinning the outside of the ovary with a sharp knife in order to obtain as much of the essential substance as possible, drying and powdering. The cow was chosen on account of the relatively large amount of lutein cells present.

I did hope to continue this study until 100 cases had been treated and the results studied, when more definite conclusions might be formed and correct therapeutic indication decided; but the publication of an article by Morley,[15] with conclusions contrary to mine, led me to report this small series of 20 cases at this time. Morley, using the same product, supplied the lutein extract to ten physicians, who returned a report of 18 cases to him. Fourteen were cases of surgical menopause, and one physician treated as many as five. It is needless to say that in a condition as obscure as the surgical menopause, as easily subject to spontaneous variations of condition, and as dependent on the individual verbal report as to the condition, this form of investigation is to be deprecated. The surgical menopause is a condition which time cures and psychotherapy may benefit. It can not be expected that definite conclusions can be drawn from one case or therapeutic indications be discovered by five. I have, therefore, been induced to report this small series with the hope that physicians may not be led to expect to find in lutein extract a universal panacea for that protean disturbance, the surgical menopause.

I have treated in all twenty cases. Ten of these cases were of scanty menstruation or approaching premature menopause. Ten were cases of surgical menopause. These cases will be discussed according to these two classes.

PREMATURE MENOPAUSE

The condition of premature menopause is one which attacks comparatively young women, between twenty and thirty-five years, and is marked by lessened menstruation, with various nervous manifestations, such as headaches, flushes and other neuroses. The condition is said by some writers not to occur before 33 years, but the establishment of the complete menopause often extends over several years, and the first effects of the condition are frequently to be observed in much younger women. It is usually associated with the lack of sexual function, as the condition is more common among spinsters and quite often dates from an illness or some definite change in nutrition or environment. This lack of sexual function in these women is curiously in consonance with the experiments of Bond who found that, in unilateral oöphorectomy in animals, the hypertrophic changes in the ovary with the formation of corpora lutea were maintained if repeated copulations were allowed.

In these ten cases of scanty menstruation, seven patients were benefited by the administration of extract of corpora lutea, gr. v. (0.3 gm.), three times daily before meals. The earlier the case was treated, the more definite seemed to be the results. The three chronic cases, in which the patients were not benefited were well-established cases with marked nervous symptoms, and did not respond to the treatment. One of the patients improved after dilatation of the cervix with the administration of the corpora lutea extract; but as it was doubtful whether the corpora lutea extract, which had been ineffectual, without the operation, was in any way responsible for the improvement, the case was classed amongst the unimproved.

---

[10] Galante: Ann. di ostet. e ginec., Milan, 1909.
[11] Leopold and Ravano: Arch. f. Gynäk., 1907, lxxxiii, 3.
[12] Villemin: La Gynécologie, May, 1908.
[13] Ferroni: Arch. di ostet. e ginec., May, 1907.
[14] Magalhaes: Brazil-med., Aug. 22, 1907.
[15] Morley: Jour. Mich. State Med. Soc., November, 1909.

The menstruation, in the seven cases of improvement, increased in amount and duration of flow. Two patients reported marked change in the character of the flow. In one very remarkable case, the patient was brought back to her normal duration of flow, of four days, while taking the lutein extract, and while untreated, menstruated two days. She was treated for three alternate months and flowed four days, while at the three alternate months untreated, she flowed two days. This seemed definite evidence of the effect of the corpora lutea in this case.

SURGICAL MENOPAUSE

Amongst the ten cases of surgical menopause, one patient was made distinctly worse, and the treatment had to be discontinued. Five were not improved and four reported some improvement. The patient who was made worse had had hysterectomy for fibroid tumor, in which an ovary had been left. The treatment was begun immediately after the operation, and caused such severe disturbance at the time of the expected menstrual period that treatment was discontinued. The patient did not suffer as markedly from the surgical menopausal symptoms after the discontinuance of the lutein extract. It is possible that the lutein excited the activity of the remaining ovary.

Another case was one of removal of both tubes and one ovary, with resection of the second, in the hope that by leaving a remnant of the ovary menstruation would continue. The remnant of the ovary remaining was about 2 by 1 cm. The menstruation did not appear for three months; after treatment for one month with lutein extract, menstruation reappeared and continued regularly thereafter. The small remnant of ovary has swollen to the size of a hen's egg, and there is pain in that region before menstruation. It is thought that the enlargement is cystic in character.

The remaining cases of surgical menopause in which the patients were benefited by the lutein extract were those in which the treatment was begun after operation, and there was no way of judging how severe the menopausal symptoms would have been without treatment. The five patients not benefited had had hysterectomy where the menopausal neurosis was well established.

Thus, in the ten cases of surgical menopause, only one patient was definitely helped. Five were absolutely uninfluenced, and three were doubtful.

If patients with surgical menopause, in whom the uterus has been removed, are expected to be benefited by the lutein extract of the ovary, why are not those patients who have had hysterectomy, with retention of the ovaries, much benefited by the presence of these lutein-forming organs with their internal secretion? Holzbach[16] has shown that the ovary after operation retains its function, and he also states that those patients who retain a functioning ovary suffer in a more marked degree from symptoms of the surgical menopause. The majority of gynecologists now, I think, believe that the retention of the ovary after hysterectomy is ineffectual in the control of the surgical menopause, unless sufficient of the uterus remains to allow menstruation.

INTERNAL SECRETION ONLY ONE FACTOR

The manifestations of the surgical menopause are too varied and extreme to allow explanation by the mere absence of the internal secretion of the ovary. The internal secretion of the ovary is only a factor in the process of the menstrual life. It may be the hormone or "chemical messenger" which stimulates the uterus in one of its functions. Let no one hope to control these physical changes and nervous explosions of the surgical menopause by the supply of an artificial internal secretion of the ovary unless, at the same time, a uterus able to menstruate can be supplied.

But the study of this condition of surgical menopause, with its nervous and often perplexing symptoms, is one fraught with many pitfalls. Patients are often so influenced by any treatment that it is difficult to decide which is the help. Time gives the correction and the treatment often gets the credit. I have seen patients benefited by Eddy's m[illegible] and chromium sulphate. However, in my experience in surgical menopause, I cannot say that any patient was definitely helped except that case in which a fragment of ovary was retained. Gellhorn[17] has reported a somewhat similar case, in which menstruation, which had been absent for six months, reappeared after the administration of ovarian extract, and a regular flow ensued.

Amongst the seven cases of so-called nervousness of premature menopause, definite improvement resulted. In all cases there was an attempt at the same time to improve the nutrition. Three married women voluntarily stated that there was a definite increase in sexual desire. I did not question any in this regard. One patient, a woman over 45, with commencing menopause, has been under treatment for three years with the result that the menses are still regular. And after she had been under treatment for eight months she conceived and miscarried. Her last child was born 18 years before this. She still continues the medication in the hope that she has discovered the fountain of youth.

The greatest result in every case was obtained when treatment was begun early and when the treatment was given over at least two weeks of each month. A few patients complained of nausea after meals or in the morning during the treatment.

CONCLUSIONS

The results of this study, small though it be, extending over five years, seem to indicate that the control of the surgical menopause may not be sought in the corpora lutea. Its value is in cases in which the uterus and ovaries or uterus alone are retained. Particularly is it valuable in the treatment of scanty menstruation and the premature menopause. I have treated a number of cases at the outdoor department of the Kensington Hospital for Women with extract of the whole ovary, and never saw any definite results therefrom. But the lutein extract, from the corpus luteum of the ovary, does seem to help in some degree, and should be accompanied by [illegible] of the uterus, with the use of the [illegible] operation, as advised by M[illegible].

At least, the administration of lutein is [illegible] after operations on pregnant women to avoid miscarriage is [illegible]. This is particularly true in the early weeks of pregnancy, during the convalescing of the woman, as it has been shown experimentally that the corpus luteum has a definite effect under such circumstances.

174 West Fifty-eighth Street.

---

[16] Holzbach: Arch. f. Gynäk., 1905, lxxx, 2.

[17] Gellhorn: Zentralbl. f. Gynäk., Oct. 17, 1907.

THE RELATION OF STUTTERING TO AMUSIA *

E. BOSWORTH McCREADY, M.D.
PITTSBURG, PA.

I have elsewhere[1] defined stuttering as "a condition in which, through lack of coordination of the nervous mechanism controlling the organs of speech, which may include either excessive or deficient innervation, there is a difficulty in enunciation which may comprise either spasmodic effort without articulate sound, or frequent repetition of the same articulate sound before the utterance of the one following. With it may be associated compensatory spasm of muscles not directly involved in speech." While this definition, an adaptation of those of others, seemed satisfactory to me at the time, I have since come to realize that like those of others, it is simply an enumeration of symptoms. To my mind there has never been a satisfactory explanation of the cause of stuttering. To treat it as a neurosis, "a mental tic," is not going far enough. A neurosis it undoubtedly is, after the establishment of the compulsive idea, but calling it such does not explain why certain individuals under the influence of fright, imitation, acute disease or nasopharyngeal irritation, begin to stutter while others equally neurotic and exposed to the same influence do not.

ETIOLOGY

The observations of Scripture[2] emphasizing the fact that practically all stutterers habitually speak in a monotone, are most important, not only from the standpoint of treatment, but also as having a bearing on the etiology. That the monotonous voice is a factor in the causation of stuttering does not at all conflict with Claiborne's suggestion[3] that stuttering should be classed among the conditions caused by congenital defects in the centers controlling speech. In a paper[4] read a short time ago before the National Association for the Study and Education of Exceptional Children, I placed stuttering among the group of developmental defects caused by biologic variations in centers and commissures through which are derived perceptions of music and rhythm. If we accept the theory held by Edgren and others that the different forms of amusia are dependent on damage to special centers and commissures which are adjacent to, but not identical with, those whose damage gives rise to the corresponding forms of speech defect, we must assume that an auditory center for tones will correspond with the auditory word-center, a kinesthetic tone-center with the kinesthetic speech-center and a visual center for notes with the visual word-center.

According to Bastian,[5] "the existence of tone-deafness as an isolated and inherent defect is probably far from rare." There are persons who are incapable of discriminating between the two notes of an octave and who notwithstanding the most frequent opportunities of hearing music remain quite incapable of distinguishing one tone from another. Variations in the kinesthetic center or its commissures would account for the inability of some individuals to "carry a tune." There are some persons who, while possessing a "musical ear," are still unable to reproduce what they have heard. I have, on a previous occasion,[4] drawn attention to the connection between amblymusia and idioglossia.

Nature is all curves and harmony. We are constantly receiving, through the special senses, impressions suggestive of modulation, inflection and consonance. On the visual center are registered impressions of form derived from the contour of hills and sky, from the flight of birds, the waving of the branches of trees, the falling of leaves; on the auditory center, from the sound of running water, the soughing of the wind, the rustle of leaves, the songs of birds; on the centers controlling the sense of touch are registered the impressions received from the handling of smooth and rounded objects, and on the general kinesthetic centers the impressions of rhythmical movements made in walking, running, bending, climbing, breathing, etc.

It seems therefore not unreasonable to suppose that these various impressions, registered as they are, in areas of which the centers concerned in speech are a part, have much to do not only with its development, but also with the proper control of the nervous mechanism of the speech-forming organs. To state more clearly, it would appear that impressions of modulation, inflection, consonance and rhythm are registered on special centers which are a part of the general visual, auditory and kinesthetic areas, and that each of these beside being in direct relationship with the word-center of the particular area of which it is a part, is also in commissural relationship with the corresponding centers of other areas.

I further believe that the monotonous voice of the stutterer is the result of a biologic variation in one of the music centers or its commissures, most likely, in the kinesthetic center or the commissure between it and the auditory music-center. It may be held that not all those with unmelodious voices stutter. While they may not do so habitually I believe it will be found that they will sometimes stutter, especially when laboring under strong emotion or fatigue, or when in poor physical condition. The child does not stutter from the time he begins to speak but if he is the possessor of a monotonous voice he will do so as soon as he is subjected to one of the exciting causes mentioned above or to reflex irritation from any source, be it eye-strain, phimosis, adenoids, or worms. The compulsive idea then becomes fixed. I have been asked why, if stuttering bears the relation to amusia which I claim it does, many stutterers are able to sing. I think this fact can be explained on the same basis that Dercum explains the same ability in some cases of aphasia. He says:[6] "The curious instance of the singing aphasics can only be met by a similar explanation (reenforcement). For instance, I had under my care some years ago a Broca aphasic, whose speech was limited to "yes," "no" and a few brief expletives. He could, however, sing—among other things—"Auld Lang Syne," carrying the air well and enunciating each word clearly. No other explanation, it would seem to me, than that of reenforcement overcoming inhibition can apply in such a case."

METHODS OF TREATMENT

If we accept the theory that stuttering is due to biologic variations in centers which are a part of or are

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Stuttering in School Children: Its Prevalence and Treatment, St. Louis Med. Rev., August, 1909.

[2] Scripture, E. W.: Treatment of Stuttering and Stammering, Med. Rec., New York, March 21, 1908.

[3] Claiborne, J. Herbert: The Journal A. M. A., April 18, 1908.

[4] Biological Variations in Higher Cerebral Centers Causing Retardation. Paper read before The National Association for the Study and Education of Exceptional Children, April 21, 1910.

[5] Bastian, H. Charlton: Aphasia and Other Speech Defects, [illegible]

[6] Dercum, F. X.: The Interpretation of Aphasia, Am. Jour. Med. Sc., November, 1909.

closely associated with centers making up the zone of language, the reason for the success and failure of many empirical methods of treatment of this disease are apparent. Practically every method that has been suggested is based both on distraction from the compulsive idea and on oft-repeated impressions of correct speaking. In other words, the patient receives from his instructor auditory and visual impressions of properly inflected and articulated words, and further than this by repetition educates his own brain cells, assisting them to perform their proper function in unison with other cells, or by forcing the opposite hemisphere to supply a center similar to that which is imperfectly developed. This is done principally through the glosso-kinesthetic center acting in conjunction with the various music-centers. Failure to cure and relapse after apparent cure are due to development of the glosso-kinesthetic center, with failure to bring about functional relationship with the music-centers. The "melody cure" advocated by Dr. Scripture fulfills all the indications necessary for a complete cure beyond danger of relapse. It should, however, be persisted in until every assurance is felt that the centers controlling melodious speech have assumed the necessary state of activity. Every effort should be made to imprint musical impressions through every available avenue, and to allow every possible opportunity for their expression. It is a well-known fact that music, dancing, rhythmical movements, drawing, etc., are great aids in the development of speech and of general cerebral activity in the backward and feeble-minded.

Another great aid in the treatment of this class of cases is the reversal of dexterity as advocated by Claiborne.[3] It is generally conceded that in right-handed individuals the complicated mechanism of speech is controlled by the zone of language in the left cerebral hemisphere.

"It must needs be admitted that there is a general auditory, a general visual area, and a general kinesthetic area in the right hemisphere, and that incoming stimuli make on it an impression similar to that which they do on the so-called "educated" hemisphere. These impressions are bilateral in reception, but unilateral in interpretation. This unity of interpretation is determined by commissural fibers of the corpus callosum. Now the same factors that determine right-handedness determine also that the left hemisphere shall be the executive speech side, but the elementary work is done on both sides."[7]

Now as Claiborne says,[3] "It is in the highest degree unlikely that a congenital defect should occur on both sides of the brain and in the same place."

In a biologic variation in brain-centers not so much can be expected from restitution of non-functionating cells as from a process of functional compensation, brought about by the undamaged hemisphere gradually taking on new or greatly developed functions.

General kinesthetic impressions have a decided influence on the development of the speech-centers as is proved by the marked improvement shown by cerebral hemiplegics after tenotomy. The more frequent and dexterous use of the muscles of one side would, therefore, assist materially in the development of the speech-centers of the opposite hemisphere.

I have reported two cases of congenital word-blindness in boys both of whom were originally right-handed who learned to read after they had become proficient in the use of the left hand together with special training. In one,[8] a youth of twenty, who stuttered very badly, I noticed a decided improvement in speech soon after he had begun to use the left hand. In fact, although I had had him under treatment for several months I had been unable to get him to speak with any degree of inflection, until after he had begun the use of the left hand. His subsequent improvement in speech was very rapid. It has been my custom for the past year, in addition to giving all my stuttering patients exercises directed toward correcting their various defects of speech, to advise them to use, when right handed, the left hand in preference to the right. I am fully satisfied of the value of this procedure, and while I do not believe that the reversal of dexterity will in itself correct stuttering or any other developmental defect due to a biologic variation in special cerebral centers, I do believe that it will prove itself a very valuable aid when taken in conjunction with other approved methods of treatment.

CONCLUSIONS

While incapable of proof, it is reasonable to suppose:

1. That the defective use of the muscles of inspiration, expiration, and of the lips, tongue and throat, resulting in stuttering is the "result of imperfect coordination, caused by disconnected and erratic discharges from the cortex."

2. That this incoordination is between the nervous mechanism controlling the acts of vocalization and articulation and the centers having for their function the appreciation and expression of melody and harmony, and is due to a biologic variation in such a center or its commissures.

3. That the cure of stuttering is only accomplished by a process of compensation brought about by the education of cells previously non-functionating, and by forcing the opposite hemisphere to supply a center similar to that which is imperfectly developed. To this end the reversal of dexterity would seem to be a reasonable procedure.

242 South Highland Avenue.

THE TREATMENT OF FURUNCULOSIS

JOHN T. BOWEN, M.D.
Edward Wigglesworth Professor of Dermatology, Harvard University
BOSTON

By furunculosis is generally meant the repeated outbreak of furuncles either singly or in numbers, extending over a period varying from several weeks to many months and even years.

As to the etiology of this condition the last word has by no means been said. We know that a furuncle is usually, if not always, caused by the infection of a hair or sebaceous follicle with the *Staphylococcus pyogenes aureus*. We know that furuncles are propagated by auto-inoculation, the new lesion being produced by inoculation from an old one. We know that diabetes, obesity, and albuminuria are conditions that may increase the susceptibility of the individual to infection in this way. We know that the development of furuncles is facilitated by external irritants to the skin, of whatever nature. Apart from the above etiologic factors which are present in only a small number of instances we do not know what it is that produces in the majority of the cases this peculiar susceptibility to inoculation of the follicles with the staphylococcus.

---

[7] Collins, Joseph: Ref. Handb. Med. Sc., i, 419.

[8] Congenital Word-Blindness as a Cause of Backwardness in School Children, Report of a Case Associated with Stuttering, Pennsylvania Med. Jour., January, 1910.

With regard to the treatment of individual furuncles, many and various are the methods resorted to. It is not my purpose to enlarge on these procedures, or their relative efficiency. Suffice it to say that I do not believe that early incision shortens the duration; nor do I believe that poulticing is to be recommended, except in rare instances, as it is contrary to aseptic principles.

In calling attention to a method of treating the skin of those afflicted with furunculosis that has proved universally effective in a large number of cases during the last fifteen years, I do not wish to detract in the slightest degree from the vaccine method. I have seen the most brilliant results from the latter treatment, remarkable for the quickness with which relief was afforded. I know of no method that compares with it, in a certain number of cases. Nevertheless, it is not successful in all cases, and I have happened to have a considerable number of cases that had been treated by the vaccine method by most competent people without any success, that have yielded to the local treatment that I am about to describe.

No originality is claimed for this treatment. Some of its principles were suggested to me many years ago by Dr. James C. White. In many of the text-books some of its essentials are referred to. The principle is simply to keep the skin as far as possible sterile.

In the first place the patient is directed to wash the whole body with warm water and soap in the morning and at night. This part of the treatment I regard as most essential. It is true that when the furuncles have been confined to the neck it may be sufficient to wash only the upper half of the body, but it is not so thorough a procedure. After this thorough washing of the whole body with soap and water, and the skin has been dried, the whole surface is then bathed with a saturated solution of boracic acid in water. Other antiseptic solutions may be used, as corrosive sublimate, but I prefer the boracic acid solution, and regard it as most effective. The skin is allowed to dry without wiping, and then the individual furuncles are dressed with the following ointment spread on cotton or linen, and bound on if possible.

℞	gm.		
Boracic acid	4		
Precipitated sulphur	4	or	āā ʒi
Carbolized petrolatum	32		℥i

Early opening of the individual lesions is not advised, incision being resorted to only after the lesions have become very painful and mature.

Another important point is to have all the clothing that comes next to the skin changed daily. It is unquestionably true that the germs are often retained in and reinoculated from the collars and underclothing.

It is not to be understood that in applying this treatment, no thought should be given to the improvement of the general condition by internal and hygienic measures. On the contrary, everything should be done on general therapeutic principles to promote the well-being of the patient.

It is not claimed that this method often accomplishes the brilliant results that are attained by the vaccine method. Nevertheless, it has rarely failed when carried out with care and patience and has, in my experience, frequently succeeded where the vaccine treatment has failed. I am convinced that a careful trial of it will prove that the statement made at the Sixth International Dermatological Congress by a distinguished foreign visitor, that the opsonic treatment is the only form of treatment for general furunculosis which is in the slightest degree reliable, must be modified considerably when the results obtained from this method of sterilization are recognized.

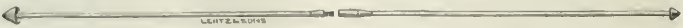
14 Marlborough Street.

A MODIFIED EXTRACTOR FOR THE REMOVAL OF VARICOSE VEINS OF THE LEG

W. WAYNE BABCOCK, M.D.
PHILADELPHIA

This instrument is a modification of the simple device I described in 1907,[1] for the removal of varicose veins of the leg. The larger acorn tip of the instrument has been increased in size and its surface toward the shaft of the instrument so cupped as to catch the wall of the vein and prevent its inversion and slipping over the end of the instrument. In using the instrument the vein is exposed either at the upper or lower termination of the segment to be removed. With the internal saphenous vein, which is most frequently extirpated, the exposure is made either just below the saphenous opening in the thigh or on the inside of the calf of the leg.

The vein is exposed, grasped with hemostatic forceps, incised and the smaller end of the instrument slipped into the lumen of the vein for the required distance or until some obstruction is encountered. With strong silk the wall of the vein is firmly tied to the shaft of the instrument, the vein ligated, divided between the point of ligature and the instrument, and the hemostatic forceps removed. The smaller bulbous tip of the instrument, which may be seen and felt beneath the skin, is now exposed by incising the overlying skin and wall of the vein, grasped, and by firm traction combined with a series of short jerks the instrument with the affixed segment of vein is extracted. The wall of the vein slips to the other end of the instrument and becomes firmly pleated in a small fusiform mass against the concavity of larger tip of the instrument. The venous branches are torn off from one to several centimeters distant from the main trunk and do not give rise to troublesome hemorrhage. The procedure may be repeated with other varicose veins as desired. Finally the short incisions are closed. The instrument may be introduced into the vein from above downward or from below upward whichever is the more convenient in the particular case. By this instrument one may often remove, through two incisions, one measuring about one inch or less and the other one-half inch in length, twenty or more inches of vein within a very few minutes.



A modified extractor for the removal of varicose veins.

The instrument shown in the illustration is jointed; the joint is, however, not an indispensable feature of the device.

2033 Walnut Street.

---

[1] New York Med. Jour., July 27, 1907.

Special Article

TYPHOID FEVER IN MILWAUKEE AND THE WATER SUPPLY

[*By Our Special Commissioner*]

Typhoid fever seems always to have prevailed more or less extensively in Milwaukee. The following table gives the total number of deaths from this disease, and the corresponding typhoid death rates for the years 1869 to 1909 inclusive.

TABLE 1.—TYPHOID DEATH RATES, MILWAUKEE, 1869-1910

Year.	Population.*	No. Deaths.†	Deaths Per 100,000 Population ‡
1869	68,820	44	61.0
1870	71,440	58	81 2
1871	75,854	35	46.2
1872	80,269	70	87 2
1873	84,684	49	57 9
1874	89,098	69	77.4
1875	95,513	25	26.2
1876	97,927	36	36.7
1877	102,341	36	35.2
1878	106,755	25	23.4
1879	111,169	32	28.8
1880	115,587	43	37.2
1881	124,475	59	47.4
1882	133,363	42	31.5
1883	142,251	35	24.6
1884	151,139	47	31.1
1885	160,027	44	27.5
1886	168,915	51	30.2
1887	177,803	55	30.9
1888	186,691	78	41.8
1889	195,579	55	28 1
1890	204,468	83	40.6
1891	212,553	71	33.4
1892	220,638	66	29.9
1893	228,720	80	34 9
1894	236,808	60	25.3
1895	244,893	63	25.7
1896	252,978	46	18.2
1897	261,063	31	11.8
1898	269,148	46	17.1
1899	277,233	47	17.1
1900	285,315	59	16.9
1901	290,491	63	21.7
1902	295,673	48	15.1
1903	300,852	54	16.8
1904	306,031	43	13.6
1905	311,210	68	22.9
1906	316,989	98	30.5
1907	322,168	89	25.7
1908	327,347	55	16.8
1909	332,526	78	23.4
1910	337,117	..	....

* Population of 1870, 1880, 1890, 1900, U. S. Census; 1910, U. S. Census Bureau estimate. Intervening years calculated by "arithmetical" method (Twelfth Census Bull. No. 135).

† Number of typhoid deaths recorded in Reports of Health Department.

‡ Rates computed directly from populations and typhoid deaths given in this paper.

By five-year periods the rates are as follows:

TABLE 2. AVERAGE TYPHOID DEATH RATES BY 5 YEAR PERIODS

1870-4	70.0	1890-4	32.8
1875-9	30.1	1895-9	17.4
1880-4	34.4	1900-4	17.3
1885-9	31 7	1905-9	24.0

COMPARISON WITH OTHER CITIES

From these data it appears that, in comparison with other American cities of similar rank, the average typhoid death rate in Milwaukee in recent years has not been remarkably high. During 1898-1908, it averaged 19.7. This figure would cause it to be placed eleventh in point of typhoid fatality among American cities of over 100,000 population (census of 1900). Ten cities had a lower average typhoid death rate than Milwaukee during this period and 27 % higher.[1] At the same time a death rate of 19.7 cannot be regarded as remarkably low. The typhoid rate of German cities with a population of over 15,000 (a total population of 19,127,086) averaged in 1902-4 only 6.7. The city of Madison, situated less than 100 miles from Milwaukee, reported an average typhoid rate of 5.8 for the years 1900-8. The average typhoid rate in Chicago for six years, 1904-9, was 16.7; in Milwaukee for the same period, 22. Milwaukee itself is in a region of the country having comparatively little typhoid fever. The typhoid rate for the whole state of Wisconsin—a registration state—for 1908 was 13.9, only Rhode Island among the registration states having a lower rate (12.9).[2]

WATER SUPPLY

The water supply[3] of Milwaukee was first obtained from springs and wells, and from the three streams—now open sewers—passing through the town. A town pump was in existence in City Hall Square as late as 1875. In 1870-71 authority was given the city by the state legislature to issue water works bonds; in 1871 a board of water commissioners was created. The supply was at first taken from Lake Michigan through a 36-inch cast iron pipe laid in the bottom of the lake, extending 2,100 feet from the shore to a crib. The pumps on the lake shore were started Sept. 11, 1874, but for about a year before this date (Nov. 3, 1873—Sept. 11, 1874) water from the Milwaukee River was pumped into the reservoir as a temporary supply for the fire department.

The depth of water at the original intake was eighteen feet, the inflow being eight feet below the surface. This served as the source of water supply up to 1895, when a new intake was completed. The old intake is still connected with the works as a reserve in case of emergency, but is said not to have been used since the above date.

The present intake consists of a brick tunnel, seven and one-half feet inside diameter, extending 3,200 feet to a crib, from which point two lines of cast iron pipe, five feet in diameter, extend 5,000 feet to submerged cribs in sixty feet of water. The inflow is situated about fifteen feet above the lake bottom. The total length of the intake is about 8,200 feet.

From the pumping station on the lake shore which has a daily pumping capacity of 86,000,000 gallons, the water is pumped to a distributing reservoir, with a capacity of 21,000,000 gallons, and to two high service stations.

The sewage of Milwaukee passes for the most part into the three rivers which intersect the city, the Milwaukee river, the Menomonee river, and the Kinnickinnic river. (See diagram.) A slow current sets toward the harbor mouth. The stench arising from these open sewers has caused flushing of the streams to be undertaken as a remedial measure. Two flushing tunnels have been constructed; one in connection with the Milwaukee river; the other, completed in 1907, in connection with the Kinnickinnic river. In 1909 the Milwaukee River Flushing Works displaced over fifteen billion cubic feet, the Kinnickinnic river works over twelve billion. The effect is of course to hasten the flow toward the lake. In addition to the sewage entering the lake from this source, an intercepting sewer runs to the north end of Jones Island, just south of the harbor, and at this point fresh, crude sewage is pumped into the lake at a rate of over 55,000,000 gallons daily. (See diagram.) The point where the sewage-laden river together with the pumped sewage, enters the lake is about three and one-half miles southwest of the water intake. No city sewers empty into the lake north of the harbor mouth. Some drainage from summer resorts and isolated houses enters the lake at various points north of the water intake, but the volume of such drainage appears to be very small.

---

[1] For data see Taylor, Engineering News, April 21, 1910.

[2] Bureau of Census Mortality Statistics, 1908.

[3] The data here set forth are chiefly taken from a historical description by Mr. Thomas M. Millan, chief engineer of the pumping station, kindly furnished by Dr. W. C. Rucker.

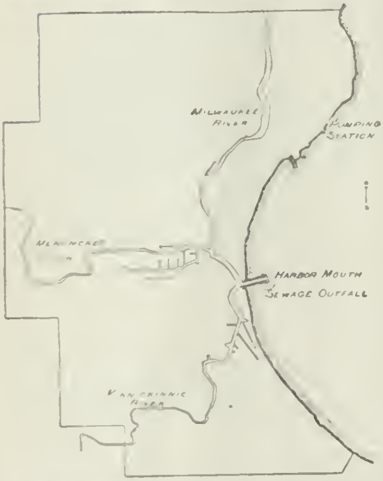


Diagram showing sewage outfalls and water intake, Milwaukee, Wis.

The possibility that some of the Milwaukee sewage may drift north and mingle with the water drawn at the intake is one that must be ever reckoned with. It has been sometimes held that on this—the west—side of Lake Michigan, the general direction of the lake currents is from north to south, but it is plain that there can be no absolute constancy in this respect. The direction and force of the wind, the fluctuation in lake levels and temperatures, and other factors must to a greater or less extent affect both the surface drift and the deeper lake currents. Major W. V. Judson, of the United States Corps of Engineers, in a recent paper[4] on "Currents in Lake Michigan," expresses very forcibly the view of the irregularity of Lake Michigan currents:

> We are aware, and perhaps it is enough for the purposes of this consideration, that occasionally currents of considerable intensity, say several miles per hour, may be expected to appear from almost any direction at any point reasonably near either shore of the lake. It is therefore apparent that in the event that the waters of the lake are polluted by the discharge into it of large quantities of sewage, then practicable localities in the lake, even twenty to thirty miles distant from the point of entrance of the sewage, are not safe places from which to derive water for domestic use.

A similar view has been well expressed by Amyot.[5]

> In the neighborhood of our cities it has frequently been observed that with favoring winds streams of unchanged sewage, like the Gulf Stream, wend their way out from shore as much as three or four miles. The winds are very inconstant in direction in these lakes, so that these streams may be easily blown up or down shore. Winds up or down the lake, lasting any length of time, cause piling up of the water. When this finds its level, currents of inconstant direction start up or down the lake.

Even a rather deep intake under these conditions is exposed to pollution, since a wind blowing in-shore may cause a heaping up of contaminated surface water, which then flows outward in a deep countercurrent. Several physical agents may be concerned in bringing about a pollution of the water supply, and it is hardly to be anticipated that as a rule meteorologic conditions will show an unmistakable relation with typhoid fever outbreaks.

Apart from the probability, on these grounds, that at times Milwaukee sewage must to a greater or less extent enter the water supply, there is direct analytical evidence that such pollution actually occurs. Dr. G. A. Bading, former commissioner of health, in a communication to the city council in August, 1908, wrote: ". . . . analysis, both chemical and bacteriologic, made at regular intervals, unquestionably demonstrates the presence of contamination." The report of Dr. G. C. Ruhland,[6] city bacteriologist, included in Dr. Bading's paper, states that "I have repeatedly found undoubted colon contamination."

REASONS FOR BELIEVING TYPHOID FEVER IN MILWAUKEE IN PART WATER BORNE

As already pointed out, the typhoid rate in Milwaukee ranges in general somewhat higher than that of neighboring cities (Madison, Chicago) possessing a pure or slightly polluted water supply. Although the state of Wisconsin contains some cities with a very high typhoid rate (1908: Eau Claire, 51.4; Kenosha, 58.2; Sheboygan, 97.3), the typhoid rate for the state as a whole was in 1908 considerably below the Milwaukee average. In a word, the general conditions of the region, wherever special water pollution does not exist, are accompanied by a lower typhoid rate than that occurring in Milwaukee.

At first the use of the lake water was followed by a sharp reduction in the amount of typhoid fever. The first year of use of the public supply (1875) was marked by a typhoid rate less than one-half the preceding five year average. The lake water itself, however, was not guiltless, as shown by further developments. Examination of the annual typhoid rate (Table 1) shows a period of irregular and rather high mortality up to 1895. In the next five year period, a much lower mortality is observed. It must be noted that in 1895 the new water tunnel was completed, thus shifting the intake about

---

[4] Final Report of the Lake Michigan Water Commission, 1909, p. [illegible]

[5] Am. Jour. Pub. Hyg., 1909, 19, p. 13.

[6] Bading, G. A.: Water Conditions of Milwaukee, First Report of the Lake Michigan Water Commission, 1909, p. 36.

6,000 feet farther out into the lake. It is a justifiable conclusion that the purer water thus obtained was responsible for the lowering of the typhoid death rate. The influence of the water supply in producing typhoid fever is here shown in a striking way.

For a list of typhoid deaths 1890 to 1910, tabulated by months (Table 3), we are indebted to Dr. W. C. Rucker, Health Commissioner of Milwaukee. This table shows, in addition to the regular autumnal incidence, several periods of unusually high mortality. These may be noted especially in December, 1904 and January, 1905; in May, 1905; in March-April, 1906; in December, 1906, and January-February, 1907; and in March-April, 1909. Now this tendency toward excessive prevalence in winter and spring is precisely similar to what was observed in Chicago[7] prior to the opening of the Chicago Drainage Canal. Attention may especially be directed to the spring and winter epidemics of 1890, 1891, 1892, and 1896 in Chicago. At the time these occurred the situation in that city as regards water supply was substantially identical with that now existing in Milwaukee, namely a supply derived from Lake Michigan without purification and exposed to pollution with considerable amounts of raw sewage at irregular and varying intervals. There is also the same general history of typhoid fever in the two cities. Extension of the water intake in Chicago was as a rule followed by a period of relative freedom, and then with the continued growth of the city the disease again became prevalent.

TABLE 3.—DEATHS BY MONTHS FROM TYPHOID, 1890-1910.

Year.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1890	8	6	4	3	8	6	4	8	20	3	8	5	83
1891	7	4	6	6	4	3	5	7	3	11	4	11	71
1892	17	6	4	4	..	8	5	3	10	6	6	3	66
1893	7	2	1	5	6	6	5	7	10	13	11	7	80
1894	7	7	4	6	..	4	3	3	5	9	5	7	60
1895	9	2	5	6	3	4	2	4	7	7	7	7	63
1896	6	7	3	5	1	2	3	4	2	5	4	4	46
1897	6	1	3	6	2	..	3	2	2	2	2	2	31
1898	6	1	1	2	6	3	7	2	7	4	4	3	46
1899	2	2	2	1	4	6	3	4	5	10	4	4	47
1900	5	..	2	2	3	6	3	6	11	11	7	3	59
1901	3	3	4	5	8	5	10	6	5	6	5	3	63
1902	3	3	4	1	..	1	3	8	5	8	7	5	48
1903	7	6	3	7	4	2	2	4	6	6	4	4	54
1904	5	1	5	1	6	4	1	3	..	3	3	11	43
1905	10	6	5	8	15	3	..	3	8	7	4	6	68
1906	10	5	14	12	4	6	4	8	7	8	8	12	98
1907	16	13	7	6	4	3	5	7	8	8	5	2	84
1908	4	6	2	3	4	7	3	4	2	9	2	9	55
1909	8	6	10	11	4	4	3	7	7	4	9	5	78
1910	22	14	18	12	19	27	..	..	..	..	..	..	..

There is evidence that the real nature of the situation has for some time been recognized by the health authorities of Milwaukee. The commissioner of health in 1899 (Dr. F. M. Schulz) wrote in the twenty-third annual report:

> Although the city at present possesses a good water supply, notwithstanding the fact that we are discharging about 60,000,000 gallons of sewage into the lake daily, it is only a question of time when, through the natural increase and growth of the city, the amount of sewage swept out into the lake will assume such proportions as to affect seriously the potability of our water.

And again in 1904 (28th Annual Report):

> While the supply of our city is under ordinary circumstances very satisfactory, every southerly and southeasterly wind would seem to carry a certain amount of contamination from the harbor dangerously near the intake, and this may sometime easily threaten the purity of the water supply.

In 1905 a definite outbreak of the disease was attributed to water pollution:

> A large number of cases of intestinal infection and a considerable number of cases of typhoid fever occurring during the month of May [Table 3] led to exhaustive chemical and bacteriologic examination of the water. . . . It is supposed that the heavy rains which occurred during April carried a large quantity of sewage into the lake. . . . In conjunction with this . . . we had for some weeks almost constantly southwest winds which facilitated the transfer of this sewage to the intake.

The bacterial examination of the water has shown unmistakable, although not as a rule extreme pollution, as stated by Dr. Ruhland, city bacteriologist, in the reports just cited.

From all these converging lines of evidence, environmental, epidemiologic, and analytical, there can be little doubt that at least a considerable proportion of the typhoid fever occurring in Milwaukee during a long series of years must be attributed to a polluted public water supply.

OTHER POSSIBLE SOURCES OF INFECTION

No one can suppose that in a city the size of Milwaukee water is the only medium of infection. In Washington, D. C., the typhoid rate averaged about 40 in the years 1906-8, and there is no reason to suppose that the public water supply played a large part, if any, in the spread of the infection. It is possible that some at present unknown mode of spread in both Washington and Milwaukee is responsible for the greater part of the typhoid fever cases, but until other possibilities are exhausted we are not justified in resorting to this assumption. Well-known possible sources of infection are milk-supply, contact with typhoid cases and with typhoid bacillus carriers, raw fruit and vegetables, and fly contamination.

These possibilities may be briefly considered, although it is plain that prolonged and intensive investigation of the local conditions would be necessary before a decided opinion could be expressed as to the weight to be given the several factors. Inspection of Table 3 shows that during the last twenty years typhoid fever has occurred frequently at times of year when the agency of the house fly could be excluded. The present outbreak furnishes a case in point. The large amount of typhoid

---

[7] Jordan, E. O.: Typhoid Fever and Water Supply in Chicago, The Journal A. M. A., Dec. 20, 1902.

TABLE 4.—CASES AND DEATHS FROM TYPHOID IN MILWAUKEE BY WEEKS—JAN. 1 TO JULY 1, 1910, INC.†

Week Ending	Cases	Deaths	Week Ending.	Cases	Deaths
Jan. 1*	29	..	April 9	48	2
Jan. 8	67	3	April 16	29	4
Jan. 15	45	..	April 23	30	4
Jan. 22	45	8	April 30	38	3
Jan. 29	27	4	May 7	23	..
Feb. 5	28	1	May 14	22	..
Feb. 12	51	4	May 21	23	11
Feb. 19	27	1	May 28	86	1
Feb. 26	75	5	June 4	112	9
March 5	49	9	June 11	91	7
March 12	72	3	June 18	61	2
March 26	23	2	June 25	17	9
April 2	45	6	July 1 (6 days)	29	4

Total number of cases to date, 1,063.
Total number of deaths to date, 114; out of city, 2.

* The week ending January 1st includes six days of 1909.

† Dr. G. A. Bading was health commissioner up to May 23, at which date he was succeeded by Dr. W. C. Ruhland.

TABLE 5.—MONTHLY PRECIPITATION BY INCHES, MILWAUKEE*

	Jan.	Feb.	March	April.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1871	3.55	1.58	3.16	3.27	3.21	3.17	1.67	3.70	0.57	3.37	2.54	1.93
1872	[illegible]	0.34	0.55	1.84	3.11	3.67	2.05	1.89	8.72	0.73	1.99	0.49
1873	2.81	0.17	1.22	2.28	5.17	2.88	2.69	4.03	2.89	1.96	1.72	2.81
1874	[illegible]	0.66	2.54	2.02	3.00	3.40	3.86	1.79	4.51	1.90	2.69	1.00
1875	1.24	1.82	2.93	3.13	5.06	4.23	3.18	2.52	4.31	2.87	1.16	3.11
1876	[illegible]	3.65	5.29	2.83	8.54	4.76	4.39	5.52	3.66	1.62	3.57	2.16
1877	2.83	0.10	5.55	6.99	0.74	5.76	2.06	6.31	0.48	7.15	4.95	3.25
1878	[illegible]	3.10	3.89	5.83	1.96	4.88	2.94	0.64	4.03	4.13	1.01	1.08
1879	[illegible]	1.62	0.92	2.04	2.29	2.66	3.79	1.87	2.00	2.01	3.66	1.76
1880	2.17	1.69	1.16	4.22	3.13	6.97	3.20	3.54	1.85	0.51	0.82	0.71
1881	1.86	5.39	5.30	0.78	2.55	3.77	5.24	0.80	4.28	6.01	1.69	1.27
1882	1.05	2.11	3.90	1.92	2.03	3.77	1.78	4.21	1.31	2.83	2.05	1.67
1883	1.66	2.64	0.28	0.86	5.67	2.84	7.13	0.38	2.32	1.92	1.81	1.96
1884	1.69	2.61	2.77	3.15	1.67	4.22	3.80	1.84	2.82	2.18	1.45	2.37
1885	1.10	0.49	0.21	2.32	0.41	6.49	4.23	7.39	3.30	2.40	1.53	2.71
1886	[illegible]	2.36	3.42	2.77	2.67	2.54	0.94	3.40	2.38	2.31	1.62	2.03
1887	2.66	3.22	1.25	1.05	1.80	0.81	5.21	2.25	1.36	2.43	0.85	4.57
1888	1.41	1.08	2.25	2.31	2.21	2.90	3.18	2.21	0.99	1.18	1.46	1.97
1889	1.75	2.00	1.07	2.40	5.61	5.21	3.08	0.76	3.15	0.56	2.71	2.87
1890	[illegible]	1.94	2.68	2.84	1.95	4.09	1.77	3.18	0.65	2.96	2.02	0.50
1891	[illegible]	1.67	3.17	3.27	1.47	4.98	3.57	2.83	0.18	1.66	3.40	1.16
1892	[illegible]	1.76	1.76	2.78	8.12	6.53	1.20	3.47	2.21	1.66	1.84	1.61
1893	[illegible]	1.51	3.29	5.69	1.79	5.46	3.67	1.01	3.24	1.62	1.20	2.59
1894	[illegible]	1.63	2.53	2.89	4.66	[illegible]	1.08	0.29	5.06	2.05	1.68	0.84
1895	[illegible]	1.26	0.74	1.48	4.24	[illegible]	1.78	2.83	1.82	0.52	2.99	2.60
1896	[illegible]	1.36	2.82	3.85	3.51	[illegible]	2.64	1.77	5.72	1.02	2.48	0.76
1897	[illegible]	1.78	4.83	4.21	1.01	[illegible]	2.53	3.00	1.48	1.05	1.87	2.42
1898	[illegible]	3.36	3.45	1.77	1.65	[illegible]	3.28	4.86	1.98	4.38	1.16	0.58
1899	[illegible]	0.75	1.99	0.68	5.42	2.29	2.56	2.54	5.04	1.21	1.64	2.25
1900	[illegible]	3.05	1.72	1.71	2.57	1.88	4.93	3.76	3.51	2.22	2.25	0.81
1901	[illegible]	1.92	3.62	0.47	1.75	1.12	1.45	1.50	1.86	0.65	0.75	1.69
1902	[illegible]	1.13	1.91	0.67	4.60	4.71	4.82	0.53	4.27	1.81	1.85	1.82
1903	0.60	2.01	3.29	2.68	3.03	1.51	4.53	5.56	5.02	2.13	1.10	1.65
1904	[illegible]	1.39	5.46	1.79	[illegible]	[illegible]	1.89	3.96	2.64	2.56	0.11	2.67
1905	1.62	[illegible]	3.00	2.00	[illegible]	3.89	2.52	3.18	0.76	3.59	1.34	1.46
1906	2.76	1.92	1.62	2.01	[illegible]	2.67	2.14	3.87	4.08	2.05	2.79	1.39
1907	2.54	0.39	2.92	3.41	[illegible]	1.48	[illegible]	2.88	5.39	0.78	0.85	2.23
1908	[illegible]	2.87	[illegible]	3.01	[illegible]	[illegible]	2.56	1.65	0.72	1.08	1.87	1.50
1909	[illegible]	1.91	[illegible]	7.49	2.27	[illegible]	1.02	3.18	3.39	0.61	2.29	3.31
1910	2.71	0.58	[illegible]	[illegible]	2.64	1.01	....	....	....	....	....	....

* By courtesy of the Weather Bureau.

fever in the winter and spring of 1910 could not have been due to fly infection.

We are, however, told by officials of the health department that there are several hundred open privies still in use in the more thinly settled parts of the city and that some hundreds have been abolished during the last three years. The present extensive distribution of cases will render the privies in the coming summer more than ever a source of danger from fly contamination. In the past fly contamination has doubtless played a part in Milwaukee as elsewhere, but to just what extent cannot be determined by any available data. The seasonal and geographic distribution of cases would not seem to justify assigning it a prominent position.

Contact infection in like manner has doubtless been effective in some degree in Milwaukee but there seems no reason for attributing to it a larger share in causation than should be assigned to it in the neighboring city of Chicago where, during the past six years, the typhoid fever rate has been considerably lower than in Milwaukee (Chicago, 16.7, Milwaukee 22).‡

In regard to possible contamination of fruits and vegetables, it may be remembered that this is especially liable to occur when the contents of privy vaults are used by market gardeners. We have no means of knowing the extent to which such a practice prevails on the truck farms in the neighborhood of Milwaukee, but the distribution of cases in time and space does not suggest that this can be one of the main factors.

The milk supply of Milwaukee, as already indicated, does not come from a region where there is a particularly high typhoid mortality. In the present outbreak there is not the disproportionate mortality among children that usually accompanies milk-borne epidemics. The records of the health department show that in the present outbreak there is no special incidence of the disease among particular milk-routes. There are no data available for determining the relative amount of milk-borne infection in Milwaukee at an earlier period.

THE PRESENT SITUATION

In the current year, 1910, there has been an unusual amount of typhoid fever in Milwaukee. This is shown by the unanimous testimony of physicians, by the fact that there are many more typhoid cases than usual in the hospitals, and by the necessity that has arisen for bringing in additional trained nurses from neighboring cities. On July 1 an appeal was issued by the Associated Charities of Milwaukee for funds to continue the work of the organization. In this appeal it is stated that "The Associated Charities are at this time almost entirely without working funds. The typhoid fever epidemic is mainly responsible for this unusual state of affairs. In the month of June just past the Associated Charities cared for 350 cases more than ever before in the history of the organization, more than in the panic years, and three times more than last year. Of these, 90 cases were illness, mostly typhoid fever."

---

‡ Whipple states that "when an epidemic occurs physicians are more likely to report cases of typhoid fever than at other times when the disease is not prevalent." (Whipple: Typhoid Fever, New York, 1908, p. 96.) "We are inclined to believe from our observation of the situation in Washington and from experimental data, that perhaps from 10 to 20 per cent. of the cases reported as typhoid fever are really some other disease." Rosenau, Lumsden and Kastle: Bull. No. 52, U. S. P. H. and M. H. Service, 1909.

The records of the health department show the extent to which the disease has prevailed (Table 4)).

A map has been prepared by the health department, showing the distribution of cases throughout the city. The poorer sections do not seem to have suffered disproportionately. The "spot map" furthermore does not reveal the existence of a number of scattered centers, but rather a uniform distribution, such as would be expected if a common factor such as a public water supply were concerned in the causation. There is nothing in the distribution of cases, so far as has been disclosed, to conflict with the hypothesis that the present rather extensive outbreak owes its origin to the lake water. On the other hand, no explanation for the particularly severe incidence of the disease at the present time has been advanced. The amount of sewage discharged into the lake has not materially increased during the last three years. Comparison of the figures of the monthly rainfall recorded by the weather bureau (Table 5) does not throw much light on the problem. It is tempting to suppose that an unusually heavy rainfall such as occurred in December, 1909 (1.14 in. above average) and April, 1910 (0.78 in. above average) may have produced a particularly extreme water pollution, but on the other hand the much more excessive April rainfall of 1909 (1.39 in. above average) was not followed by unusual typhoid prevalence. From data already given it is plain that not only rainfall but wind direction must influence profoundly the extent of contamination. It is, therefore, perhaps useless to attempt to trace any connection with meteorologic conditions where a concurrence of several factors is necessary to bring about the result and when, given exactly the right conditions, a few hours may be sufficient to produce a serious infection of the water supply. At the same time it is difficult to avoid the suspicion that a heavy rainfall such as occurred in November, 1891, was one of the factors in producing the outbreak of typhoid in the following December and January.

REMEDIAL MEASURES

When the gravity of the existing situation became manifest, warnings to boil the drinking water were issued by the health department and leaflets of instruction were printed in several languages and distributed broadcast. On June 20 a temporary plant for chlorination of the water was put in operation near the pumping station. This was being operated sixteen hours a day on July 1. The analytical results of this procedure are said to be excellent, the tap-water showing marked bacterial improvement.

It is significant that the whole problem of sewage disposal is now and for some time has been under advisement. As the result of a communication to the Common Council by Dr. Bading in 1908 an expert sewage commission, consisting of the well-known sanitary engineers, Messrs. J. W. Alvord, G. C. Whipple, and H. P. Eddy, was appointed to devise plans for a system of sewage disposal. This commission has not yet completed its investigation, but a report is expected in the near future. It is thus evident that the whole situation in Milwaukee is on the way to speedy betterment.

SUMMARY AND CONCLUSIONS

The history of typhoid fever in Milwaukee shows first a period of very excessive prevalence (1869-1874). The introduction of a public water supply improved conditions greatly. This usually happens when shallow wells are abandoned for a large body of water. In spite of the improvement, however, the typhoid rate remained excessively high (over 30) for a period of 20 years. Then in 1895 the water intake was extended 6,000 feet further out into the lake. The result was an immediate drop in the typhoid rate to about one-half. Slowly, however, the growth of the city asserted itself by an increasing volume of sewage poured into the lake and a consequent increased contamination of the water supply. In the present year (1910) the typhoid rate promises to be as high as before the extension of the water intake. No other probable source of a large amount of typhoid fever has been discovered and there can be little if any doubt that the public water supply is responsible for the present outbreak. When millions of gallons of sewage are discharged into a lake a few miles from a water intake it needs no divining rod to detect the possibilities of danger. No fact in epidemiology is more clearly established than that sewage-contaminated drinking-water is a cause of typhoid.

A CASE OF RETROGRADE PUBERTY, IMPOTENCE AND DIABETES INSIPIDUS, RELIEVED BY SUPRARENAL CORTEX

WILLIAM T. BELFIELD, M.D.
CHICAGO

History.—In 1897, H., aged 27, married, developed (1) polyuria without sugar, 120 to 150 ounces daily; (2) retrograde puberty; i. e., atrophy of testes, disappearance of beard, pubic and axillary hair, the scalp hair remaining luxuriant. The condition, called diabetes insipidus by the physicians consulted, had existed for twelve years, when, in 1909, the patient was referred to me.

Diagnosis.—The polyuria and retrograde puberty suggested an excess of pituitary secretion. As an *x*-ray picture of the pituitary region by Dr. Reichmann revealed nothing abnormal the pituitary excess was assumed to be not absolute, but relative, possibly from deficient secretion by the adrenal cortex.

Treatment.—After thyroid substance, and later adrenalin (which is derived from the adrenal medulla only) had proved futile, he was given daily four grains of suprarenal substance containing cortex as well as medulla.

Result. Improvement was prompt and distinct; after [illegible] months of this medication his daily urine is only one-half the average during twelve years; beard and body hair have grown markedly; the testes have doubled in size, and coitus has been practiced several times, after twelve years of absolute impotence. In short, he is exhibiting puberty a second time.

As two other cases of retrograde puberty—a type seemingly hitherto unrecognized—have come to my notice, possibly they are not rare.

100 State Street.

SYPHILIS IN INSANITY AS DETERMINED BY THE WASSERMANN REACTION *

C. B. ENSOR, M.D.
BALTIMORE

Of 262 male patients from Mt. Hope Retreat, tested by the Wassermann method, a positive reaction was obtained in 58, or in 22 per cent. of the total male population. Of the 262 patients, a history of syphilis was given in only 5 per cent. of the total, and only 14 per cent. of the patients showing a positive reaction admitted having syphilis, though most of them acknowledged exposure, and having had gonorrhea; 86 per cent. of the patients with positive reactions thus denied having had syphilis at any time. On the other hand, a history of syphilis was admitted where the reaction was negative in 2.6 per cent. of the total admissions. Of the 58 positive cases, 69 per cent. of the patients have been in the institution one year and under, 12 per cent. have been there two years, and 19 per cent. have been there three years and over.

We classify the positive cases as follows:

	PER CENT.
Chronic alcoholic insanity	15.5
Dementia præcox	18.9
Dementia paralytica	17.2
Manic depressive insanity	15.5
Organic dementia	20.1
Paranoia	3.1
Involutional insanity	6.8
Constitutional insanity	1.7

Of 21 patients from other sources 16 were paretics with a positive reaction in all, and of 27 cases of paresis collected from all sources, 96 per cent. of patients gave a positive reaction. Of 7 cases of tabes 83 per cent. of these were positive, and of 5 cases of cerebral syphilis 4 were positive, while in the only negative case the patient had been receiving mercurial injections for the previous six months.

PRELIMINARY NOTE ON THE ACTION OF EHRLICH'S SUBSTANCE 606 ON SPIROCHÆTA PERTENUIS IN ANIMALS†

HENRY J. NICHOLS, M.D.
Captain, Medical Corps, U. S. Army
NEW YORK

The usual treatment of yaws with potassium iodid or mercury[1] is very tedious, but the encouraging results already obtained in the treatment of other diseases due to spirochetes, namely, syphilis, relapsing fever and fowl spirillosis, by a single injection of Ehrlich's substance "606" suggest that the principle of "therapia magna sterilisans" may be applied also to yaws.

As a preliminary to the use of any new drug on man, its trial on animals is, if possible, of course, strongly indicated on many grounds. Up to the present, the only animal experimentally infected with yaws has been the monkey, various species of which have been infected by Castellani in Ceylon, Ashburn and Craig in the Philippines and Neisser, Halberstadter and Bauerman in Java. A definite lesion results from inoculation, but apparently the reaction is rather superficial, as is indicated by a late weak complement fixation reaction and a relative scarcity of spirochetes.

Recently, I have succeeded in infecting rabbits in the testicle with the spirochetes of yaws and this lesion is an excellent guide to treatment, as the spirochetes are present in myriads in pure culture, the serum reaction is prompt and strong and the organ can easily be removed and examined. Rabbits, also, are, of course, easier to obtain and to handle than monkeys.

The spirochetes came from a colored soldier returning from the Philippines who had a well-marked case of yaws with three separate general eruptions.[2]

A monkey was first infected on the eyebrow and transfers were then made of the serum of the monkey's yaw to rabbits' testicles. Three rabbits of the first generation became infected in an average of forty-one days and the infection was then carried on from rabbit to rabbit. The spirochetes are now in the seventh generation in the rabbit and the incubation period has fallen to about twelve days. A detailed account of this work will appear in the *Journal of Experimental Medicine* in a short time.

The lesion seems to differ only in degree from a syphiloma of the rabbit's testicle and consists of an edematous tumor in the testicle or epididymis, varying in size from that of a pea to that of an olive. On puncture with a capillary pipette and examination of a drop of the serum with the dark-field microscope a brilliant picture is obtained. Levaditi stained sections are equally striking. The lesion persists four to six weeks and the Wassermann reaction occurs in the first or second week. The general health of the animals is not noticeably affected.

Ehrlich's "606" is dichlor-dioxy-diamido-arseno-phenol; it is a golden yellow powder put up in vacuum tubes, and is given in the form of a disodium salt freshly prepared before each injection. This substance has been built up with the idea that it shall have a selective action for spirochetes and thus open the way to sterilize the tissues by a single adequate dose. Up to the present, no toxic effects of the drug itself have been observed[3]. A quantity of the material has been recently sent to the Rockefeller Institute by Professor Ehrlich for trial in animals.

The following experiments have been made to determine the action of this substance on animals infected with the spirochetes of yaws.

Rabbit 1.—April 1, inoculated in left testicle with material from Rabbit C (first generation from human case). May 6, nodule palpable, spirochetes present; thirty-six days. May 7, spirochetes present. May 9, nodule size of olive; serum negative. 0.1 c.c. injected intravenously with 0.0015 gm. 606 per kilo. May 10, spirochetes not found. May 12, nodule not palpable. May 21, nodule not palpable. June 3, nodule not palpable. June 16, under ether anesthesia, testicle removed, no lesion; spirochetes not found, serum negative.

Rabbit 15.—March 31, right testicle inoculated from Rabbit 7 (second generation). May 7, nodule palpable, spirochetes present; thirty-seven days. May 9, treated as above, intravenously; serum negative; nodule size of olive. May 10, spirochetes not found. May 12, lesion size of pea. May 18, lesion not palpable. May 28, rabbit dead; testicle shows no lesion.

---

* From the Laboratories of Dr. C. J. [illegible] and the Mount Hope Retreat.

† From the Laboratories of the Rockefeller Institute for Medical Research, New York.

[1] [illegible]

[2] Nichols: Proc. New York Path. Soc., 1910, x, 1.

[3] Alt: München. med. Wchnschr., 1910, lvii, 561; Iversen: München. med. Wchnschr., 1910, lvii, 777.

Rabbit 17.—April 14, left testicle inoculated from Rabbit 6 (second generation). May 7, nodule palpable, spirochetes present; twenty-three days. May 9, treated as above, subcutaneously; serum negative; nodule size of pea. May 10, spirochetes not present. May 12, spirochetes not found. May 18, lesion not palpable. June 16, under ether anesthesia, rabbit castrated; no lesion; serum negative.

Rabbit 21.—April 22, right testicle inoculated from Rabbit 9 (third generation). May 14, nodule palpable, spirochetes present; twenty-two days. May 23, serum positive. May 24, spirochetes present; treated as above, intravenously. May 25, spirochetes not found. May 27, serum positive; lesion not palpable. May 31, serum positive. June 14, lesion not palpable; serum positive. June 17, under ether anesthesia, rabbit castrated; no lesion. June 23, serum negative.

In several animals, the serum reaction has persisted a number of days after the removal of the focus of infection.

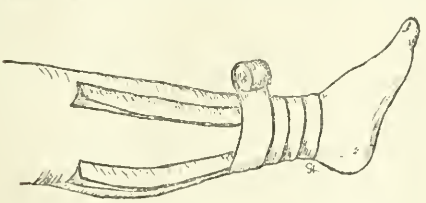
In all these animals no spirochetes could be found twenty-four hours after the treatment; the lesion disappeared after two or three days and, except in the last case, no complement fixation reaction occurred.

In animals not treated, the lesion, as noted above, persists several weeks at least and the serum reaction occurs in one or two weeks. These animals were, therefore, permanently cured by a single small dose. Rabbits tolerate a dose thirty times as great as the one given.

Three monkeys infected on the eyebrow have also been treated in a similar way and the lesions have disappeared after twenty-one days.

It would seem worth while to try this remedy in our tropical possessions where the natives are frequently, and white men are occasionally, infected.

Bandage for Cone-Shaped Surface.—Dr. Maynard C. Harding, Ault, Colo., says: The excellent bandage described by Dr. G. W. Putnam (The Journal A. M. A., April 30, 1910, p. 1441) prompts me to report a similar method of applying a bandage to any cone-shaped surface. Cut three strips of 2-inch adhesive plaster the length of the completed bandage—two will do for an arm-dressing. Fold them lengthwise with the sticky side out, and apply to the limb at equal intervals. Put on the first layer of roller as usual; then one strip of adhesive plaster applied in the same manner will suffice for each successive layer, making a bandage of exceptional strength and durability. It can be especially recommended for a knee-dressing where it is desired to limit the motion.



A firm bandage for any cone-shaped surface.

One reads much of starch bandages in works on surgery, but they are seldom found in the average office. A very satisfactory substitute can be made with the help of a bottle of thin glue or quickly drying cement. A few dabs of glue on every other layer of bandage as it is applied will convert it into a solid mass. This method can be used to apply further layers to the adhesive bandage described above, or with Dr. Putnam's bandage.

THE RELATION OF MOSQUITOES TO FILARIASIS IN THE REGION OF SAN FRANCISCO BAY*

CREIGHTON WELLMAN, M.D.
EDWARD VON ADELUNG, M.D.
AND
FINLEY M. EASTMAN
OAKLAND, CAL.

The constant presence of filariasis in the cities bordering San Francisco Bay has long rendered it desirable to know if the indigenous mosquitoes of this region are efficient hosts for the parasite at the temperature normally found in this part of California. In other words it is a desideratum to learn if an Oriental infected with filariæ residing, for instance, in Oakland might be a menace to the community in which he lives. With this object in mind we have undertaken some experiments.

REPORT OF EXPERIMENTS

The Source of the Filariæ.—A Japanese man, aged 29, was found on Dec. 19, 1909, to have sharp-tailed, sheathed filarial embryos in his night blood. This man came to San Francisco six years ago from Japan, stopping at Hawaii three months on the way. He went to Alaska four years ago and since his return to California has resided for three years in Oakland.

The Mosquitoes Used in the Experiments.—These were all bred from larvæ collected in rain-water barrels, etc., which on breeding out proved to be two common species already reported from this part of California, namely, *Culex consobrinus* (Rob. Desv.) and *C. tarsalis* (Coq.). The males soon died in captivity but the females were easily kept alive in gauze cages, protected from bright light and fed on fresh grapes, which they readily sucked.

Time and Manner of Feeding.—The patient's blood was first examined late at night and proved to contain microfilariæ in plenty, and the mosquitoes were then removed from the cage in glass tubes and wide-mouthed bottles, care being taken not to injure the insects. These containers were inverted over the flexor surface of the patient's forearm. It was found that some of the mosquitoes fed very slowly, in several instances an hour elapsing between the time the tube was placed on the arm and the mosquito's beginning to suck blood. When the insects had fed to repletion they were transferred to a cage containing a dish of water and kept at the ordinary temperature of the laboratory with some protection from the light. On the seventh, fourteenth and twenty-first days, after feeding, part of the mosquitoes were dropped alive into 80 per cent. alcohol, an equal number of controls which had fed only on fruit being treated in the same manner each time, and the bottles carefully labeled. To prevent error two lots of mosquitoes were fed and controlled after this method, the dates of the first feeding of the two lots being December, 1909, and January, 1910, respectively.

Technic Employed in Preparing the Mosquitoes.—This may be described under two heads, namely, (1) fixing and hardening of mosquitoes, and (2) staining and mounting.

Under the first head it will be remembered that the insects had been dropped alive in 80 per cent. alcohol. They were removed from this and the legs and wings cut off. Next they were placed in 95 per cent. ethyl alcohol for twenty-four hours. From this they were transferred to absolute alcohol for twenty-four hours. From absolute alcohol they were put in absolute alcohol and ether (equal parts) for twenty-four hours. From this mixture they were transferred to ether for twelve hours. From the ether they were placed in 3 per cent. celloidin for three days and afterward into 6 per cent. celloidin and placed in 80 per cent. alcohol to harden for twelve hours. The specimens were then sectioned and the sections kept in 80 per cent. alcohol previous to staining.

---

* From the Laboratory of Tropical Medicine, Oakland College of Medicine.

* Published under the *imprimatur* of the American Society of Tropical Medicine.

Under the second head we may record the following steps: The sections were taken from the alcohol and placed in tap water to remove the alcohol. Next they were stained with Delafield's hematoxylin for two minutes and afterwards washed in tap water to remove surplus of stain. Acid alcohol (95 per cent. ethyl alcohol with 1 per cent. hydrochloric acid) was used to differentiate the sections, the sections being placed for three minutes in this mixture. Next the specimens were placed in 95 per cent. alcohol for three minutes to dehydrate. The sections next were passed through beechwood creosote for five minutes to clear them and finally fixed on slides and mounted in xylol balsam under cover glasses.

Result of Examination.—No developmental forms or other extraneous bodies were seen in the thoracic muscles or any other part of the sectioned mosquitoes. The appearance of the mosquitoes fed on the patient's blood is identical with that of the mosquitoes used for controls. As the sections are thin and the staining good and as Dr. Wellman is familiar with the appearance of developmental forms of filariæ there seems to be little room for mistake.

Conclusions.—We consider that we have shown by this experiment that the two commonest species of Culex mosquitoes in Oakland are not efficient hosts at room temperature for the nocturnal sheathed microfilariæ occurring in our Japanese patient. It is possibly not too much to say, in view of these findings, that there is probably little danger that Orientals who are infected with filariæ will infect the inhabitants of the San Francisco bay cities under present conditions.

1068 Broadway.

Therapeutics

ULCER OF THE STOMACH AND DUODENUM

It is the object of this department not only to present sensible treatment for disease and to suggest a method of carrying out that treatment, but also to aid the clinician in making his diagnosis and hence to establish the correct treatment.

Besides gall-bladder disturbances and recurrent appendicitis which all give epigastric symptoms, and other reflexes from abdominal disease or conditions, ulcer of the stomach and duodenum must be diagnosed from the neurosis gastralgia, and from cancer of the stomach.

ULCER OF THE STOMACH

The principal symptoms are pain and vomiting. The pain is circumscribed and boring in character, sometimes shooting through to the back, intermittent, mostly after eating, rarely on an empty stomach, and is increased by pressure, as by corsets, bands, and belts. The greatest intensity of the pain is located somewhere in the stomach region. The vomiting is likely to occur immediately or soon after eating, and is often projectile in character. The vomiting of blood is, of course, highly distinctive, but does not always occur, and the blood may be fresh and arterial or more or less coagulated and partially digested and much of the coffee-ground variety. The appetite is generally good, especially for meat. There is often thirst, pyrosis and flatulence, rarely; there is generally hyperchlorhydria, and meat is thoroughly digested. Attacks of diarrhea are likely to occur, and the stools often contain occult blood. There may develop anemia, more or less severe.

ULCER OF THE DUODENUM

The principal symptom is pain, more or less localized in the region of the pylorus, intermittent, occurring generally about two hours after a meal. In other words, this pain occurs when the stomach is more or less empty. This pain is more frequently relieved by eating some bland food or drinking milk than is the pain of ulcer of the stomach. The appetite is generally good, and vomiting and other symptoms of gastric indigestion are infrequent. Attacks of diarrhea may occur, and occult blood is often present in the stools. There may be a marked hyperchlorhydria.

GASTRALGIA

Gastralgia or stomach cramp may be a neurosis, or may be caused by any irritant in the stomach. While severe gastralgia may cause cardiac depression and simulate angina pectoris, it most frequently allows a prognosis of perfect safety to the patient, and occurs generally in a neurotic patient or hysterical woman. The pain is never so severe as these patients think it is, is often entirely relieved by eating, and is accomplished by enormous amounts of eructated, odorless gas. Burning is often complained of, but pyrosis rarely occurs. Digestion is generally found good when tested. Burning pain and gas eructations are irrespective of the kind of food eaten. The appetite is, of course, capricious and the pain is generally relieved by food and pressure, in fact, pressure is well borne. Nausea and vomiting are rare.

CANCER OF THE STOMACH

The above three conditions may occur at any age, but more generally before 35, while cancer of the stomach occurs more generally from 40 to 60. The principal symptom is pain, generally localized, often in a region that is felt to be a mass or tumor which is exquisitely sensitive to pressure. The pain progressively becomes worse, the mass progressively grows, and emaciation and cachexia progressively increase; hence a patient who has upper abdominal pain of a duration of much more than six months, without presenting any appearance of cachexia and without having lost much weight, can be almost guaranteed not to have cancer. Other symptoms of cancer of the stomach are loss of appetite, eructations of fetid gas, pyrosis, often repeated vomiting, sometimes days at a time and then a period of rest, with frequently, of course, signs of dilatation of the stomach. Rarely is fresh blood vomited, generally extravasations of blood remain long enough in the stomach for decomposition and when vomited give the appearance of coffee grounds. The stomach poorly digests food, often contains no free hydrochloric acid after a test meal, generally lactic acid, and, if the cancer is near the pylorus, the Boas-Oppler bacillus.

A TEST FOR BLOOD IN THE FECES

Many cases of gastric and duodenal ulcer can only be diagnosed by the symptoms of these conditions plus the finding of occult blood in the feces. A small portion of fecal matter about the size of a hazelnut is mixed with water, and to this watery mixture is added a small quantity of glacial acetic acid. This is then placed in a test tube and shaken with ether. Any hemoglobin which may be present is changed to hematin by the acetic acid and taken up by the ether. After settling, the ether which rises to the top of the solution is poured off and to it a solution of guaiac in alcohol is added. To this is added 1 c.c. (15 minims) of the resin of turpentine. The change of color denotes whether blood is present or not. If blood is present in any amount it quickly changes to blue. If there is but a small quantity of blood the change requires some minutes. Before applying this test there should be no meat allowed in the diet for forty-eight hours, to preclude the possibility of the blood test being given by the eating of a meat which contained blood.

TREATMENT

While it is wise, and will be found wise, to operate more frequently for gastric and duodenal ulcer than has been done, the seriousness of the operation is such that every effort should be made to cure the condition medically. The greatest danger from these ulcers causing serious hemorrhage is in their early history, and probably it is at this time that they are most amenable to medical treatment. It is not frequent for patients to die from hemorrhage from an ulcer in these regions, but the fact that it does occur, and the fact that perforation may occur, and the fact that constant hemorrhages may cause profound anemia, makes the condition serious from the very beginning. Again, these ulcers so frequently become quiescent or apparently heal only to cause symptoms later, that it is hardly safe to decide that an ulcer in the region is cured until after the lapse of at least a year, and perhaps two years, of freedom from symptoms.

In attempting to cure an ulcer of the stomach or duodenum the diet becomes of primary importance, as it is the food that is continuously to aggravate the condition. As hyperacidity seems to increase the ulceration, certainly increases the pain, and is likely to increase the vomiting, anything that diminishes the acidity is good treatment, and a diet free from the substances that cause the greatest outpouring of hydrochloric acid is the diet of choice. In other words, a diet without meat and without meat broths, without toast, and without any hard particles of food that can scrape or irritate the inflamed part, should be selected. On the other hand, it does not always seem that a large, straight milk diet, with the probable production of lactic acid and gas during its digestion, is advisable or beneficial. Neither does it seem sensible to prescribe a starvation diet or a total abstinence from food, with rectal feeding which is always insufficient, to cure an ulceration that at the best must require weeks to heal, and this in a patient who is already debilitated and probably anemic. Therefore, the so-called Lenhartz diet with raw eggs is the most sensible as giving nutrition and at the same time inhibiting the production of hydrochloric acid and tending to heal the ulcer.

The raw eggs are beaten up whole and placed in a cup or glass surrounded by ice. The small amount of milk given is also served iced in the same manner, and the egg and milk feedings alternate with each other every two hours, at first two teaspoonfuls of the egg and four teaspoonfuls of the milk. The first day two eggs are used and six ounces of milk. The eggs and milk are gradually increased from this minimum until by the sixth day seven eggs and twenty-two ounces of milk are given. From the third day on a little granulated sugar is added. At the end of a week the number of eggs is reduced and some scraped beef is allowed, with soon a small amount of boiled rice. During the following week, the second week, the eggs may be soft boiled, and four may be administered a day, with the milk increased to nearly a quart, sugar as before, and scraped beef or chopped chicken and rice or bread with a little butter may be gradually added and the diet thus varied. Even when the eggs are used soft boiled, four should be taken a day. Whatever is taken, if solid, it should be very completely and slowly masticated, and as above stated, at first the amounts ingested at one time must be very small and taken at intervals of two hours during the day. The foods for the first week should be taken cold and the next week only warm, never hot. Small sips of cool water may be taken as often as desired or advisable.

During the first week the patient should be fed, not even allowed to feed himself, and he should remain in bed for at least three and better four weeks.

If there is hemorrhage an ice bag should be placed over the stomach and a large dose of bismuth subnitrate should be administered, perhaps 3 or 4 grams (45 to 60 grains) at once.

It generally seems advisable to give bismuth in large doses, at least 2 grams (30 grains) once a day. This can be taken stirred up in water or in milk and quickly drunk.

The treatment above suggested generally stops the pain. If pain is still severe morphin should be resorted to, but with this treatment it rarely will be necessary, and the dose required, hypodermatically, is small.

The patient should not get up to urinate or for the bowels; a bedpan should be used. If the patient is constipated, the bowels may be moved by the rectal injection of a half ounce to an ounce of glycerin with an equal amount of water, and soap suds could be used if needed.

As these patients are already short on iron and for a number of days are to receive no meat, it is advisable to give the saccharated oxid of iron (*Eisenzucker*), 3 grains, in tablet form, twice a day. The patient should thoroughly crush the tablet with the teeth before swallowing.

If after a month of this treatment the patient cannot normally convalesce and be apparently cured, in other words, if the symptoms quickly return, an operation should probably be recommended, as the future of such a recurrent case is uncertain. Recurrent severe hemorrhage should cause operation, and, of course, when there is perforation operation is immediately necessary.

FACIAL SPASM AND TIC: TORTICOLLIS

The general practitioner may as well in the first place admit that there is a scientific, psychopathic method of treating patients suffering from nervous mistakes, and in the second place, that such treatment can be carried out successfully only by physicians who have made this branch of therapy a special study.

These points being agreed to, it is most satisfactory to note that Dr. Tom A. Williams, of Washington, D. C., declares (*Monthly Cyclopedia and Medical Bulletin*, January, 1910) that many of the supposed incurable and most distressing spasms of the face and neck muscles may be cured. In this paper he ably and carefully discusses the diagnosis of the above conditions from chorea and from the more serious cerebral disturbances. He cites a number of illuminating cases, but does not go into the technic of treatment. If he did, it would hardly be of value to the general practitioner, as if the above preamble is correct and agreed to, patients suffering from these muscle contractions, terrible to themselves, distressing to their friends and causing great suffering almost beyond measure, should be referred to a physician who has made a special study of psychopathic treatment.

The object of this reference is to call the attention of physicians to the fact that in many of these supposedly hopeless cases a cure may be effected.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . Five dollars per annum in advance

(For other information see second page following reading matter)

SATURDAY, JULY 16, 1910

MEDICAL MEN WIN RANK IN THE ARMY

Major-General Leonard Wood has returned from South America and this week assumes his duties as the senior general officer of the United States Army. Next in rank is Adjutant-General Fred C. Ainsworth. Both are medical men who entered the army as surgeons. That they should have been able to break through the conservatism of military administration, and to advance so far into fields usually closed to their profession, is to the credit not only of their abilities and force of character, but of the Army itself, which has demonstrated its ability to rise above ancient prejudices and traditions and to utilize its best material. That the Medical Corps should contribute at the same time the senior line officer and the senior officer of the staff is an event sufficiently remarkable to call for more than passing notice.

General Leonard Wood was born at Winchester, N. H., Oct. 9, 1860, and graduated from Harvard Medical School in 1884. In January, 1886, he entered the Medical Corps, and soon distinguished himself in an arduous campaign against the Apaches. The Spanish War found him on duty in Washington where he had made acquaintance with a congenial spirit in the then Assistant Secretary of the Navy, Theodore Roosevelt. A like vigor of mind, combined with moral force and a love of rude physical exercises, drew these men together, and so when war was declared and the command of the regiment of "Rough Riders" was offered to Mr. Roosevelt, he told the President that Dr. Wood was by reason of his twelve years' experience in the Army much better fitted to cope with the technical difficulties of enlisting, equipping and training a new regiment than he, and he proposed that Wood should be appointed colonel and he lieutenant-colonel. This was done, and the fight at Las Guasimas made Wood a brigadier and gave the regiment to Roosevelt.

After the capture of Santiago, Wood was placed in command of that district and in the space of a year his capacity for organization had so clearly demonstrated itself that he was transferred to Havana and made the military governor of Cuba with the rank of major-general of volunteers. In three years he brought Cuba from a naked and devastated land where famine and disease stalked hand in hand, to salubrity and plenty. The death rate in Havana fell from 91 per 1000 in 1898 to 20 in 1902. In the thirty years preceding his appointment as governor there were in the city of Havana 21,448 deaths from yellow fever and 12,722 from smallpox. In the decade since that date there have been 44 deaths from yellow fever and 4 from smallpox.

But the sanitary regeneration of Cuba and the support and assistance given to the Reed yellow fever board are only a small part of the creditable work of the military governor of Cuba. In every direction in which constructive statesmanship can influence the destinies of a nation, the work of Leonard Wood has left an indelible impress on the government and lives of the Cuban people.

In the twelve years since his taking up the duties of a combatant officer, General Wood has held many important commands at home and in the far east and has been an assiduous student of the military profession. His mastery of it is demonstrated by the practically unanimous approval with which the Army received his assignment as Chief of Staff.

The career of Major-General Fred C. Ainsworth, the Adjutant-General of the Army, while less spectacular in character and far less familiar to the public than that of General Wood, is an equally creditable example of the uplifting power of high ability joined to force of character.

He was born at Woodstock, Vt., Sept. 11, 1852, graduated in medicine at the University of the City of New York in 1874 and entered the Army as assistant surgeon the same year. For twelve years he performed the routine duties of a medical officer, most of this period being passed amid the breezy and often exciting surroundings of the western and southwestern frontier. When in December, 1886, he was placed in charge of the record and pension division of the surgeon-general's office, a condition of affairs confronted him which was of grave concern, not only to the War Department but also to the President and to Congress, and which threatened to become a question of national politics. These were years of great activity in granting pensions, and for each application, the medical record had to be sought in the hospital registers, of which there were more than 20,000 volumes, and the record of service verified by consulting the muster rolls, of which there were about 100,000, in every stage of dilapidation. The former was done in the surgeon-general's office, the latter in the adjutant-general's, and each was several months in arrears. The pension office charged all delays to the War Department and the cry went up that a Democratic administration was obstructing the carrying out of the pension laws. By the introduction of good business methods and business discipline among the three hundred clerks of his division, Captain Ainsworth in three months caught up and was enabled to answer each call from the pension office within three days. He then set part of his force to copying the hospital records on cards so that all the entries for each soldier were brought together and could be instantly obtained. When this was completed all applications were answered within 24 hours. A special committee of the Senate which investigated the methods of business in the executive departments recommended the extension of Ainsworth's methods to the other bureaus of the War Department, and the Secretary of War, Mr. Proctor, in 1889, consolidated fourteen divisions of the War Department with 700 clerks into the record and pension division, which was placed under Captain Ainsworth, assistant surgeon. The adjutant-general's office unloaded on him in June, 1889, 40,000 unfinished cases and by the end of September all were disposed of and the current work was well in hand. Congress in 1892 erected this division into a permanent bureau, of which Ainsworth was made the head with the rank of colonel. An additional division of the adjutant-general's office was added to it in 1894 and in 1899 Congress still further enlarged it by the addition of the war records office and raised the rank of its chief to brigadier-general. In 1903 Secretary of War Root still further enlarged it and finally in 1904, on his recommendation, Congress consolidated the record and pension office with what remained of the adjutant-general's office after the transfer to the general staff of the advisory functions formerly exercised by the adjutant-general. The head of this new and great office, which distributes and keeps record of the vast business of the War Department and is its mouthpiece, and which is charged with the recruitment of the Army, besides being the custodian of all of the records of all of our wars, was appropriately given the rank of major-general with the title of military secretary, which was later changed to the present one of adjutant-general.

It may well be imagined by those familiar with the jealousies and contentions of departmental life, that a career so full of strenuous activity and accomplishments, of which the victorious efficiency so constantly extended its boundaries, was not entirely peaceful. In fact under this brief narrative lies many a bitter struggle against narrow prejudice, crossed ambition, jealousy and sloth, besides the vast inertia of bureaucratic conservatism. The veteran Senator Cockrell, who was chairman of the special senate committee mentioned above, and than whom none knew better the inner secrets of departmental history, said on the floor of the Senate in advocating General Ainsworth's promotion: "General Ainsworth has done a work which has never been equaled by any executive officer of this government from 1789 to date, and I challenge any comparison with his record."

Members of the medical profession may be permitted to take some pride in these achievements of their confrères.

METHODS FOR THE QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE

Clinicians have long been dissatisfied with the results yielded by the Esbach method for the quantitative estimation of albumin in the urine. The dependence of this method (1) on an exact room temperature, (2) on dilution of the urine when the albumin is large in amount, and (3) on a constant acidity are well-known difficulties. Moreover, the precipitate formed often settles unevenly; there is sometimes difficulty in making a correct reading of the meniscus in the tube and, finally, the picric acid in the solution makes it objectionable to handle on account of the staining of the hands and clothes in case of accident. A distinct advance in the quantitative methods of estimating the albumin in the urine was made by Tsuchiya when he introduced his solution consisting of phosphotungstic acid, hydrochloric acid and ethyl alcohol.

The recent study of Mattice[1] shows the great value of Tsuchiya's reagent[2] when used in a certain definite way. Mattice made a large number of control observations with other methods, with results which speak strongly in favor of the use of Tsuchiya's reagent. He finds that the phosphotungstic method is much more accurate than the Esbach method for comparative quantitative estimation of albumin in the urine and urges that Esbach's solution be supplanted altogether in clinical work by Tsuchiya's reagent. The readings are very little influenced by changes in temperature; foaming or floating of the precipitate is rarely seen; the precipitate settles much more evenly than with the Esbach reagent; it is easy to read the meniscus accurately at the mark on the Esbach tube and no dilution of the urine is necessary.

The method is applicable to high grades of albuminuria as well as to the slightest grades. It can also be used where the albuminuria is complicated by glycosuria. The solution is easily prepared, keeps well and does not stain the hands or clothes. It can, therefore, be warmly recommended for clinical use.

THE BRIEF IN DEFENSE OF THE TEN-HOUR LAW FOR WOMEN

The Illinois Supreme Court recently declared constitutional a law limiting the working-day of women in factories and laundries to ten hours. This decision, aside from its intrinsic interest, is noteworthy because in the arguments for the brief and in the decision rendered by the court stress was laid not on the legal aspect of the question, but on the demands of public health. The brief submitted to the Supreme Court [illegible] the ten hour law contains but twenty-four pages of legal matter, the remaining five hundred odd pages being devoted to a review of the literature on fatigue.[1] The document thus becomes one of great interest to physicians, for it is probably the most nearly complete compilation that has ever been made of the publications, both medical and sociological, on the subject of what we must, for want of a better word, call "overwork."

---

[1] Mattice, Albert F.: The Quantitative Estimation of Albumin in the Urine, Arch. Int. Med., March 15, 1910, p. [illegible]

[2] Tsuchiya's method was described in The Journal, July 25, 1908, p. [illegible]. The reagent consists of 1.5 gm. phosphotungstic acid, 5 c.c. concentrated hydrochloric acid and ethyl alcohol enough to make 100 c.c. This is used in the Esbach tubes in place of the old picric-citric acid solution, with technic similar otherwise.

Although the primary object of this brief is to show that the demands of public health require legal restrictions on the work of women because of the peculiar importance to the community of the health of mothers, yet the brief is not limited to the consideration of the overwork of one sex only, but discusses fatigue in all its aspects. The experimental work of Mosso, Helmholtz, Ranke, DuBois-Reymond, Weichhardt and Wolff-Eisner is reviewed. The investigations of German, Italian and French writers on the effect of overwork on the different organs, on the effect of night work, of prolonged standing on the feet, of foot-power machinery, of the speeding up required by the "piece-work system," are fully given. There are also to be found statistics of great interest drawn from the working-class insurance records of Germany.

To the American reader one striking feature of this review of the literature is the small part which our country has taken in this most modern field of research. Quotations from American sources are hard to find and when found they consist chiefly of reports of factory inspectors. Few well-known American names are found in this brief. On the other hand, the foreign quotations bristle with familiar names and it is evident that industrial hygiene ranks as high as any other branch of medicine in Europe. Men who are authorities in physiology, pathology and medicine have investigated the effects of fatigue in the different industries, and practicing physicians of the first rank have appeared before legislators to testify in favor of legal restrictions. When the question of early closing was agitated in England in 1888 a bill to shorten the working-day was introduced by the noted scientist Sir John Lubbock and was supported by a petition from the medical profession signed by such men as James Paget, Richard Quain and W. S. Playfair.

There are some very interesting statistics in this brief as to the increase of nervous diseases which accompanies the increased speed of industry and the greater strain on the attention. Thus the State Invalidity Department of Berlin reported in 1906 that 35 per cent. of the cases treated were neuroses of the heart. Nervous breakdown accounted for over one-half of the new patients during the year and over one-third of the [illegible]

The effect of fatigue on the occurrence of accidents is graphically shown by French and Belgian statistics. The number of accidents increases progressively during the morning hours, drops after the noon intermission and then rises from hour to hour till the end of the working-day, affording a practical illustration of Helmholtz' experiments in attention fatigue.

While the health of the woman herself is important to the community, the effect of her good or ill health on the coming generation is even more important, and as this is one of the strongest points in Mr. Brandeis' argument, we find many statements as to the effect of overwork in women on their fecundity and on infant mortality. The most extensive study of the effect on fecundity seems to have been made by Broggi, who states that of 172,365 Italian women between the ages of fifteen and fifty-four years who were employed in industrial occupations, the average child-bearing coefficient was only 45 per cent. or about one-third of the general fertility of Italian women (120 per cent).

Infant mortality in Germany and England seems to increase progressively according to the increase in the proportion of women engaged in industrial work, and this is true even if the mother's work results in a higher standard of comfort in the home. The two classical demonstrations of this rule are the great Lancashire cotton famine and the siege of Paris, during both of which crises there was loss of employment and great privation. In spite of the starvation and the increased general death-rate the infant death-rate fell, in Paris actually 40 per cent., simply because the women, being out of work, were obliged themselves to nurse and to care for their children.

The overwork of women is not so crying an evil in this country as in Europe, for the number of married women obliged to work outside of their homes is far smaller here, but it must be remembered that in many states the child-labor laws are far from adequate, and even in those states where children under fourteen are forbidden to work, there is still ample time between the age of fourteen and the girl's marriage to allow of serious and permanent injury to health—injury which may result in childlessness or in the bearing of sickly children. It is a matter of common observation that the first generation of children born in this country of foreign parents are inferior in physique to their peasant parents; yet it is precisely these girls who go into the heaviest kinds of factory work and have the longest working-day. It is also these girls who are the coming mothers of the American nation.

Since it is impossible to control beyond a certain point those trades which make especially severe demands on the endurance of women workers, the obvious course seems to be to restrict the number of hours which women may be employed in them. The ten-hour law is a step in the right direction, but it is probable that this generation will not pass away without seeing still further steps taken.

---

[1] [illegible] Brief [illegible] submitted by [illegible] Josephine Goldmark [illegible] for Appellee. In the Supreme Court of the State of Illinois, [illegible] Term, 1909. [illegible] essentially the same brief [illegible] Mr. Brandeis [illegible] defended the ten hour law [illegible] in Oregon. It is, however, much more exhaustive than the first one.

THE FUTURE OF THE MEDICAL PROFESSION

Dr. Victor C. Vaughan[1] has made an interesting analysis of the present condition of the medical man in this country, in relation to society in general, to industry and to the other professions. He also ventures to make some prophecies regarding the trend of medical science and the place and office of the future practitioner. Dr. Vaughan shows what has been accomplished in this country for the elevation of the profession through an awakened professional conscience, a high code of ethics and harmonious organization. "This is a commercial age and this is preeminently a commercial country, and yet the medical profession is ridding itself of commercialism. It is demanding of those who desire to enter its ranks a higher degree of culture and intelligence than is demanded of any other profession in this country." He sees the activity and usefulness of the physician rapidly expanding and becoming devoted more to the uplift of mankind than to financial gain. "The world has never been in greater need of the enlightened medical man than it is likely to be in the next generation, and the world will demand that he be worthy of the tasks that will fall on him. No other profession will be able to render greater service to mankind."

In view of the great and increasing cost of medical education and investigation in medical sciences, Vaughan thinks that the government should help to pay for them. "The nation that will profit in the future from the labors and discoveries of the profession must help in this cause. It must make large appropriation for scientific research. It must render financial aid to medical education, which has become too costly for the profession itself to provide, and it must not permit the use of short roads to practice. While the advanced medical educator in this country is doing his best to elevate his profession, pseudo-medicine is filling the lobbies of every state capitol with demands for legal recognition, and too often it happens that our law-makers do not distinguish between the true and the false. This imposes a heavy duty on the profession, namely, the education of the public."

Dr. Vaughan enumerates some of the specific ways in which the medical profession can be of service to humanity, and some of the measures necessary to free the race from disease. Among these are the education of the public in the nature of infectious diseases, and the inauguration thereby of measures to restrict and eradicate such pests; the placing of venereal diseases on the list of dangerous and communicable disorders, and the holding in custody of all persons so affected; and the routine medical examination of every person at least twice a year. This last suggestion gives a wider scope to a plan broached by Professor Irving Fisher, already noticed in THE JOURNAL. Unless all signs fail (for many other thinkers have read them in the same sense) the trend of our professional future would seem to be in the direction indicated by Dr. Vaughan or something closely parallel thereto.

One deduction from these premises, however—it seems to us to be an inevitable one—Dr. Vaughan refrains from drawing, namely, that unless science discovers some way of extracting professional fees from stones or nutriment from air, there must be a readjustment of the financial relations between the medical profession and the public. Already the profession feels the hardship of having to maintain non-commercial standards while making a livelihood by offering specific individual services to a commercially minded public; and already that commercially minded public begins to realize that every effort of the medical profession to widen the sphere of its public service narrows the circle within which its members may reap individual rewards. What is to be the result in the day when the highest medical skill shall be directed toward the prevention of disease, and an epidemic shall as clearly point to reprehensible neglect on the part of some responsible person as a train-wreck does now? Shall we ever be able to persuade our patients to fee us, as the Chinese are said to pay their physicians, so long as they remain in health? Even if the occidental mind could be brought to regard this procedure as natural, there is an obvious difficulty in the fact that many of the most important works of preventive medicine are not performed for the benefit of any individual; they are public services, and must be paid for, if at all, by the public. Until the day comes, therefore, when the physician's work shall be recognized as essentially a public function, the conscientious physician must be content to regard himself as an unpaid public servant, whose right hand and left are perforce ignorant of each other's doings, since the one is hastily snatching at the indispensable bread and butter, while the other is helping to usher in the new and—let us hope—better order of things.

Current Comment

MALTA FEVER

Commenting on a question recently raised in the British House of Commons, relative to the infection of goats with Malta fever, *Nature*, June 16, says that what makes these animals so dangerous in the spread of the disease is the fact that they themselves are so immune. If Malta fever caused in the goat high fever and the other symptoms that it does in man, the animal would cease to be a danger. It would be confined to its stall and its milk would run dry. As it is, the infected goat keeps in apparent perfect health, and therefore the Maltese themselves refuse to believe that the disease is spread through the medium of the milk and have been exporting their infected goats and thus spreading the disorder. Last year the Sleeping-Sickness Bureau of the Royal Society discovered it infecting a large proportion of the native population on the shores of Lake Albert Edward in Uganda, and the native goats were found to be the carriers. Some Maltese goats imported into the United States in 1906 were found to be infected, and but for the rigid quarantine we might have had the disease epidemic here. As it was all the animals, and even the kids born here, had to be slaughtered within two years to prevent the spread of the infection. The prohibition of the use of goats' milk has completely abolished the disease in the British soldiers and sailors in Malta, though it continues to prevail among the native population. It seems strange that the exportation of Maltese goats should be permitted by the British government or that their importation should be allowed by any other—it is, as *Nature* says, almost beyond belief that it should be so. The importation or exportation of the carriers of an acute infectious disease like Malta fever is hardly comparable with that of tuberculous cattle, as *Nature* seems to infer, though that is sufficiently undesirable to call for restrictions.

---

[1] Address on University Day at the University of Cincinnati, published in Science, 1910, New Series, xxxi, 127.

SANITARY REFORM IN TURKEY

Since the revolution in Turkey with the Young Turkish Party in control there seems to be a better prospect for health and hygiene in the Turkish capital. In former times, any proper medical treatment of Turkish women was rendered impracticable by Mohammedan custom. The advent of women missionary physicians, who were allowed to see their patients, probably started the breaking down of the barriers and gradually there has come a change so that at the present time many Turkish women readily submit to the necessary examinations and treatment by the physician. The change has been accelerated by recent events. One of the most striking changes reported is that of public lectures on hygienic subjects, which seem to be fairly started under the auspices of the American College for Girls in Constantinople. This would have been impossible under the old régime, but in the existing conditions the movement seems to have a very promising future. It will take a long time, of course, to reform the many sanitary deficiencies of the Turkish capital and still longer in the provincial towns and rural districts, but a start appears to have been made and prominent Turkish physicians are actively cooperating in the work.

A CENTENNIAL OF THE WATER CLOSET

In 1810 the water-closet came into general use in Germany and the Germans are this year celebrating "the centennial of the water-closet." Thirty-five years before that date—that is, in 1775—the first British patent ever granted for a water-closet was issued to Alexander Cummings, a watchmaker; while twenty-three years after—in 1833—the first American patent was taken out. Like all innovations, it came into general use but slowly, and it was not until 1872 that its use was officially recognized. In that year a municipal ordinance for the city of London went into effect that brought the modern system of sewage into being, and with it the general introduction of water-closets. Who at first could have realized the importance of these few quarts of water in a reservoir as solving the problem of permitting sanitary existence in large cities? To-day the water-closet may be regarded as the stamp of civilization; not until a water-closet system is installed can any populous community now rank as civilized and up-to-date.

HONOR TO CROOKES

The British government has conferred the Order of Merit on Prof. William Crookes in recognition of his eminent work in chemistry and physics. This order, established by King Edward VII as a special distinction for men eminent in science, literature or art, is limited to twenty-four members within the British empire, Lord Lister and Sir Joseph Dalton Hooker being the only members of the medical profession so honored. This well-deserved distinction comes to Professor Crookes as a recognition of his standing as one of the foremost chemists of to-day. His most prominent achievements have been the discovery of thallium in 1861, the invention of the Crookes tube, by means of which Roentgen discovered the *x*-rays, and his investigations bearing on a large number of important problems associated with commercial and theoretic chemistry. In 1898 the British Association for the Advancement of Science elected him president, while many scientific bodies have honored him with office or membership. The appointments of Sir William Crookes and Mr. Thomas Hardy, the well-known English novelist, on whom the honor was conferred at the same time, leaves but a single vacancy in the order.

COMPLETE REPORT ON MEDICAL CURRICULUM

Two years ago the Council on Medical Education, recognizing the tendency to overcrowd the medical curriculum, appointed a special committee to make a careful study of the comparative value of each of the subjects taught and to bring in a report recommending what might be termed a model or standard curriculum. Special pains were taken to have this curriculum represent the ideas, if not the ideals, of as large a number as possible of leading medical educators who would represent all sections of the country. The Council selected chairmen for ten subcommittees and each of these chairmen was asked to recommend fifteen other educators in his subdivision of medicine and, from the names submitted, nine additional selections were made for each subcommittee, making a total of one hundred for the entire committee. These committees entered on the work with remarkable energy and enthusiasm, numerous meetings were held, an enormous amount of correspondence was carried on, ideas were submitted to and suggestions obtained from a large number of other educators acting in an auxiliary capacity, and the result was the report on a model medical curriculum which was submitted at the last year's Conference of the Council on Medical Education. The eagerness with which copies of this report have been sought by medical and other teachers shows the deep interest which is being taken in the efforts to improve the medical curriculum. So extensive has been this demand that it was decided to issue another edition[1] of the report which would include also the discussions of the subcommittees so far as they could be obtained. The Council has clearly stated that this curriculum is advanced merely for its educational value and not with the idea that all colleges should conform strictly to it. In fact, absolute uniformity of curricula in all colleges is not desirable, although comparative uniformity would be of much benefit in permitting to students more freedom of migration from one college to another and in facilitating a larger interstate reciprocity in the licensing of physicians.

LIFE PROTECTION IN SUBMARINES

As new conditions arise in the varied human activities they necessitate new provisions for safeguarding life. The submarine proves to be almost as dangerous for the operators as for the foe, and many lives have been lost through collision or failure of the submerged vessel to rise. Complicated arrangements have been devised for the release of the imprisoned crew or the provision of air until they can be released; but now comes a more simple invention. According to the *Scientific American*,[2] it consists of two cylindrical shells, one revolving inside the other. The outer opens both to the sea and to the interior of the vessel, while the inner and revolving one has but one opening, which may be turned to the inside of the vessel so that a man may enter, and then to the outside so as to allow escape into the water. The operation is repeated until all have escaped. Only a small quantity of water is admitted each time. It is certainly simple and if it works it may save many lives. We next need a safe means of slow descent when an airship is wrecked too far above ground to allow one to jump with safety.

Medical News

CALIFORNIA

New Hospitals. A six-story reenforced concrete hospital, with ninety-five foot frontage, is being built on Pine Street, between Jones and Taylor, by William F. McNutt, San Francisco, and will be ready for occupancy in October. It will be furnished with suitable operating rooms, roof garden and solarium, and will accommodate ninety patients.——The Roosevelt Polyclinic has been opened at 679 Broadway, San Francisco. The following are the heads of the departments: Surgery, Drs. Walter G. Harder and Charles A. Pauson, medicine, Drs. Ralph B. Scheier and Herbert I. Bloch; gynecology and obstetrics, Drs. George K. Herzog and Walter S. Johnson; genito-urinary diseases, Drs. Louis Gross and William Edwards; skin diseases, Dr. J. Cameron Pickett; diseases of the eye, ear and nose, Drs. Albert Cohen and Oscar Tobriner; pathology, Dr. Grace Sinforth.——The Southern Pacific Railroad Company is building a new $10,000 hospital at Dunsmuir, to be completed July 1.——Work is soon to be begun on a $20,000 hospital at Lemoore.——The American Mutual Hospital Association at Taft is about to erect a new building to take the place of the present hospital.——A hospital is being fitted up at Ferndale in the building formerly occupied by the Sisters of [illegible].——The new Kaspare Cohn Hospital was dedicated June [illegible] at Los Angeles, the hospital being the gift of Kaspare Cohn, a wealthy resident.——A new hospital has been opened at Coalinga, called the San Joaquin.

GEORGIA

College Closes on Account of Typhoid. Wesleyan Female College, Macon, was closed for the balance of the term on account of an epidemic of typhoid fever.

College Commencement.—At the annual commencement exercises of the Medical Department of the University of Georgia, Augusta, degrees were conferred on ten physicians. Dr. Joseph E. Allen, who has been dean of the medical college for four and a half years, retired and was succeeded by Dr. William H. Doughty.

Personal. Dr. T. E. Rogers has been elected a member of the house-staff of the hospital at Macon.——Dr. and Mrs. Eugene B. Elder, Macon, are spending their vacation in [illegible].——Dr. Theodore E. Oertel, Augusta, has been elected president of the Antituberculosis and Sanitary Society of the State of Georgia.——Dr. John F. Harris has been appointed on the board of health at Dalton.——Dr Robert G. Stephens has been elected city school medical examiner at Atlanta, vice Dr. Stewart R. Roberts, resigned.

ILLINOIS

New Hospital.—Work on the new hospital at Monmouth to take the place of the old building has been begun. The hospital will be ready for occupancy by April, 1911, and will cost $37,000.

Personal. Dr. Anne J. Murphy, formerly house physician at the New England Hospital for Women and Children, Boston, has been appointed on the resident staff of the Edward Sanatorium at Naperville, to have charge of the new laboratory.——Dr. Harry C. Hill and family, Streator, have returned from abroad; Dr. Hill spent most of the time in the hospitals of Vienna.——Dr. Julius Wen Glesky, assistant superintendent and chief of the medical staff of the Eastern Illinois Hospital for the Insane, Kankakee, has resigned. He will go to the Sacred Heart Sanitarium, Milwaukee.——Dr. Charles O. Melz has been appointed assistant surgeon at Murphysboro for the Mobile and Ohio railroad.

Chicago

Less Typhoid in Chicago. The report for the first six months of 1910 for the city shows 94 deaths from typhoid fever, equivalent to a rate of 8.3 per 100,000 of population. The rate last year, under similar computation, was 12.5 for the first half of the year. This shows the lowest record ever recorded in an American city of 200,000 population or over. The deaths from typhoid in June numbered 10.

Society of Mental Hygiene.—The Society for Mental Hygiene has been granted a charter. Among the organizers are Drs. Henry B. Favill, Sidney Kuh and Alice Hamilton, Miss Jane Addams, Samuel Alschuler and Miss Julia Lathrop. The object is the investigation of the conditions surrounding the commitment of the insane and attending to their welfare after they have been dismissed from institutions.

Report of the Milk Commission. The preliminary report of the milk commission recently appointed by the mayor to the city council states that in the opinion of the commission after investigation, the milk supply of Chicago as shown by high bacterial count is probably the dirtiest of any large city in the United States. The commission does not blame the health department for this condition, but states that the department is undermanned and underpaid, and that the whole matter requires further study preparatory to drafting an entirely new set of ordinances concerning the milk supply. For the present the commission recommends that means be provided for the rigid enforcement of existing ordinances by materially increasing the number of inspectors and also that action be taken by the council to forbid the marketing of any milk at a temperature above 50 degrees F.

MARYLAND

Physician Injured. Dr. George L. Broadrup, Cumberland, sustained severe injuries, July 8, from being run down by his own automobile. He had failed to throw it out of gear and when he cranked it it rushed forward, throwing him over an embankment and pinioning him against a house, causing a broken ankle, several fractured ribs and bad cuts.

---

1. A copy of the complete report will be sent to any address on receipt of 5 cents for postage.
2. Scientific American, June 18, 1910, p. 504.

Baltimore

Registration of Midwives.—The Committee of Health calls on all midwives to register by August 1. The law lately passed requires them to register at the health office and to obtain a certificate from the State Board of Health.

Health Notes.—The health report for June shows 193 cases of tuberculosis reported, as against 80 for June, 1909. This is supposed to be due to the fuller reports of the disease now than formerly. There were 89 deaths from the same disease against 83 last year. The total deaths from all causes were 798 against 722 last year; 237 were of children under 5.

Personal.—Drs. C. A. Clapp, E. A. Knorr, Carl Voegtlin, J. M. West, J. Mabry Matthews and Christian Deetjen have sailed for Europe.——At the first meeting of the Municipal Tuberculosis Commission, July 7, Dr. John S. Fulton was elected chairman.——Dr. Marshall West has been made health officer for the First district to take the place of Dr. Arthur H. Mann, who resigned on account of ill health.

Municipal Tuberculosis Commission.—The mayor has appointed the following Municipal Tuberculosis Commission: The mayor (ex officio), Dr. Thomas McCrae, Dr. John S. Fulton, Dr. Harry Friedenwald, Mr. Henry S. Delaney, Mr. Robert Biggs and Mr. J. B. Noel Wyatt. The board of estimates has appropriated $2,500 to start the work, which aims at nothing less than stamping out the disease here.

Driving the Physician Out of Practice.—The many agencies and activities tending to drive the physician out of practice were enumerated in an address by Dr. Richard C. Cabot of Boston at Johns Hopkins recently. It was maintained that the physician is being superseded by health boards, hospitals, insurance companies and other general welfare agencies, and that the tendency is toward the support of hospitals and hospital physicians by public funds, public health being considered of supreme importance to the nation, superior even to public education. In Boston they have gone beyond most other cities in having nurses in department stores and factories. Cabot calls attention to the fact that five years ago there were twenty-five thousand medical students in the country, whereas there are now but twenty thousand, and the diminution is continuing in this steady ratio. He says physicians face this condition, but should get behind it and help it along, as there is no doubt that in the majority of instances the patient with all the facilities of the hospital, the possibility of team work among the physicians, and the trend to higher specialization gets better results from a hospital than is possible in the office of the practicing physician, and better results, i. e., better public health, is what the nation wants. It is of vital importance, and not even second to education, which the state already has assumed charge of.

NEW JERSEY

New Tuberculosis Pavilion.—A new tuberculosis pavilion located on the grounds of the Isolation Hospital at Paterson was opened for patients July 1. It is a model institution.

Sum Raised for New Hospital Building.—For the purpose of erecting a new homeopathic hospital building, the trustees, board of managers, the medical and surgical staff and the citizens' committee have succeeded in raising $100,190 in Camden after a campaign of twenty days.

Hospital Plans Extension.—Announcement has been made that a contract has been awarded at Camden for a new building for the use of the Cooper Hospital out patient department and for other purposes at a cost of $60,000. The removal of all private patients to this new building will enable the hospital to use the rooms now occupied by such cases in the main building for ward purposes.

Trenton Water Supply.—Suit has been brought against the city of Trenton under the law of 1909 to compel the purification of Trenton's public water supply. Affidavits submitted show that the supply is polluted. Under the above law the state board of health has a right to institute suit in the Court of Chancery against the offending municipality to obtain purification of the public water supply. The report of the state board of health for June shows that the public is beginning to realize the value of the examination of water supplies by the state board of health, as more numerous requests for such examination are being made. The report also shows that the number of deaths from cancer has increased, the report for June showing the highest number of deaths with one exception, for any month during the past four years.

NEW YORK

Keuka Lake Society to Meet.—The eleventh annual meeting of the Keuka Lake Medical and Surgical Association, whose membership embraces twelve counties in central and eastern New York, will be held at Grove Springs, Lake Keuka, July 21 and 22. A program of fourteen papers has been prepared. Dr. Robert M. Elliott, Willard, is president and Dr. H. B. Nichols, Syracuse, secretary.

The Fight Against Tuberculosis.—The Charity Organization Society, the State Charities Aid Association and the New York State Department of Health, organizations which are conducting the crusade in this state against tuberculosis, report that New York leads the country with 5,476 beds for consumptive patients. Massachusetts provides 2,403, Pennsylvania, 2,347, Colorado, 1,489 and New Mexico, 1,104. Facilities in this direction are, however, very inadequate.

Personal.—Dr. Mercer C. Robinson, Rochester, is in the hospital suffering from severe injuries received in a collision between his automobile and a street car.——Dr. Ira C. Whitehead, health officer of Montgomery, has smallpox, which it is supposed he contracted during a recent visit to the Immigration Bureau in New York.——Dr. Archibald M. Campbell, Mount Vernon, has sailed for Europe.——Dr. Aspinwall Judd and Dr. William J. Robinson and family, New York City, have sailed for Europe.

Harbor Pollution.—The Metropolitan Sewage Commission has reported that the sewage which is being emptied into the harbor is creating conditions which are unsanitary and a menace to public health. Tidal studies carried on in connection with the United States Coast and Geodetic Survey show that the drainage which is discharged into the harbor is not flushed out to sea but is assimilated by the water. The commission recommends that an interstate board be created by New York and New Jersey to plan a system that will protect the harbor for all time to come.

New York City

Suspicious Hospital Fires.—There have been two fires recently in the Kings County Hospital, Brooklyn. The last one on July 5 caused $2,000 damage and threatened the lives of 250 people. Investigation seems to indicate that they are due to incendiarism and arrests are expected.

The Peoples' Hospital.—This institution, situated on lower Second avenue, was dedicated June 21. It was built and presented to the public through the efforts of Austro-Hungarian citizens, the emperor of Austria having donated an operating table. The building has accommodations for fifty patients.

A Roof Camp.—A camp has been opened on the roof of the New York Throat, Nose and Lung Hospital on East Fifty-seventh Street for the treatment of tuberculosis patients. The camp is open on three sides and has ventilating skylights. It has a dining room, dormitory, dressing rooms and a shower bath.

Seizure of Ice Cream Cones.—More than 4,500,000 ice cream cones were seized by United States Marshal Henkel of New York, under the pure food law, on the ground that they contained boric acid and were detrimental to the public health. They were intended for shipment to Galveston, Tex. It has been found that ice cream cones are often composed largely of glue.

To Stop Smoke from Autos.—The amendment to the sanitary code relating to smoking automobiles has become operative. Drivers and owners of autos that throw out smoke are liable to arrest and fine. Seventy men of the sanitary squad were on duty when the amendment went into effect to see that it was obeyed. A light smoke is overlooked or passed with only a warning.

Donations to Medical College.—Word from Dr. Royal S. Copeland, dean of the New York Homeopathic Medical College and Flower Hospital, states that $25,000 has recently been donated by the alumni and by the trustees for improvement of the laboratories and for changes in the college building. Several full time salaried instructors in the laboratory branches are to be added.

A Sane Fourth in New York.—In accordance with the city ordinance forbidding the sale of fire crackers, fireworks, etc., these things were not on sale and the city had a quiet and orderly day. The health department had laid in the usual supply of tetanus antitoxin and sent out the usual directions for its use. Not only were there very few instances where the antitoxin was needed, but there was a great falling off in the number of fires. Last year there were 176 fires attributable to fireworks, while this year there were only 33. The damages from fires were only a little more than three thousand dollars this year against $20,000 for 1909.

NORTH CAROLINA

Tuberculosis Exhibit. The National Tuberculosis Association recently held a very successful exhibit in Winston, creating much interest, the exhibit being inspected by several thousand people.

State Medical Board. At the forty-eighth annual session of the State Board of Medical Examiners, at Wrightsville Beach, June 15-23, the board was reorganized with the election of Dr. Lewis B. McBrayer, Asheville, president for the ensuing year. Dr. Benjamin K. Hays was reelected secretary-treasurer.

Society Meeting. The Sixth District Medical Association held its regular session at Raleigh recently. In addition to the instructive papers read, clinics were given at the Raleigh hospital. The following were elected officers: President, Dr. George W. Long, Graham; vice-president, Dr. Louis J. Picot, Raleigh; secretary, Dr. Charles A. Woodward, Durham.

Work of Hookworm Commission.—The North Carolina State Board of Health, working in conjunction with the Rockefeller hookworm commission, has appointed Dr. John A. Ferrall, special assistant secretary of the board for hookworm work. At a recent session, the state was divided into districts and the following physicians elected to make a thorough canvass of the state, working along anti-hookworm crusade lines: Dr. B. W. Page, Snead's Ferry; Dr. C. F. Strosnider, Wilmington; Dr. Claud L. Pridgen, Kinston.

Personal.—Dr. Benjamin K. Hays, Oxford, has been appointed local surgeon of the Southern Railway at Oxford.—Dr. David J. Hill, Lexington, has been appointed local surgeon of the Southern Railway at his home town.—Dr. Robert L. Payne, formerly of Lexington, has been appointed chief surgeon of the Norfolk & Southern Railway with headquarters at Norfolk, Va.—Dr. John Miller Faison, of Faison's, Duplin County, was nominated by the democratic party of the third district for Congress. Dr. Faison is a well known practicing physician, a prominent member of the State Medical Society, and his political recognition is appreciated by many friends in the profession.—Dr. John E. Ashcroft, Monroe, has been elected a member of the State Board of Health, vice Dr. James A. Burroughs, Asheville, deceased.

State Medical Society Meeting. The fifty-seventh annual session of the Medical Society of the State of North Carolina was held at Wrightsville Beach June 21-23, under the presidency of Dr. Edward Jenner Wood, Wilmington, vice Dr. James A. Burroughs, president, deceased. The attendance was the largest in the society's history for a session at an extreme point in the state, more than 300 members being present. The session of 1911 will be held in Charlotte. The following officers were elected: Drs. Chalmers M. Van Poole, Salisbury, president; James V. McGougan, Fayetteville; William E. Warren, Williamston, and Lucius N. Glenn, Gastonia, vice-presidents; David A. Stanton, High Point, secretary; Herbert D. Walker, Elizabeth City, treasurer; James M. Templeton, Cary, orator; Samuel A. Stevens, Monroe, essayist; John M. Campbell, Morganton, leader of debate; Jacob F. Highsmith, Fayetteville, and J. Howell Way, Waynesville, delegates to American Medical Association, 1911-12. At one general session a conference on hookworm disease was held and a paper was read by Dr. Charles Wardell Stiles, scientific secretary of the Rockefeller hookworm commission. A night session was given over by the society to memorial exercises in honor of the thirty members who died during the year. Dr. J. Howell Way, of Waynesville, made an address on the life and character of Dr. James Anthony Burroughs, of Asheville, who was president of the society at the time of his death, and Dr. William Henry Harrison Cobb, of Goldsboro.

OHIO

Tuberculosis Hospital.—Construction has begun on the new tuberculosis hospital of the county infirmary at Columbus.

Public Health Bulletin.—The Board of Health of Columbus has begun publication and distribution of a bulletin to educate the public in sanitary and hygienic matters, following the plan of other cities.

College Merger.—It is reported that the Pulte Homeopathic College is to be merged with the Cleveland Homeopathic College. The consolidated school will be located at Cleveland and will be known as the Cleveland Pulte Homeopathic Medical College.

Health Board News. The mayor of Cleveland has appointed Drs. Edward F. Cushing and James E. Cogan on the health board of that city, and $10,000 has been voted to the board of health to complete the contagious disease hospital and to fight smallpox.

School for Medical Officers. A school for medical officers of the Ohio National Guard, the first of its kind in the state, was held at Columbus in June. Major Joseph A. Hall, Cincinnati, acting surgeon general of the guard, was the originator of the plan. The officers were instructed by Major Edward L. Munson, medical corps, U. S. army, and Major S. B. Taylor, medical corps, Ohio N. G. The meeting was attended by more than fifty members of the medical staff.

Personal.—Dr. Luther B. Turner, Columbus, has been elected district physician to succeed Dr. Lewis D. Wolfe, who resigned.—Dr. Arthur M. Harrison, Bowling Green, has been appointed assistant surgeon in the medical corps of the Ohio National Guard with rank of first lieutenant.—Dr Robert H. Butler, Bellefontaine, has been appointed an assistant clinical instructor on the faculty of the Ohio Miami Medical College, Cincinnati.—Dr. John C. Jones, a member of the board of education of Cleveland, and two daughters, are in Europe.—Dr. George M. Osborne, Portsmouth, has retired from practice.—Dr. Robert C. Longfellow, Toledo, in recognition of work done in laboratory pathology and bacteriology, has been given the degree of M.S. by St. John's University, Toledo.—Dr. John C. Fox, Cleveland, has been appointed physician at the City Hospital.

Changes at the University of Cincinnati.—At a meeting of the trustees of the University of Cincinnati, May 31, on the recommendation of President Dabney, a complete reorganization of the faculty of the Ohio Miami Medical College (medical department of the University of Cincinnati) was adopted. It was found during the year just closed, the first year of the union of the Ohio and Miami colleges, that the faculty was much too large and consequently too unwieldy. The new plan provides for a clinical head and a didactic head in the more important departments, while in the smaller departments the two positions will be combined. The plan also provides for a salaried dean. The chiefs of the fundamental chairs of anatomy, physiology, pathology and chemistry will be on salary and will devote their entire time to the work. Dr Paul G. Woolley, formerly of the University of Nebraska College of Medicine, is now the professor of pathology with Dr William B. Wherry as assistant professor of bacteriology: Dr Martin H. Fischer, of the Oakland (Cal.) College of Medicine and Surgery, has been secured as professor of physiology. A full time professor in anatomy is still to be secured.—Dr Charles E. Howard has been appointed receiving physician to the Cincinnati Hospital, vice Dr. Robert D. Mussey, resigned.—Dr. Rufus B. Hall has been appointed gynecologist to the Cincinnati Hospital, vice Dr. Charles L. Bonifield, resigned.

PENNSYLVANIA

Personal.—Dr. H. J. Huber of Lancaster has located an office at Reading.—Dr. Leo Mundy of Wilkes-Barre will take charge, for several weeks, of the State Hospital at Hollidaysburg, Blair county.

New Hospital at Wilkes-Barre. It is planned to have a new hospital ready by November 1 at Wilkes-Barre. The physicians interested have empowered a committee to purchase a site at Hanover street and Carey avenue.

Scarlet Fever Prevents Outing of Insane. The usual picnic at the State Hospital for the Insane which was to be held on July 4, was postponed because of scarlatina in a nurse. She was removed to the Municipal Hospital, Philadelphia, and a possible epidemic prevented.

A Prize Paper.—The State Pharmaceutical Association of Pennsylvania recently awarded its twenty-dollar gold prize to Dr. F. E. Stewart for his paper on "Patents and Trade-Marks," which was read before the Philadelphia branch of the American Pharmaceutical Association.

Sanatorium Receives Donation.—The Berks County Tuberculosis Society received two checks from wealthy philanthropic women of Reading. The money will be used toward the expense of a second building at the society's camp on Neversink Mountain for the accommodation of sixty additional patients.

Meeting of County Society.—The Blair County Medical Society met at Blair County Hospital, Altoona, June 28. Dr. W. M. Late Coplin, professor of pathology at Jefferson Medical College, delivered the chief address. The hospital was inspected and Dr. Sommers, its superintendent, gave a luncheon.

Tuberculosis Notes.—The Board of Health of Reading decided, June 27, to prohibit the use of public drinking cups.——The State Tuberculosis Exhibit was held in Wilkinsburg, near Pittsburg, June 28 to 30. Dr. John Bouse of the State Health Department addressed a meeting on June 28 on tuberculosis in Pennsylvania.

Alumni Association Meets. The Lehigh Valley Alumni Association of the Medico-Chirurgical College of Philadelphia met at Easton, June 26, and elected the following officers: President, Dr. I. E. Ward, Easton; vice presidents, Drs. W. G. Tillman, Easton, Jacob Fraunfelter, Nazareth, and C. S. Kemper, Bethlehem; secretary, Dr. V. S. Messinger, Easton.

Williamsport Hospital Report.—In the annual report attention was called to the fact that the hospital has expended during the past decade for additions, new buildings and improvements $167,800, of which only about one fourth was money secured from the state. The institution has grown to three times its former size and capacity, while its indebtedness for maintenance is less than one-seventh of what it was ten years ago. More patients were admitted last year than in any previous twelve months in its history, the average daily number being 92.2. The executive committee is composed of Dr. George D. Nutt, Dr. H. G. McCormick and Samuel N. Williams.

Philadelphia

Personal.—Dr. T. J. Ellinger, operated on for appendicitis July 9, is improving rapidly.——Dr. W. Wayne Babcock and Dr. and Mrs. Ellwood Matlack have sailed for Europe.

Physician in Serious Accident. Dr. B. Franklin Stahl, while enroute to Maine in an automobile, was seriously injured by the turning over of the machine on a steep grade near Great Barrington, Mass. Mrs. Stahl was killed instantly. Dr. Stahl is lecturer on dietetics in the University of Pennsylvania, and wrote an article for the last Automobile Number of The Journal.

TEXAS

Personal. Dr. Whitfield Harral, medical director of the Southwestern Life Insurance Company, Dallas, was elected director of the exchange department of the American Life Convention at a meeting in Dallas, July 2.

Vaccination at El Paso. On account of the recent epidemic of smallpox in northern Mexico, the health board of El Paso vaccinated over 5,000 persons and issued certificates of vaccination to over 12,000 people. The quarantine has been raised at El Paso and Juarez.

Society Meeting.—At a meeting of the Taylor County Medical Society held on June 27, in Abilene, Dr. Charles M. Rosser, Dallas, delivered an address on "Cancer of the Uterus." A dinner was given in honor of Dr. Rosser at the Hotel Grace. Covers were laid for thirty.

Laboratory of Preventive Medicine.—The board of regents of the University of Texas, at a meeting held May 31 at Galveston, approved the plans submitted by the faculty of the Medical Department for building and equipping a laboratory of preventive medicine and public health.

State Board Meeting.—At the meeting of the State Board of Medical Examiners ending June 30 the following officers were chosen: Dr. James D. Osborn, Cleburne, was reelected president; Dr. John D. Mitchell, Fort Worth, was reelected vice president, and Dr. Robert H. McLeod, Palestine, was elected secretary-treasurer. Governor Campbell, the judges of the higher courts and the members of the board dined together at the Driskill Hotel, June 30.

College Commencement.—At the commencement exercises of the medical department of Fort Worth University, eleven physicians were graduated. Dr. Charles W. Stiles, U. S. P. H. and M. H. Service delivered the principal address on "Hookworm and Typhoid Fever." Dr. Stiles said that it is through lack of sanitation that hookworm spreads and with it typhoid fever, which he claimed were the most loathsome and useless [illegible] known to medical annals. He said that we are dirtier than the Italians, that the Prussian equaled the American in [illegible], but that no nation on earth equals us in filth. He claimed that over [illegible] people die annually from typhoid [illegible] and that [illegible] is responsible for it.

WISCONSIN

College Commencement.—At the seventeenth annual commencement exercises of the Wisconsin College of Physicians and Surgeons, Milwaukee, medical degrees were conferred on six graduates.

State Appointments. The State Board of Control of Wisconsin Reformatory, Charitable and Penal Institutions has appointed the following physicians: Dr. Charles Gorst, superintendent of the Mendota Hospital for the Insane; Dr. W. A. Sherman, superintendent of the Northern Hospital for the Insane, Oshkosh; Dr. L. Rock Sleyster, physician to the State Reform Prison at Waupun; Dr. Alfred W. Wilmarth, superintendent, and Dr. Augustus L. Beier, assistant superintendent, Home for Feeble-Minded at Chippewa Falls, and Dr. John W. Coon, superintendent of the Tuberculosis Sanatorium at Wales.

Bequest to Medical School.—By the will of the late Dr. Byron Robinson of Chicago, of the class of '78, the Medical School of Wisconsin University receives his collection of books amounting to over 1,500 volumes. The library is unusually rich in early American medical treatises and old anatomic plates, besides modern works on anatomy, and on the history of medicine. A scholarship in anatomy worth $550 a year was also provided for in the bequest. The library is to be known as the Robinson-Waite Library in honor of the donor and his wife, Dr. Lucy Waite Robinson. The scholarship is to be known as the Byron Robinson scholarship in anatomy.

State Society Meets.—At the recent meeting of the State Medical Society of Wisconsin in Milwaukee the following officers were elected: President, Dr. Byron M. Caples, Waukesha; vice presidents, Drs. John M. Dodd, Ashland; Theodore J. Redelings, Marinette, and Wilson Cunningham, Platteville; secretary, Dr. Charles S. Sheldon, Madison; assistant secretary, Dr. L. Rock Sleyster, Waupun, and treasurer, Dr. Sidney S. Hall, Ripon. To act on Council on Health and Public Instruction of American Medical Association, Dr. Charles R. Bardeen, Madison, vice W. B. Hill; delegate to National Legislative Council, Dr. Byron M. Caples, Madison; delegate to Council on Medical Education, A. M. A., Dr. M. P. Ravenel, Madison; delegates to A. M. A., Drs. Charles Sheldon, Madison, and A. H. Levings, Milwaukee; alternates, Drs. W. Cunningham and R. G. Sayle. The 1911 meeting will be held at Waukesha. Dr. Richard M. Pearce of the Carnegie laboratories, New York, and Dr. Joseph C. Bloodgood, Baltimore, were the guests of the society.——The first annual meeting of the Association of County Secretaries and Officers of the State Medical Society of Wisconsin was held in Milwaukee just prior to the meeting of the state society. There was a good attendance and many subjects relating to organization were discussed.

GENERAL NEWS

Printers' Tuberculosis Sanatorium.—At the meeting of the International Printing Pressmen and Assistants' Union at Columbus, provisions were made for the establishment of a national tuberculosis home for printers and pressmen at Hales' Springs, near Asheville, N. C.

Beriberi in the Philippines.—Dr. Victor G. Heiser, director of health in the Philippines, has evolved a plan which will make the Philippine Islands the first country in the east to wage a systematic war on beriberi. It is believed from recent studies that the disease is caused by a continued diet of polished rice, and Dr. Heiser proposes to abolish its use in the government workshops, prisons and other public institutions and substitute therefor red rice, containing phosphorus, the lack of which causes beriberi. An idea of the ravages of this disease in the Philippines may be gained from the fact that in the city of Manila alone the number of deaths from beriberi is 1,000 annually.

Prize Offered by International Dairy Federation for Essay on Milk. The International Dairy Federation offers a prize of 500 francs ($100) for the best work on the comparative value of raw and cooked milk to be submitted to the International Dairy Congress annually. The exact question is as follows: "To determine by latest experiments, made at least in part on man himself, the comparative nutritive value of raw milk and cooked milk (pasteurized, sterilized or desiccated). In case of an advantage in favor of raw milk, to determine the rôle that the enzymes of the milk play in nutrition." This prize is a permanent one and is to be conferred at each of the international sessions of the Dairy Congress. Papers may be in French, German or English and should be forwarded to the Secretary General of the International Dairy Federation, 23 Rue David Desvachez, Brussels-Uccle, Belgium, not later than April 1, 1911.

Health in the Philippines.– The annual report of the Bureau of Health of the Philippine Islands July 1, 1908, to June 30, 1909 contains a review of the work done by the department under Dr. Victor G. Heiser, Director of Health. The pamphlet is well illustrated and contains numerous charts, together with statistical tables covering the health and vital statistics from every angle, and the report shows that much effective work has been done in improving the sanitation and health of the islands. Manila being the largest city, and much public improvement work having been done there, a large portion of the report is taken up with what has been accomplished in that city. A new gravity water system, the supply for which is collected from an uninhabited watershed, has been so far completed that the water from it was turned on in November. In May the new sanitary sewer of the city was completed, but according to the quarterly report of the department for the last quarter of 1909 not a large number of house connections have yet been made, owing to the fact that many houses are of cheap construction and the owners cannot afford to install plumbing, the cost of which in many instances would equal or exceed the value of the property. The full benefit of the new sewer system on health conditions has not therefore been had. The bureau of public works sunk about 40 artesian wells and the provinces about as many more. The Baguio Hospital at Benguet, with a capacity of 44 patients, was opened in July. The modern reinforced concrete hospital at Bilibid, with a capacity of 376 patients, was put into use in February. The capacity of the Culion leper colony was increased to accommodate 1,900 lepers. It is found that leprosy is decreasing, so that one case in 2,800 of population is now discovered as against one in 2,000 previously found. Lepers are being collected in all the provinces and isolated in the Culion colony. A hookworm commission was placed in the field at Taytay and another at Las Piñas. Extensive drainage improvements were made on the San Lazaro Estate, making it possible to transfer over 1,000 persons who had previously occupied insanitary areas. In addition much routine work has been done by the department, including the suppression of a number of epidemics of cholera. It has been found in Manila that many cases have been reported as meningitis which on investigation proved to be cholera, and in many instances these were the foci from which subsequent outbreaks of cholera occurred. The report states that it is becoming more evident that by the observance of a few simple rules good health can be maintained with more certainty in the tropics than in temperate climates. Among the rules set out are the following: Be vaccinated; never drink water unless it has been boiled or distilled and never eat raw vegetables; thus you will avoid dysentery, cholera, typhoid fever and other intestinal diseases; fruit grown on trees may be eaten with impunity; do not use "patent medicines" or alcoholics; they are not necessary; sleep under a good mosquito net. Mosquitoes of the disease-carrying variety generally only fly at night. Otherwise observe the same hygienic rules that are applicable to temperate climates. The report contains studies of the different diseases and the methods employed in the different cities and provinces to combat them, the whole showing that conditions are constantly improving.

FOREIGN

Monument to Professor D'Urso. During the annual session of the Sicilian Medical Association, held at Messina recently, a monument to its former president, G. D'Urso, a victim of the Messina earthquake, was unveiled in a public square.

Brazilian Neurologic Society.—At the meeting of the Brazillian Society of Neurology, Psychiatry and Legal Medicine, held at Rio de Janeiro, May 1, the following officers were elected: President, Prof. Juliano Moreira of Rio de Janeiro, director of the National Hospital for the Insane; vice-president, Dr. Carlos Eiras; secretaries, Dr. H. Roxo and Dr. Mario Pinheiro, and treasurer, Dr. A. Ramos.

Prize to Sanfelice for His Research on Cancer. The Balbi-Valier prize of $600 was awarded this year to Prof. F. Sanfelice of Messina for his fifteen years of research on cancer which have resulted in the production of his cancer serum. (It was described in The Journal, June 26, 1909, page 2117.) The prize is awarded biennially to an Italian by the Venice Regio Istituto di Scienze, Lettere ed Arti for the greatest progress in medicine or surgery during the preceding two years.

Personal.—Dr. Wilhelm Roux, professor of anatomy at Halle, eminent for his contributions to embryology, celebrated his sixtieth birthday June 9, and a *Festschrift* in two volumes was presented to him.—Dr. E. A. Schafer, professor of physiology in the University of Edinburgh, has received an honorary doctorate of medicine at the University of Berne, after lecturing at the university on "The Functions of the Pituitary Body."—Dr. Wolferstan Thomas, assistant lecturer in the Liverpool School of Tropical Medicine, has been appointed director of the new laboratories established in the state of Amazonas.—Surgeon E. L. Atkinson, R. N., is to accompany Capt. R. F. Scott and his Antarctic expedition, as doctor, bacteriologist and parasitologist.

Other Deaths in the Profession Abroad.—Dr. Edward Cresswell Baber, M.B., L.R.C.P., M.R.C.S., linguist, scientist and laryngologist, a son of Dr. John Baber, of London, England, died in London May 14. He was noted for his studies of the thyroid in the lower animals, and as a laryngologist. He practiced in Brighton, where he was the founder of the Brighton Throat and Ear Hospital, and also in London.—Sir Francis Seymour Haden, F.R.C.S., of London, the famous etcher, and a noted surgeon in his day, died June 1 at Bramdean, Hampshire, aged 92.—William Rose, B.S., F.R.C.S., emeritus professor of surgery in King's College, author of works on surgery, died May 28 in London, aged 63.—William Henry Spencer, M.A., M.D., Cantab., M.R.C.P., Lond., formerly senior physician to the Royal Bristol Infirmary, died at Oxford, May 27, aged 73.—P. J. Pick, M.D., professor of dermatology at Prague until 1906, founder in 1869 of the *Archiv für Dermatologie und Syphilis*, died at Prague recently in his seventy-sixth year. The hundredth volume of his *Archiv*, which was dedicated to Caspari, contained a notable report from Pick on the later history of his syphilis patients. He aided in founding in 1898 the German Dermatologic Society and has been its perpetual president since, has contributed over 200 works on dermatology to the literature, and introduced iodoform into dermatologic practice as also the medicated gelatins.—Paulin Trolard, M.D., professor of anatomy in the Algiers College of Medicine.

LONDON LETTER

(From Our Regular Correspondent)

London, July 2, 1910.

A New Development in Library Work

The Royal Society of Medicine has instituted a new development by which its magnificent library may be useful to its fellows living in any part of the world. Short abstracts are prepared for them gratis, of papers and even of books, on any medical subject, and references to medical literature searched for and checked. This innovation has been warmly welcomed and grateful letters have been received from such remote places as the Chitral Valley, the Sudan and equatorial Africa, where for years men have had their work hindered by the inaccessibility of libraries. Some say that the work is done for them even better than if they had been in London, for they would probably not have been able to devote the many hours required for the research which the machinery of the library procures with a minimum of time and labor.

Relation of Medicine to Surgery

In recent years the development of the surgery of the internal organs abdominal surgery, thoracic surgery and brain surgery has involved a considerable encroachment by the surgeon on what was once the exclusive province of the physician and the process is by no means at an end. In a letter to the *Times* a layman advocates the handing over of appendicitis in particular and abdominal disease in general from the physician to the surgeon on the grounds that the latter's experience is more valuable, "he sees inside and outside" etc. This has called forth a reply from Sir Clifford Allbutt who points out that in the Hippocratean age there was no division of the art into medicine and surgery and Celsus recognized no such division. It was left for imperial Rome, with its formal ideas and medical slaves to initiate and to the feudal and ecclesiastical societies of the middle ages to extend and perpetuate the separation of the medical bookman from the medical workman. "The division between medicine and surgery was not a division of nature but an arrogant repudiation of the part of the hands in the work of the world." This fantastic separation of the thinker from the craftsman has produced, Sir Clifford says, enormous hindrances and ambiguities to which the divided practice in some cases of appendicitis calls attention. The gynecologists, who have seen the evil, have thrown over the convention and practice all the methods which the cases under their care require. The whole profession will have to follow and liberate physicians for the complete performance of their own responsibilities. These contentions do not question the need of specialism. This is another problem. One physician will make himself completely efficient in abdominal disease; another in diseases of the pelvis; another of the chest, and so on; while some will prefer diseases in which, as surgery is not yet applicable, the most excellent adroitness of the hand will be maintained by chemical and other manipulations. There is no longer place for the mere [illegible] hand doctor. For this integration of medicine and the healing of this crippling schism, Sir Clifford recommends the amalgamation of the Colleges of Physicians and Surgeons into an Academy of Medicine.

Medical Missionaries

The important part played by physicians in missionary work was shown at the World Missionary Conference which has recently taken place at Edinburgh, where it was freely admitted that medicine was a most powerful auxiliary to [illegible] teaching. Of the 5,522 Protestant regular missionaries now at work in the world 641 men and 341 women are medically trained and duly qualified. There are 550 hospitals and 1,024 dispensaries employed in missionary work. On the question of the training of medical missionaries there was a unanimity of opinion that the medical missionary could not be too highly trained in his profession. Candidates were advised to take postgraduate study in such subjects as tropical diseases and ophthalmology. It was further suggested that practical experience of hospital work as a resident, either at home or on the field, was desirable before undertaking the duties of a medical mission station for the first time.

Artificial Teeth the Cause of Death

A curious case of death, the remote result of a motor accident, has been the subject of a coroner's inquest. A woman [illegible] cycling in December, 1908, was knocked down and run over by a motor car. Her skull and clavicle were fractured. She was wearing a plate bearing four artificial teeth. This was missing from her mouth but two teeth and part of the plate were found in the car. What had become of the others was a mystery. She was discharged from hospital in January, 1909, and her recovery was so complete that she married in the following November. But ever since the accident she complained of throat symptoms. Three weeks ago she returned to the hospital, where she died this week. The postmortem examination showed in the esophagus the missing part of the plate with the two teeth attached, fastened deep in the tissues by its gold hook. Round this an abscess had developed which caused death.

Ophthalmology at Oxford

Oxford University was the first body in this country to grant a diploma in ophthalmology. Candidates must have taken courses of instruction in the University on the anatomy, physiology and diseases of the eye. The course of anatomy and physiology extends over two months and that on diseases of the eye over three months. Another feature of Oxford is the Congress of Ophthalmic Surgeons which is held annually. The congress will assemble at Keble College July 20 to 22. The special feature of the congress will be operations for cataract and glaucoma, which will be performed by some of the most eminent specialists, among others Professor Lagrange of Bordeaux, Professor Holth of Christiania, Professor Heine of Kiel and Colonel Herbert of Nottingham, who will each perform his own operation for glaucoma. Sir Anderson Critchett will operate for cataract and Major Gilney will perform the intracapsular cataract extraction practiced by Major Smith. A novel feature of the congress is that there will be no papers and discussion, but a series of demonstrations and exhibitions.

Visit of American Surgeons to England

A party of the members of the American Society of Clinical Surgeons are making a tour of the principal surgical clinics of this country. They include Samuel Alexander, Kansas City; [illegible], St. Louis; Arthur D. Bevan, Frank Billings, [illegible], J. B. Murphy and L. L. McArthur, Chicago; Joseph A. Blake, George E. Brewer, Ellsworth Eliot, Jr., W. [illegible] and George Woolsey, New York; Ernest A. Codman, [illegible], [illegible] and C. A. Porter, Boston; Gwilym G. Davis, C. B. Frazier, J. H. Gibbon, J. T. Hutchinson, Edward Martin, R. H. Harte and R. G. Le Conte, Philadelphia; John M. T. Finney and Harvey Cushing, Baltimore; Charles H. Mayo, Rochester, and Emmet Rixford, San Francisco. The tour in London includes visits to the following hospitals: St. Thomas's, King's, Middlesex, Guy's, St. Bartholomew's, London Temperance, National Hospital for Epilepsy. Mr. Makins, Sir Watson Cheyne, Mr. Bland Sutton, Mr. Arbuthnot Lane, Mr. Lockwood, Mr. H. Patterson and Sir Victor Horsley are doing the honors at the respective clinics. The Frimley Sanatorium for Consumptives and the Museum of the Royal College of Surgeons will also be inspected. From London the party will go to Edinburgh where they will visit the Royal Hospital Infirmary and the Hospital for Sick Children and be received by Mr. Alexis Thomson and Mr. Harold Stiles. Thence they will proceed to Newcastle and Leeds to visit the clinics of Mr. Rutherford Morison and Mr. Moynihan, and finally to Liverpool to the clinic of Mr. Robert Jones.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 1, 1910.

Against Infant Mortality

The Ligue Contre la Mortalité Infantile has just held its first general assembly under the presidency of M. Mirman, director of public charities and hygiene at the Ministry of the Interior. Dr. Aviragnet, secretary of the society, read the general report, from which it appears that infants' consultations have been created within several years in 61 departments and are in regular operation in more than 380 localities. Dr. Aviragnet demanded that besides commercial milk there should be a specially controlled milk for infants and invalids, as in certain foreign countries. M. Mirman delivered an address on the means at the disposal of the government to combat infant mortality. He indicated that the Théophile Roussel law, which established medical supervision over children entrusted to hired nurses, affects annually only 170,000 children under 2 years. Since the births amount to almost 800,000 a year a great many young children are not under any medical supervision. The mortality of infants under a year increased in Paris from 1887 to 1891 to 299 per thousand. This rate diminished between 1901 and 1905 to 156 per thousand, that is to say, it decreased about 50 per cent. The same conditions are reported in other French cities having more than 30,000 inhabitants. In spite of this decrease infantile gastro-enteritis every year carries off tens of thousands of children.

The Reorganization of the Hospitals

Though France has the incontestable credit of founding charitable institutions at a very early period, as is proved by the old hospitals such as the Hôpital Dieu at Paris, that of Lyons, that of Rheims, etc., at present most of our hospital buildings do not meet the demands of modern medicine and surgery. Accordingly the municipality of Lyons has decided to construct a model hospital for 1,200 patients, which is to contain also all the clinics of the Lyons college of medicine. Before executing this work the municipality sent a mission to study the German and Danish hospitals. M. Edouard Herriot, mayor of Lyons and member of the superior council of public charities, who headed the mission, has just made public his impressions on this journey. He learned much in Germany and became convinced of the archaic character of the French hospital organization and of the necessity for its complete reform. M. Herriot insists particularly on the fact that scarcely any French hospitals have enough isolation rooms, so that it is not rare to see the delirium of dying patients disturbing the physical and moral repose of their companions.

It is important, moreover, that the construction of a modern hospital should not be left to the architect, whose main concern is the beauty of line. The Virchow Hospital at Berlin, where so much progress has been realized, has suffered from this defect. The principles of construction should have been laid down by the physicians and surgeons. If at Paris the old Cochin Hospital possesses to-day a perfectly organized surgical section, it is because Professor Quénu was able to collaborate constantly in the construction of the building for this service, which he directs.

A Proposed Remedy for Depopulation

Dr. Lannelongue, a professor at the Paris college of medicine and a senator, has just laid before the bureau of the senate a bill directed against depopulation. Among the first causes of the evil Dr. Lannelongue mentions prolonged or perpetual celibacy, late marriage, the excessive tendency to seek official life, the lack of testamentary liberty, the precarious situation of the salaried official, rural emigration, etc. The slenderness of our birth rate does not come, as one might believe, from purely physiologic causes. Statistics show that sterility has remained stationary; it amounted to 18 per cent. in 1856, and did not exceed 17 per cent. in 1891. If the birthrate has diminished, it is not because the proportion of childless families has increased, but because the number of children in fecund families has diminished. The factors of weakness and of decadence against which it is necessary to strive for the conservation of the race and the future of the nation are the results of a more or less voluntary and deliberate limitation of the fertility of women which reduces the number of children to the minimum.

Dr. Lannelongue proposes a whole series of measures to combat depopulation. In the first place he proposes to lay supplementary military obligations from the age of 29 on celibates, who, since they do not fulfil the duty which they owe to the state of bringing children into the world, should have special obligations toward the national defense, from which married men and the fathers of families should be free. A proposition which will, no doubt, be considered audacious is that of requiring marriage of civil officials above the age of 25. Dr. Lannelongue, moreover, proposes certain pecuniary advantages during active service and at retirement for the benefit of civil employees who have not less than three living children. Finally, he proposes a modification of the civil code so as to give the father of a family absolute liberty in disposing of his patrimony, which will have the effect of dispelling the fear, too frequent among parents, of having to let their fortune be parceled out among a great number of children. The absolute right of testamentary disposition would, moreover, have the advantage of habituating young people to rely on their own intelligence and activities for their means of existence.

Election of Professor Roger to the Academy of Medicine

In its session of June 28 the Académie de Médecine elected a titular member in the section of pathologic anatomy in place of Dr. Malassez, who died last September. Dr. Henri Roger, professor of experimental pathology at the Paris college of medicine and physician of the Hôpital de la Charité, was elected.

BERLIN LETTER

(*From Our Regular Correspondent*)

BERLIN, June 23, 1910.

Centennial of the Berlin University

The program for the celebration of the university centennial is now settled. October 10 at 6 p. m. divine service will be held in the cathedral, at 8 p. m. a reception at the university and, following that, a torchlight procession. October 11 the first celebration will take place in the new aula and at noon there will be a banquet; October 12 a second celebration in the new aula, in the afternoon a garden festival in the exposition park and in the evening a "Kommers" of the student body in the exposition hall of the zoologic garden.

Sanitary Reports on German Southwest Africa

The first report of the experiences collected in regard to the military sanitation in German Southwest Africa from 1904 to 1907, during the Herero and Hottentot campaign is at hand, prepared by the commander of our defense army. In this report there are included communications regarding the sanitary corps, the organization of the sanitary service, the sanitary equipment and the aid of the sick. Among about 21,000 soldiers employed in the protective service, the sanitary corps consisted of 922 men, of whom 187 were sanitary officers. There was one physician to 120 men. Of the entire sanitary corps, 41, or 4.7 per cent., died. Of these 12 fell in battle (5 sanitary officers and 7 assistants). In the sanitary service on the field a field hospital was erected only in large undertakings. Even the erection of a division hospital was generally impracticable on account of the peculiar style of fighting which endangered particularly those carrying the wounded. Clothing with corduroy and khaki gave good service. The entire load of each foot soldier was about 52 pounds (26 kg). The food was often unsatisfactory. Many cases of scurvy necessitated the issue of chocolate, fruit juices, citric acid and condensed milk. Alcohol was often necessary on cold nights in the face of the enemy, while it was also evident that the effectiveness of the troops and their resistance to disease was not in the least diminished by involuntary abstinence from alcohol. Bathing was sometimes impossible for weeks on account of want of water. Clarification with alum and subsequent boiling sufficed for the purification of drinking water. Among the prisoners, a total of [illegible] Hereros and 9,000 Hottentots, infectious diseases were rife, especially dysentery, typhoid and syphilis (in the prison at Karibib 70 per cent. were syphilitic) and formed a constant danger to the troops. The care of the sick was the source of great difficulties; severely wounded patients with high fever had often to be transported on horses to which they were bound with thongs. It was necessary for the severely sick to remain often for days and weeks in ox carts.

Personal

Professor Krehl has unexpectedly declined the call to Leipsic as successor of Curschmann. It is confidently to be expected that at the next vacancy in a large university city (which may be Munich) Krehl will again be taken into consideration as the suitable successor.

Professor Döderlein of Munich has received a call for the position of Professor Olshausen. Döderlein was, as I have reported to you a few weeks ago, formerly on the appointment list of the faculty of the university of this city. It is doubtful whether he will accept the call; this depends on the action of the Munich authorities in providing the new building which he desires for his clinic. The Munich medical faculty has addressed a petition to the ministry to this effect and also the students made a visit to the department asking that Doderlein be retained in the university. It is to be expected that the Bavarian government will accept the ultimatum of Döderlein, and that the latter will remain in Munich. In that case the Prussian government will probably call Professor Hofmeier of Würzburg whom the faculty of the Berlin university nominated to the first place after the refusal of Krönig. As successor of the recently deceased Professor Zuckerkandl of Vienna, Professor Rabl of Leipsic was chosen, but declined.

Meeting of Tuberculosis Physicians in Carlsruhe

Early in June the seventh convention of the German tuberculosis physicians occurred at Carlsruhe and the proceedings were interesting with reference to the diagnosis, prophylaxis, and treatment of tuberculosis. Professor Feer, director of the Heidelberg pediatric clinic, reported his experience with the cutaneous and ocular tuberculin test; 2,000 children in his clinic were submitted to the von Pirquet test, in 86.7 per cent. of whom there was no suspicion of tuberculosis, in 4.8 per cent. there was suspicion, and 8.5 per cent. were clinically evidently tuberculous. In the first six months of life, 1.7 per cent reacted positively, in the second six months, 7.3 per cent. Of 1,732 non suspects none reacted positively up to six months of age; from six to twelve months, 3.4 per cent.; 1 to 2 years, 6 per cent.; 2 to 3 years, 11 per cent.; 3 to 5 years, 17 per cent.; 5 to 7 years, 22 per cent.; 7 to 10 years, 29 per cent.; 10 to 15 years, 38 per cent. According to Feer, the Pirquet test is specific, but with a very irritable skin the reaction may be simulated. In many cases of inactive tuberculosis, especially in children over 5 years of age, the reaction was positive at the second trial. Active tuberculosis very seldom gives a negative result with the cutaneous test. Feer never observed injurious effects. The positive result loses its value after the third to fourth year of life as it often occurs in the inactive form. On the other hand, the negative result is very significant. The ocular test was applied in 271 cases, only a single instillation of a drop of 1 per cent. of old tuberculin being made. Of 253 clinically tuberculous women a positive reaction was found in 22 per cent. of the 92 who showed a positive result by the Pirquet test. In 5 of the 101 positive ocular reactions severe conjunctivitis was observed. Dr. Roepke of Melsungen recommends an ambulant tuberculin treatment for patients after the usually too short sanatorium treatment. In his opinion the tuberculin preparations afford the only specifically active remedies. He recommends the gradually progressive method avoiding reactions as far as possible. In this way the occupation is as a rule not disturbed. Dr. Koppert in the sanatorium treatment favors rest and protection for the patients at first, especially by treatment in recumbency, but later he introduces systematic exercises for the increase of the resisting power and self confidence of the patient. By confinement to bed a weakening of the entire musculature of the body is easily produced, this inconvenience is mitigated or removed by walking exercises, systematic muscular work, etc. The period of employment must not exceed 2 to 4 hours daily. Dr. Junker also recommends a systematic employment in the popular sanatoria, especially by garden work and agricultural labor and by housework for women. Professor Starck (Carlsruhe) treated the subject of tuberculosis and pregnancy. Among about [illegible] pregnant women 1.6 per cent. were found tuberculosis. Here however only severe cases appear to have attracted attention and the mild cases presented no striking symptoms so that it may be concluded that very light cases are little influenced by pregnancy. He found in his material that about one fourth of all the cases of tuberculous pregnant women first showed evident symptoms during pregnancy. Severe forms become aggravated in the course of a pregnancy without exception, but mild forms often bear it remarkably well, although the prognosis must always be uncertain. Pulmonary tuberculosis complicated by laryngeal tuberculosis during pregnancy renders the prognosis still more unfavorable. As to the influence of tuberculosis on the pregnancy, it appears that in general abortions are not more common than among non-tuberculous women. Premature birth occurs, however, oftener in cases of severe tuberculosis. The influence of the mother's tuberculosis on the fetus may be exerted in three ways, by intrauterine infection (which is very rare), by the weakened constitution of the prematurely born child, and by the inherited predisposition. The therapy of tuberculous pregnancy is essentially prophylactic. Tuberculous girls must be warned against marriage. After recovery from tuberculosis permission to marry must be granted only after the expiration of from two to three years. When tuberculosis occurs in a married woman, conception must be prevented if possible. Statck does not advise the induction of premature labor in a tuberculous pregnant woman, because he considers it as injurious for the tuberculous patient as delivery at full term. On the other hand, the earliest possible abortion has a favorable influence on the course of the tuberculosis. The complication with laryngeal tuberculosis is an unconditional indication for abortion in the first few months.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, June 23, 1910

The Tuberculous Patient and the Austrian Law

The increasing vigilance with which the public is watching the spread and prevention of tuberculosis has caused a physician to compile the present regulations of the Austrian law in regard to tuberculosis. The law justifies the breaking of an engagement of marriage by either party if the other is found out to suffer from active tuberculosis. If, however, tuberculosis becomes manifest or recognized only after the wedding, the marriage is valid. On the principle that damages can be claimed from the party responsible for the loss, landlords are entitled to have the flat from which a tuberculous patient has moved disinfected at the expense of the patient. Public spitting may be, and has been prohibited, and a fine, sometimes very high, may be imposed if the law is transgressed. Private corporations have sometimes obtained damages on this ground. Children suffering from tuberculosis are not allowed to visit public schools, except for examinations. A movement is now on foot to establish special classes for tuberculous children in spite of medical remonstrations against the necessity of keeping such children in school at all. A tuberculous teacher is strictly forbidden to continue his occupation. A tuberculous prisoner may claim postponement of the term of imprisonment, and a recruit is entitled to a [illegible] of one to three years, or if after his twenty-fourth year, he still is suffering from demonstrable illness, he has to be [illegible]. [illegible] disputes under the claim of workmen's [illegible] have been brought to the courts when laborers [illegible] engaged in certain kinds of [illegible] favorable to infection. As a rule the attitude of the courts of law is not very favorable to the [illegible] of the employed persons. The attempt has been made [illegible] to make tuberculosis a notifiable disease [illegible] of the public health bill [illegible] to provide that in order to obtain [illegible] shall produce a certificate of health especially as freedom from tuberculosis. This [illegible] is of course not [illegible] that are most likely to occur in [illegible].

MANILA LETTER

(From Our Regular Correspondent)

Manila, May 31, 1910

Infant Mortality

[illegible] the present [illegible] among infants [illegible] in the daily [illegible] Total deaths for the day 25, infants 18, or total deaths 15, infants 11. The chief cause of this high death rate is universally considered to be improper environment, care and feeding. Both Filipino and American physicians are actively engaged in combating such a disproportionate mortality of babies. Among the Filipino physicians Dr. Calderon, recent delegate to the International Congress of Tuberculosis at Washington, is the most actively engaged in this work. The Bureau of Health and the Manila Medical Society are also lending their aid. Appeals are frequently made through the daily press and the public are quite well aware of the condition of affairs. This, however, is of no particular significance to the vast majority of Filipinos, who are quite accustomed to it. In fact in the old days before American sanitation was established the death-rate among the babies was, if we can trust the meager statistics available and the memory of the oldest residents, even much greater than it is to-day. Most of the burden of this work naturally falls on the Americans and the few more intelligent Filipinos; since, for reasons stated above, the great mass of the population can hardly be expected to aid, and the foreign residents (English, German and Spanish) who remain more or less segregated and who as a rule have no interest in the welfare of the islands except in a commercial sense, have not proved very charitable.

If the vital statistics of the Bureau of Health of the Philippine Islands be studied it will be seen that, but for the great mortality of infants and children, the health of Manila will compare favorably with that of any American city of like size. There are fewer deaths from pneumonia, diabetes, typhoid and heart disease than is the rule in American cities of 250,000 inhabitants. The sanitary conditions are excellent. Pure water is to be had at a slight cost and the climatic conditions are never excessive. In view of these conditions the medical profession of Manila has set itself to the task of looking into the conditions obtaining in the home of the average Filipino mother and to ascertain the cause for such a high death-rate among the babies.

Accordingly the American Association for Study and Prevention of Infant Mortality was organized and held its first meeting last November. At the close of the four days' session resolutions were adopted stating that the present high rate of infant mortality is due to inherent debility or disease, improper environment and care, improper feeding and communicable diseases, and is to a high degree preventable; that the breast feeding of infants is, when possible, the only proper method; that the reporting of all communicable diseases, especially of those commonest in society, to health boards, should be compulsory; and that the scientific instruction of the young in practical hygiene and sanitation, and of mothers in the care and rearing of infants is an important duty resting chiefly on physicians, sociologists, school authorities and boards of health. The Bureau of Health and prominent native physicians and many Americans have been making efforts to supply proper nourishment in the homes of the classes through the Gota de Leche, an organization which is taking charge of most of the charities for the relief of the babies.

Inspection of Meats

The Bureau of Health and the Bureau of Agriculture have recently joined forces in instituting a rigid inspection of all meats entering Manila from a foreign country. The two bureaus are to cooperate in this inspection and the Bureau of Science has offered to analyze any suspicious specimens sent to it by the meat inspectors. Live animals shipped into the islands for food are also subjected to a rigid inspection before being allowed to land and are held in quarantine on the least provocation. Thus by a system of double inspection, one abroad and one before landing, sound meat is practically assured the people of Manila.

Meeting of Far Eastern Association of Tropical Medicine

The first biennial meeting of the Far Eastern Association of Tropical Medicine was held at Manila, P. I., the first week in April. [As noted in The Journal May 18.—Ed.] The congress was attended by seventy-six medical men engaged in professional work in the far east, including the official delegates from the governments of India, Ceylon, Siam, Netherlands, India, the Federated Malay States, the Straits Settlements, Hongkong, the Philippine Islands, Tsingtau and Japan. There were eight scientific meetings. With the exception of the final meeting which was held at Baguio, the new summer capital of the islands, all the meetings of the congress were held in the administration building of the new General Hospital of Manila.

The general run of the papers was good and most of them were of a high standard.

Among those of more than a local or more than a tropical interest may be mentioned one by Dr. S. Purdy of Auckland, New Zealand, on "Flies and Fleas as Factors in the Dissemination of Disease." From his experience in India and Egypt he is led to place particular emphasis on the danger of flies, especially in disseminating cholera and typhoid fever. He spoke favorably of the effects of petroleum in killing flies in the larval stage.

In connection with the subject of the notification of diseases in Manila a valuable paper was read by Dr. Macdachlan of the Bureau of Health and Dr. Andrews of the Bureau of Science, entitled "Studies in Infantile Mortality." It was a record of a verification of the causes of death as registered at the ordinary registry offices. The deaths of ninety-two infants under one year of age were verified, as to the cause of death, by post-mortem examination. It was found that out of the ninety-two cases, taken at random, 47 per cent. were due to infantile beriberi. Despite any doubt as to the validity of the diagnosis in any of these cases, it would still seem evident from the statistics furnished that the greater portion of the deaths of infants in Manila, as in most of the cities of Siam, India, Japan, etc., is due to digestive troubles arising from improper feeding. It was further shown that the deaths of children under 1 year in the Philippines amounts to 48.8 per cent. of the total deaths recorded.

The largest attendance occurred on Friday, when the subject of beriberi was brought up for discussion. This is a topic of widespread medical interest in the far East, especially in the tropics. Papers were read on "The Cause of Beriberi," by Dr. J. de Haan, delegate from Netherlands, India, and Dr. H. Fraser, delegate from the Federated Malay States; on "Beriberi in Siam," by Dr. Highet, delegate from the Government of Siam; on "Food and Metabolism in Beriberi," by Dr. Hans Aron; and on "The Etiology of Beriberi," by Dr. E. Musgrave of the Bureau of Science. An interesting point about these papers is that from each of those districts evidence was brought forward to show that beriberi is closely associated with the continuous consumption of white polished rice as the staple article of diet. In reviewing past work on beriberi, Dr. de Haan showed that the idea of this disease being caused by a bacterium is untenable, that it is a food disease, and that in Netherlands, India, it had been found that it could be kept very much in abeyance by adding to the white rice diet a form of green pea which is called "Katchang idj-ju." The indications are that unpolished rice or rice milled by the native crude method does not give rise to beriberi. The explanation is, that in polishing rice the outermost layer of cells, which contain most of the fat and phosphorus, is polished off and it is the lack of these constituents which gives rise to beriberi.

At the concluding meeting of the association, Dr. Clark, who is the Medical Officer of Health of Hongkong, extended a cordial invitation from the government of Hongkong to the Far Eastern Association of Tropical Medicine to meet there in 1912. The invitation was endorsed not only by the government but also by the British colonial office. The association accepted the invitation with acclamation. Dr. Atkinson of Hongkong was elected president. The following vice-presidents were elected: Sir A. Perry (Colombo), Dr. de Haan (Netherlands, India), Dr. Ellis (Straits Settlements), Dr. Highet (Siam), and Dr. Shibayama (Japan).

Miscellany

Cardiac and Respiratory Failure Associated with Engorgement of the Thyroid.—In a discussion on lymphatism (*Proc. Roy. Soc. Med.*, March, 1910) Mr. Carter Braine reported a case of cardiac and respiratory failure, during an operation for the removal of an abdominal tumor. The failure seemed to be due to an engorgement of the thyroid gland, which previous to the operation had seemed to be normal. The patient was an emaciated woman, aged 24, extremely nervous and with a rapid pulse. Ethyl chlorid followed by ether was used. The patient was placed in the Trendelenburg position and the abdomen opened. The operator requested that the patient be relaxed a little further on account of rigidity of the recti; at this time the pupils were dilated and a light-reflex was present. On pushing the anesthesia a little further the pulse became feeble, the pupils were still very large and a doubtful corneal reflex was present. There had been no traction on the abdominal contents. Respirations became very shallow; the anesthetic was stopped and chest compressions employed to assist respiration. Breathing ceased, however. There had been no cyanosis, no stertor; the color was ash grey and the pulse imperceptible at the wrist. Artificial respiration and oxygen were employed and persevered in, although the patient was considered by all present to be dead. The tongue was well forward and had given no trouble. It was then noticed that the thyroid was swollen, the two lateral lobes and the isthmus being well marked. The anesthetist was absolutely certain that this swelling was not present before the anesthetic was commenced. The patient had been removed to the floor to facilitate the employment of artificial respiration. Believing that the inability to restore the respiration might be due to the swelling of the gland the head was raised from the floor and slightly flexed on the sternum and artificial respiration continued in this position. In a few minutes the pupils commenced to contract, a thready pulse returned, and respiration became reestablished. Strychnin was given, the patient placed on the table and the operation completed under light anesthesia with the patient in the horizontal position. The patient was returned to her bed with color and pulse good and no trace of the swelling of the thyroid could be discovered. Though perhaps rare, this possibility should be kept in mind in respiratory and cardiac failure during anesthesia, and it should be borne in mind that in status lymphaticus the thymus might also become engorged, giving rise to reflex cardiac inhibition or respiratory stasis.

Variation in the Inherent Phagocytic Power of Leucocytes. The opsonic index, according to E. E. Glynn and G. L. Cox (*Jour. Path. and Bacteriol.*, 1909, xiv, 90), as determined by the Wright technic, does not necessarily represent the true index of the power of phagocytic response of the blood of any given individual. In determining the opsonic index of a given patient's blood, Wright and his school do not take into account the possibility that there may be differences in the phagocytic power of various strains of leucocytes, as well as in the different types of leucocytes themselves. Wright himself said, "It clearly emerges that the phagocytic count is uninfluenced by the corpuscle employed. . . It will make it clear that we may take the opsonic index of any blood as an index of the patient's power of phagocytic response." From their observations on human beings, Glynn and Cox are led to take exceptions to this doctrine. They find that both serum and leucocytes are subject to change, so that both must be taken into consideration in estimating the extent of phagocytosis of a given blood. They claim to have shown that "there may be a marked and often very constant difference in the phagocytic capacity of various strains of polymorphonuclear leucocytes. These differences may be apparent not only in pathologic blood, but also in normal blood. The opsonic index does not necessarily coincide with the index obtained by mixing a person's own leucocytes with his own serum. The extent of the phagocytosis obtained when washed leucocytes and serum from the same individual are incubated together can be correctly estimated by separately measuring the proportions due to the serum and washed leucocytes respectively. The inherent phagocytic power of the leucocytes of different individuals towards bacteria may tend to be constantly below a given standard, not only in disease but to a lesser extent in health. The phagocytic power of different leucocytes is subject to variations in the same individual which are at least as marked as those in the amount of opsonin (in undiluted serum), but there is no evidence that the variations are specific in the uninfected."

Mission Hospital Patients in Turkey. Dr. C. D. Ussher, a medical missionary in Van, Turkey, writes that people in America would undoubtedly flee the dispensary connected with his hospital if they should see the patients. He says: "Picture them brought in among the crowd smallpox cases in every stage, papules, vesicles, pustules and scabs; famine, scarlet fever, diphtheria, measles and whooping-cough. If you talk to the friends about microbes and infection, many either look at you nonplussed or assure you that there are no microbes on them; they had a bath a month or two ago or 'last Easter.' Those whose friends are able to care for them properly are sent home and those most needy are sent to the hospital if there is room for them. Yes, smallpox, scarlet fever, typhus, typhoid and all are sent to our one and only hospital, and it takes much labor and expense in washing, bathing and disinfecting to prevent infection of others." The hospital is a three-story building, 50 by 70 feet, with four general wards and nine private wards, one of which with two beds is used for contagious diseases when cases are few.

Cradling in Treatment of Strangulated Hernia.—In a communication in the *Progrès Médical*, March 19, 1910, M. de la Roquette refers to a case recently reported in which strangulated eventration became spontaneously reduced as the patient's head was kept constantly lower than the pelvis. He then reports a case from his own experience in which an irreducible strangulated hernia gave rise to such threatening symptoms that the patient was taken at once to the nearest hospital, but this was miles away and the patient had to be carried down in the native (Chinese) litter which is suspended at the head and foot from the center of a crossbar borne on the shoulders of two men. The continuous swaying resulted in the spontaneous reduction of the hernia in this case, and he suggests that some such cradling device might be systematically applied in treatment of strangulated hernia.

Aneurism of the Vertebral Artery and Celiac Axis.—A man, aged 57, had complained of neuralgic headache at intervals for six years (Longcope: *Proc. Path. Soc., Philadelphia*, February, 1910). Six days before admission to hospital the pain became worse and the patient fell unconscious, remaining so for thirty minutes. When he recovered consciousness his right foot was paralyzed, and on admission to the hospital he had fever, retraction of the head, paralysis of the right foot and delirium. Six lumbar punctures were performed and pure blood was obtained each time. The patient died of pneumonia. Autopsy revealed a ruptured aneurism of the vertebral artery. In the celiac axis there was a nodule which was thought to be a thrombus, but which when dissected away was found to be a true dissecting aneurism.

Marriages

Edward Patera, M.D., to Miss Jane Smyth, both of Chicago, July 2.

Joseph Isaac Kemler, M.D., to Miss Rebecca Macht, at Baltimore, June 29.

J. Page Strong, M.D., to Miss Camilla Lucille Gordon, at Baltimore, June 29.

William Harris, M.D., to Miss Julia L. Shrotz, both of Philadelphia, June 28.

John A. [illegible], M.D., Atlantic City, N. J., to Miss Lyons, at [illegible], recently.

Walter F. [illegible], M.D., Spokane, Wash., to Miss Martha [illegible] of [illegible], Wis., June 23.

Thomas G. [illegible], M.D., to Miss Nena E. Inskeep, both of Fairfield, Ill., at Chicago, June 24.

Franklin Harold Crail, M.D., East Las Vegas, N. M., to Miss Laura Ballock of Denver, June 28.

Luther Gould Dearborn, Jr., M.D., Derry, N. H., to Miss Laura F[illegible] of Cambridge, Mass., June 8.

[illegible] P. Rucker, M.D., Bedford City, Va., to Miss Mary P. Williams of Fredericksburg, Va., June 27.

William Richard Arthur, M.D., Greene, Iowa, to Miss Hazel [illegible] of Des Moines, June 10.

[illegible] Strick, M.D., Davenport, Iowa, to Miss [illegible] Petersen of Iowa City, June 23.

[illegible] Campbell, M.D., to Miss Maude Barbour, both of Kansas City, Kan., at Leavenworth, Kan., June 25.

[illegible] Newton Hill, M.D., Osawatomie, Kan., to Miss [illegible] of Pleasant Hill, Mo., June 24.

[illegible], M.D., Missoula, Mont., to Miss Sabra [illegible] of [illegible], Minn., at Minneapolis, June 8.

William Henry [illegible], M.D., Iowa City, Iowa, to Miss [illegible] of Monticello, Iowa, at Iowa City, June 22.

Deaths

Henry Harris Aubrey Beach, M.D. Harvard Medical School, Boston, 1868; a member of the Massachusetts Medical Society; Boston Society for Medical Science, the Society for Medical Improvement, and the Society for Medical Observation; formerly demonstrator of anatomy and instructor and lecturer on surgery in Harvard Medical School; for two years associate editor of the Boston Medical and Surgical Journal; died at his home June 28, aged 66.

Clement Bloch, M.D. University of Koenigsberg, Germany, 1890; a member of the German Medical Society; for five years head physician of the Montefiore Home; visiting physician to the Polyclinic Hospital and Mount Sinai Hospital, and physician to Sydenham Hospital, New York City; died at his home in that city, July 3, from heart disease, aged 46.

Charles Zellhoefer, M.D. New York University Medical College, New York City, 1873; a member of the Medical Society of the State of New York; consulting physician to the German, Eastern District and St. Catharine's Hospitals, Brooklyn; died at his home, June 30, from heart disease, aged 65.

George Glick, M.D. Eclectic Medical Institute, Cincinnati, Ohio, 1849; for many years president of the First National Bank, ex-postmaster, member of the city council and school board of Marshalltown, Iowa; died at the home of his daughter in Chicago, June 26, from paresis, aged 83.

Edward Jerome Page, M.D. Louisville (Ky.) Medical College, 1874; Jefferson Medical College, 1883; a member of the Oregon State Medical Association, and the Southern Oregon Medical Association; president of the Commercial Bank of Oakland; died at his home in that city, July 1, aged 60.

Alfred Willard Southgate, M.D. Harvard Medical School, Boston, 1905; a member of the Massachusetts Medical Society; a member of the staff, and for two years house surgeon of the City Hospital, Worcester; died in that institution, June 25, from tuberculosis, aged 31.

Charles B. Richmond, M.D. Northwestern University Medical School, Chicago, 1878; a member of the American Medical Association; for thirty years a resident of Colorado and twenty-one years a practitioner of Denver; died at his home in that city, July 1, aged 56.

Simon B. Beer, M.D. Eclectic Medical Institute, Cincinnati, Ohio, 1874; of Fairview, Ill.; served in the One Hundred and Third and Thirty-sixth Illinois Infantry throughout the Civil War; died in a hospital in Peoria, June 23, following an operation, aged 72.

James Robertson Ely, M.D. University of Louisville (Ky.) Medical Department, 1859; a member of the Kentucky State Medical Association; formerly of Frankfort, Ky.; died at the home of his son-in-law in Tryon, N. C., June 19, from sepsis, aged 74.

Daniel A. Sheffield, M.D. Northwestern University Medical School, Chicago, 1867; Rush Medical College, Chicago, 1886; formerly of Apple River, Ill.; died at the home of his daughter in Lamont, Iowa, June 25, aged about 80.

Joseph F. Koerper, M.D. Philadelphia College of Medicine and Surgery, 1852; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, March 18, from senile debility, aged 79.

Joseph Hark, M.D. Franklin Medical College, Philadelphia, 1848; a retired practitioner of Bethlehem, Pa.; died at the home of his grandson in Bethlehem, June 18, from fatty degeneration of the heart, aged 91.

Addison Norvel Nuckols, M.D. Medical College of Virginia, Richmond, 1870; a Confederate veteran; a resident of Danville, Va., until two years ago; died at his home in Lynchburg, June 9, from apoplexy, aged 66.

Robert Edward Emmett Burke, M.D. University of Louisville (Ky.) Medical Department, 1905; formerly intern at the City Hospital, Louisville, Ky.; died at his home in that city, June 28, from tonsilitis, aged 26.

Edwin Drake Van Deventer, M.D. Missouri Medical College, St. Louis, 1881; a member of the Missouri State Medical Association; of Laddonia, Mo., was struck and killed by a Chicago & Alton train, July 4, aged 51.

John Philip Harrell, M.D. Keokuk (Iowa) Medical College, 1892; a member of the Iowa State Medical Society; formerly city physician of Burlington, Iowa; died at Mercy Hospital in that city, June 28, aged 42.

William Lobdell Johnson, M.D. Albany (N. Y.) Medical College, 1865; a member of the Medical Society of the State of New York; died at his home in Johnstown, June 26, from chronic gastritis, aged 66.

Charles DeWitt Early, M.D. Rush Medical College, Chicago, 1901; formerly county physician at Peoria County, Illinois; died suddenly while seated in a chair at the Elks' Club, Peoria, July 5, aged 32.

Walter William Snyder, M.D. Starling Medical College, Columbus, Ohio, 1901; a member of the Ohio State Medical Association; was found dead at his home in London, Ohio, June 26, aged 34.

Clarence Roberts Campbell, M.D. College of Physicians and Surgeons, Baltimore, 1906; of New Bedford, Mass.; died at the home of his brother in Provincetown, Mass., June 19, from pneumonia.

Donald Alex. McDonald, M.D. University of Michigan, Department of Medicine and Surgery, 1876; of Detroit, Mich.; died in Rochester, Minn., May 29, from gastric ulcer, aged 50.

Charles L. Sonnemann, M.D. Northwestern University Medical School, Chicago, 1894; of Milwaukee, Wis.; died at the home of his brother-in-law, June 23, of nephritis, aged 41.

Richard Joseph Nunn, M.D. Savannah (Ga.) Medical College, 1854; a member of the Medical Association of Georgia; a Confederate veteran; died at Savannah, Ga., June 30, aged 79.

Frank B. Dodge, M.D. College of Physicians and Surgeons, Baltimore, 1880; a resident of Mount Morris, N. Y., for twenty-eight years; died at Fresno, Cal., June 22, aged 70.

Benjamin Franklin Daniel, M.D. Atlanta (Ga.) Medical College, 1887; formerly of Union Point, Ga.; died at his home in Decatur, Ga., June 27, from tuberculosis, aged 60.

John Waters Deshon, M.D. Bellevue Hospital Medical College, New York City, 1891; formerly of Little Rock, Ark.; died at Tulsa, Okla., July 3, from heart disease, aged 57.

John Whitehead Seidell, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1907; died at his home in Nichols, Fla., June 16, from typhoid fever, aged 28.

David Findley (license, Iowa, 1886); a practitioner of Cass County, Iowa, for forty-seven years; died at his home in Atlantic, June 28, from senility, aged 80.

Oliver H. Caldwell, M.D. Memphis (Tenn.) Hospital Medical College, 1882; a veteran of the Civil War; died at his home in West Paris, Texas, June 28, aged 78.

Thomas M. Young, M.D. Chicago Homeopathic Medical College, 1880; a veteran of the Civil War; died at his home in Seattle, Wash., July 1, aged 68.

John B. Heck, M.D. Louisville (Ky.) Medical College, 1874; formerly postmaster of Dayton, N. M.; died at his home in that place, recently, aged 60.

Sebastian Cabot Lewis, a resident of Kerens, Texas, for twenty-two years; died at that place, June 21, from senile debility, aged 91.

Samuel H. Decker (license, Pa., 1891); formerly of Benezett, Pa.; died at his home in Kersey, Pa., April 7, from pneumonia, aged about 65.

Elizabeth Short, M.D. Woman's Medical College, Kansas City, Mo., 1898; died at her home in Kansas City, July 1, aged 44.

Sylvanus F. Heath, M.D. Harvard Medical School, Boston, 1866; died at his home in Gilman, Ill.; June 16, aged 71.

Pharmacology

QUININ ARSENATE REFUSED RECOGNITION

Report of the Council on Pharmacy and Chemistry

The advisability of admitting quinin arsenate as a non-proprietary article to New and Nonofficial Remedies was taken up for consideration by the Council and the product was referred to a committee on chemistry. This committee recommended that the opinion of the staff of clinical consultants should be obtained relative to the value of this product. This was done and on the staff's recommendation the drug was refused recognition and the Council ordered the following statements to be published. W. A. Puckner, Secretary.

Quinin arsenate is the secondary quinin salt of arsenic acid. It contains 8 per cent. of elementary arsenic and 69 per cent. of anhydrous quinin. 0.1 gm. (1½ grains) would be equivalent to approximately .092 gm. (1 9/20 grains) of quinin sulphate and to 0.032 gm. (½ grain) of sodium arsenate (five times the official dose). It is thus seen that the proportions of the two chief ingredients in the salt are such that an efficient dose of quinin cannot be given in this form without introducing a dangerous amount of arsenic. As it does not appear that the preparation possesses any properties that might not be found in a mixture of quinin salts and various preparations of arsenic, and as it has no advantage over other forms of arsenic now available there is no reason for including it among the official non proprietary remedies. Attempts to substitute it for other quinin salts would be likely to lead to overdosing with arsenic.

THE DEADLY HEADACHE POWDER

Two Widely Advertised Nostrums Add to Their Mortuary Lists

Yet another death is recorded from the use of the deadly "headache powder." According to the reports, Mrs. Lena Shepland, Hastings, Neb., having a headache, took a dose of bromo-seltzer; this not giving the desired relief, she also took a dose of antikamnia. An hour later she was dead from heart failure induced by these heart depressing nostrums.

The *Hastings Daily Tribune* in reporting this case demonstrates the change that the daily press has undergone in the past five years. Not only do the names of the nostrums appear in the report but also in large type in the heading. This seems to show that the Proprietary Association of America is losing its grip on the press. Five years ago it would have been hard to find a paper that would have dared to give a nostrum such unenviable notoriety as this Nebraska paper forces on bromo-seltzer and antikamnia.

RADAM'S MICROBE KILLER

A correspondent asks for information concerning "Radam's Microbe Killer," as he has a patient with cancer whose family are strongly urging the use of this nostrum.

"Radam's Microbe Killer" was shown up by Mr. Adams in his "Great American Fraud" series and also in the report of the Australia Royal Commission. This nostrum had a great vogue some years ago and then seemed to drop out of notice, apparently, however, it has been revived recently and is being pushed vigorously, especially in New York City and on the Pacific coast. A few months ago the federal government seized a consignment of this preparation (see The Journal, May 14, 1910) and served notice on the firm in whose possession it was found. The court decided that the product should be destroyed and that the firm in question shall pay all the costs of the proceedings. The "Notice of Judgment" published by the government did not give in detail the results of the government analysis, but application to the Department of Agriculture regarding the composition of this nostrum brought the following letter:

"The acting secretary has officially authorized giving you the information relative to the composition of 'Radam's Microbe Killer.' The results are as follows:

"Sulphuric acid	[illegible] per cent
"Sulphurous acid	0.016 per cent
"Inorganic matter (ash)	0.013 per cent.
"Water by difference	99.81 per cent

"The above clearly shows that 'Radam's Microbe Killer' is a mixture of sulphuric acid and sulphurous acid dissolved in ordinary hydrant water. It is quite possible that the sulphuric acid may have been present in part as sulphurous acid."

A REDISCOVERY

Fifteen years ago The Journal ceased to carry the advertisement of antikamnia; ten years ago it called attention to the fact that this nostrum was being advertised to the laity by means of circular letters; since that time it has persistently exposed the devious ways in which the exploiters of this dangerous powder have humbugged the medical profession and the public. Some other medical journals, notably the *Medical World*, have enlightened their readers on the same subject. It can hardly be said, therefore, that the medical profession was unaware of the "heads I win, tails you lose" policy of the Antikamnia Chemical Company.

Apparently, however, our friends the druggists, were unaware of the machinations of the Antikamnia people. This, at least, is what we are led to believe by a letter which has recently been sent to physicians by the committee on the U. S. P. and N. F. propaganda of the Chicago branch of the National Association of Retail Druggists. With its own letters calling attention to the way in which physicians have been made the cat's-paw of the proprietary interests, this committee sends a facsimile letter of the "Do-you-suffer-pain?" letter which the Antikamnia people have been scattering among the laity for years.

This change in attitude on the part of the N. A. R. D. is encouraging. It is less than five years ago that the Antikamnia Chemical Company sent "as a Thanksgiving Offering to the National Association of Retail Druggists, our check for the sum of five hundred ($500.00) dollars." This money the N. A. R. D. gratefully received and acknowledged with the statement that the Antikamnia Company deserved great credit for realizing "that the retail druggist is, after all, the best friend of the proprietary manufacturer." And at the time this "honorarium" was accepted by the N. A. R. D. these same "Do-you-ever-suffer-pain?" letters had been going to the public for over five years. Reforms come slowly, however, and it is sufficient to be thankful for them when they arrive. The medical profession should appreciate the present attitude of the N. A. R. D. toward at least one of the "ethical" nostrums even though that attitude is brought to their attention in the form of a discovery at least a decade old.

Correspondence

Treatment of Burns; Correction of a Prescription

To the Editor:—In my paper on "Rational Treatment of Burns" (The Journal A. M. A., July 2, p. 27), an error [Our error.—Ed.] exists in regard to the strength of the picric acid solution. The prescription as used by me and given in my manuscripts is as follows:

	gm. or c.c.	
Picric acid	1	ʒi
Alcohol	64	℥ ii
Water q. s.	768	O jss

Please make this correction in The Journal, as serious results might follow the use of a picric acid solution as strong as the one erroneously printed in my paper of the above date.

H. I. Fancher, M.D., Chattanooga, Tenn.

Bismuth Subnitrate Superior to Bismuth Milks

To the Editor:—There are a number of bismuth preparations on the market put out by manufacturing chemists in the shape of bismuth creams, milks, etc., purporting to have the same field of usefulness in gastro-intestinal disorders as bismuth subnitrate. I believe these preparations are made from the salt and, while, from a pharmaceutical standpoint they seem to leave nothing to be desired clinically, I am convinced they are well nigh worthless at least in infants.

In a series of observations covering their administration to numerous infants suffering from acute gastro-enteric conditions, I failed to observe a sedative or astringent action in a single case. In 21 cases I gave [illegible] ounces of a well-known bismuth milk at [illegible] hour to infants suffering from gastro-enteritis with frequent stools containing some blood and abundant mucus without the slightest appreciable effect in the character or frequency of the stools notwithstanding the fact that milk feeding was entirely withheld during this treatment for a period of seven days. The bismuth milk passed through the entire alimentary tract practically unchanged and appeared in the stools as a white semi-solid mass. Bismuth subnitrate was now administered in 10 gr. doses every two hours resulting in darkened stools, lessened amount of blood and almost complete disappearance of mucus within the first twenty-four hours of its administration.

Judson A. Hulse, M.D., Akron, Ohio.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 9, 1910:

Slater, E. F., M. R. C., granted 12 days' leave of absence about Aug. 15, 1910.

Fisk, Owen C., M. R. C., ordered from Fort Crook to Fort Omaha, Neb., for temporary duty.

Roberts, William M., major, left Fort Thomas, Ky., en route to camp at Gettysburg, Pa.

Gosman, George H. R., major, reported for duty at Chickamauga Park, Ga.

Smith, Allen M., major, left Washington, D. C., on 30 days' leave of absence.

Hammond, William G., dental surgeon, relieved from duty in the Philippines Division and directed to sail on transport to sail from Manila, P. I., about Sept. 15, 1910, to San Francisco. Dental Surgeon Hammond will proceed thence to his home and on expiration of the leave of absence granted him this date will report to the Surgeon General of the Army for annulment of contract. Leave of absence for 3 months, to take effect on arrival in the United States, is granted.

Mills, Frederick H., M. R. C., granted 4 months' leave of absence about Sept. 15, 1910.

Gray, William W., col., leave of absence extended 1 month.

Harris, Herbert I., M. R. C., granted leave of absence for 1 month and 15 days.

Register, Edward C., M. R. C., assigned to permanent duty at Fort H. G. Wright, N. Y.

Adams, Paul A., M. R. C., died at Scofield Barracks, H. Ty., July 3, 1910.

Baker, David, major; Darby, Taylor E., lieut.; Northington, E. G., M. R. C., report arrival at Chickamauga Park, Ga.

Kramer, Floyd, lieut., left Fort Robinson, Neb., en route to Fort D. A. Russell Target and Maneuver Reservation, Wyo., for duty.

Brown, Henry L., capt., reported for duty at Chickamauga Park, Ga.

Griswold, W. C.; Meterick, R. H., M. R. C., left Fort Oglethorpe, Ga., en route to Camp of Instruction, Chickamauga Park, Ga.

Gunckel, George I., dental surgeon, en route to Fort McPherson, Ga., from temporary duty at Fort Screven, Ga.

Mount, J. R., lieut., reported for duty at Camp Dickinson, Chicago.

Brooks, William H., major, ordered to Columbus Barracks, Ohio, for temporary duty. Major Brooks to be relieved from duty at Presidio, San Francisco on completion of temporary duty at Columbus Barracks, Ohio, and will then proceed to Recruit Depot, Fort McDowell, Cal., for duty, relieving Lieutenant Colonel Euclid B. Frick, Medical Corps.

Frick, Euclid B., lieut.-col., on being relieved from duty at Fort McDowell, Cal., will proceed to and take station at the Presidio of San Francisco.

Medical Corps, U. S. Navy

Changes for the week ended July 2, 1910:

Sellers, F. E., P. A. surgeon, detached from duty at the Naval Station and Naval Recruiting Station, New Orleans, and ordered to the Naval Station, Guam, M. I.

Dean, H. A., P. A. surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Stepp, J., P. A. surgeon, ordered to the *Wabash*.

Wheeler, L. H., P. A. surgeon, detached from the *Marietta* and ordered to the *Virginia*.

Stitel, C. L., P. A. surgeon, discharged from treatment at the Naval Hospital, Las Animas, Colo., and ordered to Washington, D. C., for examination for retirement and thence home to wait orders.

Phillips, F. W., asst. surgeon, detached from the Naval Hospital, New York, and ordered to the *Marietta*.

Hart, R. E., P. A. surgeon, ordered to the Naval Recruiting Station, Buffalo.

Garrison, H. A., asst. surgeon, detached from the Naval Station, Guam, M. I., and ordered home to wait orders.

Jeffree, H. M., P. A. surgeon, ordered to the Naval Recruiting Station, Cleveland, Ohio.

White, F. C., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the Naval Recruiting Station, St. Louis.

Payne, J. H., P. A. surgeon, having completed examination for promotion, ordered home to wait orders.

[illegible], A. L., acting asst. surgeon, ordered to duty at the Naval Hospital, Newport, R. I.

Rennie, W. H., P. A. surgeon, detached from the Naval Recruiting Station, St. Louis, ordered home and granted sick leave for 3 months.

[illegible], J. T., asst. surgeon, ordered to the Naval Recruiting Station, Cincinnati.

[illegible], M. C., asst. surgeon, detached from the Naval Recruiting Station, Cincinnati, and ordered to the Naval Training Station, Newport, R. I.

Woodland, F. L., acting asst. surgeon, ordered to duty at the Naval Hospital, Philadelphia.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended July 6, 1910:

Kerr, J. W., asst.-surgeon general, granted 1 month's leave of absence from July 7, 1910.

Long, J. D., asst. surgeon general, directed to proceed to Columbus, Ga., on special temporary duty.

McIntosh, W. P., surgeon, granted 4 days' leave of absence from July 5, 1910.

Nydegger, J. A., surgeon, granted 7 days' leave of absence from July 3, 1910.

Grubbs, S. B., P. A. surgeon, granted 4 days' leave of absence en route to station.

Lumsden, L. L., P. A. surgeon, directed to proceed to Norfolk, Va., on special temporary duty.

Anderson, John F., P. A. surgeon, granted 5 day's leave of absence from July 5, 1910. Paragraph 189, Service Regulations.

Leake, J. P., asst.-surgeon, granted 7 days' leave of absence from June 24, 1910. Paragraph 191, Service Regulations.

Altree, G. H., acting asst. surgeon, granted 30 days' extension of leave of absence from May 3, 1910, on account of sickness.

Duffy, Francis, acting asst.-surgeon, granted 4 days' leave of absence from July 6, 1910.

Houghton, M. W., acting asst.-surgeon, granted 2 days' leave of absence from July 2, 1910.

Morgan, Roy, acting asst. surgeon, granted 7 days' leave of absence in June, 1910. Paragraph 210, Service Regulations.

Stewart, W. J. S., acting asst.-surgeon, granted 1 month's leave of absence, without pay, from June 23, 1910.

Story, Henry C., acting asst. surgeon, granted 30 days' leave of absence from July 1, 1910.

Walker, T. D., acting asst.-surgeon, granted 11 days' leave of absence from June 28, 1910.

Wetmore, W. O., acting asst.-surgeon, granted 5 days' leave of absence from June 8, 1910, and 1 day's leave June 15, 1910, under paragraph 210, Service Regulations.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HOSPITALS FOR CANCER PATIENTS

To the Editor: Does the Rockefeller Institute or Hospital for the treatment of cancer receive patients at present? Are there any similar hospitals elsewhere in the country? I have a patient with a cancer in the primary stage whose case would be suitable for such a hospital.
T. W. Longfellow, Windfall, Ind.

Answer.—As we understand it the Rockefeller Hospital, now nearing completion, adjoining the Rockefeller Institute, is not to be especially a cancer hospital, but is intended to cover the whole field of medical research. The hospital will not be open for some weeks. When it is opened it will be used to care for a limited number of patients, preferably those suffering from the heretofore incurable diseases; the work will be largely experimental, and the patients received there will have consented to a participation in this experimental work. The Skin and Cancer Hospital in New York City and the Skin and Cancer Hospital in St. Louis are both excellent institutions.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

COUNTY SECRETARIES MEET IN WISCONSIN

The first annual meeting of the Association of County Secretaries and State Officers of Wisconsin was held in Milwaukee, June 21, 1910. Dr. C. S. Sheldon of Madison stated that the object of the organization was to enable county secretaries to get together, to meet with the state secretary and with each other, and to talk over the methods and most successful manner of conducting county society work. Officers were elected as follows: Dr. T. J. Redelings, Marinette, president; Dr. Rock Sleyster, Waupun, secretary; Dr. W. F. Zierath, Sheboygan, vice-president.

Dr. C. S. Sheldon presented a paper on the aims and designs of this association, in which he disclaimed originality as to the idea of such an organization. Accounts of similar organizations in other states had greatly impressed him with their usefulness in bringing the county secretaries into closer touch with the work of the state society and with each other. He told of the services of Dr. Sleyster and of his scheme of the "Booster Club" and the "2,000 for Milwaukee in 1910," and said that Dr. Sleyster had clearly vindicated his title of "Head Booster" and that the outcome of the present meeting would determine the measure of his success. He reviewed the results of organization thus far accomplished in the endeavor to transform the 150,000 disorganized doctors into one compact and harmonious body, and said further: There has been too much jealousy in the profession, resulting in the lowering of the public estimate of the whole profession. The medical expert has become discredited, and malpractice suits are made easy by the alliance of disloyal medical men with unprincipled shysters. The effort to secure sorely needed legislation has been ineffective. Medical men are not accorded the respect and consideration which they deserve as shown by the ready acceptance of such fads as Eddyism, osteopathy and the like. The solution of these problems has been undertaken by the American Medical Association. The county medical society is the unit of organization and membership therein is the condition of membership in the district, state or national organizations. Organization is proving effective though much is still to be accomplished. Since the movement began the standards of medical education have been advanced and the work of the colleges improved, medical legislation has gone steadily forward, and sanitation and preventive medicine have made great strides.

Time has vindicated the adoption in Wisconsin of the reorganization plan. Previous to its adoption in spite of the most strenuous and persistent effort not over a dozen county societies could be kept alive, while the state medical society numbered only about 600, whereas now there are 54 regularly organized county medical societies and a membership in the state medical society of over 1,800. The present meeting was called to discuss conditions in the state and to endeavor to increase the efficiency of the society at least 25 per cent. during the coming year.

A grave responsibility rests on the county secretary, in securing and fostering the scientific spirit in the society, collecting dues, maintaining the organization, securing the best possible programs for meetings, and bringing the members into pleasant social relations. The object and aim of the association is to discuss ways and means to bring about these results and to keep the organization alive and vigorous.

Dr. Sleyster presented a paper on "Some Things This Association Can Accomplish." He said that what could be accomplished might be summed up in these words: It is a chance to get together and talk things over, to learn what your neighbor is doing and how. New ideas and methods are brought to the notice of each member, and adopted by him. Of even more importance is the inspiration and enthusiasm the county secretary should take home with him from a meeting of this kind. He will learn the ideals and results accomplished elsewhere, and obtain a fuller realization of the possibilities of his position. What has been accomplished in national, state or county organizations can be accomplished at home. The standing of the profession with the public is largely dependent on local organizations.

Dr. Sleyster suggested the giving of an hour's time in each society at an early meeting in the year to discussing the non-members in the county, and the appointment of a committee to get applications from these non-members; the appointment of a special membership committee to work for new members, and the inviting of eligible non-members to each meeting. He urged the holding of a "Booster Meeting" each year, and to begin the campaign early, make careful and accurate plans and then carry them out. He emphasized the value received for the membership fee paid, showing that each member received the state journal, membership in both county and state societies and malpractice insurance. He advocated the passage of a resolution in each organization instructing the secretary to make a sight draft on a specified date on each member in arrears and thus relieve the secretary of the trouble in connection with collections; that reports of each meeting be sent to the journal; that members be optimistic in writing or speaking of their society, and that formal dignity be dropped when meeting as doctors and friends; and last, and above all else, that each member "be a booster."

Dr. George H. Simmons of Chicago delivered a short address in which he congratulated the association on the good sense of the arguments, suggestions and helpful thoughts contained in the papers which had been presented. He reviewed the plan of improved organization adopted by the American Medical Association by which the county society was made the unit of representation in the state societies and in the American Medical Association. The fundamental thing is the county society, the door through which one must enter to become a member of the state society or of the American Medical Association. The county society elects the members of the state house of delegates, who in turn elect the delegates to the American Medical Association.

Hence the county society should take more interest in what the American Medical Association and the state societies are doing and should be prepared to approve or disapprove. They should devote one meeting each year to the discussion of national and state problems and should instruct their delegates to the state society what position to take on the various questions under discussion and in like manner the delegates to the American Medical Association should represent the views of the majority. Formerly the state society did not appreciate the enormous importance of the House of Delegates of the American Medical Association, but now it has begun to realize the importance of picking representative men as delegates.

At present there are two especially important things before the association, one being the work in connection with medical education, in which every physician should take great interest, and the other the work of the Council on Pharmacy and Chemistry, which should appeal to every physician. If this work is in accordance with the views of the members it should be so expressed in the county society where the matters should be discussed.

Dr. Simmons called attention to the *Bulletin of the American Medical Association*, published to enlighten the men in charge in the state societies—the councilors, county secretaries and presidents of county societies—containing accounts of the subjects under consideration, i. e., medical education, medical legislation, etc., and to the importance of those subjects, and suggested bringing the *Bulletin* to the county society meeting and discussing the subjects. The American Medical Association and its committees want the views of the individual members as to whether the work being done is in accord with their opinions. We have the machinery, he said, but we have not yet begun to work with the machinery. He emphasized the necessity of securing a good live secretary for the county society. He said that one of the best movements yet started in connection with this work was the organization of these associations of county secretaries, and that provision ought to be made whereby the county secretary should be able to attend these meetings and his expenses be paid. It would do more to help bring about better conditions than any other one thing. And bettering conditions means putting the medical profession higher in the estimation of the people.

Dr. G. Windesheim of Kenosha spoke on "The Relation of the Councilor to the County Society." He called attention to the fact that under the reorganization plan, the councilor was able to be of little benefit to the county society. He is no more the peacemaker, organizer and censor for the county societies but is simply the go-between of the county society and the state society. Each county society should hold a special meeting each year at which the councilor of the district is present and discuss such matters as refer to the state society and the American Medical Association with which the councilor is supposed to be familiar and thus explain such matters as may be perhaps misunderstood, and so save the membership of a few men to the state society.

It is questionable whether the office of councilor is really necessary at the present time, except as trustee of the state society, unless some such plan can be adopted. At these meetings the delegates to the next state society meeting should be present and should be instructed as to the question to be brought before the House of Delegates. In that way the state society would get an idea as to what the county societies and the profession generally want.

Dr. H. W. Abraham of Appleton presented a paper on "The Year's Program of the County Society; How Can We Promote Greater Scientific Interests?" in which he said: The scientific program of a medical society is not the most important function of that body. Perfect organization, which includes the best of good fellowship, is the primal object. To be successful, both scientifically and financially, it is necessary to systematize and organize after the manner of a great business enterprise. The scientific program should be the postgraduate school of the profession. Every man should have some favorite line of study each year and should give the results of his studies—clinical experiences, study and review of the literature along some particular line, or original investigation. The program should be the subject of considerable inquiry on the part of the committee. Hunt out a number of individuals having a special interest in some particular subject; give them plenty of time to prepare. As a general rule, a paper should not take up a subject in the order of a text-book. It would stimulate interest and discussion if papers were so written as to emphasize the advances made, by comparison of old with new methods. Each year's program might have a paper on the newer methods of diagnosis brought out during the year; another on advances in therapeutics; another on new surgical methods, and so forth. The progress made each year in medical chemistry and physiology should be brought before the society. Many do not take medical periodicals, and would be more interested in the scientific aspects of medicine by thorough discussion. Cases in which a post-mortem examination has shown a mistake in diagnosis should be carefully written up, bringing out the clinical symptoms and signs that lead to the diagnosis, as such papers furnish a rich field for discussion and are of great practical value. Questions of medical ethics should be brought before the members for discussion. A paper should be read at least once a year on the work done by the American Medical Association. Personal work on the part of officers, especially the secretary, as to the obligation to do good work, which rests on those presenting papers, would be of value.

To sum up, a program is interesting: 1. When the papers are brief. 2. When they stimulate discussion. 3. When they arouse interest for further reading. 4. When they give the results of original work. 5. When stating clearly the advances made in medical science. 6. When they show originality in arrangement and composition.

Dr. M. V. DeWire of Sharon presented a paper on "The Business Side of the Secretary's Work." He said: In the majority of instances the work of the county secretary includes the management of the whole society; keeping the records; collecting dues; remitting to the state society; incurring expenses and paying bills; arranging for time and place of meeting, working up the program; looking after social features, arranging for the clinical cases; printing and mailing programs; soliciting new members and keeping the machinery of the society well oiled and in good running order. The number of meetings each year will vary with the number of members, their convenience in getting together and transportation facilities. The arrangement of the program will depend largely on the turn of mind of the majority of the members and as to whether they are surgeons, obstetricians, internists, etc. It is well to alternate the subjects, and it is advantageous to make here a symposium on the subject so as to be able to discuss it from all angles. The programs should not be too long but should give ample time for discussion. Social features are an advantage. It is best to arrange a program for at least three months in advance. Clinical cases are a great help and serve to make a deeper impression of the points brought out. Members should be urged to bring such cases before the meeting and patients can often be persuaded to come by explaining that they will get the benefit of the experience of the entire society. Invitations should be printed and mailed at least a week before the meeting.

As to little infractions of the "Principles of Ethics," patience and ingenuity on the part of the secretary are required. In nine cases out of ten, by seeing the member and talking to him you can usually show him his mistake, and he will be grateful to you for calling his attention to it. Use all the tact you have, all you can borrow and then use more tact.

Dr. J. H. Cleary of Kenosha presented a paper on "Social Features of the County Society." He said: Man is preeminently a social animal, and doctors are no exception. The mere gathering together in a society constitutes a social feature of no mean standing and proves the prime importance of the social element in all human organizations. In order to hold the continued interest of a body of men it is necessary to contribute to their mental or material welfare or to amuse them and most frequently both are necessary. A doctor's life being a serious one, anything that takes his mind from his daily work and furnishes relaxation assumes greater importance in medical organizations than in most other societies. Under the new era of systematic organization in medicine the need for social features in basic societies becomes more apparent. Bickering and enmity cannot long endure the mellow sunshine of the social hour. We must consider the opportunities for social features. In our county we find that holding meetings at the homes of members by invitation guarantees successful meetings, with only sufficient formality to conduct the business of the society. The spirit of sociability and good fellowship prevails. Special amusements provided will depend on circumstances and available talent and varies in different communities. During the summer months one or two meetings may be held in the country, and in counties having inland lakes they should be utilized to the fullest extent. Why not make these summer diversions old-fashioned picnics and bring the ladies? Only too frequently differences are carried into the families of physicians, and the presence of the families would contribute to the desired harmony and a better acquaintance. The annual meeting should be a feature of the county society, and should be made a special occasion. The business being completed in a short time, the social features can be elaborated, and may consist of a banquet and accompanying features. Special meetings may be provided or a regular meeting may be utilized in which to collaborate with neighboring counties. We have had some experience with these joint meetings in Kenosha and they were very enjoyable affairs. The social features of the county society should be in charge of a special committee, and not left to the overworked county secretary.

State Boards of Registration

COMING EXAMINATIONS

ILLINOIS: Coliseum, Chicago, July 20-22. Sec., Dr. James A. Egan, Springfield.

MAINE: Augusta, July 19-20. Sec., Dr. F. W. Searle, Portland.

OHIO: Cincinnati, July 19-21. Sec., Dr. Geo. H. Matson, Columbus.

Minnesota April Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the examination held at St. Paul, April 5-8, 1910. Aside from the written examination, practical tests were given in anatomy, pathology, histology, bacteriology and urinalysis. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 18, of whom 16 passed and 2 failed. Ten reciprocal licenses were granted at this examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College	(1910)	88.3
Northwestern University Medical School	(1909)	77.9
College of Physicians and Surgeons, Chicago	(1905)	85.4
Johns Hopkins University	(1908)	90.1
University of Maryland	(1909)	91.2
University of Minnesota, Coll. of Med. (1903) 80.6;	(1909)	79.6, 81.2
Hamline University	(1909)	77.5
Cornell University Medical College	(1904)	79.2
Hahnemann Medical Coll. and Hosp., Philadelphia	(1909)	84.7
University of Pennsylvania	(1886)	85.6
University of Toronto, Ontario	(1909)	80.8
McGill University, Canada (1900) 85.6;	(1906)	8[illegible].9
University of Manitoba, Winnipeg	(1890)	8[illegible].8

FAILED

College	Year Grad.	Per Cent.
Hahnemann Medical College of the Pacific	(1902)	66.1
Laval University, Quebec	(1899)	72

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1909)	Illinois
College of Physicians and Surgeons, Chicago (1902)	(1908)	Illinois
Illinois Medical College	(1906)	Illinois
Northwestern University Medical School (1902)	(1908)	Illinois
College of Physicians and Surgeons, Keokuk	(18[illegible])	Iowa
Kansas Medical College	(18[illegible])	Kansas
St. Louis College of Physicians and Surgeons	(1906)	Illinois
Beaumont Hospital Medical College	(1899)	Missouri

California April Report

Dr. Charles L. Tisdale, secretary of the California State Board of Medical Examiners, reports the written examination held at San Francisco, April 5-8, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 90, of whom 73 passed, including 13 osteopaths, and 17 failed, including [illegible] osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Cooper Medical College, (1907) 84.2; (1908) 91.6;	(1909)	80.2
Hahnemann Medical College of the Pacific (1908) 81;	(1909)	80.5, 81.1.
College of Physicians and Surgeons, San Francisco (1904) 79.7; (1906) 81.2; (1907) 75, 77.8; (1908) 84.6;	(1909)	80.3.
University of Southern California (1905) 79.2; (1908) 78.1;	(1909)	75.
University of California	(1909)	78.2, 81.[illegible]
California Eclectic Medical College	(1909)	82.[illegible]
College of Physicians and Surgeons, Los Angeles	(1909)	76.8
University of Colorado	(1897)	82.4
Yale Medical School	(1904)	88.9
Atlanta College of Physicians and Surgeons	(1900)	92.2
College of Phys. and Surg., Chicago (1897) 98.8;	(1905)	80.7
Northwestern University Medical School	(1895)	75
Hahnemann Medical College and Hospital, Chicago	(1907)	80.3
Northwestern University Woman's Medical School	(1890)	86.1
Medical College of Indiana	(1896)	82
State University of Iowa, College of Medicine (1890) 91.9;	(1907)	78.1.
University of Louisville	(1893)	82.7
Kentucky School of Medicine	(1889)	82.8
Tulane University of Louisiana	(1905)	81.9
Johns Hopkins University	(1908)	88.6
Baltimore Medical College	(1906)	8[illegible]
University of Michigan, College of Medicine (1880) 82.6;	(1895)	81.4.
Harvard Medical School	(1910)	87.7
Creighton Medical College	(1900)	84.5
University of the City of New York, (1887) 9[illegible].7;	(1891)	87.3
Univ. and Bellevue Hosp. Medical College	(1909)	86.4
Coll. of Phys. and Surg. of New York (1885) 89.3	(1908)	78.4
Bellevue Hospital Medical College	(1886)	93.6
Western Reserve University	(1907)	81.2
Cleveland College of Physicians and Surgeons	(1898)	82.9
Miami Medical College	(1908)	77.2
Hahnemann Medical College, Philadelphia	(1900)	89.4
Western Pennsylvania Medical College	(1894)	82.7
Jefferson Medical College (1884) 77.7	(1895)	78.0
Vanderbilt University	(1909)	75, 84.5
University of Vermont	(1908)	80
Laval University, Quebec (1[illegible]) 75.6	(1904)	76.3
University of Toronto, Ontario	(1907)	87.5
University of Dublin, Ireland	(1877)	97.7
St. Bartholomew's Hospital Medical College	(1879)	96.3

FAILED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Los Angeles	(1906)	69.8
California Eclectic Medical College	(1905)	71.8
Coll. of P. & S., San Francisco (1[illegible]) 69,	(1909)	7[illegible].6
Rush Medical College	(1895)	7[illegible]
Drake University	(1896)	46.2
Hospital College of Medicine, [illegible]	(1902)	64.2
Tulane University of Louisiana	(1908)	62.1
University of Maryland	(18[illegible])	7[illegible]
Kansas City Medical College	(1891)	7[illegible]
Cleveland College of Physicians and Surgeons	(1884)	*77.7
Jefferson Medical College	(1884)	*78.1
Hahnemann Medical College, [illegible]	(1909)	7[illegible].4
Tokio Medical College, Japan	(1907)	63.8

* Fell below 60 per cent in [illegible]

The following questions were asked.

ANATOMY

1. Trace cerebrospinal fluid from the lateral ventricles to the spinal canal. 2. Describe the rami communicantes. 3. Name the bones of the tarsus. Use diagram. 4. Indicate, on the diagram, the points of exit from the pelvis of the following nerves: External cutaneous, anterior crural, genitocrural, obturator, sciatic, pudic, superior gluteal. 5. Indicate, on the diagram, the course of the

common, internal and external iliac arteries. 6. What veins are without valves? 7. What cranial nerves are distributed to muscles of eye? Which are motor? 8. Give topographic outline of the lungs and bronchi on the anterior chest wall. Use the diagram. 9. Give origin and course of the eleventh cranial nerve as far as its exit from the skull. 10. What are the characteristics of arthrodial joints? Give five examples of this class of joints. 11. What is the ischiorectal fossa, how bounded and what does it contain? 12. When the arm is hanging with palm forward, what bony prominences at shoulder, elbow and wrist are normally in line?

HISTOLOGY

1. (a) Name the structures found in red bone marrow; (b) give the function of red bone marrow. 2. Draw diagram illustrating lung tissue, naming different structures. 3. Explain the difference between the mucosa of the endometrium and that of the vaginal portion of the cervix. Also make drawing. 4. Give structure of the tonsil. 5. From which germ layers are the following derived: pancreas, spleen, large intestine, salivary glands, fat? 6. Draw a transverse section of the brain, at a point just anterior to the pons varolii. Name most important parts. 7. Draw diagram illustrating a cell and name all the necessary constituents. 8. Describe the structure of the liver. 9. Explain the difference between the white and gray matter of the brain. 10. What are terminal arteries? Name organs which are so supplied. 11. Identify slides. 12. Identify slides.

BACTERIOLOGY

1. What are the differences in structure, methods of multiplication, sporulation, etc., between the blasmycetes or yeasts and bacteria? 2. What changes are produced on the culture media when *Bacillus coli communis* is grown: (a) on gelatine, (b) in milk, (c) in dextrose, (d) in lactose. 3. Describe the conditions necessary to successfully grow *Bacillus tetani* and the appearance of a stab culture in agar or gelatin about the sixth day. 4. What is the difference between an antitoxin and a bacterial vaccine? 5. Name four pathogenic anaerobic bacteria. 6. Differentiate between the bacillus of tuberculosis and *Bacillus lepra* taking into consideration staining, culture peculiarities, effect on tissues and relation to tissue cells of the host. 7. Describe briefly how you would make gelatin plate cultures, using material from a furuncle as the source from which to obtain the germ. 8. Name ten pathogenic bacteria that are Gram-positive. 9. What do you understand by the opsonic index? 10. How would you sterilize (a) a culture tube of gelatin, (b) a glass container with rubber stopper, (c) a platinum needle in a glass handle. 11 Identification of cultures. 12 Identification of slides.

CHEMISTRY

1. What is the poison in most headache powders? Its effect? Antidote? 2. Mention six elementary substances commonly used in their pure state in medicine. 3. What does the presence of an abnormal quantity of chlorin in drinking water indicate? 4. How would you detect the presence of bile in the urine? Give two tests. 5. Give the reaction, specific gravity and percentage of fats in normal cow's and woman's milk. 6. Mention a secretion in the body that contains cholesterin, one that contains pepsin, and one that contains trypsin. 7. What antidotes should be used in phosphorus poisoning? Explain the action of each. 8. Define and illustrate (a) capillary attraction, (b) absorption, (c) diffusion, (d) osmosis, (e) endosmosis. 9. In what principal form is nitrogen eliminated from the body? Give the chemical properties of nitrogen. 10. What is the chemical composition of the various renal calculi? 11. Mention one chemical antidote for each of the following: (a) Phenol, (b) arsenious oxid, (c) sulphuric acid, (d) mercuric chlorid, (e) oxalic acid. 12. What are the distinguishing characteristics of urates and uric acid as found in the urine? Give test for uric acid.

PHYSIOLOGY

1. How and where is lymph formed? 2. Discuss sleep and its causation. 3. Discuss briefly the influence of the nervous system on the digestive secretions. 4. Describe the movements of the intestines during digestion. 5. (a) Explain the effect of expiration on the volume of the brain. (b) Inspiration. 6. Discuss the formation, function and fate of glycogen. 7. What is the physiologic difference between the brain of man and that of lower animals? 8. Under what circumstances may functional union be made between fibers of different nerve trunks? What practical value has this operation? 9. Give nerve supply and action of muscles concerned in the movements of the eyeball. 10. Do we determine the function of a nerve by the location or function of the center from which it comes or by its peripheral connection? Give your reasons. 11. What is the effect of a destructive lesion in the posterior limb of the internal capsule? 12. To what extent is the secretion of sweat under nervous control? Vasomotor?

PATHOLOGY

1. Describe the difference in the pathologic changes which take place in degeneration of the tissues and those which take place in atrophy. 2. Give the pathology of tabes dorsalis. 3. Describe the gross and microscopic changes which take place in the spleen, liver and kidneys as a result of prolonged exposure to malarial infection. 4. What are the postmortem changes usually found in diabetes mellitus (a) in children, (b) in adults of middle age, (c) in adults of advanced age? 5. What is the average blood pressure in adults from 20 to 40 years of age measured in millimeters of mercury? And mention the results if this pressure is exceeded for a considerable time. 6. In bone tissue what variety of malignant growths usually occur and why? 7. Under what conditions is cerebral embolism most likely to occur? What blood vessels are most likely to be affected and why? 8. Describe the local lesion caused by infection [illegible] the general systemic effects and state how [illegible] usually occurs. 9. Describe the condition present in acute [illegible] of the heart. Give the immediate and predisposing causes [illegible] result. 10. State fully why urinary bladder [illegible] and be [illegible] to treatment in both elderly men and in elderly women. 11. Identify 2 slides. 12. Identify 2 slides.

HYGIENE

1. Describe in detail the method of transmission of yellow fever. 2. What measures would you adopt to prevent the spread of typhoid [illegible]? 3. What is a septic tank? Describe its construction and explain how it acts. 4. What sanitary measures should be adopted in caring for tuberculous patients? 5. Name five of the most common intestinal parasites, and give a short description of each. 6. Give three ways of fumigating a room with formalin, also two methods with other disinfectants. 7. What effect have venereal diseases on the propagation of the human species? Explain. 8. How does the hookworm usually enter the human body? What means would you adopt to prevent its spread? 9. Describe the technic of vaccination and give the course of a successful case. 10. What is the period of incubation of the following diseases: Plague, smallpox, diphtheria, scarlatina, measles? 11. What is the object of placing traps on all waste pipes? What danger to health would arise if there were no traps? 12. Describe two types of water filter. What should be accomplished by a good filter?

OBSTETRICS

1. What zymotic diseases are liable to affect the pregnant and puerperal woman, and how? 2. How soon after the completion of the second stage of labor should the umbilical cord be ligated? How dressed? What are the dangers of improper dressing? 3. What injuries are liable to occur to the birth canal during labor? 4. Under what circumstances are anesthetics indicated in labor? What are the dangers? 5. What are the causes of premature rupture of the membranes? How does it influence the progress of labor? 6. How would you determine if a child is premature at birth? 7. Differentiate between retained and adherent placenta; the management of each. 8. What can be determined by external palpation of the pregnant woman at the eighth month? How should it be performed? 9. What are the so-called false pains of labor? Differentiate from true pains. 10. Rupture of the uterus, etiology and symptoms. 11. Give the physiology of menstruation, of ovulation, relation if any. 12. What is inversion of the uterus? Diagnosis and management.

GYNECOLOGY

1. Give the conditions justifying operative measures in fixed retrodisplacement of the uterus. 2. Describe a pelvic hematocele and give the usual cause. 3. What is the pathology of pelvic cellulitis and what are the physical signs? 4. Name the most important causes of sterility. 5. Differentiate between a pudendal hernia and a pudendal hematocele. 6. What do you understand by the operation for perineorrhaphy? 7. Give the etiology and pathology of chronic endocervicitis. 8. Describe a case of carcinoma uteri and give some of the most prominent physical signs. 9. Discuss the matter of relative prognosis of cancer of the body of the uterus and cancer of the cervix. 10. Describe the mode of use and purpose of a vaginal tampon. 11. Differentiate between herpes of the vulva and chancre. 12. Name the muscles of the perineum and give the functions of the perineal body.

GENERAL DIAGNOSIS

1. Give the physical signs of a pleurisy with effusion. 2. Give the symptoms of bubonic plague. 3. Give the symptoms and physical signs of aortic insufficiency in the stage of failing compensation. 4. Give varieties, etiology and symptoms of chorea. 5. Give the symptoms of tabes dorsalis. 6. Describe a Colles' fracture. 7. Give the points on which you would make a diagnosis of cancer of the stomach. 8. Describe diabetes mellitus and differentiate it from diabetes insipidus. 9. Differentiate rubeola from scarlet fever. 10. Describe the secondary lesions of syphilis. 11. Give the symptoms of a transverse myelitis. 12. Give the symptoms of cholelithiasis.

Book Notices

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Ph.D., Professor of Physiology at Cornell University Medical College, New York City. Second Edition. Cloth. Price, $3 net. Pp. 402, with 13 illustrations. Philadelphia: W. B. Saunders Co., 1909.

This is an important publication and deserves more than passing notice. Not only does this bring the whole subject up to date but several of the chapters are practically rewritten, so great has been the advance in knowledge since the appearance of the first edition three years ago.

In the introductory chapter the author reviews the progress in our knowledge of nutrition, beginning with the "Aphorisms" of Sanctorius and following with a rather detailed account of the work of Lavoisier, Liebig, von Voit, Pettenkoffer, Pflüger, Rubner, and many others less widely known. Some fundamentally important truths of nutrition may well be quoted in the author's concise terms: "Metabolism in the body is not proportional to the combustibility of the substance outside the body, but protein which burns with difficulty outside, metabolizes with the greatest ease, then carbohydrates; while fat, which readily burns outside, is the most difficultly combustible in the organism" (Voit).

"The quantity of oxygen needed in metabolism depends on the kind of material that burns in the organism. . . . The absorption of oxygen does not cause metabolism, but rather the amount of metabolism determines the amount of oxygen to be absorbed. The metabolism of the tissues, through its oxygen requirement and its carbon dioxid production, changes the condition of the blood and thereby regulates respiration."

An intelligent basis for the understanding of the process of nutrition is best acquired by a study of the organism when it is living at the expense of materials stored within itself, as it does in starvation. In the chapter on starvation is explained that during starvation an animal lives on its fat and protein and that its length of life depends on these. When there is no fat, protein may burn exclusively, therefore "the quantity of the protein metabolism in starvation depends on the amount of fat in the body." "The actual loss of body weight is greater when protein is the source of energy than when the energy is derived from fat," because it requires 33 gm. of protein to yield 26.4 calories of heat, while 2.8 gm. of fat will yield the same.

The chapter on the regulation of temperature is a most important one. Warm-blooded animals maintain an even temperature through the interaction of two factors: (1) heat generation (thermogenesis) through tissue metabolism; and (2) loss of heat from surface (thermolysis) through radiation, conduction and evaporation of water.

Metabolism is proportional to the superficial area of an animal, but other factors, such as low external temperature, cold baths, wind, humidity and clothing influence metabolism and also modify the loss of heat from the surface of the body.

The recent interest in the "low protein" diet advocated by Chittenden gives the chapters on the influence of protein food an especial importance. Proteins are now definitely known to be constructed of chains of amino-acids. After citing the work of Emil Fischer in building up protein bodies synthetically, describing the products of their hydrolytic cleavage and the methods of the construction of muscle, gland, nerve and other tissue by their synthesis after absorption, Lusk says that any excess of protein ingested is promptly catabolized, or fat may be deposited. He discusses the influence of fat and carbohydrates on metabolism and refers to the experiments of Meissl and Strohmer, Voit, C. Lehmann and Rubner, in which it was shown by experiments on pigs, geese and dogs that the capability of building up fat out of carbohydrates is widespread in the animal kingdom. It is valuable to know that one may diet an obese patient on a food containing little protein and two-thirds of the body's energy requirement without danger of protein loss, the other third of the energy being furnished by the body fat.

In the chapter on the "Influence of Mechanical Work on Metabolism" the author shows that the muscular work does not increase protein metabolism, quantitatively, or change it in character. The power to accomplish muscular work is not usually derived from protein metabolism, but from the combustion of sugar and fat; therefore physical exercise requiring fat consumption without concomitant destruction of protein must be of the greatest value in the treatment of obesity. The increased output of carbon dioxid due to mechanical work is always directly proportional to the work accomplished.

Lusk reports the influence of alcohol on muscular work, as studied by Shumburg and by Hellsten. Both of these investigators found a temporary increase in working power of the muscle, "but after twelve to forty minutes there is a decrease in power which lasts for two hours. No such depression occurs after taking sugar. It is obvious that alcohol is not beneficial when muscular work is to be accomplished."

The influence of training is to make the use of body energy more economical.

Later chapters of this valuable work are devoted to: "A Normal Diet;" "Food Requirement During the Period of Growth;" "Metabolism in Anemia, in Diabetes, in Fever;" "Purin Metabolism—Gout," and finally Chapter XV gives a summary of the theory of Metabolism. The chapters on diet and metabolism in disease are of especial value to the clinician.

The theory of metabolism is a valuable formulation of the known facts and closes with the following sentences: "Living protoplasm metabolizes in accordance with its necessities at the time and never more. A large supply of nutrient materials will not increase cell metabolism. If food is ingested above the requirement of the organism any excess will be retained in the body (unless it has passed out unabsorbed). However clearly formulated the laws of metabolism may be—and many of them are as fixed and definite as are the laws of physics and chemistry—still the primary cause of metabolism remains a hidden secret of the living bioplasm."

The wide-spread interest in the subject of nutrition at the present time makes this a timely and valuable addition to the literature of the subject.

Hygiene and Morality. A Manual for Nurses and Others, Giving an Outline of the Medical, Social and Legal Aspects of the Venereal Diseases. By Lavinia L. Dock, R.N., Graduate of Bellevue Hospital Training School. Cloth. Price, $1.25 net. Pp. 200. New York: G. P. Putnam's Sons, 1910.

This book, after vividly describing the so-called social diseases, syphilis, gonorrhea and chancroid, historically, clinically and from their sociologic aspects, plunges into the subject of prostitution; giving the history of legislation on the subject. Segregation, regulation and licensing of prostitution are all condemned unsparingly. The author then discusses white slavery and the age of consent, and scathingly arraigns legislators, ministers and the medical profession, as well as the male population in general, for their indifference or positive opposition to measures for the betterment of the condition of women in this respect. She acknowledges, however, that through the efforts of various societies and individuals, principally supported by women, there is recently an awakening on these subjects that promises much for the future, and gives the medical profession especial credit for endorsing and supporting the proposition that continence is not inimical to health. After giving a practical outline of measures for preventing, through prophylactic education in the hygiene of sex, and by other means, many of the evil consequences of what she calls "commercialized prostitution," and the social diseases, the author, who has evidently studied long and thought much and deeply on these questions, advocates as the real solution of the problem equal standards of purity for the two sexes and woman suffrage. However one may feel about the latter conclusion, the book certainly presents in a strong manner the truth about evils which cry aloud for some solution, and should help in bringing about the enlightenment of the public. It will undoubtedly bear a goodly share in arriving at whatever measure of success is attained in that direction.

The Expectation of Life of the Consumptive after Sanatorium Treatment. By Noel D. Bardswell, M.D., Medical Superintendent, King Edward VII Sanatorium. Cloth. Price, $1.50. Pp. 130. New York: Oxford University Press, 1910.

The problem of life expectancy in the consumptive class requires for its solution accurate life-histories of a large number of patients subsequent to their discharge from sanatoria. Such histories have not been available, partly because of the difficulty of keeping in touch with discharged patients and partly because results have not confirmed the prophesies of some ardent advocates of sanatorium treatment. Dr. Bardswell has made a small but valuable contribution in this record of 241 cases of tuberculosis, which includes 62 cases of incipient disease, 95 of moderately advanced and 84 of far advanced cases. He believes that his statistics indicate that a permanent recovery may be expected in from 70 to 80 per cent. of cases of early consumption, in from 40 to 60 per cent of moderately advanced cases and in 8 to 10 per cent. of the far advanced cases. If like statistics from many observers can be steadily collected and critically and impartially analyzed, we may, in time, arrive at the consumptive's expectation of life and at the same time ascertain the true value of the sanatorium and other treatment.

A History of the London Hospital. By E. W. Morris. Cloth. Price, $1.75 net. Pp. 296, with illustrations. New York: Longmans, Green and Co. [1910].

Those who imagine from the title of this book that it is a dry and prosy chronicle of facts relating to the institution named in the title will be agreeably surprised. The author has really painted a panoramic picture of the progress of medicine and surgery from the time of the founding of the London Hospital, in 1740, to the present time. More than that, he has given in interesting detail the conditions obtaining among such of the poor and needy as, when ill, applied to this hospital for relief. The book is indeed a history, and a most instructive one, of British medicine, with the London Hospital for a central theme. To read it is to admire the magnificent pioneer work of those who have gone before and to be thankful that one is living in the twentieth century. Having read it, one has a clearer conception of what the British system of supporting hospitals by voluntary contributions means.

The Diseases of Infancy and Childhood. Designed for the Use of Students and Practitioners of Medicine. By Henry Koplik, M.D., Attending Physician to the Mount Sinai Hospital. Third Edition. Cloth. Price, $5. Pp. 944, with 233 illustrations. Philadelphia: Lea & Febiger, 1910.

This edition is considerably enlarged, thoroughly revised and brought up to date. The book reflects the mature experience of a keen observer. It is reliable throughout, is abundantly illustrated, and is, in every way, well balanced, both as a textbook for the student and as a reference book for the general practitioner. The chapters on certain subjects with which the author is perhaps most naturally associated in our minds, such as those on meningitis, the acute infectious diseases, etc., are especially noteworthy. The chapters dealing with infant feeding and nutritional disturbances in infancy reflect to a large extent and in a very refreshing, though conservative, manner the recent advances in our knowledge of that subject. The book can be safely recommended as one of the best exponents of American pediatrics.

The Conquest of Consumption. By Woods Hutchinson, M.D., Author of "Studies in Human and Comparative Pathology," etc., and Clinical Professor of Medicine, New York Polyclinic, etc. Cloth. Price $1 net. Pp. 158, with illustrations. Boston: Houghton Mifflin Company, 1910.

Woods Hutchinson is a sort of hygienic John the Baptist and goes forth preaching in the wilderness of the lay world. He discusses the enemy—tuberculosis—what happens to the bacillus in the human body, the weapons for the fight against the enemy, how to get fresh air and sunlight (he considers food in reality as the greatest foe of consumption), discusses intelligent idleness, the question of the camp and country, the personal question, the expense of treating tuberculosis, the matters of climate and health and ends with specifications for the open air treatment of tuberculosis at home. The book is hopeful, encouraging, and can be heartily commended.

Prescription Writing and Formulary. By John M. Swan, M.D., Associate Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia. Flexible leather. Price, $1.25 net. Pp. 185. Philadelphia: W. B. Saunders Co., 1910.

This is an excellent little manual. Owing to the multitude of private formulas and "ethical" proprietary remedies, the average student who graduates is unable to write a prescription correctly. This little manual takes up the construction of prescriptions, Latin forms and terminations, the Pharmacopœia, weights and measures, doses, abbreviations and incompatibilities and has an appendix of more than 100 pages devoted to a formulary for various conditions, alphabetically arranged.

The Influence of Strong, Prevalent Rain-Bearing Winds on the Prevalence of Phthisis. By William Gordon, M.D., Physician to the Royal Devon and Exeter Hospital. Cloth. Price 7 shillings 6 pence net. Pp. 108, with illustrations. London: H. K. Lewis, 136 Gower St., W. C., 1910.

This work shows an enormous amount of detail work and it is regrettable that it can be of little value save to the statistician. Few conclusions of value are made—the most important probably being that the prevalence of strong rainy winds appears to be remarkably associated with the increased prevalance of tuberculosis while the absence of such winds appears to correspond strikingly with the rarity of the disease.

Society Proceedings

AMERICAN ACADEMY OF MEDICINE

Thirty-fifth Annual Meeting, held in St. Louis, June 4 and 6, 1910

The President, Dr. James H. McBride, of Pasadena,
in the Chair

The officers elected were given in The Journal, June 18, p. [illegible]

Report of Committee on Essential Subjects to Be Taught in a Medical School

Dr. Edward Jackson (Chairman), Denver: A most urgent present need concerning medical education is careful consideration of just what matter should be placed before the student by the teacher of each subject in the medical curriculum. The paramount need is wise selection. The giving to each individual teacher absolute control of the matter of selection and of a certain portion of the time and energy of each medical student, with little attempt to closely co-ordinate his own with the work of the different departments, has developed a state of pedagogic anarchy. A proper corrective would be a general discussion in which the suggestions of the teacher of one branch should be criticised by the teachers of the other branches.

In this connection it would seem advisable that the Academy should devote a mid-year conference, held probably in connection with the Association of American Medical Colleges, to the discussion of this general subject. The underlying thought of papers presented at such a conference should be to seek an agreement as to the relative order of the importance in the training of the topics to be taught in a particular branch. In making such selection of topics certain general needs and facts must be acknowledged as fixing their relative values in the required course. For example:

The general developmental value of the topic, especially in the fundamental branches. Some natural order of development, and the practicability of studying certain things better in college while others may be as well or more readily studied afterwards. The need of mutual understanding among physicians in giving professional unity; the appreciation by each of work in all branches with ability to appropriate that which can be made useful in one's own work. The facts that every graduate should be fitted to render some definite practical service to the community before he is heralded as a doctor of medicine, and that the required undergraduate training is the beginning of a process normally to continue throughout the whole professional life.

While, for development in conformity to individual tastes and desires, some freedom must be given from the beginning, the full latitude in this respect must be left for the postgraduate period of development.

Educational Principles Involved in the Combined Course in Arts and Medicine

Dr. A. Ross Hill, University of Missouri, Columbia: The arrangement by which a student pursues general courses in letters and science for two or three years, then for a year or two follows about equally fundamental courses in the sciences of anatomy and physiology with vocational or professional motive to stimulate his interest, but with an emphasis on the spirit of discovery and on scientific method, then spends two or more years in specifically professional training with the hospital clinics for his laboratory, seems to recognize the normal development of special interests and the gradual growth of professional insight toward that maturity of judgment which is demanded of even the beginner in the field of medical practice; while it saves the immature student from the pursuit of that narrow practicality which forever limits his power to think and his ability to grow and adapt his judgment to new conditions and new scientific discoveries. To object to it on the ground that it means counting one and the same course to two degrees is purely formal and arbitrary and would be considered puerile were it not for the educational standing of those who offer the objection. The severest criticism that seems at all fair to pass on the combined course is that it is good enough for those who will not adopt a better plan, the better plan being the requirement of the A.B. degree of candidates for entrance to the school of medicine.

The ultimate solution of the problem of how to secure sufficient breadth of preliminary training for the medical student without unduly prolonging the period of preparation seems to lie in the improvement of our elementary schools, which are now wasting about two years of the average pupil's time. When the present standard for the A.B. degree will have been attained by normal, unretarded youth at twenty instead of twenty-two years, the requirement of an A.B. degree, representing in the main humanistic culture, will become a natural standard for admission to schools of medicine, and the combined course will become inadvisable. Till then it seems not only to furnish a reasonable standard of requirement, but to be based on sound educational principles.

Is the Profession Losing Its Grip?

Dr. Charles McIntyre, Easton, Pa.: Physicians of to-day do not occupy the same relation to the world of education and science as they did in the middle of the last century. Many doctors of medicine were teaching general science and other subjects in colleges in the decade 1841-1850, while to-day in these colleges not a single M.D. occupies a corresponding chair. On the other hand, it is a frequent occurrence to find men without the M.D. degree holding prominent chairs in medical colleges, serving as directors of health departments of our municipalities and writing school physiologies. The question is raised, is not the condition due to the narrowing influences of the early specializing in the present scheme for medical education? Professor Dewey, of Columbia, is quoted as saying that much of the science teaching has failed to be a means of liberal education because of the faulty method of many of the teachers, and the assertion is made that the temptation to pursue the faulty method is greater in the medical college than in the undergraduate department. It may, perhaps, be said that the present system of education is not a success because its promoters are desirous of so many changes requiring more time. It seems pertinent to question the correctness of the principle of the present scheme, and to suggest that more attention be paid to the preliminary general education than now, teaching thoroughly the rudiments of medicine in the medical course, and transferring much that is now attempted to elective postgraduate work.

DISCUSSION

Dr. E. P. Lyon, St. Louis: My own observations have shown me that the man with the two years' training, the man who takes six years of college and medical work, is able to advance to a much higher degree of attainment than the man who goes into the medical school from the high school. I believe the combined course is the ideal toward which we should all work in medical education. I agree with Dr. Jackson in his reference to a state of "pedagogic anarchy" in some medical schools. It would seem that there ought to be a medical normal school in which men could learn how to teach. In my opinion the main reason why men who devote their entire time to the fundamental sciences should be encouraged to teach these subjects rather than practitioners is that most of them are graduates of laboratories in which they have had to do some teaching and are men pre-eminently interested along this line.

Dr. Thomas D. Davis, Pittsburg: The trouble with our medical educational institutions to-day is that they are trying to make too much out of students and demanding of them many things that are impracticable. No one should leave college with the idea of being equipped as a specialist. That is the work of the post-graduate school.

Dr. J. E. Tuckerman, Cleveland: The man who would be fitted by temperament, by natural ability, to take up the study of medicine has no need to waste, as he now does below the college course, two to four years. We must begin far down in our educational system to put it on a proper basis. If we say that laboratory teaching should be done entirely by laboratory men, we run into another difficulty. I have known efficient chemical laboratory men to be ignorant of clinical facts concerning drugs about which they were teaching.

Shall the Ph.D. Be Granted for Work in the Surgical Sciences?

Dr. Arthur E. Hertzler, Rosedale, Kan.: The functions of a university are humanistic, scientific and practical. The practical can reach its highest perfection only when based on the humanistic and the scientific. The science of medicine is a department of biology. Applied medicine is but the discovery and application of forces which negate the counteracting forces as revealed by pathology. Chemistry, anatomy, physiology and pathology are now accorded academic recognition. With men and equipment equal to those now available for the fundamental branches, surgery would reach and maintain the same high scientific level. So-called practical medicine is but an apology for the lack of scientific methods, with the introduction of scientific methods. Practical medicine will give place to the "applied science of medicine." With the granting of university rank the science of surgery will share the benefits of definite organization and will profit by the humanistic spirit of the university, and will encourage picked young men who desire to devote themselves to scientific careers to select surgery as the field of their activities as the fundamental branches have in the past.

DISCUSSION

Dr. Henry B. Ward, Champaign, Ill.: The answer to Dr. Hertzler's question must be traced to present conditions. For the granting of the Ph.D. in the surgical sciences there must be in the curriculum opportunity to do research work. The intensiveness also of an institution is a factor. The man who would take the degree must have the opportunity to go far beyond the limits of ordinary instruction. How many of our colleges are prepared to offer this opportunity? In the matter of adequate teaching, the man who shall successfully direct the work of the student for the degree of Ph.D. must be one who has the vision of the prophet, one who sees beyond the limits of the known, who has sufficient grasp and insight into the future to indicate to his disciple the successful lines of attack in mastering the unknown. And, while results depend largely on environment, fundamentally they depend on the individual student, and the question ultimately is one of mental caliber. Personally, I confidently look forward to the time when the medical schools of this country will not only in surgical sciences but in all branches offer the Ph.D. degree, and will carry their students to the point where they will thoroughly deserve that degree. Then the contributions of America to the advancement of medicine will be worthy of a great nation.

Dr. Henry B. Hemenway, Evanston, Ill.: I hope the day is far distant when Professor Ward's proposition will come true. I would have the degree of M.D. stand for the very best we can get in medicine, allowing to those who have achieved something extraordinary an honorary degree. Let it be a purely honorary matter, not a matter of commercialism. I do hope, however, to see the time when the colleges all through the land will give a training which would be equal to that which might command the Ph.D. degree.

Correlation of School Health Supervision With Other Health Agencies

Dr. Ernest B. Hoag, Berkeley, Cal.: School health supervision ought to be under the control of the Board of Education and not under the board of health in all places, with the possible exception of larger cities with well organized governments. There ought to be a cooperation between the school health officers and the city health officers that there need be no duplication of effort. It is usually possible to bring various health organizations such as the associated charities, the medical dispensaries, the dental dispensaries and certain social welfare societies under one general organization. In Berkeley all of these health agencies have been brought together under one roof with great economy of effort, effectiveness, time and money.

The School System and the Child

Dr. A. L. Benedict, Buffalo, N. Y.: In reference to the frequent condemnation of the modern system of education, it may be said that a system that has been increasingly bad should manifest itself by an increasing mortality in the rising generation. On the contrary, there has been a decided decline of the death rate and an increase of the average longevity of about seven years in a generation. Much of the reputed ill-effects of our school system may be attributed to extrinsic causes. Many children are insufficiently fed and clad, and are overworked by their parents. The criticism that the school system treats the children wholesale instead of considering individual capabilities is but a reflection of the requirements of life in a republic. While in large cities the establishment of special courses for those above and below the average capability might be advisable, the present standards represent fairly well the capability of the majority of pupils. The school has been of immense benefit also in having corrected purely physical defects, the cause of dulness. The verdict of the child himself is distinctly favorable. Even proportionate to the population the high school attendance has doubled or quintupled in the last 25 years. This could scarcely be the case if the grammar school were either physically injurious, cruel, or inconsistent with the real needs of the people.

DISCUSSION

Dr. Thomas D. Davis, Pittsburg: We do not give the public schools the high praise they deserve for what they accomplish in the small amount of time they have with the scholars. The charge is often made that the children are burdened with overwork, but I could cite instances showing that the strain is put on the child at home, and the school is wrongly charged with the nervous break thus wrought.

Dr. Helen C. Putnam, Providence, R. I.: How we look at the public schools depends on what we consider they are for. We consider that they are to make good citizens. The parents have been criticized very severely, but the public schools did not educate them to become good parents, consequently their children are not being well trained. That is one way in which the public schools are far behind the needs of the country. We have 500,000 tramps, and over 90 per cent. have been in our public schools. Why are they tramps if the public schools did their duty by them? We have a large class of paupers unable to support themselves and only a small proportion able to read and write. There is something about the education of the masses in this country that is at fault. I am entirely willing to grant a lot of good intention with regard to the public schools, but until we can supply institutions that will give teachers a better training, and have appointed committeemen who instead of being politicians, are up to the standards in their ideas with regard to education and what education is for, I think we must strive with every faculty we have to try to improve our public schools.

Dr. Leartus Connor, Detroit: The importance of manual training in the schools ought to be emphasized. The severest criticism I have to make of the whole school system is that it magnifies the power of book knowledge to the detriment of the practical knowledge that enters into the life of a citizen.

Dr. Henry B. Ward, Champaign, Ill.: I agree with Dr. Putnam that the schools are not doing what they ought, but that is not the fault of the schools. When we consider that the child spends one tenth of his time under the influence of the teacher it is unreasonable to charge the shortcomings in the case to this influence and ignore the other 90 per cent. of influence. The fundamental difficulties can never be righted exclusively by the school. There will be required the influence of the home to make the product of America higher and better in the next generation.

The Social Aspect of the Gonococcal Infection of the Innocent

Dr. W. A. Newman Dorland, Philadelphia: Discarding the statistics of the alarmists, who estimate that as many as 90 per cent. of pelvic inflammatory cases in women are due to the infection, 50 per cent. may be attributed to this cause. Not only are there innocently infected women, but there has been marked increase of the infection in little girls. It is the concern of the medical profession to exert greater care in the "social" treatment. Social status does not afford immunity and social status does not guarantee personal purity. While the time may not be ripe for the state to require a medical certificate the young woman's parents may demand a clean bill of health. Especially should the profession avoid the fallacy that health and continence are not compatible. By no means during the presence of the disease should a gonorrheic marry. The disease is curable, when cured there is no danger of communication.

Ocular Disease in Hereditary Syphilis

Dr. S. D. Risley, Philadelphia: More than 60 per cent. of all cases of iritis applying for treatment are due to syphilis, and at least 35 per cent. of all blindness is the result of gonococcic infection during parturition. The vast majority of cases of interstitial or parenchymatous keratitis are unquestionably due to hereditary syphilis. Thus syphilis stands to-day, as it has stood for generation after generation, the darkest blot on the fair escutcheon of our Christian civilization. Attention should also be called to the very large group of patients suffering from chronic forms of eye disease which are difficult to classify, but which are doubtless due to impaired general nutrition, the result of mild or less virulent doses of the infection.

The Social Plagues and the Public Schools

Dr. Ira S. Wile, New York City: The state in compelling attendance at public schools tacitly assumes the responsibility of safeguarding children from all contagious and preventable diseases communicable at school. Books on school hygiene and medical inspection of schools do not refer to venereal diseases as part of a school problem. Medical examination of teachers demands more attention. Janitors, scrub women and attendants are known sources of venereal infection. Of the new admissions to schools for the blind in 1907, 25.21 per cent. were due to ophthalmia neonatorum. To educate the blind costs eleven times as much as to educate one with normal sight. The school problem consists principally in prevention by abolishing common drinking cups, towels, pencils, sponges, etc. Toilet facilities must be improved. Examination of genitals must include microscopic examination of mucus or pus. The boards of health should make such examination gratis. Children require better hygienic education in order to protect themselves when puberty develops.

The Black Plague and the Educational Remedy

Rev. George R. Dodson, St. Louis: In fighting the black plague the first thing is to turn on the light. At present we instruct children in many matters of minor importance and keep from them the knowledge that would save them from their greatest dangers. In conveying this instruction the simple, direct method is the best. There is nothing so eloquent as the terrible facts. It is essential that the people should initiate and carry on this reform, for only those social movements which have behind them popular conviction "stay put." Such legislation as may be enacted should aim rather at enlightenment and educational effects than at considerable direct results. The public will respond as soon as it is made clear that venereal disease destroys not only the dissolute, but that in immense numbers it blights the lives of the innocent. Furthermore, the teaching that saves from the black plague will also raise the whole subject of the transmission of life from the low plane it occupies in the thoughts of many, and the by-product of our instruction will thus be of almost as great value as the public health which is the main aim.

OHIO STATE MEDICAL ASSOCIATION

Sixty-fifth Annual Meeting, held at Toledo, May 11-13, 1910

(Concluded from page 155)

Two Cases of Heart Block

Dr. L. C. Grosh, Toledo: One case illustrates block at the auriculoventricular juncture, and the other at the sinoauricular juncture. By heart block is to be understood an imperfect conduction of the impulse from one cavity of the heart to another. In man two forms have been found: a failure of some of the beats to pass the block, and when none of the impulses are conducted from one part to another. Either of these may result from interference with the vagus center; any interference with the vagus nerve or its terminals, or by changes in the myocardium. The first case was under observation for four years with unusual opportunities for registering both the venous and arterial pulse. The condition was changed from complete block to normal two different times. The blood pressure was at all times over 200. There was a complete series of transitional forms from the 1-1 rhythm in which conduction was adequate, through 3-2, 2-1, 5-2, to 7 3 and 8 3 rhythm, and it is difficult to state at what point the ventricle became independent of the auricular tutelage. The second case, that of a man showing emaciation, anemia and a palpable tumor connected with the pylorus, was under observation a year, during all of which time the arrhythmia persisted without fundamental change until death. A microscopic examination in the area described by Heath and Flack revealed marked proliferation of the connective tissue and minute plaque like calcareous deposits.

DISCUSSION

Dr. J. E. Greiwe, Cincinnati: The interesting feature of the analysis is that the muscular tissue of the heart must be considered as divided into two classes: the tissue which has to do with contraction and expansion of the blood vessels, and the tissue which is associated with the function of conductivity. There is a definite path for the stimulation of conduction. It has been found that this does not pass directly to the ventricular wall but into the papillar muscles, and on to the muscular fibers from above downward and then back to the heart. If there is a sclerotic process of the heart, a great deal depends on the seat of the trouble. In acute myocarditis there may be no change in the rhythm of the heart; and where there is marked change in the rhythm there may be no extensive myocarditis.

Dr. L. C. Grosh, Toledo: The work done from a physiologic standpoint is of great importance. The rather peculiar tissue that is gathered into the so-called bundle of His has had some of the primary functions of the heart attributed to it, and while this is more or less speculative, I feel that the heart has developed up around this peculiar primary cardiac canal.

Diagnosis and Treatment of Early Pulmonary Tuberculosis

Dr. J. P. DeWitt, Canton: The fact that present methods of treatment will effect a cure in tuberculosis in ninety to ninety-five per cent. of cases if applied early should stimulate all medical men to become competent to make an early diagnosis. Inspection, palpation and percussion are of little value in early cases, and information must be had through auscultation. One should proceed to the use of tuberculin to prove the diagnosis. Close observation will often reveal a local reaction (e. g., by the use of Hay's laryngoscope) without general reaction occurring. The inunction of the tuberculin ointment of Moro or the cutaneous test introduced by von Pirquet is usually employed first; if reactions do not occur, the old tuberculin of Koch is injected subcutaneously. After gradually increasing the dose from one-tenth to ten milligrams, if no reaction has occurred it is quite certain that the patient has not early tuberculosis. Few patients in limited financial condition ever recover from well-developed tuberculosis. Observation will show that many supposed to have been cured by rest and feeding relapse. A cure is due to the infected organism establishing an immunity to the tubercle bacillus. I have never seen harmful results from reactions, but often marked improvement follows where previously the patient was not doing well. If there is a temperature of 100 degrees or over the patient is put to bed until the temperature is normal. Patients immunized with tuberculin do not develop complications of the larynx, glands or bowels, and very few relapses are noted, while patients apparently cured without tuberculin frequently relapse and develop complications. Return of the bacilli proves that the patient was not cured. Patients given specific treatment, plus hygienic treatment maintain their immunity to the tubercle bacillus and its toxin.

DISCUSSION

Dr. R. P. Daniells, Toledo: The many different dilutions of tuberculin put out by the various companies have made its use apparently so easy that it has become a dangerous thing, because not given carefully, and because the person giving it does not understand how it is being given and why, and he does not watch the patient. It is one of the most valuable aids in the treatment of tuberculosis, if given carefully. The skiagraph is another important aid in diagnosis, and shows some things absolutely impossible to learn in any other way—the healed tuberculous lesions.

Dr. John North, Toledo: The tuberculous pulse differs from every other, furnishing a means of early diagnosis. This peculiar pulse will occur two years before the case can actually be diagnosed by physical tests. If a patient has the full proportion of calcium in the body he is immune from tuberculosis. The tuberculous patient eliminates lime, he cannot assimilate it, and the things that give the best results are milk and eggs, both of which contain a large proportion of calcium salts. Put them in condition to assimilate by hydrochloric acid, and they improve. The pregnant mother has tuberculosis because she has taken the lime from her body to build up the body of the baby.

Dr. L. A. Levison, Toledo: In using the test of von Pirquet if the reaction is not at all positive, if one will wait until the next day and inject a small dose subcutaneously, there will be a reaction, even when the dose is not enough to induce a rise of temperature. This is valuable in cases where it is not advisable to use the old methods of Koch.

Dr. William E. Hover, Lima: All people who have cold hands and feet, who dread to sit in a draft, who will not eat beef steak cooked rare, and who cannot or will not take milk, should be looked on as having incipient tuberculosis and treated accordingly, whether they react to the test or not.

Dr. Oscar Berghausen, Cincinnati: In considering the primary pathology it is often found that the infection occurs from a primary bronchial lesion. It must be borne in mind that there may be a primary lesion in the kidneys, and if this is suspected, care must be taken not to set up a complication through the use of the tuberculin test.

Dr. J. P. DeWitt, Canton: The main point I wished to bring out is that patients apparently recovered from tuberculosis by the use of rest, food and fresh air, are not well and will react to tuberculin, and a great many do relapse; but patients who have in addition immunizing doses of tuberculin have a different appearance, and they do not relapse.

The Treatment of Pneumonia

Dr. James L. Tracy, Toledo, sought to emphasize the importance of studying the treatment with reference to the biology of the disease. The cells in the lungs whose functions are so directly impinged on by the diplococcus call to their aid and defense the functions of co-ordinate and interdependent cells, and from these in turn go out calls for organic functional assistance, and that functional assistance which is so promptly rendered is made up of those abnormal functional processes by whose functions is constructed the lymph dam of diplococcus infection; and the specific characteristics of the lymph dam for the diplococcus shows a prearranged preparedness of systemic integrity for resistance to that particular infection. None of the emergency processes can be absent from the general plan for systemic defense without rendering the other processes ineffective. They fit one into the other as the physiologic processes fit one another, and together these unusual organic functional processes are, biologically, as really and intelligently as defensive of systemic life as are the usualy organic functions of the body, biologically, constructive and conservative of systemic life. This being so, it is therefore wise, and hence scientific treatment of pneumonia, at the first visit, to confine the efforts at helpfulness to the patient to the furnishing of sustenance to these organs which are so excessively functionating; the treatment must be hygienic and dietetic.

The Protection of Child Life

Dr. C. O. Probst, Columbus: Human life, which means productive energy, should be regarded as the main one of our natural resources. The state could greatly extend and perfect measures that have already in a limited field proved effective, as the control of the milk supply, the education of dairymen and parents. It could place one or more honest inspectors in each county to enforce its requirements, and might have a traveling dairy exhibit along the lines of the tuberculosis exhibit. More progress would be made if no further effort were made to "teach old dogs new tricks," but attention should be devoted to the training of the school children in hygiene and sanitation and physical education. This would mean a new man in school life, a school physician; it would mean school supervision, not school inspection.

Most of the school books could be utilized to teach certain health subjects. Sums in arithmetic could deal with sanitary problems as well as interest or land measurement. In teaching geography, maps might show the relative prevalence of tuberculosis in different countries, and in history the great plagues could be recalled to show the blessings of improved sanitation and vaccination. If great deeds are to be chronicled to inspire patriotism, why should the heroes of godless wars be selected rather than the heroes of life-saving, preventive medicine who have laid down their lives in battling against or searching for the cause of pestilential disease? If presidents, and members of congress, legislatures, councils and school boards had themselves been given such instruction, efforts for a national health department would be vastly easier of attainment. Education in matters of health should be begun with the grandparents of children to be born fifty years hence.

Three Years of Serum Therapy in Epidemic Cerebrospinal Meningitis

Dr. William S. Chase, Akron, Ohio: In the serum-treated cases, after one or two subdural injections, the cerebrospinal fluid becomes clearer. Microscopically, there appears a preponderance of intracellular meningococci and the nuclei no longer take the stain well. There is a decrease in the leucocytes in the spinal fluid and also a fall in the general leucocyte count. In the cases which react favorably, within twenty-four hours the temperature falls, frequently to normal, all symptoms of hyperesthesia are greatly reduced and the patient passes from a period of wild delirium to one of perfect quiet and complete consciousness. Subsequent exacerbations in these cases are less so severe and improvement follows other injections. It is interesting to note that the neck rigidity and the Kernig sign are usually the last symptoms to disappear, and frequently continue well into convalescence. The average duration of the disease in the serum-treated cases is about two weeks, as against five or six weeks of tedious illness in those which went on to recovery under previous methods of treatment. Complications are practically suppressed. In the cases injected early deafness is common.

The earlier the serum is given, the greater is the chance of recovery. Work done in the French epidemic last year suggests the strong probability that cases treated with the subdural injections in the early prodromal stage may be aborted. Lumbar puncture should be performed as a diagnostic measure in all suspected cases.

DISCUSSION

Dr. Zinninger, Canton: Flexner has been wise in restricting the use of the serum to men who could confirm their diagnoses by scientific methods. If there is to be improvement in the use of the serum, either it must be in its production or in the technic of its administration. One of the most interesting things to consider is whether there are different strains of the diplococcus, and Flexner is working on this question now. It is known that this is true of other cocci, and those following the methods of vaccine treatment know that an autogenous vaccine is superior in nearly all cases to that made from the stock vaccines.

Exudative Erythemas and Their Visceral Manifestations

Dr. Mark E. Brown, Cincinnati: My paper refers to those involvements of the skin characterized in one instance by serous exudate (angioneurotic or localized edema), in another by serous exudate plus hyperemia (urticaria); in a third by serous exudate plus hyperemia and hemorrhage (erythema multiforme), and in a fourth by exudation or extravasation of erythrocytes (purpura). While any of these conditions may present itself alone their not infrequent relationship with arthritis or with certain serious and well-marked visceral lesions or both renders the symptom-complex interesting to clinicians. In different attacks in the same individuals, different manifestations or combinations may be present and give rise to varied diagnoses—Schoenlein's disease, Henoch's purpura, angioneurotic edema or urticaria—all of which may have been correct in so far as that particular attack was concerned. As to internal changes, the most important are those involving the heart, as endocarditis and pericarditis; the kidneys, as nephritis; the gastrointestinal crises, and hemorrhages. The symptom-complex then promises a number of skin lesions, a variety of internal disorders and an arthritis of varying intensity.

In five of seven cases arthritis was present, and in the two remaining arthritis had been present in previous attacks. Occasionally there is synovitis or periarticular inflammation; but one is impressed with a relationship to articular rheumatism, particularly as there was, in several instances, a preceding or coincident tonsillitis. All patients with arthritis had some fever. Sweating was not present. Eruption was present in considerable variety. In all but two there was purpura hemorrhagica, in three localized edema, in one urticaria, in one erythema nodosum, in two erythema multiforme, in one vesiculation. In several, different cutaneous manifestations occurred at the same time, in others there were different eruptions at different attacks. There were two cases of acute endocarditis, two of acute nephritis and in two others hematuria. In one there was chronic nephritis from the onset, but no blood was found. In three there were abdominal cramps, in one pleurisy with effusion, followed by dry pleurisy on the other side.

Pulmonary Manifestations of Syphilis, with Report of Cases

Drs. H. W. Dachtler and R. P. Daniells, Toledo: During the past year, in examining about ninety patients for pulmonary tuberculosis, and studying the condition of the lungs with the help of the skiagraph, most of the cases were found to be uncomplicated tuberculosis, a few were mixed infections of tuberculosis and syphilis, while six cases came under observation which proved to be uncomplicated syphilis of the lungs. The patients came or were sent because they were losing weight and had a slight fever; some had a little dry cough; all were easily fatigued, and they, or members of their families suspected beginning consumption. These six cases are reported because they suggest that a syphilitic condition occurs more frequently in the lung than is usually suspected, and because it closely resembles the early stages of pulmonary tuberculosis. In all the cases tuberculosis has been eliminated first by no reaction to 12 mg. of Koch's old tuberculin given hypodermically; and second, by no signs of tuberculosis demonstrable in the skiagraphs. Moreover, syphilitic infection has been proved either by a direct history of infection or by a history of miscarriages with other syphilitic signs and symptoms, and a rapid improvement on antisyphilitic treatment, and in one case by the Wassermann reaction. From the study of these cases, we believe that a syphilitic condition of the lungs occurs more frequently than is generally suspected, and that without doubt it is often treated for pulmonary tuberculosis.

Intravesical Operations, with Report of Cases

Dr. Charles M. Harpster, Toledo: With the cystoscope we are able to see many conditions rather than diagnose them by symptoms, such, for instance, as papillomata, sarcomata and carcinomata, foreign bodies of all sorts, ulcerations and their character, cystitis and its mode of infection, prostatic and pericystic enlargements, the condition of the ureteral orifices, activity of urinary secretion, absence of either kidney, double ureter on one side, hematuria following renal colic, tuberculosis or renal carcinoma, and various infections of kidney and bladder. In time to come the cystoscope will be used more in catheterizing the ureters, in applying suction or hyperemic treatment to bladder conditions or in drawing urine from the ureter and in making applications to diseased areas, in the removal of foreign bodies, removal of growths by snare, incision of strictured ureters or their dilatation, and many other operations and procedures. Ureteral catheterization is of service in showing the patency of the ureters, in obtaining separate urines and in finding calculi, crystals, epithelium, casts and tuberculous material and determining the competency of either kidney. With a bismuth fused catheter *x*-ray confirmation of diagnoses may be made, and the catheter may be used during gynecologic operations to prevent injury to the ureter, as is done by Olshausen and others. The Luys separator is useful for diagnostic purposes where the condition of the bladder has been previously determined by the cystoscope. Errors which may arise with either the catheter or the Luys separator are due to faulty instrumentation, reflex oliguria or polyuria caused by the instrument or the collection of urines at inappropriate times. Two factors are necessary with catheterization to give accurate quantitative results: a catheter with a terminal opening, and Albarran's method of methylene blue injection into the catheter. In prostatic enlargements of old men in whom general or spinal anesthesia are contraindicated the technic and instruments of Goldschmidt are useful. Under a 2 per cent. solution of novocain the obstruction, especially if a bar or medium projection, can be incised under the guidance of the eye. With the old Bottini instrument or the Freudenburg modification this could not be done. Multiple incisions cause contraction of the gland. One out of every four cases of prostatic hypertrophy is cancerous. This method of treatment offers hope of preventing cancerous development by relieving increased tension and pressure on the gland and decreasing the irritation from residual urine. If it will stay or prevent cancerous development in even a small number of cases in the inception of the condition its use must become a fixed procedure in surgery.

AMERICAN NEUROLOGICAL ASSOCIATION

Thirty-sixth Annual Meeting, held in Washington, D. C., May 2-4, 1910

(Concluded from page 158)

Myositis Fibrosa Following Nervous Breakdown

Dr. John K. Mitchell, Philadelphia: A nervous breakdown from overwork was followed by an attack of fever of unknown origin, with great prostration. Four months later a stiffness in the extensors of one thigh was noticed. A like stiffness and hardness successively appeared in muscles of other parts. This increased in degree until the patient was almost crippled. A portion of muscle excised during life exhibited widespread fibrous degeneration, the muscle fibers being in some places replaced by fibrous tissue, in others pushed aside by it. In cross-section radiating striæ, apparently of fibrous tissue, are seen. The patient improved under treatment.

Friedreich's Ataxia

Dr. William G. Spiller, Philadelphia: In this case, in addition to the usual findings in the spinal cord, the peripheral nerves were greatly degenerated; recent degeneration detectable by the Marchi method was seen in some of the muscle fibers, and the cerebellar nuclei showed alteration of the nerve cells. Many naked axis cylinders were detected by the Bielschowsky stain in the columns of Goll, which by the Weigert hematoxylin stain appeared almost completely degenerated. Friedreich's ataxia is not a degeneration confined to the spinal cord or cerebellum, but is the result of implication of the entire central and peripheral nervous systems.

DISCUSSION

Dr. E. W. Taylor, Boston: In one case which I studied there was a striking degeneration of the cerebellar tract and of Gower's tract. I would ask whether Dr. Spiller was able to trace this degeneration of Gower's tract into the cerebellum, and whether anything has been done toward tracing Gower's tract and the cerebellar tract toward their terminations.

Dr. B. Sachs, New York: The distinction between Friedreich's ataxia and amaurotic family idiocy is interesting. In hereditary ataxia we evidently have an involvement chiefly of tracts of peripheral structures, and no doubt there is some cellular involvement as well, while amaurotic family idiocy is a purely cellular disease. Some years ago these cases were spoken of as cases of arrested development. These family diseases would not occur if there were not some vital defect in the germ plasm. That vital defect makes the organism less resistant to extraneous influences or to influences within the body than it would be if this vital defect in the germ plasm did not exist. I do not believe that any family disease can be due to an extraneous toxic or infectious agent, but an infectious agent that is formed within the body itself is conceivable, particularly if you admit that the injury done to the germ plasm in the first place makes the various structures of the body less resistant to poisons formed within the body itself.

Dr. W. G. Spiller: The Wassermann reaction was not taken, but there were no clinical manifestations of syphilis. The pathology shows no round-cell infiltration, such as is characteristic of the nervous system. Gowers' tract was not degenerated, although in many cases of Friedreich's ataxia it has been. Cellular changes are not usually found in Friedreich's ataxia, according to report. The nucleus dentatus in this case showed decided cellular changes. There were also some changes in the cortex.

Freud's Analytic Method

Dr. James J. Putnam, Boston: In so far as Freud has shown us a valuable means of studying the processes which go on unconsciously within our minds and the respects in which they lead to traits of character and temperament, it is difficult to see how any one can fail to recognize the importance of his work. Most of the criticisms have come from persons who have failed to verify his conclusions. However, the more carefully and thoroughly the method is applied, the more accurately the conclusions derived from it will be found to coincide with those laid down by Freud and others who have followed in his footsteps. It is obvious that the talents and interests of neurologists are not all of the same sort, and for those to whom the study of the mind in health and in disease appears the most important portion of the physician's work, the contributions of this relatively new field are certain to seem of marvelous promise and of immense practical importance.

DISCUSSION

Dr. G. L. Walton, Boston: One important difference between these memory pictures and those of the waking life is the inability of the dreamer to measure time and space; but the main distinction lies, perhaps, in the absence of goal ideas and of the power of control which enable us in our waking hours to guide our thoughts more or less successfully in definite channels. The associations by which these pictures are assembled will vary with the individual and be tinged by his emotional tone, but to read into them, however ingeniously, the fulfilment of desires is to strain a point, and to substitute a preconceived notion for the study of facts. To credit mere memory pictures, distorted at that, with being symbols is unduly to glorify the dream state. I should perhaps rather say unduly to debase it when the symbols are of the character which permeates the works of this author. The reproduction of a dream in detail, and its analysis, is not only baffling and valueless in my opinion, for medical practice, but may be harmful.

Dr. B. Sachs, New York: I would agree with anything of Freud's if I could feel that his teachings were absolutely sound. There are several practical reasons why they do not appeal to me: the first counts least, that is, the length of time the examination takes and the smallness of the result. The most serious objection to the method is that it has had a distinct sexual taint given it. It may be of great interest to the neurologist to find out that some sexual misconception or some disagreeable sexual thought had existed in that person in early years; but, while it may be of great interest to the physician, and while it may not do a woman of 40 any harm to have her psychic analysis made as carefully as Dr. Putnam has performed it, it is my firm conviction that we do no good by taking a young woman of 14 to 20 and pushing her thought back on that one sexual mistake, not a conscious sexual mistake, that was made early in life. I cannot see that the therapeutic results have been any better, nor have they been arrived at any quicker than by the older methods.

Dr. C. L. Dana, New York: My practical experience has been not only of failure, but often of disaster with Freud's method. It has often at times been most unfortunate, and I have practically stopped giving any such treatment in cases of at least the more educated, more intelligent type of patient that comes to me. In the minor cases of this class of psychoneuroses I find that by ordinary methods of treatment, education and modern therapeutics the patients get well. I always tell psychasthenic patients that they will get well, and they generally do. It must be remembered that a certain number of patients run a course, and recover, whether you do anything or not, in one or two years. There is another group of cases, more serious, which date back to early life; these are serious cases. I have not been able to do much with them. If this method will successfully help them, it will be of value, but I do not see exactly how the method could explain or help a condition which is essentially constitutional. The quickest way of getting at the inside of these cases is to do what we practically all try to do and often succeed. I take cases of this kind, put them in a private hospital and give them an intelligent nurse. I go to see them often, and send masseurs whom I know to be intelligent women or men to give them treatment, and by every process that I know of I become acquainted with their story. In two or three weeks one learns about these patients, one knows their past history, and I do not believe you can get as much by the Freud method as by our present method. I think we have much better methods than that of Freud.

Dr. L. F. Barker, Baltimore: Freud's method should be tested carefully. It is too early to say how much good will come of it, but certainly a large amount of new knowledge concerning the psychology of these patients, the psychology of life generally, is being derived from these studies. I think we should separate the method of psychoanalysis from the purely sexual idea. In my application of psychoanalysis it has been very helpful, especially in extending the anamnesis. As to psychasthenic cases, my experience with them is that they are hereditarily badly endowed people. They start badly. Most of them come from generations of neurotic people. I have in mind some cases under my care where for three generations this condition existed. This may come at any time of life though most of them have attacks early in life.

Dr. C. K. Mills, Philadelphia: I am not in accord with Dr. Putnam's views. The reports so far have not been altogether satisfactory. The cures do not seem to be in greater number or better than those obtained by the old methods.

Dr. H. T. Patrick, Chicago: Dr. Putnam's method does not differ so very much from the ordinary methods of psychoanalysis. It seems to me that psychoanalysis, or whatever leads us to get back to the definite original cause of any phenomenon in the abnormal patient, or the beginning of what has been the series of abnormal phenomena, is a help. What I believe to be distinctly injurious is to encourage the patient to probe himself when he is by himself without control and without the leading intelligence of his physician, into his past life because patients are unable to observe facts without conclusions, to observe phenomena without interpretation, and it is particularly these neurotic, poorly balanced, hypersensitive people who are constantly drawing wrong conclusions. This is distinctly dangerous, and it is that particular part of the Freud method with which I am at variance.

Dr. A. A. Eshner, Philadelphia: These patients are already unduly subjective and introspective, and care should be taken not to make them more so as a result of a certain form of interrogation. Herein appears to reside a danger entitled to serious consideration.

Dr. H. N. Moyer, Chicago: I am a disciple of Putnam rather than of Freud. Anyone who undertakes to practice Freud's methods on his patients on their first visit to the office will soon have no patients. That is obvious. The older methods are to be adhered to for a certain time. As to the psychoanalysis of impotence, the physician who neglects to look for some prostatic trouble or stricture will probably fail. The old methods are efficient, as a rule, but there is a certain residuum of cases not relieved by ordinary methods and for whom is left this psychoanalysis. It is a distinct, adequate, efficient method of getting at a few cases that we had not succeeded with before until it was offered to us.

Dr. P. C. Knapp, Boston: There is one radical defect in Freud's general position which has not been touched on. We see almost every day cases of nervous disturbance of one sort or another due clearly and confessedly to some pronounced emotional disturbance. The patient improves as the emotional disturbance is put into the background and forgotten. It does not seem always to be a reasonable method of treatment in those cases which are due to a forgotten emotional disturbance to drag that once more into the field and get the patient to dwell on it. It seems to me this is the primary unreasonableness of the views of Freud. There is a tendency to consider the data derived from the psychoanalytic methods as being absolutely accurate, but I have not always found them so.

Dr. J. J. Putnam: There is a great deal of misunderstanding of this sexual questioning. One does not take a young unmarried girl and begin to talk about her sexual relations. It would be very extraordinary if anyone should do that. The sexual ideas are the ones that the patient himself brings out. That Freud has always contended. The persons who speak as though the sexual thought were brought out in these patients' minds have failed to recognize that they are suffering from these thoughts, and the purpose is not to dwell on sexual thoughts, but to relieve their minds from sexual thoughts which in another form are active and producing symptoms. As to the objection to the patient's probing himself, it is inimical to him to probe himself alone, and it is to prevent the patient from doing this that the patient is encouraged to probe himself before the physician; the patient probes himself alone from morning to night otherwise, and it is to make it impossible for him to do this that we use this treatment.

General Conception of Dementia Præcox

Dr. Adolf Meyer, New York: The studies of metabolism and toxic state so far furnish nothing specific or decisive in regard to dementia præcox. The neurologic and histologic data appear rather as incidental to more clearly definable functional data than with a leading rôle. The data of conduct and behavior and of reactive material of the patients have proved much more directly helpful in furnishing constructive material. According to the make-up, the same results may be reached by combinations of marked constitutional peculiarity and slight external cause, and slight overt constitutional peculiarities and marked external cause. The essential is the break of compensation of mental (chiefly emotional and volitional) adjustment, with more or less deficit—and in most cases with the peculiar attempts at balance and reconstruction which constitute the glaring surface-picture of the clinical description and the special mechanism of the analytical consideration. Evidence seems to favor the postulate of a departure from the Kraepelinian dogma. Dementia præcox is essentially unlike general paralysis and more likely the usually inevitable outcome of (1) conflicts of instincts and (2) incapacity for a harmless constructive adjustment.

Some of the Mental Mechanisms in Dementia Præcox

Dr. August Hoch, New York: In certain paranoia states, such as those described by Rüdin and Gaupp, also in a certain type of psychosis recently analyzed by Birnbaum, the content of the psychoses represents conflicts and reactions to conflicts which the individual, owing to a constitutional defect, was incapable of handling adequately. The clinical picture of dementia præcox is much more complicated and often presents apparently a disconnected array of manifestations. When it is possible to analyze these, however, it is found that all the experiences mean something to the patient; that certain Freud mechanisms are at work, and that these apparently disconnected symptoms are connected and related to definite trends. The frequency with which sexual conflicts are found in the history of such patients and the fact that so often sexual trends make up the content of the psychosis, point to a lack of sexual adaptation. Our memories are grouped, as it were, in more or less extensive and more or less circumscribed complexes or centers of attraction, in the formation and cohesion of which special interests take an important part. We can conceive of the mind, therefore, as made up essentially of trends of interest. In the course of individual development certain main tendencies of the personality develop which then take the lead, while other tendencies become repressed. These repressed trends exert nevertheless a marked influence on the conscious thought and activity, as Freud has shown; but in normal life they do so mainly through the fact that the energy they supply is led into profitable channels. Every trend naturally pushes toward a realization in the direction of its feelings. If this is in harmony with the main tendencies of the personality this is useful and represents the dynamic force behind our thinking and our pursuits, adapted to the environment and the given situation. If, however, trends which are not in harmony with the main tendencies of the personality and which are, therefore, under the influences of repression, no longer find an outlet in profitable channels, but assume a more or less independent dominating rôle, it is not to be supposed that the laws which govern normal mental activity should be suspended; on the contrary, we shall expect to find the same principle of the trend pushing toward its realization, while at the same time the other tendencies of the personality assert themselves in repressing influences as well as in adjustment reactions, but owing to the disturbance of balance between the usurping trend and the main tendencies of the personality, the thinking and acting is then no longer adapted to the actual situation, but appears as something strikingly out of contact with it, and is of a simpler, more crude type. This, in so far as the mental side is concerned, is what seems to take place in the cases of dementia præcox which can be analyzed the overgrowth of certain trends at the expense of the main, adapted interests of the personality.

Errors in the Diagnosis of Mental Disease

Dr. E. E. Southard, Boston: A series of 250 cases of mental disease, with *intra vitam* diagnoses by several physicians, recorded at the Danvers State Hospital daily clinics 1904-8, has been subjected to anatomic review for the sake of learning where lies the greatest difficulties in diagnosis. Ten cases (4 per cent.) remain both clinically and anatomically obscure. Seven cases (2.8 per cent.) had diagnostic doubts settled after the clinic, either *intra vitam* or postmortem. Sixty six cases (26 per cent.) were doubtful clinically, but the correct diagnosis was obtained by one or more diagnosticians in 49 of the 66 (74 per cent. of the doubtful group). One hundred and eighty-four cases (74 per cent.) were clinically certain, and the clinical diagnoses were confirmed (or not altered) by autopsy in 163 of the 184 (89 per cent. of the unanimous group). The correct diagnosis was obtained by one or more diagnosticians in 212 cases in 250 (85 per cent.). The "correctness" of these diagnoses is subject to some reservation, (1) since within the "organic and senile dementia group" differentiation proved difficult, and (2) since anatomic "consistency" often signifies absence of characteristic lesions. The acute psychoses have been reviewed, however, bearing in mind modern views. Several alcoholic cases failed to exhibit striking brain lesions. The majority of the real diagnostic difficulties uncovered by this analysis would appear to require more intensive work in the field of clinical pathology.

The Differentiatives of Dementia Præcox and Depressed States By So-Called Biologic Blood Tests

Drs. E. C. White and S. D. W. Ludlum, Philadelphia: We seem to have been able to differentiate between dementia præcox on the one hand and melancholia on the other. Our method is based on the determination of the fixation complement of guinea-pig serum by the serum of the patient. We found in melancholia that the amount of complement absorbed was very much larger than of all other diseases studied; and also much larger than dementia præcox, in which disease it was approximately normal. We have tested 67 cases of various mental diseases. Thirty-seven melancholics of manic depressive type and involutional forms have so far been decisive and characteristic in all tests. We also found that by carefully standardizing the factors in Much's test it gave a positive test only in dementia præcox. When the standardization was not done, a positive result was often obtained. The syphilitic cases, of course, can be separated by the Wassermann reaction and progress in biologic tests is making it possible to discover chemical changes in so-called functional diseases

Clinical Significance of the Urine in "Nervousness"

Dr. Edward B. Angell, Rochester, N. Y.: I have noted for a number of years in examination of urine of patients afflicted with "nervousness" that in making the Heller nitric acid ring test there is formed at the junction of the urine and acid a pigment ring which varies in color from bright red to dark brown. Of the chemical nature of this ring I am unable to give any account, but believe I am safe in saying that it probably consists of some of the organic nitrogen compounds. It is a reaction entirely different from that given by indican or bile, although these substances may be associated. A similar reaction occurs in cases of exophthalmic goiter and in persons taking iodid of potash. That it is associated with excessive nitrogen elimination is shown by the fact that it is almost never present on a non proteid diet. The patients who show this reaction are those who complain of headache, backache, restlessness, sleeplessness, numbness and a general depressed feeling, associated with other symptoms generally classed as nervous. If such patients are put on a diet low in nitrogen, lead an open-air life and are given salicylates and alkalies to aid elimination, they will be relieved of their symptoms and at the same time this reaction of the urine will disappear. From two weeks to two months are required for a cure. In obstinate cases a year may be required.

Radiculitis of Cervical and Brachial Plexuses, Secondary to Pachymeningitis Externa Cervicalis-Gummatosa

Dr. F. W. Langdon, Cincinnati: A white man of 33, married, occupation superintending out-door work, grading, etc., gradually developed a paralysis of tetraplegic distribution, beginning in left forearm and hand, and extending in the course of 14 months so as to render useless all four extremities. The upper extremities were flaccid, the lower spastic with plus knee-jerks and Babinski sign. The paralysis was preceded by sharp pains in left neck and face. Neck movements were almost abolished—not by paralysis of muscles, but by articular obstruction. Numbness and tingling were extensively distributed over both arms and legs. A smooth firm, not bony, boss could be felt in the left side of the neck between the third and fourth cervical vertebræ. The patient was unable to walk without constant danger of falling and was unable to grasp a pencil with either hand. Vision was good; pupillary changes slight; ocular movements free, with slight nystagmoid jerking on extreme lateral excursion. Some dysphagia at times. No voice or tongue changes. Sensory changes slight, excepting the initial pain in the left neck and face which was not prominent after the first month. There was a hand size area of tactile anesthesia over the left thorax and one twice as large over the right abdomen, where temperature sense was disturbed or confused. Diagnosis was made of an exudate (gumma) situated between cervical dura and periosteum enclosing the nerve roots and compressing the lateral columns of cord; a radiculitis and compression myelitis, secondary to pachymeningitis externa. Under mercury by inunction and supporting measures steady improvement occurred and patient was discharged at his own request in five and one-half months, having gained 25 pounds in flesh and the use of all extremities. Three months later he resumed his regular occupation. A year later he is able bodied, can use pick and shovel well whenever necessary and attends to his full duties in every respect

The Ocular Changes in General Paresis and Tabes Dorsalis

Dr. Edward D. Fisher, New York: The examination of fifty general paretics confirms my former statement that optic atrophy and ocular muscle paralysis are comparatively rare in general paresis as compared to their frequency in tabes; nor, again, are the muscular paralyses permanent, as a rule. Clinically, this would seem to mark out the two diseases as distinct. In the 50 cases only 2 had optic atrophy and none any third nerve lesion outside of the Argyll Robertson pupil. In the cerebral type of general paresis, that is, those cases of exaggerated reflexes, the Argyll Robertson pupil is often absent in the early stages. Among over 200 cases of general paresis only one presented a history of tabes extending over a number of years preceding the mental symptoms with lightning pains, crises and ataxia.

Lenticular Zone and Anarthria

Dr. Alfred Gordon, Philadelphia: A case which I saw shows that Marie's contention in regard to aphasia cannot be entirely confirmed by the pathologic findings. The destruction of the lenticulo-caudate nuclei was complete, and yet the patient did not present the least indication of anarthria or dysarthria. The speech was clear and distinct. The patient did, however, present a partial word-blindness and partial verbal amnesia, all symptoms of sensory aphasia. The few symptoms of the latter correspond to Marie's ideas. The conclusion to which my observation leads me is that while the so-called lenticular zone of Marie may play a certain rôle in sensory aphasia, its rôle is not considerable. As to its being a center for anarthria, the present case proves that its destruction does not interfere with phonation and articulation of words.

Medicolegal

Care, Skill and Diligence Required of Physicians and Surgeons—Malpractice Suit Brought Four Years After Alleged Loss of Eye by Phenol—Burden of Proof and Presumption

The Supreme Court of Alabama says, in Shelton vs. Haeclip (51 So. R. 937), that in McDonald vs. Harris, 131 Ala. 359, the legal measure of care, skill and diligence of physicians and surgeons is thus defined: "The reasonable and ordinary care, skill and diligence which the law requires of physicians and surgeons is such as physicans and surgeons in the same general neighborhood, in the same general line of practice, ordinarily have and exercise in a like case." It was for the alleged breach of this duty that this action was instituted practically four years after the wrong complained of was alleged to have been inflicted. The damnifying result was averred to have been the loss of the eye of the then 11 months old child, Velma Haeclip.

These facts were undisputed on the record: That Velma had been affected with chickenpox and nausea, and the right eye (the one destroyed) was inflamed, ulcerated in the external corner, had scabs on it, and was infected with pus and "septic poison." That the defendant Shelton was called professionally to see her, mainly, it appeared, for the eruption and the nausea. That he examined the right eye, and stated that he would give a prescription for its treatment, and at the same time instructed the parent to keep the organ cleaned with the frequent application of warm boiled water. That what was received as this prescription was used by dropping three or four drops from a teaspoon into the eye after lifting the eyelid. That the application was made in the afternoon about 2 o'clock. That the child at once gave evidence of being in great pain in that eye, and with its hands rubbed off the scabs and introduced the poisoning pus into the eye. That the sight of the eye was destroyed when examined on the succeeding morning, the destruction being accomplished by the thickening of the tissue over the sight of the eye.

The cardinal theory of the plaintiff on the trial was that the liquid introduced into the eye contained phenol (carbolic acid), and that the destruction of the sight resulted from that. It was obviously true that, if the loss of sight was due to disease, the defendant did not breach his duty, unless in the treatment thereof he failed to measure up to the standard stated before; and it was equally as obvious that the plaintiff's theory excluded any other means or omission leading to that breach of duty in the premises, except that rested on the use of phenol in the prescription written by the defendant in the treatment of the eye. A druggist and the defendant both testified that the prescription written by the defendant was prepared by the druggist and sent by the defendant, and that in it there was no ingredient of phenol. Another physician who saw the eye the next day testified that the eye nor lid nor face gave any evidence of having been burned with phenol, and that in his opinion the loss of sight was due to the disease. There were some tendencies in the evidence to the effect that the preparation contained phenol, the chief of which were afforded by the testimony of two witnesses that the contents of the bottle bore an odor of carbolic acid, and that the sediment in the bottom of the bottle was similar to that made by an excess over a solution of phenol.

The burden of proof in cases of this character is on the plaintiff to show that the defendant's care, skill, or diligence in the given case was not that required, as stated, of physicans and surgeons; and it should be added that there is no presumption of negligence or want of skill from the failure to cure.

It is evident from this record that the controlling issue was whether the preparation applied to the eye was that prescribed by the defendant. As indicated, there was some evidence tending to show that the preparation was that prescribed by the defendant, and that it contained phenol. It consisted of the testimony of a Mrs. Daniel, the "next friend," by whom the suit was instituted, that the defendant brought the bottle to the house where the child was, and that out of this bottle the liquid was put into the eye. It must be conceded, however, that there was a conflict in respect of the issue stated; and, in the light of all the evidence, the court entertains the opinion that the weight of evidence and the probabilities of the truth of that tending to fix liability on the defendant were so strongly against the verdict rendered in the plaintiff's favor as to carry conviction that it was wrong and unjust.

In the first place, the long period of time elapsing between the injury and the institution of the action, in connection with the undisputed fact that the defendant was subsequently often called professionally to treat members of Mrs. Daniel's family, were circumstances impossible to be ignored in determining the weight to be given to Mrs. Daniel's testimony. In the second place, the testimony of a physician who was called as a witness might be taken at the limit of its probative value, and yet, when boiled down, it amounted to nothing more than that the injury "might"—a term, as employed, no stronger than possibly—have been produced by phenol, or "might" (i. e., possibly) have resulted from a virulent form of conjunctivitus. There was for the plaintiff no evidence that the eyeball or its membranes were burned by a caustic. There was a total absence of proof that any sloughing occurred. It is incredible on the evidence adduced as to the effect of phenol that the iris could be altered in color from brown to white by the application of phenol and at the same time avoid sloughing of the canterized membrane.

The original prescription was before the court. Phenol was not one of its named elements. The other physician first mentioned, who saw the eye the next day, was positive that there was no evidence of canterization about the eye or face. Two witnesses said there was an odor of phenol, and one that there was a cloudy sediment in the bottle. But the inevitable effect of phenol on membranes and the positive statement of the other physician, apparently disinterested, that there was no canterization and no sloughing, and the testimony of the druggist and the defendant, all in connection with the long lapse of time between the injury and the commencement of the action and the continuance of the defendant in the professional service of the household, compel the conclusion that phenol did not destroy the child's sight.

Insane Delusions and Unreasonable Habitual Prejudice

The Supreme Court of Illinois says, in the will case of Snell vs. Weldon (90 N. E. R. 1061), that, in analyzing the legal conception of an insane delusion, it is necessary to keep in mind that the ultimate and essential thing to be established is that the testator had, at the time the will or testament was executed, such an aberration as indicates an unsound or deranged condition of the mental faculties, as distinguished from the mere belief in the existence or non-existence of certain supposed facts based on some sort of evidence. A belief which results from a process of reasoning from evidence, however imperfect the process may be or illogical the conclusion, is not an insane delusion. If, under the facts shown, the court is able to see how a rational person might have believed all that the testator believed and still be in the possession of all his senses, an insane delusion is not established. Where a testator has some actual grounds for the belief which he has, though regarded by others as wholly insufficient, the mere misapprehension of the facts or unreasonable and extravagant conclusions drawn therefrom do not establish the existence of such a delusion as will invalidate his will.

Furthermore, while it is true, as said by this court in the former opinion in this case, that "injustice, unfairness, prejudice, or anger without a reasonable cause does not disqualify any person from making a valid will," still, where these manifestations habitually appear in respect to the same subject without any reason, and are adhered to after their falsity is demonstrated, they become strong and satisfactory evidence of a mental derangement, and evidence of their existence, without any cause, in respect to one so nearly related as to be naturally entitled to the testator's bounty, is entitled to greater weight than it would be if the parties were not so closely related.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 2

1 Surgery as a Science and Art in the City of New York in the Middle of the Last Century. S. Smith, New York.
2 Superficial and Deep Sensory Disturbances in Their Relation to Astereognosis and Asymbolia. A Gordon, Philadelphia
3 Esophageal Diverticula. E. Mayer, New York.
4 Nasal Osteoma J. H. Guntzer, New York.
5 *The Treatment of Chorea with Large Doses of Arsenic. G. B. Hassin and A. S. Hershfield, Chicago.
6 Abstraction of Calcium Salts from the Mother's Blood by the Fetus a Cause of Large White Kidney in the Former. J. G Drennan, Chicago.
7 Precautions in Laboratory and Morgue that Lessen the Danger when Dealing with Plague. D. H. Currie, Honolulu, H. I.

5. **Treatment of Chorea With Arsenic.**—The authors have employed the Comby-Filatov method with success in four cases. No serious complications occurred, except vomiting in one case and edema of the eyelids and herpes in another. Hassin and Hershfield conclude that arsenious acid in the solution 1:1000 given in smaller doses than advocated by Comby are safer than Fowler's solution. This can be seen from one of these cases where a boy, 8 years of age, could safely bear 5 teaspoonfuls of 1:1000 solution of arsenious acid, i. e., grain 1/3 of arsenious acid, but showed symptoms of intolerance from 9 drops of Fowler's solution and this after his system had been somewhat used to the drug. The time of treatment is considerably shortened by using the acid; the improvement sets in very early, within a few days of treatment, and it is due, exclusively, to the use of arsenic. The authors do not consider it excusable to deprive chorea patients of the benefits of arsenical treatment on account of possible complications. The by-effects of arsenical treatment can be greatly mitigated by using arsenious acid and can be avoided if attention be paid to the condition of the gastro-intestinal and renal apparatuses.

Boston Medical and Surgical Journal

June 30

8 Method of Treatment in Infantile Paralysis. E. H. Bradford, R. W. Lovett, E. G. Brackett, A. Thorndike, R. Soutter, R. Osgood, Boston, Mass.
9 *Elimination of Hexamethylenamin by the Mucous Membrane of the Middle-Ear and Nasal Sinuses. W. M. Barton, Washington, D. C.

9. A preliminary note on this subject appeared in The Journal, March 12, 1910, p. 871.

New York Medical Journal

July 2

10 The Trend of Medical Education in the United States. W. C Borden, Washington, D C.
11 Torsion of the Omentum. J. W. Markoe, New York
12 *High-Frequency Currents in the Treatment of Arteriosclerosis. T. E. Satterthwaite, New York.
13 The Cystoscope as an Aid to Diagnosis. S E. Tracy, Philadelphia.
14 The Prostatic Urethra. J. A Hawkins, Pittsburg, Pa.
15 Erroneous Deductions from Physiologic Experimentation with Ergot. A. T. Livingston, Jamestown, N. Y
16 The Stimulatory Action of the Oosperm in the Uterus. J. Oliver, London, Eng.
17 Tuberculosis E. C. Schroeder, Bethesda, Md
18 *A Method of Examining Sputa for Tubercle Bacilli E. H Goodman, Philadelphia

12. Abstracted in The Journal, May 28, 1910, p. 1811

18. **Examination of Sputum for Tubercle Bacilli.**—The solution which Goodman uses is really Labarraque's solution, except that instead of 75 grams chlorinated lime, 150 grams are used, and in addition a solution of 3 per cent. sodium hydroxid. It is to the action of the chlorin and the sodium that its dissolving properties are ascribed. To the sputum is added an equal amount of the solution. The whole is thoroughly mixed with a glass rod, and put on a boiling water bath. After the sputum has become a homogeneous mass (from fifteen to twenty minutes) it is removed from the water bath, a small amount of water added, and the whole is centrifugated for five minutes in an electrically driven centrifuge. If more than one tube is used the supernatant fluid is poured off and the sediments combined, washed in the centrifuge with physiologic salt solution for three to five minutes, the excess poured off, and the residue smeared on a slip by means of a platinum loop. The specimens were stained in the usual manner. Apart from avoiding the necessity of using a patented substance the new solution has the advantage of being about one fourth as expensive as the former. It is easily made in any laboratory, and where facilities do not permit of this, it may be made by a druggist.

Kentucky Medical Journal, Bowling Green

June 1

19 Tuberculosis of the Bladder J. D. Mutters, Rush.
20 The Management of Normal Labor Cases J. H Hester, Mumfordsville.
21 Tonsillitis. S. J. Smock, Glasgow
22 Acute Peritonitis. W H. Yelton, Butler
23 La Grippe. J. V. Young, Monticello.
24 Tuberculosis (Etiology) O W Brown, Lenoxburg
25 Morphin Its Uses and Abuses. R. F. Griffin, Owensboro.
26 Pyorrhea Alveolaris. C. C. Kemper, Owentown.
27 When Is Abortion Necessary? J. J. Rodman, Owensboro.
28 Perforation from Typhoid Fever E. A Stevens, Mayfield.
29 The Phenomena of Malaria. W. Blair, Glensfork.
30 Head Injuries. D. C. Donan, Horse Cave
31 Practical Infant Feeding. P. F. Barbour, Louisville
32 Work of the Southwest Kentucky Medical Association. W L. Mosby, Bardwell.
33 Cerebrospinal Meningitis. S. M. Hopkins, Demossville
34 Influenza or Lagrippe C Kendall, Morgan.
35 Acute Infantile Paralysis. W A M Kinney, Falmouth
36 Effects of Alcohol from a Scientific Standpoint. P. Ligon, Henderson.
37 Chloroform as a Dressing in Minor Surgery. H H. Stafford, Hellier.
38 Empyema A P. Dowden, Eminence
39 Why Maintain a County Medical Society? O Allen, Cromwell.
40 Hookworm Disease. J. B. Jackson, Hopkinsville

Medical Fortnightly, St. Louis

June 10

42 The Clinical Picture of Korsakoff's Disease Now and in 1886. S. G. Burnett, Kansas City
43 Practical Results in the Surgery of Prostatic Obstruction; Presentation of Patients and Specimens. B. Lewis, St. Louis.

New Orleans Medical and Surgical Journal

June

44 The Problem of Eugenics M A Aldrich, New Orleans
45 Expert Medical Evidence at One Dollar Per Day T W Schaefer and A. M Wilson, Kansas City
46 Uncinaria (or Hookworm Disease) D W Kelly, Winnsfield, La
47 Bacteriology and Pathology of Influenza. F B [illegible], New Orleans.
48 Gastrointestinal Grippe. S. K Simon, New Orleans

Journal Michigan State Medical Society, Battle Creek

June

49 The Relation of Gall-stones to Jaundice A. McLean, Detroit
50 Chronic Toxemias Arising from the Intestinal Tract L. E Corbus, Grand Rapids
51 Injuries and Repairs of the Pelvic Floor. H B Garner, Traverse City, Mich
52 Aneurism of the Descending Thoracic Aorta. J Flinterman, Detroit
53 Tonsillectomy J F Byington, Battle Creek
54 Accidental Secondary Infection of the Free Peritoneal Cavity. T. A McGraw, Detroit.

July

55* An Interesting Case of Retention of Foreign Body Below the Orbit V A. Chapman, Muskegon, Mich.
56 The Treatment of Acute Nephritis E Boise, Grand Rapids
57 A Plea for Better Attention to the Newborn Baby I L. Polozker, Detroit
58 Vasostomy and Vasectomy in Acute and Chronic Gonorrheal Vesiculitis and Epididymitis. F. B. Marshall, Muskegon, Mich.

59 Serodiagnosis of Syphilis and Its Clinical Value. H. R. Varney, Detroit.
60 Hydatidiform Mole. G. Kamperman, Ann Arbor, Mich.
61 *A New Gateway to Certain Operative Procedures in the Abdominal Cavity. S. C. Graves, Grand Rapids, Mich.
62 Appendicitis. W. J. Herrington, Bad Axe, Mich.

55. **Retention of Foreign Body Below Orbit.**—In adjusting the sight of a Remington rifle, the patient used an enormous charge about 90 grains of smokeless powder. When the rifle was discharged, it burst open at the breach. The patient received an injury of the face just below the left eye. There was a large gaping wound. It was cleansed and probed by a competent surgeon who decided that there was no foreign body present. The wound was closed and dressed and went on to uneventful recovery. Soon after this the patient began to have what he called a bad catarrhal discharge from the nose. This discharge also would drop into his throat from the nasopharynx. At times it would have a bad odor. Six weeks ago the old wound under the left eye broke open and has been discharging foul pus freely ever since. For years the patient has had double vision. The double vision used to be vertical; now it is horizontal and is worse lately. Ophthalmoscopic examination reveals a congested condition of the retinal veins. The appearance of the nerve head simulates optic neuritis. The general appearance is that of pressure on the optic nerve. The anterior wall of the antrum was freely removed. Far back in the antrum high up, and embedded in the posterior wall was found a foreign body. The tissues around about this were black. On cleaning away the debris the foreign body proved to be a large piece of the steel frame which confines the lock and mechanism of the rifle.

The end of this piece of steel which was deepest embedded was ragged and corroded with rust. The upper edge of the distal end was curved upward and was behind the eyeball. It was necessary, in extracting the steel, to raise the proximal end and depress the distal end in order that it could be extracted without injuring the eyeball.

The floor of the orbit was gone and the soft tissues of the orbit rested on the steel. This steel had penetrated so deeply that the distal end was lodged in the sphenoid bone and had almost entered the cranial cavity. It weighed exactly one ounce.

61. **New Abdominal Gateway.** Graves makes an incision along the center of the rectus through integument, fascia and the anterior layer of the sheath; then the muscle is displaced outwardly and the incision deepened behind the normal center of the muscle through the remaining structures of the wall, viz. the posterior layer of the sheath, the transversalis fascia, the preperitoneal fat and the peritoneum, or the three latter in the absence of the first. Closure axiomatically is the reverse of the preceding.

Bulletin Johns Hopkins Hospital, Baltimore

June

63 Sir Charles Bell. L. R. Corson, Savannah, Ga.
64 A Special Function Discovered in a Glandular Structure Hitherto Supposed to Form a Part of the Prostate Gland in Rats and Guinea-pigs. G. Walker, Baltimore.
65 The Nature of the Secretion of the Vesiculae Seminales and of an Adjacent Glandular Structure in the Rat and Guinea-pig, [illegible] Special Reference to the Occurrence of Histone in the Former. G. Walker, Baltimore.

Journal Delaware State Medical Society, Wilmington

June

66 The X-ray Treatment of Carcinoma. W. S. Newcomet, Philadelphia.

Surgery, Gynecology and Obstetrics, Chicago

June

67 Joint Tuberculosis. L. W. Ely, New York.
68 [illegible] C. [illegible] Buffalo.
69 [illegible] of [illegible] Bones ([illegible]) and Their Treatment. C. [illegible] Chicago.
70 *The Increase of Cancer. W. B. Coley, New York.
71 The Value of the Shadowgraph Ureteral Catheter in the Diagnosis of [illegible] Lesions of the Urinary Organs. H. [illegible] Chicago.
72 [illegible] Obstruction. C. [illegible], New York.
73 *[illegible] of the Common Carotid and Subclavian [illegible] for Innominate Aneurism. J. C. [illegible] Philadelphia.
74 [illegible] Anesthesia. A. J. [illegible], Minneapolis.
75 [illegible] of Bone. C. [illegible] Birmingham, England.
76 *[illegible] Operation for Prominent Ears Based on the Anatomy of the Deformity. W. H. Luckett, New York City.

77 Anomalous Kidney (Nephrectomy). B. M. Ricketts, Cincinnati, Ohio.
78 Venereal Papillomata. D. A. Moffat, Cape Town, South Africa.
79 *A Useful Stitch for Overlapping Fascia in the Closure of Abdominal Wounds. C. C. Norris, Philadelphia.
80 The Tuberculin Blister Reaction. H. de C. Woodcock, Leeds, Eng.

70. **Increase of Cancer.** A great mass of evidence, based on vital statistics, shows a well marked and steady increase in cancer in practically every civilized country. Attempts to explain away this increase as an apparent and not real increase are far from convincing. Without any further increase the present death rate from cancer is appalling. Furthermore, the actual death rate from cancer is much higher than the known rate by reason of the fact that in many cases of patients dying from internal metastases the strong prejudice of the relatives against the name of cancer is respected by the family physician, and some secondary cause of death appears in the certificate, instead of the primary cause, cancer. Deaths from cancer registration area in the United States for 1907 were 30,514 or 1,494 more than in 1906, and a rate of 73.1 in 1907 compared with 70.8 in 1906. Estimated deaths from cancer in the United States for 1907 were 63,598. For the year 1908, 33,465 deaths from this disease were returned, and the death rate was 74.3 per 100,000 of population, as compared with 30,514 deaths and a death rate of 73.1 for 1907.

A careful study of the whole subject shows the increase to be a general one and not limited to a few parts of the body. In other words intra-abdominal or inaccessible cancer, which would be the type most likely to be affected by improved methods of diagnosis, shows even less relative increase than external cancer. In 1868 the death rate for cancer of the stomach per 1,000,000 living, 35 years and upward, was 283.65 for males and 193.45 for females. In 1888 the rate had increased to 346.15 for males and 277.79 for females, making an increase of 22 per cent. for males and 44 per cent. for females; but in this particular period the death-rate of cancer in general had increased 50 per cent. The greater death-rate of malignant disease in women is due to the large number of cases which occur in the breast and the uterus. In all other localities the liability in the male is much greater than in the female. Cancer has already increased to such an extent that at the present time it causes more deaths among women than tuberculosis, in 1905 the rate being 100 cancer deaths to 94 from tuberculosis. Even taking men and women together, and at all ages, the death rate from cancer is rapidly approaching that of tuberculosis. From 1851 to 1860 the death rate per 1,000,000 living was 317 for cancer, 2,676 for phthisis, and 807 for other tuberculous disease; while from 1891 to 1900 the rate was 754 for cancer, 1,391 for phthisis, and 619 for tuberculous diseases.

A careful analysis of the statistics of cancer that are obtainable at the present time forces one to the conclusion that there is a constant and considerable increase in the number of people afflicted with cancer in all civilized countries.

73. **Ligation for Innominate Aneurism.** DaCosta reports two cases in which this procedure was carried out. One patient is alive and well two and a half years after operation, the other died from some unknown cause three years after the operation.

76. **New Operation for Prominent Ears.** The operation described by Luckett is for the purpose of reconstructing the fold or truss of the cartilage recognized as the antihelix in ears turned forward and the same principle is applicable for the reconstruction of the superior crux of the antihelix for the so-called drooping ears or of both together when necessary. A crescentic incision is made through the integument opposite to the line of the intended new or reconstructed antihelix. The inscribed integument is removed; the edges of the skin are now dissected free from the cartilage and retracted. A similar crescentic segment is removed from the cartilage. The skin and the cartilage are now sutured separately, and it is the method of suturing the cartilage that is emphasized. The cartilage suture is passed from the cranial side from within out and back again care being taken not to perforate the skin on the external surface, then crossed over the excised portion and passed on the other side from within out and back again as a Lembert suture, in such a manner that when the suture is

drawn tight and tied, not the edges but the sides or flat surfaces of the cartilage will be in apposition. The edges have been turned forward or outward to form the antihelix and at the same time the helix is set closer to the cranium, thus diminishing the cephaloauricular angle. Four or five interrupted sutures are usually enough for the cartilage. The skin is sutured with horsehair. The greatest care must be exercised in asepsis and in the hemostasis. The width of the crescentic segment of the cartilage to be removed depends on the size of the ear, and the thickness of the cartilage.

79. **Closure of Abdominal Wounds.**—The stitch Norris makes is a quadrilateral one and no matter how tightly it is tied two borders of the quadrangle are unconstricted. A comparatively large area of fascia is brought into apposition and this not only produces firm union but lessens the number of stitches required. As a moderate amount of fascia is taken up with each passage of the needle, and as the stitch is, as it were, a double one, tearing out is extremely unlikely. When the stitch is tied it should form a square each side of which measures about one fourth of an inch.

Mississippi Medical Monthly, Vicksburg

June

81 Medical Legislation. D. W. Jones, Brookhaven.
82 *Inevitable Abortion. F J. Underwood, Nettleton.
83 *The Duty of the Family Physician as an Obstetrician. W. L. Little, Wesson
84 *A Plea for Asepsis in Labor. R. M. Boyd, Houston.
85 *Care of the Expectant Mother. J. W. Cooper, Newton.

82 to 85.—Abstracted in THE JOURNAL, May 7, 1910, pp. 1568, 1569.

American Journal of Surgery, New York

June

86 A Modified Technic for the Combined Operation of Extirpation of the Rectum. J. P. Tuttle, New York.
87 The Treatment of Placenta Prævia, Based on the Study of 42 Cases. A. A. Hussey, Brooklyn.
88 Tuberculosis of the Fallopian Tubes as an Etiologic Factor in Extrauterine Pregnancy. A. M. Taylor, San Francisco.
89 The Removal of Tonsils. N. L. Wilson, Elizabeth, N. J.
90 Surgical Significance of Nystagmus and Vertigo. P. Fridenberg, New York.
91 Perforation in Typhoid Fever. F. E. Dubois, Plainfield, N. J
92 Gastrocolic Fistula Due to Carcinoma: Operation. W. H. Axtell, Bellingham.

Journal Indiana State Medical Association, Fort Wayne

June

93 The Action of the Heart Valves. W. J. Moenkhaus, Bloomington.
94 Condition of the Heart Muscle and Vascular System in Various Heart Lesions. R. H Ritter, Indianapolis.
95 Types of Myocardial Lesions. A. C. Kimberlin, Indianapolis.
96 *New Method of Tying Off the Umbilical Cord. C. J. Rothschild, Fort Wayne.
97 Inflammation of the Seminal Vesicles. J. N. Baughman, Evansville.
98 The Value of the Leucocyte Count as Shown by the Analysis of 300 Miscellaneous Counts. B. W. Rhamy, Fort Wayne.
99 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
100 *New Means for Diagnosis and Treatment of Diseases of the Sigmoid and Rectum. F. W. Foxworthy, Indianapolis.
101 The Relation of Pelvic Inflammation to Stricture of the Rectum. B. Van Sweringen, Fort Wayne.
102 Why Is the Country Doctor? C. C. DuBois, Warsaw.

96. **A New Method of Tying Off Umbilical Cord.**—A strip of pure para rubber 7 cm. long, 3 by 3 mm. in cross section, is drawn through a small aluminium ring 7 mm. in diameter, so that a loop 2 cm. long with two free ends is obtained. The one end has a knot fast against the ring and is 7 mm. long, the other end is about 2 cm. long. This constitutes the entire apparatus used by Rothschild. He takes a loop of cord about 5 cm. distal to the umbilicus, places the rubber ligature over it, draws slightly on the end, cuts through the loop, draws the placental end of the cord out, and ties it off as usual. The umbilical end of the cord then has the ligature over it. The ligature is adjusted so that 1½ cm. is on either side of it, then it is drawn tight and remains until the cord "drops off." He has tried it on about 100 cases and with good results. There was no after-bleeding and the cord dropped off normally. It is easy of application, the force exerted is continuous, bleeding cannot take place (it is especially valuable in hemophilia), and costs only a few cents.

100. **Diagnosis of Diseases of Sigmoid and Rectum.**—Foxworthy describes a specially devised table which he uses for this work. It can be thrown into positions which make possible the proper examination and treatment of these special diseases.

Military Surgeon, Washington, D. C.

June

103 Personal Experience During the Spanish-American War, Showing the Disadvantages of Depending on Untrained Civilian Physicians for Military Service in Time of War; with Some Suggestions. C. B. G. de Nancrede, U. S. Army
104 Field Service Hygiene. R. Smart, Roswell, New Mex
105 Hookworm Disease and Pellagra H J. Nichols, U. S Army.
106 A Visit to India. H. C. Pillsbury, U S. Army
107 Intestinal Parasites in Scout Companies. W. R Eastman, U. S Army.
108 The Gastrodiscus Hominis in the Philippines Introductory Helminthologic Comment A. D. Tuttle, U. S. Army

Buffalo Medical Journal

June

109 A Present Menace to Education. P W Van Peyma, Buffalo.
110 Toxins and the Liver. W M Brown, Rochester, N Y
111 Treatment of Spreading of Diffuse Peritonitis. F W McGuire, Buffalo.
112 The Vagaries of Fibromyomatous Tumors. J. F. W. Ross, Toronto.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

June

113 Cerebral Localization from the Point of View of Function and Symptoms. M. Prince, Boston
114* The Sensory Function Attributed to the Seventh Nerve. C K. Mills, Philadelphia.

114. **Sensory Functions of Seventh Nerve.**—Mills summarizes his paper as follows: 1. If by the seventh nerve is meant that nerve trunk which arises in the pons from the lower and upper facial nuclei, this nerve is purely motor. 2. It is doubtful whether nerves whose functions are concerned with the pressure and postural senses are conveyed in the branches and trunk of the motor facial. 3. The afferent systems for epicritic and protopathic sensibility are not represented in the seventh nerve. 4. The geniculate ganglion is the homologue of the dorsal spinal ganglia. 5. If the geniculate ganglion, the intermediary nerve of Wrisberg, and the chorda tympani are considered part of the facial or seventh nerve, then this nerve may be regarded as partly sensory, having functions chiefly gustatory. 6. Nerve fibers concerned with the transmission of gustatory impulses proceed from their origin in the geniculate ganglion to their distribution by way of the great superficial petrosal nerve and the chorda tympani. The destination of the former nerve is the soft palate, where its fibers terminate in taste buds, and of the latter nerve the taste buds in the anterior two-thirds of the tongue with the exception of its tip. 7. Evidence is lacking that in the facial trunk proper, in the intermediary nerve of Wrisberg, the great superficial petrosal or the chorda tympani, are nerves of common sensibility, although some observations would seem to indicate that the anterior part of the tongue and possibly a very small strip of the auricle have a vestigial supply of this sort. 8. Herpes does not originate from inflammation of nerves which are not concerned with cutaneous or membranous sensibility. 9. Limited inflammation of the geniculate ganglion may in rare cases occur, producing a syndrome whose factors are loss or perversion of taste and vasodilator and secretory phenomena. 10. If the geniculate ganglion is the seat of inflammation, adjoining parts such as the facial nerve proper, and the eighth nerve may be involved by pressure or extension, thus giving rise to peripheral facial paralysis and to acoustic phenomena and phenomena of equilibration and of orientation, vasodilator and secretory symptoms, or to some of these symptoms. 11. The cases of herpetic inflammation cervico-occipital, auricular and facial which have been observed in connection with facial paralysis, or facial paralysis and acoustic symptoms, are best explained on the supposition of an involvement of ganglia other than the geniculate.

Maryland Medical Journal, Baltimore

June

115 Professional Significance of the Midwife and Optometry Bills Passed by the Recent Legislature of Maryland. H Woods, Baltimore.
116 Care and Treatment of Epileptic Insane. J. C. Clark, Baltimore
117 Climatic, Soil and General Conditions in Maryland with Reference to Hookworm Disease. M. L. Price, Baltimore.
118 Differential Leucocyte Count as a Diagnostic Aid. S. Cherry, Baltimore
119 Genealogic Trees of Epileptic Families. E. A Kennedy, A. V. Cooper and F W. Gould, Baltimore.

Interstate Medical Journal, St. Louis

June

120 The Medical Profession in Relation to Preventive Medicine. L. F. Flick, Philadelphia.
121 The Cancer Problem. L. Loeb, Philadelphia.
122 Cases Simulating Abscess of the Liver. G. Dock, New Orleans.
123 Etiology and Diagnosis of Chronic Myocarditis. R. H. Babcock, Chicago.
124 Treatment of Chronic Myocarditis. A. R. Elliott, Chicago.
125 Vaccination of Infants and Young Children. J. R. Snyder, Birmingham, Ala.
126 The Cause and Cure of Inguinal Hernia. H. O. Marcy, Boston.
127 Fulguration and Its Results Compared with Those of Other Methods of Cancer Therapy. Dr. de Keating-Hart, Paris, France.
128 A Useful Mild Caustic: Its Employment in Cancer and Affections of the Cornea. A. E. Ewing, St. Louis.

Journal of Biological Chemistry, Baltimore

June

129 *A New Method for the Determination of Fat and Fatty Acids in Feces. O. Folin and A. H. Wentworth, Boston.
130 Carbohydrate Esters of the Higher Fatty Acids. W. R. Bloor, Boston.
131 The Production of Volatile Fatty Acids and Esters in Cheddar Cheese and Their Relation to the Development of Flavor. S. K. Suzuki, E. G. Hastings and E. B. Hart, Madison, Wis.
132 Method for the Determination of Sodium Iodid in Animal Tissues. P. J. Hanzlik, Cleveland, Ohio.
133 *Alkaptonuria. A. Ravold and W. H. Warren, St. Louis, Mo.
134 Phosphorus in Beef Animals. C. K. Francis and P. F. Trowbridge, Columbia, Mo.
135 New Form of Extraction Apparatus. C. W. Greene.

129. **Determination of Fat and Fatty Acids.**—Folin and Wentworth determine the fatty acids after extraction by ethereal hydrochloric acid solution, purification of this extract by solution in petroleum ether, and dissolving the residue left after evaporation of ether in benzol, by titration with sodium alcoholate, using phenolphthalein as an indicator.

133. **Alkaptonuria.**—Ravold and Warren had the opportunity of examining the urine in a case of alkaptonuria. The fresh urine was clear, from pale yellow to reddish brown, darkening on standing, with no unusual odor. The volume varied from 930 c.c. to 1,425 c.c., averaging 1,050, the specific gravity varied from 1.009 to 1.016, averaging 1.013. The polariscope showed that it contained no sugar. It was always acid and the fermentation test was negative. It reduced copper solutions only on heating. On contact a black ring appeared but no precipitate, and on mixing the liquids the blue color of the reagent disappeared, the mixture becoming green and beginning to darken from the surface down. It reduced ammoniacal silver solution immediately in the cold, giving a silver mirror on the test tube. It did not reduce alkaline bismuth solutions and gave a negative reaction with the phenylhydrazin test. The uric acid was below the average and the amount of urea seemed to be diminished. The homogentisic acid nitrogen quotient averaged 49.9 which corresponds with that found in other samples of urine containing this substance.

St. Paul Medical Journal

June

136 Transverse Abdominal Incisions. E. Boeckmann, St. Paul.
137 Surgical Pathology of the Thyroid. T. F. Riggs, Pierre, S. D.
138 Glaucoma: the Underlying Cause of Symptoms Often Mistaken for Other Conditions. J. L. Rothrock, St. Paul.

Louisville Monthly Journal of Medicine and Surgery

June

139 [illegible] C. C. [illegible], Louisville.
140 Difficult Eliminations of Foreign Bodies in the Windpipe. G. H. [illegible], Georgetown, Ky.

Southern California Practitioner, Los Angeles

June

141 The Old Doctor, The Young Doctor, The Ideal Doctor. J. W. [illegible].
142 Occupation for the Osteopath. D. L. Tasker, Los Angeles.
143 [illegible] J. M. Powers, Los Angeles.
144 [illegible] with Special Reference to Sympathetic Ophthalmia. R. L. [illegible], Redlands, Cal.
145 [illegible] a Proper Operation. W. H. Roberts, Pasadena.
146 *A Simple Differential Stain for Diphtheria Bacilli. D. C. Ragland, Los Angeles.

146. **Differential Stain for Diphtheria Bacilli.**—Ragland has devised the following stain intended especially for the "small town" physician who has a microscope but no incubator. The stain is composed of methylene blue and eosin and the adult diphtheria bacillus is quickly recognized because the polar granules are stained a deep blue while the remaining portion of the bacillus takes the eosin or pink stain, making thereby a marked contrast. The stain is composed of three solutions, the formula and technic for using which are as follows: Solution "A": Methylene blue, saturated aqueous solution, 10 parts; 10 per cent. citric acid solution, 10 parts; aqua destillata, 80 parts. Solution "B": 10 per cent. aqueous solution citric acid, 5 parts; methyl alcohol, 22 parts; distilled water, 73 parts. Solution "C": Eosin, saturated aqueous solution, 1 part; aqua destillata, 199 parts.

The technic is as follows: 1. Make thin smears from throat, especially from the margin of membrane or suspicious path. 2. Dry in air. 3. Fix in flame (gas or alcohol). 4. Add sufficient blue stain "A" to cover smear and allow to act 10 to 15 seconds; then shake it off but do not wash. Now apply solution "B" and allow to act for 10 to 15 seconds, then shake it off, but do not wash. Lastly add solution "C" and allow it to act for 10 to 15 seconds; then shake off excess of stain and blot dry with filter or blotting paper, mount in Canada balsam or cedar oil and examine. Diphtheria bacilli show as pink rods with a dark blue granule in either pole. All other bacilli and cocci are stained pink. This stain has been controlled by the culture method of laboratory diagnosis in over 1,000 cases.

Denver Medical Times and Utah Medical Journal

June

147 Bezold's Mastoiditis. F. E. Waxham, Denver.
148 Acute Traumatic Tetanus Treated by Magnesium Sulphate. A. P. Heineck, Chicago.
149 Tetanus, with Infection of Attending Physician. E. L. Freiberger, Alamosa, Colo.
150 Differential Diagnosis of Intestinal Obstruction. H. P. Kirtley, Salt Lake City.

Bulletin Medical and Chirurgical Faculty of Maryland, Baltimore

June

151 *Some Public Health Problems. G. M. Linthicum, Baltimore.

151. Published in full in The Journal, June 4, 1910, p. 1835.

Archives of Pediatrics, New York

June

152 *The Results of Substitute Feeding in Premature Infants. M. Ladd, Boston.
153* Acidified Milk in Pediatric Practice. J. M. Brady, St. Louis.
154 Congenital Obliteration of the Bile Ducts. E. L. Peck, Philadelphia.
155 Stuttering. E. W. Scripture, New York.
156 Casein Curds in Infants' Stools: Biologic Proofs of Their Casein Origin. F. B. Talbot, Boston.
157 *Clean Milk. G. W. Goler, Rochester, N. Y.
158 Bovine Tuberculosis. W. H. Park, New York.
159 Abscess of Liver in an Eight-year-old Boy: Operation. J. R. Judd, Honolulu, H. I.

152. **Substitute Feeding in Premature Infants.**—Ladd studied these cases in two hospitals. In one hospital there were included in this series 95 babies of whom 58, or 61 per cent., died; 24, or 25.3 per cent., lived and gained in weight; 13, or 13.7 per cent., lived but were discharged, either losing in weight or making no gain. Of the last mentioned group many were taken home because of their condition, and probably died, so that the ultimate mortality was undoubtedly considerably more than 61 per cent. In the other hospital there were 30 babies included in the series. Of these, 24 died, giving a mortality of 80 per cent., and 6 lived and gained in weight, a percentage of 20. The mortality was therefore nearly 20 per cent. greater at the Children's Hospital than at the Infants' Hospital. This difference is probably accounted for by the fact that no infant was discharged while losing in weight and condition. All were allowed to remain in the wards until their condition warranted treatment at home.

The total mortality was 65.6 per cent. in 118 out of 125 babies weighing under 2,100 grams at birth. No infant weighing under 1,200 at birth survived. No infant in the sixth month of gestation survived. The smallest baby admitted weighed 570 grams and lived six days. The possibility of materially lowering the mortality by providing proper means of conveying premature infants to the hospital is very great. Premature babies who survived gained on an average only 50 grams a week on modified milk, for an average period of 70 days each. The average energy quotient of the food of 11 patients who lived and gained in weight was 107. There was no definite relation between the energy quotient of the food and the weekly gain in weight. Modified milk, however, carefully administered and supervised, must be considered an unsatisfactory food for premature infants, and should be used only when breast milk cannot be obtained. Ladd says that hospitals planning to receive premature infants should make ample provision for the maintenance of wet nurses. The relative value of padded cribs and incubators could not be accurately judged, as modern incubators have not been used at either of the two hospitals in which this study was made.

153. **Acidified Milk in Pediatric Practice.** Brady believes from his experience that acidified milk fills a long felt want in the institution feeding of infants. Pure air, however, is indispensable, and the larger the ward and the fewer babies in that ward the greater the success with any method of feeding. Young infants at birth may with advantage be placed on this food. Thrush and other forms of stomatitis are seldom met with in infants receiving this food. The development of scurvy and rickets need never be feared. Acidified milk places at the disposal of the infant the casein in the form of the lactate, which is so necessary for the growth and development of the infant in an assimilable form and in a sufficient quantity. The lactic acid bacillus and the lactic acid certainly seem to prevent the development of intestinal indigestion, as the babies on this food almost invariably have good stools. It seems that the infant, when receiving acidified milk mixtures is in a better position to care for the fats, and that a larger percentage of fat may be fed than when on the usual modified milk mixtures. The casein in acidified milk being in the form of the lactate is not affected by the rennin. Brady emphasizes the rarity of curds in the stools of infants receiving acidified milk mixtures even when top milk mixtures are employed, but he does not advise the use of these high fat percentages in the early weeks, as fat diarrhea and fat intoxication must be reckoned with. From his observations it would seem that fat alone, and protein alone, are not responsible for the curds in the stools of infants fed on cows' milk: for their production it would seem that the fats require the presence of the proteins and that with both acting together the result is the very familiar curdy, mucous stool; the latter due to a secondary catarrh from the irritation of the former. This reasoning seems close at hand when it is considered what occurs in acidified milk feeding. The proteins are in the form of very fine particles, especially if the acidified milk has been well agitated, not coagulable by rennin; therefore, its deleterious influence on the fats is removed, and hence the normal stools. In order to be successful in feeding acidified milk, it is necessary to be well grounded in the principles of infant feeding, and this method does not furnish a short route to this goal. The good results seem due not alone to the low fat, to the presence of lactic acid and to the chemical change of the protein, but the presence of the lactic acid bacillus plays a very definite rôle.

In private practice cases of malnutrition, intestinal indigestion and diarrhea should have this food. Finally, Brady would make a special plea that the city infant during the days of excessive heat, the latter part of July and August especially, receive the advantage of this food.

157. **Clean Milk.** In the 13 years, from 1884 to 1897, inclusive, during which no systematic milk work was done in Rochester, the total number of deaths under one year of age was 6,306, and the deaths between one and five years of age, 3,304, making a total of deaths from birth to five years of age, 9,610. For the 13 year period, from 1897 to 1909, inclusive, the total deaths under one year of age were 4,641, and the deaths from one to five years of age 2,080, making a total of 6,721. In the first period not all of the deaths were reported; in the last period we have reported the death of every child born at term who breathed. The mortality between birth and five years of age showed a diminution of 30 per cent. in the last period. This, Goler shows, is what can be done when the baby gets clean milk.

Quarterly Bulletin Northwestern University Medical School, Chicago

June

160 The Changes Produced in the Kidneys by Experimental Ligation of the Ureter. G. D. Scott, Chicago.
161 Polydactylism Correlated with Defect of the Fronto-nasal Process. C. W. Prentiss, Chicago.
162 The Topography of the Hypophysis. W. S. Gibson, Chicago.
163 The Repair of Injuries to Peripheral Nerves. J. B. Murphy and A. B. Eustace, Chicago.
164 Traumatic Asphyxia with Report of Cases. F. F. Pi[illegible] Chicago.
165 The Treatment of Syphilis. F. E. Simpson, Chicago.
166 Splenectomy in Relation to Union in Fractures. A. B. Kanavel, Chicago.

Albany Medical Annals

June

167 The Pathology of Tuberculosis of the Breast. C. G. Cumston, Boston.
168 Local Anesthesia. A. H. Traver, Albany.
169 The Clinical Significance of Subfebrile Temperature in Pulmonary Tuberculosis. A. T. Laird, Albany.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

June 18

1 Foreign Bodies in the Air Passages. R. J. Godlee.
2 The Precipitin Test in Medicolegal Work. F. J. McWeeney.
3 Conjunctivitis. R. W. Doyne.
4 Influenzal Meningitis. F. E. Batten.
5 A Comparison Made Between Simple Gastro-Circulatory Syncope and Angina Pectoris Attack. W. Verdon.
6 Four Cases of Sporadic Cretinism in One Family. R. C. Stevens.
7 *The Treatment of the Partially Drowned. J. A. Barnes.

7. **Treatment of the Partially Drowned.**—The result to be aimed at in the treatment of such persons, says Barnes, is the driving of the blood from the abdomen, so that the brain may receive its proper supply. This he aims at by an attempt at auto-transfusion as follows: Having started an assistant on artificial respiration, he firmly bandages the legs from the feet upward. A roller towel is then passed around the patient's abdomen, the two ends crossing in front. One assistant is told off to each of these ends. As the arms are brought down to the chest in the expiratory movement of artificial respiration (Silvester's method) these two assistants grasping the towel-ends firmly with their right hands, pull them, at the same time making pressure on the abdomen with their left hands. In this way considerable squeezing of the abdomen is obtained. As the inspiratory movement commences the pressure is relaxed so as not to interfere with the expansion of the lungs. The process is continued synchronously with the movements of artificial respiration. Barnes' idea is that this acts beneficially in two ways: (1) it assists, by pressing up the diaphragm, to more completely empty the chest with expiration; and (2) it squeezes some of the excess of blood from the abdominal cavity. The bandaging of the legs and arrangement of the towel can be very quickly carried out with assistance, of which there is usually no lack in these cases.

Gravity should also be made to assist the flow of blood to the brain by keeping the head at a lower level than the body. He gives a hypodermic injection of ether (30 minims) and usually one of strychnin as well. The objection to the use of these stimulants—that they stimulate an already tired center and are quickly followed by increasing depression—seems hardly to apply in cases of drowning, as when once reaction has set in recovery is usually rapid.

British Medical Journal, London

June 18

8 Faith Healing. C. Allbutt.
9 "Suggestion" in the Treatment of Disease. H. Morris.
10 Spiritual Healing. H. T. Butlin.
11 The Faith that Heals. W. Osler.
12 Considerations on the Occult. T. C. Shaw.
13 Palaeogenic Face-Pattern in Acroteric Piebalds. J. Hutchinson.
14 Dermatitis Artefacta. N. Walker.

Medical Press and Circular, London

May 25

15 Disseminated Sclerosis. J. Taylor.
16 The Roentgen Treatment of the Superficial Cutaneous Catarrhs. G. J. Myl[illegible]er.
17 Acute Leukemia. T. G. Moorhead.
18 A Suggested Memorial to King Edward, the Peacemaker. D. Walsh.

June 1

19 The Change of Life in Man. M. de Fleury.
20 Coxa Valga. S. Pringle.
21 Ununited Fracture of the Tibia Treated by Wiring. W. C. Stevenson.
22 A Convenient Instrument for Ready Clinical Investigation of the Sensibility to Coolness and Warmth. T. A. Williams.

June 8

23 The Problems Presented by Extreme Cases of Incontinence of Urine and Some Solutions of Them. W. Alexander.
24 *Cesarean Section in the Treatment of Eclampsia Gravidarum. F. J. McCann.
25 Nux Vomica. G. C. Crichton.
26 Adiposis Dolorosa. J. C. McWalter.

24. **Cesarean Section in Treatment of Eclampsia Gravidarum.** McCann performed Cesarean section successfully in the case of a woman who was seen shortly after her first convulsion. McCann suggests the following indications for this operation: (1) When the fits are severe and recur in rapid succession; (2) when labor has not commenced; (3) when the cervix is difficult to dilate from elongation, hypertrophy or excessive rigidity; (4) when the mother is moribund and the fetus living and viable; (5) when labor has commenced and there is found considerable disproportion between the size of the child and that of the pelvis; (6) when the surroundings of the patient are suitable for a major surgical operation and when the services of an operator skilled in pelvic surgery can be obtained.

Clinical Journal, London

May 25

27 The Heart. S. West.

June 1

28 *Three Rare Tumors of the Base of the Tongue; Surgery of Malignant Diseases of the Tongue. F. Eve.
29 The Heart (continued). S. West.
30 So-called Second Sight. Its Features, Varieties and Causes. P. Dunn.

June 8

31 Hemiplegia and Its Treatment. G. Holmes.
32 The Heart (concluded). S. West.
33 The Hyperemic Treatment of Inflammation. A. V. Poyser.

28. **Tumors of the Tongue.** The two cases of endothelioma of the tongue reported by Eve presented many features in common. In each the growth occupied the extreme base of the tongue and formed a very prominent disk-shaped mass which was not ulcerated on the surface. Glands were distinctly enlarged in the superior carotid triangle in both. The symptoms had been discomfort or a feeling of a foreign body in the fauces, and were so slight that the growth attained a considerable size before it was discovered. The microscopic character of the tumor in the first case was of a lymph-endotheliomatous type, the growths consisting of cord-like masses of endothelial cells, in places surrounding dilated lymphatic channels. In the second case it was peritheliomatous. There were very numerous and large vascular channels surrounded by cords of endothelial cells. The third case was one of epithelioma.

Australasian Medical Gazette, Sydney

April

34 Surgical Work of the Year. H. C. Hinder.
35 The Evolution of the Treatment and Care of the Insane. S. H. R. Montgomery.
36 Bilateral Tubal Pregnancy with Rupture on Either Side. T. G. Wilson.
37 *Strangulated Hernia in an Infant 16 days Old. E. E. Moule.
38 Poisoning by Sulphate of Zinc. A. Palmer.

37. **Strangulated Hernia in an Infant.** Sixteen days after birth, the baby was suddenly seized with an attack of vomiting and seemed very ill. Then it got a little better and passed some urine and feces. An hour later Moule found a lump in the upper part of the right scrotum, neither nurse nor mother had noticed it. The lump gurgled on pressure, but was irreducible even under chloroform. The sac when opened proved to be a patent funicular process containing about four inches of purplish gut.

British Journal of Children's Diseases, London

May

39 Symmetrical Trophic Lesions of the Extremities in a Child. Syringomyelia (Morvan's Type). H. M. Fletcher.
40 Chronic Pericarditis with Enlargement of the Lymphatic Glands: Still's Disease. H. B. [illegible]
41 The Infant Out-patient from a Public Health Standpoint. L. H. B. [illegible]

June

42 Acute Nonsuppurative Encephalitis in Children. N. P. Marsh.
43 *[illegible] of the Cerebrospinal System a Cause of Acute Tremor in Children. L. Parsons.
44 *A Modern Crèche. F. Myers.

43. **Polioencephalitis.** While polioencephalitis will not account for all forms of acute tremor, for it has been seen associated with a tuberculous tumor, Parsons holds that a diagnosis of polioencephalitis can usually be made by a consideration of the type and age of the child, the season of the year, character of the onset, and the course of the disease, the absence of changes in the fundi oculorum and cerebrospinal fluid, and in those cases where it does occur, the presence of an associated poliomyelitis.

44. **A Modern Crèche.** The ideal, or modern crèche, Myers says, should be so arranged (a) that the day nurseries, bathrooms, etc., for the children's use ought to be on the ground floor; (b) that the kitchen scullery, larder, pantry, mother's dining room, and a laundry-room should be situated in the basement; and (c) that the matron's and nurses' bedrooms, sitting room, students' room, cloak-room, etc., could be conveniently placed on the first floor.

Journal of Tropical Medicine and Hygiene, London

May 16

45 Operations for Elephantiasis. T. E. R. Branch.
46 *Necator Americanus* in the Bahr-Elghazel Province of the Anglo-Egyptian Sudan. J. B. Christopherson.

Journal of Obstetrics and Gynecology of the British Empire, London

June

47 *After-results of Abdominal Operations on the Pelvic Organs: 1,000 Consecutive Cases. A. E. Giles.
48 The Prevention of Ophthalmia Neonatorum with Special Reference to the Teaching of Midwives. A. N. Walker.
49 *The Hemolytic Lipoids of Degenerating Fibroids with Special Reference to Red Degeneration. H. L. Murray.
50 Subphrenic Abscess Complicating Pregnancy with Sloughing of Spleen. B. A. J. Solomons.

47. **After-Results in Abdominal Operations.**—A review of the final results in 248 cases has convinced Giles that the effect of hysteropexy on the general health is very good, as 90 per cent. of the patients were better than before the operation, as many as 75 per cent. being in quite good health; while among the 10 per cent. who were not better the cause had nothing to do with the operation in one-half of them. Symptoms are markedly relieved; 90 per cent. of the patients had either no pain afterward or had less pain than before the operation; 14 patients were relieved of dysmenorrhea, 21 of dyspareunia, and 16 of headaches; 22 patients got relief from menorrhagia, and 13 from excessive leucorrhea; 13 patients found their constipation improved. As regards the effect of hysteropexy on the bladder, 18 per cent. of patients experienced frequency of micturition, and 77 per cent. had no trouble, or no more than before operation. The position of the uterus remains permanently good in about 95 per cent. of cases; about 5 per cent. suffer from partial or complete return of displacement. The results in cases of procidentia are not quite as good as in cases of retroversion or prolapse; but 88 per cent. of cases of procidentia show permanent good results. To obtain the best results in the latter cases combined operations are usually necessary. In the event of pregnancy following hysteropexy, there is a slightly increased tendency to miscarriage if pregnancy follows too soon after the operation; hysteropexy causes no subsequent complications of labor, as out of 44 cases of full time delivery 40 had normal confinements, and the remaining 4 had complications independent of the operation. When pregnancy follows hysteropexy, the position of the uterus is not disturbed thereby, as the results after pregnancy were just as good as in cases where no pregnancy followed, and the cases of full time delivery showed only one case of partial return of displacement out of 29 cases. Among these cases, therefore, the uterus kept in good position in 96.6 per cent. of the cases, as against 94.7 per cent. in the cases of patients who did not become pregnant.

49. **Red Degeneration of Fibroids.** Murray examined four specimens of red degeneration of uterine fibroids and found that the lipoids of degenerating fibroids are markedly hemolytic. This hemolytic action is readily restrained by blood plasma. Excess of lipoid in a suspension of red blood corpuscles leads to the development of a gray or brown color in place of the red. Thrombosis in red degeneration is not primary. Red degeneration microscopically is indentical with

certain other degenerating fibroids showing no red. The accumulation of lipoid is not, in the first instance, dependent on the presence or amount of thrombosis, but on the degree of preceding degeneration. Laking of the corpuscles has more relation to lack of the fluid constituents of the blood than to large excess of lipoid. Many of the stains in fibroids—not necessarily red stains—may be due to old symptomless hemolysis.

Archives de Médecine des Enfants, Paris

June, XIII, No. 6, pp. 401-480

51 *Chronic Appendicitis in Children. J. Comby.
52 Vital Staining with Neutral Red for Study of the Pathologic Cerebrospinal Fluid. E. Weill and A. Policard.

51. **Chronic Appendicitis in Children.**—Comby reviews 31 operative cases and 108 others in which chronic appendicitis was diagnosed, and discusses the differential signs. The condition is more common than generally recognized, he says; many cases of assumed dyspepsia, anemia, chlorosis, liver affections, enterocolitis, the status lymphaticus and tuberculosis are in reality solely or mainly the effect of chronic appendicitis. Acute appendicitis is generally merely the flaring up of a chronic process, and physicians should be on the lookout for this. Periodical vomiting is a sign that the child is a candidate for acute appendicitis, as also a tendency to repeated indigestion. Constipation is habitual and obstinate although diarrhea may be observed; some of the children fail to develop properly but after removal of the appendix grow promptly to normal stature. There is also, he says, a nervous form of chronic appendicitis. Children with it are moody, disinclined to play or work, and seek solitude. A change of character in this line, and discovery of digestive disturbances should suggest chronic appendicitis. Intercostal neuralgia may also be a sign, or pain in the right leg, with a tendency to limp, suggesting hip or knee disease; Comby has had several cases of this kind. In another group the suggestive symptom was a tendency to faint, the children growing pale and falling in syncope but retaining consciousness throughout. Headache, convulsions, urticaria and prurigo were observed in other cases. The proof in regard to the causal appendicitis in these cases is afforded by the rapid restoration to normal after appendicectomy. A spontaneous cure of chronic appendicitis cannot be counted on, although there may be symptomless intervals, sometimes of years. Surgical treatment is required in the majority of cases, especially for chronic appendicitis in children. The dangers of an interval operation are so slight as to be negligible, but the diagnosis must be positive. In case of doubt he prefers to operate and has never yet had occasion to regret his decision.

Bulletin de l'Académie de Médecine, Paris

June 7, LXXIV, No. 22, pp. 497-587

53 *Inflammation and Thickening of the Pleura with Persistent Effusion. (Les pachypleurites et les pleurésies intarissables.) M. Dieulafoy.
54 *Vomiting of Pregnancy. (Des vomissements de la gestation.) A. Pinard.
55 *Inflammatory Tuberculosis of the Uterus and Adnexa. A. Poncet and R. Leriche.

Presse Médicale, Paris

June 8, XVIII, No. 46, pp. 425-432

56 *Inflammation and Thickening of the Pleura with Persistent Effusion. (Les pachypleurites et les pleurésies intarissables.) M. Dieulafoy.

June 11, No. 47, pp. 433-440

57 Sudden Variations in the Number of Leucocytes Depending on the Arterial Pressure. J. Camus and P. Pagniez.

53-56. **Pleurisy with Persistent Effusion.**—Dieulafoy reports two cases of thickening of the pleura with recurring effusion for ten years in one case and for twenty years in the other. The patients were tapped over a hundred times and a total of over 230 liters was withdrawn but the general health persisted constantly excellent; the patients were incommoded merely by the mechanical disturbance from the effusion. In the first case the effusion was purulent and fetid and streptococci and pneumobacilli could be cultivated from it, but they were of such attenuated virulence that they proved harmless for animals. In the other case the effusion was constantly sterile. The effusion in both cases has finally ceased, the patients not having required tapping for a long time. Dieulafoy theoretically advocates decortication of the lung in such cases, but there was nothing to indicate that active intervention was necessary in these or in a third case in which the patient was tapped 15 times in the course of six years; there has been no return of the effusion since 1885 in this last case.

54. **Vomiting of Pregnancy.**—Pinard gives a historical review of this subject and states that years of experience have confirmed him more and more in the conviction that intoxication is responsible for the tendency of pregnant women to vomit, and that the outcome depends on the intensity of the intoxication. He reiterates his assertion that the pulse is the best index of the degree of intoxication, and that if it goes above 100 the pregnancy should be interrupted at once. The details of 7 recent cases are added to supplement the 20 he has previously published (reviewed in THE JOURNAL, Oct. 30, 1909, page 1518).

55. **Inflammatory Tuberculosis of Internal Genitals.**—Poncet and Leriche regard a latent tuberculosis as responsible in many cases for sclerosis of the ovaries or toxic impregnation of the Graafian follicles entailing infantilism, hypoplasia of the genitals, amenorrhea, dysmenorrhea, pelvic neuralgia or a tendency to abortions. An old chronic latent tuberculous process may likewise explain the heavy, easily bleeding, painful uterus in women of the alleged neuroarthritic type. All require general antituberculosis measures and possibly tuberculin.

Revue de Chirurgie, Paris

June, XXV, No. 6, pp. 967-1174

58 *Disadvantages of Scopolamin for General Anesthesia. (Chloroforme. Chloral. Scopolamine.) P. Delbet and R. Dupont.
59 Later Results of Transplantation of Veins on Arteries. A. Carrel
60 Fifteen Cases of Malignant Tumors of the Orbit. A. Faix.
61 Tumors of the Jaws of Dental Origin. (Enclavomes dentaires.) R. Leriche and G. Cotte.
62 Rôle and Mechanism of Infectious Disturbances from a Wisdom Tooth. (Accidents de dent de sagesse.) C. Capdepont.

58. **Disadvantages of Scopolamin for General Anesthesia.**—Delbet and Dupont review their experiences with 120 patients given a dose of scopolamin as a preliminary to chloroform. The list includes 2 fatalities, one serious postoperative syncope and a number of other mishaps. They refer also to Flateau's one fatality in 30 cases, Ziller's 3 in 64 cases and Blos' several serious mishaps and one death in 105 cases. They declare that the advantages ascribed to the use of scopolamin for this purpose are more apparent than real; it may retard vomiting but does not do away with it altogether. Scopolamin, they add, is unquestionably toxic for patients whose emunctories are out of order, even in a dose as small as 0.001 gm. (1/64 grain). They express a decided preference for chloral as a preliminary to chloroform, as it is not dangerous and in the dose of 4 gm. (61 grains) tranquillizes the patient and prevents the phase of agitation under chloroform. They have used it thus in 850 cases, giving the chloral in water about half an hour before the operation. In the 22 cases on record of fatalities following an injection of scopolamin as a preliminary to general anesthesia, 13 were cancer patients. This proportion warns especially against giving scopolamin to patients with cancer. In 4 other cases the surgical affection was in the neck. In one of the other cases an unusually large dose of scopolamin had been given (0.0036 gm. scopolamin and 0.06 gm. morphin).

Semaine Médicale, Paris

June 8, XXX, No. 23, pp. 265-276

63 *Subacute Typhoid Septicemia. V. Audibert

June 15, No. 24, pp. 277-288

64 *Dilatation of the Stomach Owing to a Lesion in the Peritoneum or Stomach Wall. J. Paviot.

63. **Subacute Typhoid Septicemia.**—Audibert declares that sufficient attention has not been paid to subacute septicemia from the typhoid bacillus, and yet it is extremely common. The reaction to the presence of the bacillus in the blood may vary with every individual attacked. He protests against restricting the idea of typhoid toxi-infection to the syndrome involving the intestine; it may attack any organ

or tissue and the syndrome has probably many times been diagnosed as influenza, atypical typhoid, gastric fever, etc. This subacute "Eberthian septicemia" has a slow onset; there is no uniform type of fever but it may long continue, with gastric disturbances; the mind is not affected and the patient feels calm and wants to eat. He thinks that this form of typhoid infection occurs more commonly in children than the typical form.

64. **Dilatation of the Stomach from Lesions in the Wall or Peritoneum.**—Paviot has examined with the microscope the stomach from certain cases of dilatation during life and found invariably some lesion in the wall or peritoneum, evidently responsible for the dilatation—of course this material excludes all cases of stenosis of the pylorus. The lesion may long have healed, but it leaves the stomach wall more or less insufficient for its task, owing to sclerosis in the region adjoining the lesion. Careful inquiry will generally elicit a history of some inflammatory process in the region, possibly years before. Once convinced that these dilated stomachs, painful at times or with recurring pains, are of inflammatory nature, wonderful benefit may be derived from energetic revulsion or similar therapeutic procedures, entirely aside from dietetic measures. It may even be advanced as a principle that the more the dilatation of the stomach seems to coincide with painful points in the region below the liver or in the right flank, the better the prospects of a cure under heat and revulsion applied perseveringly to the painful zones. Local revulsion may also prove useful with other gastric disturbances, as for instance for a hard drinker with ulcerative gastritis or a patient with hematemesis and the epigastrium more or less tender, the benefit derived in some of these cases from heat or blisters is another argument in favor of the inflammatory origin of dilatation of the stomach in some cases, whether secondary to inflammation in the peritoneum or to gastric ulcer.

Archiv für Verdauungs-Krankheiten, Berlin

June, XVI, No. 3, pp. 267-418

65 *Salt Content of Common Articles of Food. (Der Chlor- bezw. Chlornatriumgehalt der gebräuchlichsten menschlichen Nahrungs- und Genussmittel.) J. Leva.
66 Case of Abnormally Small Stomach. (Fall von Mikrogastrie.) H. Eisinger and G. Schwarz.
67 Influence of Choleen on Secretion of Bile. (Experimentelle Studien über die Beeinflussung der Gallensekretion durch neuere Cholagoga.) F. Eichler and B. Latz.
68 Influence of Lactic Acid Bacilli on Intestinal Flora. (Einfluss der Milchsäure-Bazillen auf die Darmflora.) M. Einhorn and E. Wood (New York), and E. Zählin (Pittsburg).
69 *The Bead Test and the Test Diet. (Eine vergleichende Studie über die Perlenprobe von Max Einhorn und die Probekost für Darmkranke von Adolf Schmidt.) J. G. Wells.
70 *Nervous Dyspepsia. A. Bolinger.
71 Influence of the Salicylates, Mercury and Certain other Drugs on the Diastase Content of the Saliva. (Zur Kenntnis der diastatischen Wirkung des menschlichen Mundspeichels.) (Einfluss einiger Medikamente auf die Speicheldiastase.) L. Fricker. Commenced in No. 2.

65. **Salt Content of Common Articles of Food.**—Leva's research in this line was mentioned with some of his conclusions in The Journal, July 2, page 93. His tables fill over 15 pages, presenting the results of over 360 analyses and comparing them with those of others. The work has been done to supply a basis for a systematic salt-poor or salt-free diet, but he does not here discuss the indications for either.

69. Summarized in The Journal, April 23, 1910, page 1365.

70. **Nervous Dyspepsia.**—Bolinger reviews the various conflicting views on this subject and advocates classifying in three groups the stomach symptoms generally described under the name of nervous dyspepsia: 1, those of neurogenic origin, that is, disturbances occurring peripherally in the organ, from disease or trauma, irritation with centripetal conduction—this is the neurasthenic type; 2, the central or psychogenic type with centrifugal conduction of the irritation to the organ—the hysteric type, and 3, those of central psychogenic origin but with no conduction of the irritation—the hypochondriac type. These types are frequently combined and various observers interpret the symptoms in different fashion according to their pet theories. In a case described in detail the [illegible] was accompanied by all the signs of Stiller's universal asthenia, or what [illegible] calls chronic atony of the intestines, while the patient could also be regarded as an example of Strümpell's axiom: "It is not the stomach trouble that makes a man a hypochondriac; it is the hypochondria that entails the stomach trouble." The patient, a young bachelor, further presented attacks of sudden dyspnea, with a chill, pain in the heart region, irregular pulse, etc., the attacks lasting perhaps half an hour—a typical example of what M. Herz has described as the sexual psychogenic cardiac neurosis. Each one of these scientists might have ticketed and demonstrated the case exclusively as a typical example of his special assumption in regard to nervous dyspepsia.

Berliner klinische Wochenschrift

May 30, XLVII, No. 22, pp. 1001-1044

72 *Determination of Minute Proportions of Blood in Clinical and Forensic Medicine. (Nachweis kleinster Blutmengen.) H. Citron.
73 Absorption of Radium Emanations Through the Skin. (Aufnahme von Radiumemanation durch die Haut.) W. Engelmann.
74 Certain Changes in the Respiration Rhythm. (Klinische Studien über einige Veränderungen des Atmungsrhythmus.) C. Frugoni.
75 *The Pneumatic Cabinet in Treatment of Chronic Bronchitis, Especially that Consequent on Heart Disease. (Die pneumatische Therapie bei chronischer Bronchitis.) H. Samter.
76 *Treatment of Paralytic Conditions in the Arm. (Behandlung von Lähmungszuständen an der oberen Extremität.) C. Helbing.
77 Jaundice with Appendicitis. (Icterus bei Perityphlitis.) E. Holländer.
78 Two Cases of Tubal Chorioepithelioma. (Die bösartigen Chorioepithelioma des Eileiters.) G. Davidsohn.
79 Röntgenology in the Service of the General Practitioner. G. Loose.

72. **Determination of Invisible Blood.**—Citron examines the fluid in question by mixing with alcohol, then rinsing with ether and dissolving the residue in pyridin. The latter dissolves the blood pigments and they are readily detected with the spectroscope if the specimen is inspected through its longest diameter. He uses a square shallow chamber to hold the specimen and examines it lengthwise.

75. **The Pneumatic Cabinet in Treatment of Chronic Bronchitis.**—Samter refers in particular to bronchitis associated with cardiac insufficiency and tabulates the effect on the blood pressure of the therapeutic application of the pneumatic cabinet. The influence of the compressed air is felt in the promotion of the respiration; the diaphragm descends deeper, the lungs expand, the walls of the bronchi spread apart and the mucus clinging to them is carried out by the more vigorous respiration. The best results were obtained with chronic bronchial catarrh without much fluid secretion. His experience has shown that even with a weak heart musculature the blood pressure does not drop in the cabinet, confirming the harmlessness of the method in uncomplicated cases of cardial bronchitis.

76. **Treatment of Paralysis of the Arm.**—Helbing discusses the orthopedic management of spastic cerebral hemiplegia and birth paralysis, emphasizing the importance of over stretching of the muscle as the cause of the trouble. When the ends of the muscle are brought closer together, correcting the over stretching, the apparently paralyzed muscle will often regain its function as he shows by some typical examples.

Correspondenz-Blatt für Schweizer Aerzte, Basel

June 1, XL, No. 16, pp. 497-536

80 *Artificial Feeding of New-born Infants. (Zur Kenntnis der künstlichen Ernährung Neugeborener.) E. Döbeli.

80. **Infant Feeding.**—Döbeli gives artificial food to a new-born infant only in amounts sufficient to keep the child at the same weight after the first physiologic decline. He is convinced that the child brings with it into the world enough reserves to supply the needed calories for a time with little assistance. It has been his experience that children with the "exudative diathesis" were rather above the normal weight at birth and he has never witnessed any harm result from keeping the food down to 300 gm. for the first two days and 500 or 600 gm. for the two or three weeks following. He prefers a 25 per cent. dilution of milk, generally skimmed. The children thrive better when kept on this small amount for the first few weeks. Plump children especially are well supplied with a reserve of calories and do not need to have fat supplied in the food at first.

Deutsche medizinische Wochenschrift, Berlin

June 2, XXXVI, No. 22, pp 1017-1064

81 Thermopenetration. (Ueber Transthermie und die Therapie mit Aetherwellen.) C. Funck.
82 *Course of Laryngeal Tuberculosis with Artificially Induced Pneumothorax. (Verlauf der Kehlkopftuberkulose bei der mit künstlichem Pneumothorax behandelten Lungenschwindsucht.) A. Da Gradi.
83 Inoculation of Guinea-pigs with the *Spirochæta pallida*. (Erfolgreiche Uebertragung von Syphilisspirochäten auf Meerschweinchen.) H. F. Hoffmann and E. Tomaszewski.
84 Modification of Agglutinating Power of Paratyphoid Bacilli. (Umwandlung agglutininbindender Eigenschaften des Paratyphus B-Bacillus.) R. J. Boddaert.
85 *Importance of Mineral Salts in Pathogenesis and Treatment of Edema. E. Schloss.
86 *Significance of the Maximal Blood Pressure. (Die wahre Bedeutung des sogenannten maximalen Blutdruckes.) J. v. Benczur.
87 *Schlesinger's "Leg Sign" in Tetany. (Das "Beinphänomen" bei Tetanie.) W. Alexander.
88 Experimental Bases for the Electrocardiogram. E. Rehfisch. Commenced in No. 21.
89 Radioscopic Localization of Foreign Bodies. (Nadeln im Kniegelenk. Gebisse im Oesophagus.) M. Cohn.
90 *Robert Koch's Last Illness. L. Brieger and F. Kraus.

82. **Course of Laryngeal Tuberculosis with Artificially Induced Pneumothorax.**—Da Gradi reports from Forlanini's clinic at Pavia three cases of pulmonary tuberculosis in which pneumothorax treatment was applied, and the associated laryngeal lesions healed completely under its influence. He emphasizes that laryngeal tuberculosis should not be regarded as a local process, because it is maintained constantly by the passage of sputum from lesions lower down. If the latter are cured, the laryngeal lesions are liable to subside of themselves. In the cases reported this occurred under the simplest local measures or without them in one case as the infectious focus below practically healed.

85. **Importance of the Mineral Salts in the Pathogenesis and Treatment of Edema.**—Schloss confirms Levy's statement in regard to the extremely sensitive reactions on the part of infants to the intake of salt, thus permitting instructive research on the metabolism of mineral salts. After theorizing to explain the phenomena observed, he relates clinical findings which demonstrate the correctness of the deductions. It seems that the healthy infant behaves in respect to sodium chlorid like an adult with severe insufficiency on the part of the kidneys. The salt is retained for a longer or shorter time, and the proportion to be retained is determined by the relative salt poverty of the tissues; this is dependent on the food and is thus most pronounced in breast-fed infants. When more mineral salt is ingested the organism defends its cells against osmotic injury, first by a diluting reaction and then an elimination reaction. Which of these two reactions predominates depends on the greater or less harmfulness of the substances in question for the organism, especially for the kidneys. The predominance of the one or the other reaction entails edema or increased diuresis. With edema from congestion, effusions, etc., if a concentrated solution of salt is given, there will be increased elimination of water in consequence, draining away the edema. The salt does not exert any direct diuretic power and consequently salt is contraindicated in nephritis on account of the danger of retention and resulting injury. But a broad field of usefulness seems to be opening in the line of treatment of passive accumulations of fluid. He relates a striking example of this in an infant with idiopathic dropsy developing during feeding with buttermilk. By continuous administration of small doses of a mineral salt, this edema disappeared entirely in two days. He gave calcium phosphate in this case, having found that the calcium salts are more effectual than the sodium salts. His theory to explain why urea does not cause osmotic disturbances is that the latter result only with substances which are unable to permeate the cells; urea is evenly diffused in the cells and the fluids bathing them, consequently it does not entail osmotic disturbances—whatever other evils may be laid to its charge.

86. **The Significance of the Maximal Blood Pressure.**—Benczur advises the simultaneous use of the Recklinghausen apparatus or its equivalent and the Gärtner tonometer. The pressure in the tonometer shows only a trifling reduction when the apparatus above registers the "maximal" pressure. The suppression of the pulse wave merely transforms the waves of the blood stream into a continuous current; the lumen of the artery is not made smaller. The difference between the maximal blood pressure and the pressure in the cuff which suppresses the Gärtner pulse differs within a wide range. It is very small in heart disease with failing compensation.

87. **Leg Phenomenon in Tetany.**—Alexander has confirmed Schlesinger's findings in regard to the leg sign in tetany, mentioned in THE JOURNAL, April 9, 1910, p. 1244. He states that it was absent in two infants with other unmistakable signs of tetany, but it was constant in the few adults examined.

90. Summarized in Berlin Letter, June 25, 1910, page 2132.

Deutsche Zeitschrift für Chirurgie, Leipsic

May, CV, Nos. 1-2, pp. 1-260

91 *Experiences with 38 Cases of Ileus. (Zur Pathologie und Klinik der Darmokklusion.) S. Medowoy.
92 Radiologic Examination of Stenosis of the Duodenum. (Die Duodenalstenose durch Füllung und Peristaltik radiologisch erkennbar.) G. Holzknecht.
93 *Treatment of Spontaneous Dislocation of the Hip Joint in Consequence of Acute Disease. (Zur Therapie spontaner Hüftgelenksluxationen im Gefolge akuter Erkrankungen.) M. Brandes.
94 *Enterotribe Clamp for Gastroenterostomy, etc. (Ein neues Verfahren zur Ausführung der Gastroenterostomie und Enteroanastomose ohne Oeffnung des Darmlumens während der Operation.) E. Martini.
95 Roentgen-Ray Research on Hypertrophy of the Prostate. (Darstellung der Prostatahypertrophie im Röntgenbilde.) L. Burkhardt and H. Floercken.
96 Combination General Anesthesia. (Zur Frage über kombinierte Narkosen.) E. v. Karlowicz.
97 *Importance of the Thymus for Surgery. D. G. Zesas.
98 *Enterotribe Button for Gastroenterostomy, etc. (Wie kann man den vorläufigen Anus praeternaturalis und die Enteroanastomose, unter Verwertung der Vorteile und Ausschaltung der Gefahren der beiden Operationen, miteinander vereinigen?) A. Marro.
99 *Experimental Research on the Action of Measures for Resuscitation after Temporary Occlusion of the Aorta and Pulmonary Artery. (Experimentelle Untersuchungen über die Wirkung von künstlicher Atmung, Herzmassage, Strophantin und Adrenalin auf den Herzstillstand nach temporärem Verschluss der Aorta und Arteria pulmonalis, unter Bezugnahme auf die Lungenembolieoperation nach Trendelenburg.) A. Läwen and R. Sievers
100 Deformity of Child's Thorax Resulting from Influence of Artificial Anus. (Ueber eine Thoraxdeformität bei lange bestehendem Anus praeternaturalis im Kindesalter.) A. Läwen.

91. **Ileus.**—Medowoy reviews the experiences with 38 cases of ileus at the university clinic at Basel in charge of Wilms.

93. **Treatment of Spontaneous Dislocation of the Hip Joint in Consequence of Acute Disease.**—Brandes emphasizes the importance of prevention of dislocation when a secondary process develops in a joint. Mere mechanical supports are not enough; the dislocation is generally the result of distention from an effusion in the joint, stretching and loosening the ligaments and favoring the escape of the head from its socket at the slightest accident or effort. Puncture to release the effusion, repeated as needed, is thus the best prophylaxis. It also aids in the healing of the inflammation. The majority of these secondary spontaneous dislocations occur in the course of typhoid fever, and consequently double vigilance is required in this disease. If the luxation has occurred, puncture, reduction and other measures as for congenital dislocation give the best results. In the personal case described, the luxation occurred in consequence of an osteomyelitic process in the neck of the femur in a little girl. The literature on the subject is reviewed, including Kummer's compilation of 51 cases of spontaneous luxation (exclusive of tuberculosis and osteomyelitis) and Degrez' 81 cases. The outcome is growing constantly better as the affection is being managed more and more like a congenital luxation.

94. **Enterotribe Clamp for Gastroenterostomy, etc.**—Martini reports good results from the use of a little shell which he has devised to facilitate the union of stomach and intestine. It consists of two concave parts hinged together at one end, the edges of both parts cut into sharp teeth, the whole when closed resembling somewhat a pea-pod, 4 or 6 cm. long by 8 or 10 mm. wide. The bowel is sutured to the stomach, then a buttonhole is made at one end of the suture and one arm of the enterotribe is introduced below the suture, the other arm clamping down on it from above. The suture is thus completely enclosed above and below inside the little shell. The teeth do not quite touch each other, so no opening

is made that might allow escape of the content of the gut. The parts are drawn together above the shell for a second suture, burying the shell beneath. The tissues slough away by the second or third day from the irritation of the teeth on the shell and the anastomosis is complete. The technic gave exceptionally good results in experiments on 12 large dogs, both for gastroenterostomy and enteroanastomosis.

97. **The Thymus from the Surgical Standpoint.**—Zesas reviews 21 operations on the thymus on record and mentions that Friedlander and Myers induced retrogression of an abnormally large thymus by Roentgen exposures, the former in a two months' old male infant, with 8 exposures in one month, the latter with 47 exposures in three months. In the 21 operative cases, 16 of the patients were cured, 2 improved and 3 died. No untoward by-effects were observed in any case. Hypertrophy of the thymus was discovered in 40 cases of death during anesthesia, 29 of the patients being less than 20 years old. In 22 cases of a fatality during an operation for exophthalmic goiter, the thymus was found enlarged: all but one of the patients succumbed to heart failure. This suggests, Zesas thinks, the possibility that the enlarged thymus should be the gland to be removed rather than the thyroid, or at least thymectomy should precede the strumectomy. The operation should not be deferred, however, until the heart has been injured beyond repair by the hyperthymization.

98. **Mechanical Device to Secure the Advantages of Both a Preliminary Artificial Anus and Enteroanastomosis Without their Dangers.** Marro gives an illustrated description of a device invented for a special case, a patient with advanced tuberculosis with a femoral hernia incarcerated for five days. He has applied this "button enterotribe" in 2 cases to date with excellent results.

99. **Experimental Research on Measures for Resuscitation after Temporary Occlusion of the Aorta and Pulmonary Artery.**—Läwen and Sievers have been conducting extensive research to supply a physiologic basis for Trendelenburg's operative treatment of pulmonary embolism, studying the effect of clamping the aorta and pulmonary artery with and without artificial respiration and other measures for stimulation and resuscitation. The most effectual of all was artificial respiration with oxygen, possibly supplemented by an injection of epinephrin directly into the left ventricle. Massage of the heart may prove useful in addition, but this cannot be relied on alone. This combination revived the animals after 6 or 8 minutes—which is ample time for the Trendelenburg operation. There is no need for differential pressure during the operation as the respiration stops completely.

Medizinische Klinik, Berlin

May 29, VI, No. 22, pp. 849-888 and Supplement

101 *Treatment of Contracted Pelvis. (Behandlung des engen Beckens in Praxis und Klinik.) P. J. Jung.
102 Comparison of Clinical and Radiologic Findings in Stomach Diseases. (Die radiologische Feststellung gewisser Krankheitsbilder des Magens.) S. Jonas.
103 Treatment of Appendicitis. (Welchen Fortschritt sollen wir in der Behandlung der Blinddarmentzündung machen?) I. Sogel.
104 Climatic Treatment of Pulmonary Tuberculosis. (Klimatische Behandlung Lungenkranker.) A. Moeller.
105 Radiologic and Autopsy Lung Findings Compared. O. v. Hehn.
106 Operation for Presternal Dislocation of the Clavicle. Grunert.
107 *Alcohol and Other Stimulants as Medicines in Heart Disease. (Genussmittel bei Herzkranken.) M. Herz.
108 Advance Phase of the Diazo Reaction in Tuberculous Urine. (Ueber ein Vorstufe der Ehrlichschen Diazoreaktion im Harne von Tuberkulösen.) M. Weisz.
109 Improved Technic for Staining Tubercle Bacilli. (Tuberkelbazillenfärbung nach Gram und deren Bedeutung für die Sputumuntersuchung.) W. Beyer.
110 General Principles for Treatment of Leg Ulcer. (Behandlung des Unterschenkelgeschwürs.) J. Schäffer.

101. **Treatment of Contracted Pelvis.**—Jung remarks in the course of this postgraduate lecture that few practitioners realize the importance of taking the temperature as a routine measure in every obstetric case on first arriving. He deprecates prophylactic version and high forceps unless the latter is the last resort just before perforation. In general practice [illegible] is necessary with a much contracted [illegible] or there are signs of infection. He says in regard to artificial premature delivery that it should be recommended only when the mother and child afterwards can count upon careful attendance for a suitable length of time. In these conditions it is to be warmly commended. The moment for intervention he determines by examining the woman about once a week, striving to push the head into the pelvis. As long as it can be done with ease, the delivery can be deferred, but when this becomes difficult he interferes. The best time is the thirty-sixth week, but two or even four weeks earlier are suitable. A child weighing from 2,000 to 2,500 gm., or nearly 6 pounds, with good care generally develops well, without harm from the premature delivery. With primiparæ, however, he advises against premature delivery as it is impossible to foresee the outcome. The written consent of wife and husband he regards as indispensable before undertaking tubal sterilization in an operative case of much contracted pelvis, as also when abortion is induced. In the latter case he advises consultation with another physician, preferably the district physician.

107. **Stimulants, Etc., in Heart Disease.**—Herz believes that the moderate use of alcohol, coffee, tea, or tobacco may be advantageous in certain cases, especially when patients are depressed from the restrictions imposed by their disease. Denicotinized tobacco is especially useful for patients with heart disease. Alcohol and coffee may even have a direct remedial effect: a little brandy or wine may restore appetite and beer or rum dispel insomnia. Coffee may prove useful as a direct analeptic but it is contraindicated in cardiac neuroses as it is liable to increase the pulse. It also has a tendency to cause extrasystoles and thus should be avoided with signs of coronary sclerosis.

Münchener medizinische Wochenschrift

May 31, LVII, No. 22, pp. 1161-1208

111 *Constant Bacteriologic Findings in Lupus. (Zur Aetiologie des Lupus vulgaris.) M. Krüger.
112 Biologic Research on Tumor Cells. (Zur biologischen Untersuchung von Tumorzellen.) T. v. Wasielewski and L. Hirschfeld.
113 Serodiagnosis of Malignant Tumors by Means of the Meiostagmin Reaction. (Die Serodiagnose bösartiger Geschwülste mittels der Meiostagminreaktion.) M. Ascoli and G. Izar.
114 Salt as Antidote in Bromid Intoxication. (Weitere Mitteilungen über die praktische Verwendung des Kochsalzes in der Behandlung der Epilepsie.) A. Ulrich.
115 Acid-Fast Bacilli in Wind Instruments and their Importance in Diagnosis. (Säurefeste Bazillen in Blasinstrumenten.) E. Jacobitz and H. Kayser.
116 Theoretical Objections to Intravenous Ether Anesthesia. A. Brüning.
117 Advantages of Constriction Hyperemia after Removal of Tuberculous Glands in the Neck. (Stauungshyperämie zur Nachbehandlung nach Exstirpation tuberkulöser Halsdrüsen.) H. Mohr.
118 *A Duodenal Tube. (Eine Duodenalröhre.) M. Gross (New York).
119 *Symptomatology of Hysteria. H. Goldbladt.
120 *Intermittent Limp. (Klinische Beiträge zur Pathologie des "intermittierenden Hinkens" der "Dysbasia angiosclerotica.") W. Erb. Commenced in No. 21.

June 7, No. 23, pp. 1209-1264

121 *Malignant Degeneration of Chronic Gastric Ulcer. (Zur Frage von der krebsigen Entartung des chronischen Magengeschwüres.) G. Hauser.
122 *Importance of Ambulant Typhoid in Children in Further Spread of Typhoid. (Bedeutung der ambulanten Typhusfälle im Kindesalter bei der Weiterverbreitung des Abdominaltyphus.) G. Brückner.
123 Paradoxical Movements of the Diaphragm. (Die paradoxe Zwerchfellbewegung.) A. Bittorf.
124 Pathology and Treatment of Coxa Vara. G. Hohmann.
125 *Causal Treatment of Glycosuria and Diabetes. C. Funck.
126 Meat Poisoning. (Zur Fleischvergiftung, bedingt durch den Bacillus enteritidis Gärtner.) R. Brekle.
127 Tuberculous Lesion in Optic Nerve. (Zur Tuberkulose des Sehnerven.) E. Reye.
128 Nature, Early Diagnosis and Encouraging Serotherapy of Typhoid. (Abdominaltyphus.) H. Lüdke.
129 Organization of Medical Literature. I. Bons.

111. **Etiology of Lupus.**—Krüger was able to isolate tubercle bacilli in scrapings of lupous tissue in all of his 13 cases, using the latest technic. The positive bacteriologic findings suggest that the focus must entail active production of antibodies and this may be the explanation of the comparative rarity of new tuberculous infection in lupus patients; tuberculous lesions in the internal organs, especially in the lungs, seem to be remarkably rare in lupus patients.

118. Published in THE JOURNAL, April 23, 1910, page 1365.

119. **Symptoms of Hysteria.**—Goldbladt calls attention to the constancy of a sensation of dryness in the mouth and

throat as the most frequent sign of hysteria. He does not venture to decide whether this is a sensory disturbance or a defective secretion of saliva. An objective symptom which he has frequently encountered is a puffiness and bluish tint in the cheeks. When pronounced it looks as if a layer of a bluish pinkish powder had been applied. If not very typical, by stroking or tapping the cheek the phenomenon becomes more apparent. It may be observed in the center of the brow or sometimes over the entire face; in a few cases only in one cheek. He never found this symptom in cases of simple neurasthenia and depression but encountered it a few times in climacteric neuroses, when there was nothing to suggest hysteria. He has records of this sign of hysteria in 200 cases.

120. **Intermittent Limp.**—Erb reports a new series of 39 cases from his private practice, all but 2 in men. In his former compilation of 120 cases from his own and others' experience, only 7 of the patients were women. In this new series abuse of tobacco was evident in 19, repeated exposure to cold in 14 and abuse of alcohol in 10 or 11. There was a history of syphilis in only 3 of the 36 men. He asserts that intermittent limping—which he insists is best described as angiosclerotic dysbasia—is frequently incorrectly diagnosed, mistaken for other troubles and treated in the wrong way. This is especially dangerous on account of the possible danger of gangrene. The trouble generally develops gradually, but he gives several examples of a sudden onset. The partial or complete lack of the pulse in the foot is the one striking symptom, as also the varying behavior of the pulse, its disappearance when the feet are cold and its return after a warm foot bath or under treatment. Signs of general arteriosclerosis were evident in over 85 per cent. of the cases. The vasomotor disturbances he regards as the consequence rather than the cause of the organic obliterating arteritis responsible for the trouble. An important sign of a tendency to intermittent limping is the way in which the leg blanches when it is lifted repeatedly as the patient lies recumbent, followed by redness and hyperemia when the leg is left horizontal. This change occurs much more rapidly and pronouncedly than in health and persists very much longer. Under rest, warmth to the feet, iodid and bromid and galvanic foot baths, great improvement may be realized, even although the pulse in the feet is still imperceptible, as collateral circulation may develop. He also advises the wearing of warm stockings at night, rubbing the legs with alcohol, and other symptomatic measures and strict avoidance of all injurious influences, especially getting the feet wet, cold floors, cold douches and sea bathing, sleigh-riding and traveling in winter. Too hot foot baths and indiscriminate application of superheated air should also be avoided, as also energetic massage and the wearing of tight elastic stockings. In the severer cases the patient should be kept in bed and only when benefit is apparent should very cautious exercises be commenced. His experience shows that this combined and cautious treatment may give very satisfactory results in favorable cases. In conclusion he describes what he thinks is a new form of acute arteritis entailing sclerosis and intermittent limping. The patients were two young men suddenly developing continuous pain in one foot and typical intermittent limping but no general symptoms, no local inflammation or fever. Everything pointed to a primary affection of the arteries of the foot; in one case it developed after lying on the ground in wet clothes for an hour while hunting on a bleak day. Intense pain and the other symptoms came on two hours later.

121. **Malignant Degeneration of Gastric Ulcer.**—Hauser reports a case of scirrhous cancer of the stomach in which gastric ulcers had developed secondarily in the total absence of gastric hydrochloric acid. The peptic ulcers must have been the work of the secretion of the cancer—Neubauer and Fischer have recently demonstrated the existence of a peptid-splitting ferment in the stomach content of persons with gastric cancer. He believes that symptomless gastric ulcer and cancer are more common than generally recognized; malignant degeneration is necessarily a slow process.

122. **Unrecognized Typhoid in Children as Source for Epidemics.** Brückner calls attention to three recent epidemics of typhoid in different communities in western Germany in which the infection was traced to a child who had had a mild gastrointestinal disturbance, so slight that medical aid was not sought. Several children who played with this child developed likewise a mild ambulant and unrecognized form of typhoid, but from these children numbers of other cases in adults and children developed. In all these epidemics children between the ages of 11 and 15 furnished by far the largest contingent of cases. This preponderance of cases in children may explain the regional immunity observed sometimes in adults. As typhoid in children generally runs such a mild and not clinically appreciable course, this source of contagion can be eradicated only by the strictest supervision by medical school inspectors and teachers of every case of simple dyspepsia, and when general practitioners learn to look more universally for typhoid in children. An adult bacillus carrier was probably responsible for the first case in one of the epidemics reported, and in the others, hibernation of the typhoid germs, possibly in the soil or privies. Each epidemic might easily have been prevented if the first child or children had been seen by a physician or if the disease had assumed a clinically recognizable form. His experience demonstrates that typhoid is liable to be lurking beneath the most apparently harmless indigestion. It is especially suggestive when several children seem to be affected at about the same time, particularly in spring and late summer. A circular has been sent to physicians in the typhoid campaign zone in western Germany asking them to redouble their vigilance in all suspicious cases when a case of typhoid is known within the reach of their practice. In Strasburg all the physicians are notified by the health authorities by mail, a postal being sent to each with the street and number of each house where an infectious disease has been notified, T, for typhoid; D, for diphtheria, etc. Every effort is being made to teach general practitioners to rely more on bacteriologic examination from the very start in every suspicious case of indisposition.

125. **Causal Treatment of Diabetes and Glycosuria.**—Funck reports six cases of diabetes or glycosuria in which the sugar disappeared from the urine when existing gastrointestinal disturbances had been corrected by dietetic and other measures. The large glands controlling the carbohydrate metabolism may be affected by any infection or other general process or by the action of toxins generated in the body, and glycosuria may thus result as a third link in the chain. Instead of directing all one's energies to treating the glycosuria—which is only a symptom—the aim should be, he urges, to unearth the primal cause and cure it, after which the glycosuria will subside of itself. Especially effectual is treatment along these lines when the primary trouble is a gastritis or enteritis; in many such unrecognized cases the dietetic restrictions enforced for the diabetes had a direct curative influence on the causal trouble; as this was cured the glycosuria disappeared with it. He insists on the necessity for detection of the prediabetic stage; this requires examination of the urine again and again, tests of pancreas and liver functioning, and early recognition of the prediabetic symptoms, pruritus, alveolar pyorrhea, neurasthenia, etc.

Virchows Archiv, Berlin

June, CC, No. 3, pp. 385-572

130 The Eye Changes in Leukemia. (Augenveränderungen bei der akuten und der chronischen Leukämie.) P. Verderame. Commenced in No. 2
131 Bone Growth in the Skin. (Knochenbildung in der Haut.) E. Sehrt.
132 *Addison's Disease and Its Connection with Hyperplasia of the Lymphatic Apparatus and the Thymus. Kahn.
133 Multiple Osteomas in the Tracheal Mucosa. (Tracheopathia osteoplastica.) E. Brückmann.
134 Ciliated Epithelium Cyst in the Thyroid. (Eine Flimmerepithelzyste in der Schilddrüse.) R. Isenschmid.
135 Suppurative Myelitis. (Zur Kenntnis der eitrigen Myelitis.) K. Kawashima.
136 Duplication Anomalies in the Kidneys. (Doppelbildungen an den Nieren und ein Versuch ihrer entwicklungsgeschichtlichen Deutung.) H. Wimmer.
137 Anatomic and Microscopic Findings with Infarcts in the Intestines. (Befunde bei Darminfarzierung.) G. Pommer.

132. **Addison's Disease.** Kahn shows by a review of the history of Addison's disease that much light has been thrown on it by the advance of science but that the changes in the

lymphatic apparatus and especially in the thymus have not been much studied to date, and no causal connection between them has been definitely recognized. He then reports a case of chronic Addison's disease in a youth with the thymolymphatic temperament. The suprarenals had been totally destroyed by a primary tuberculous process, as also in a similar case in a man of 41 with the status lymphaticus. Analysis of these cases and of similar ones in the literature seems to demonstrate a mutual stimulating action between the thyroid and the suprarenals and between the thyroid and the thymus, while there is a mutual inhibiting action between the suprarenals and the thymus. This assumption clears up, he says, some of the obscure features in both Addison's disease and exophthalmic goiter.

Wiener klinische Wochenschrift, Vienna

May 26, XXIII, No. 21, pp. 763-796

138 *Clinical Importance of Differentiation of Effusions and Transudates by Response to Acetic Acid. (Klinische Bedeutung des Essigsäurekörper-Nachweises in serösen Flüssigkeiten.) H. Popper and E. Zak.
139 Comparative Chemical Researches on the Brain. (Vergleichend-chemische Gehirnuntersuchungen.) K. Linnert.
140 *Bradycardia, Hypotonicity and Hypotonic Bradycardia. M Herz.
141 Treatment of Bronchiectasia by Artificially Induced Pneumothorax. (Ueber Pneumothoraxtherapie bei Bronchiektasien.) O. Frank and N v. Jagic.
142 Ovarian Pregnancy. (Ueber Ovarialgravidität.) J Bondi.
143 *Resection of Posterior Spinal Roots for Gastric Crises in Tabes. (Zur Foersterschen Operation bei gastrischen Krisen.) A. Götzl.

June 2, No. 22, pp. 797-838

144 Consciousness and Intoxication. (Bewusstsein und Intoxikation.) E. Raimann.
145 *Transparency of the Skull with Congenital Hydrocephalus. (Ueber die praktische Bedeutung der Strasburgerschen Transparenzuntersuchung bei Hydrocephalus congenitus.) J. v Bokay.
146 *Pathology of the Suprarenals. (Zur Pathologie der Nebennieren.) M. Goldzieher.
147 Prolongation of First Phase of Ether Anesthesia. (Ueber protrahierten Aetherrausch.) V Schiller and J. Mleen.
148 Experimental Research on Epidemic Poliomyelitis. IV. C. Leiner and R. v. Wiesner.
149 Behavior of Spermatozoa in Female Genital Tract. (Ueber das Verhalten der Spermatozoen im weiblichen Genitaltrakt bei Effluvium seminis.) K. Natanson and H. Königstein.

138. **Acetic-Acid Precipitation in Effusions, Etc.**—Popper and Zak report experiences which confirm the diagnostic importance of the determination of the albuminoid in organic fluids precipitated by dilute acetic acid. The technic is similar to Rivalta's test, but Moritz merely adds the drops of the 5 per cent. acetic acid to the fluid being examined. The fluid becomes turbid in case it contains much of the albuminoid. Non-inflammatory edema fluid gives no reaction but an inflammatory irritation soon produces a large amount of the substance giving the acetic acid reaction. A negative reaction in the cerebrospinal fluid apparently excludes inflammatory irritation of the meninges.

140. **Bradycardia with Low Blood Pressure.**—Herz has been examining the records of patients with bradycardia or low blood pressure or both out of 1,000 patients with heart or vascular troubles—a total of 157 cases. Analysis of this material shows that a low blood pressure with heart symptoms—if insufficiency of the myocardium can be excluded—speaks for the purely functional nature of the heart trouble. Extrasystoles are almost never encountered with low blood pressure except in cases of heart neuroses. The predominant symptoms with the nervous low blood pressure are painful sensations in the region of the heart; with nervous bradycardia palpitations, and with bradycardia accompanied by low blood pressure general weakness. With bradycardia accompanied by low blood pressure there may be an actual "nervous" heart weakness, with or without albuminuria and edema.

143. **Division of the Spinal Roots in Treatment of Gastric Crises.** Götzl reports the third case on record of the cure of the gastric crises in tabes by dividing the posterior spinal roots, confirming the benefit from intradural resection of some of the spinal roots in relieving the intolerable visceral pains in tabes. The healing of the wound was disturbed by a serous discharge for a few weeks. He discusses the anatomic bases for the phenomena observed and adds that ataxia and joint disturbances should not deter from the operation if the gastric crises become intolerable, but the poor prospects for healing of the wound justify it only as a last resort when addiction to morphin is otherwise inevitable.

145. **Transparency of the Skull with Congenital Hydrocephalus.** The experience of von Bokay has confirmed the peculiar transparency of the part of the head where there is much hydrocephalus. He gives colored plates of three cases and the autopsy in two confirmed the clinical findings in regard to the deposits of fluid. In a darkened room the bones of the skull are transparent for the electric light but the brain tissue is opaque and the skull is transparent only where the brain is very much thinner than usual. In the transparent regions, the wall of the hemisphere was in places only a few mm. thick. This transparency permits location of the hydrocephalus and proves a guide for operative measures.

146. **Pathology of the Suprarenals.**—Goldzieher reports research which shows that the normal average epinephrin content in the human suprarenals is about 4 mg., while with arteriosclerosis the average amount was 5.8 mg. and with chronic nephritis 5.79 mg. On the other hand, in septic disturbances with low blood pressure, the average was only 1.5 mg. This loss of epinephrin was manifest in pneumonia, puerperal fever, meningitis and other septic processes, showing that it is merely a general reaction of the suprarenals to infections. The changes in the suprarenals may be a swelling of the parenchyma, cystic degeneration or development of hemorrhagic infarcts—all the changes being serious and explaining the disturbance or total arrest of suprarenal functioning in infectious diseases. This leads to an abnormally small proportion of epinephrin in the blood and this is clinically manifested by a lessened blood pressure. The collapse in septic affections is probably due chiefly to the lessened blood pressure resulting from the acute suprarenal insufficiency.

Zentralblatt für Chirurgie, Leipsic

June 11, XXXVII, No. 24, pp. 817-848

150 *Exposure of Base of Skull by Temporary Resection of Soft Palate. (Die Freilegung der Schädelbasis durch temporäre Gaumenresektion.) C. Hofmann.
151 Utilization of Conjunctiva from the Eye in Plastic Restoration of the Nasal Passages. (Benutzung der Bindehaut des Auges beim plastischen Verschluss von Defekten der Nase.) O. Sprengel.
152 *Technic for Conservative Arthrotomy. (Kniegelenkseröffnung.) O. J. Lauper.

150. **Exposure of Base of Skull by Resection of Soft Palate.**—Hofmann found that he was unable to obtain access to a tumor at the base of the skull by a median incision in the soft palate, and consequently in a recent case he carried the incision across the front of the roof of the mouth and along just inside the teeth to the rear, thus permitting the turning back of almost the entire roof of the mouth in a single flap. The pedicle of the tumor was in the region of the sphenoidal sinus and when this was severed the tumor almost dropped out of itself. The left common carotid had been ligated beforehand but he thinks that this precautionary measure might be dispensed with. The replacing and suturing of the flap were much less difficult than suturing a median incision in the palate.

152. **Conservative Arthrotomy.** Lauper refers in particular to the knee and commends his technic of internal oblique incision, for a distance of 12 cm., slanting from above outward, a finger's breadth from the patella, and opening the capsule over the condyle of the femur without disturbing the joint proper, merely separating the periosteum and the capsule from the femur forward until past the median line, but not back toward the rear. Then with a little force it is easy to dislocate the patella outward without twisting it, merely pushing it outward by pressure on the external condyle. The knee is then flexed which permits extensive oversight of all its parts, both condyles, the inner articulating surface of the tibia, both crucial ligaments, and the median meniscus. When the leg is stretched the patella slides back spontaneously into its place. In the case described a sequester was removed and a glass drain introduced into the bursa below the quadriceps. It was removed in two days. Healing was complete in two weeks without impairment of function.

Zentralblatt für Gynäkologie, Leipsic

June 11, XXXIV, No. 24, pp. 801-832

153 Operation for Large Rectovaginal Fistulas. H. Thomson.
154 *Advantages of Prophylactic Appendicectomy. (Appendicitis mit Abszess im Uteruskörper nach einer vorher ausgeführten Ovariotomie: Beitrag zur Frage der prophylaktischen Appendektomie.) A. Grasmück.
155 Technic for Capillary Drainage of the Abdominal Cavity (Drainage der Bauchhöhle.) A. Sippel.
156 *Stretching the Pelvis During Childbirth. (Ueber Beckendehnung der Kreissenden.) K. W. Krug.

154. **Prophylactic Appendicectomy.**—Grasmück reports a typical case to emphasize the perils from not removing an exceptionally long appendix when the abdomen has been opened for any cause. In his case the appendix had become adherent to the body of the uterus and an abscess had developed at this point in the uterus. The appendix was fully 12 cm. long, and this unusual length should have compelled its removal, Grasmück declares, at an ovariotomy done three years before for cystic degeneration of the right ovary.

156. **To Enlarge the Pelvis during Delivery.** Krug comments on the beneficent arrangement by which Nature seeks to facilitate childbirth by serous imbibition in the cartilages of the pelvis, loosening up the joints and ligaments and permitting them to stretch. In a recent case in which the labor contractions were vigorous but the smallness of the outlet prevented the expulsion of the fetus, he introduced the three middle fingers of the right hand into the vagina and placed one finger on each of the bone protuberances, and then introduced the left hand in the same way. Then as the labor contraction came on he pressed with might with the tips of the three fingers on each side against the bones, exerting the stretching force all in the direction of the transverse diameter of the pelvis, lifting the pelvis a little as he did so. Repeating this procedure for six labor pains, the child was speedily safely delivered. The patient said that it much reduced the pain of the contractions.

Zentralblatt für innere Medizin, Leipsic

June 11, XXXI, No. 24, pp 601-624

157 Digestive Leucocytosis in Laboratory Animals. (Die Verdauungsleukocytose beim Laboratoriumstiere.) C. Klieneberger and W. Carl.

Gazzetta degli Ospedali e delle Cliniche, Milan

May 24, XXXI, No. 62, pp. 657-664

158 Premonitory Swelling of Glands with Acute Infections. (Segno clinico premonitorio di diagnosi di malattia infettiva acuta.) G. de G Giunta.
159 *Increased Phagocytic Power of the Leucocytes from Syphilitics in Presence of Syphilitic Serum. (Nuovo mezzo di leucodiagnosi della sifilide.) G. Burzi.

May 31, No. 65, pp. 689-696

160 *Castration Reduces Sensibility of Rabbits to Strychnin and Tetanus Toxin. (Castrazione e veleni convulsivanti.) T. Silvestri.

June 2, No. 66, pp. 697-704

161 *Bullet Lodging Harmlessly in Heart. (Ferita dell'arteria polmonare.) C. Viscontini.

June 5, No. 67, pp. 705-720

162 *Method of Making an Artificial Sphincter. (Sopra la possibilita di creare a scopo chirurgico uno sfintere artificiale.) G. Ferrarini.

June 7, No 68, pp. 721-728

163 Catheterization of Ureter as Means of Dislodging Calculi. (Sul cateterismo cistoscopico come mezzo terapeutico dell'anuria calcolosa.) F. Cuturi.

June 9, No. 69, pp. 729-736

164 *Scopolamin as Aid in Spontaneous Reduction of Strangulated Hernia. (La riduzione incruenta dell'ernia strozzata favorita dal bromidrato di scopolamina.) A. Luxardo.

June 12, No. 70, pp. 737-752

165 Technic for Operative Treatment of Varicocele. G. Masera.

159. **Leucodiagnosis of Syphilis.**—Burzi found that the phagocytic activity of the leucocytes, tested with spores of the *Oidium albicans*, was materially enhanced by adding serum from a syphilitic to the test mixture. This stimulating action was never observed with normal serum.

160. **Influence of Castration on the Action of Poisons Causing Convulsions.**—Silvestri has long called attention to the importance of the calcium salts in the origin and treatment of a tendency to convulsions; his assertions in regard to the altered metabolism of calcium as the principal factor in epilepsy, eclampsia and tetany have been often cited in these columns. The influence of the thyroid, ovary and testicle on the lime metabolism seems to have been established by recent research, which he here reviews in detail, commenting especially on the fact that a lack of the proper proportion of lime may be the effect of the glands which promote this metabolism or of the defective functioning of those which check it. The influence of the ovaries on the lime metabolism has long been known, and he here reports experiments to determine the influence of the testicles in this line. Their removal seems to have as important an effect on the skeleton as removal of the ovaries. The clinic and the laboratory have shown the favorable action of lime salts on the tendency to convulsions and as neutralizing the action of strychnin and tetanus toxin, and recent research has shown retention of the phosphates and of lime in castrated animals; so he undertook research which has demonstrated that removal of the testicles or ovaries in rabbits rendered them very much less sensitive to injection of strychnin or tetanus toxin, injected a few days to two weeks later, in a dose rapidly fatal for the controls. He has a patient who developed epilepsy at puberty which became aggravated on marriage and pregnancy but ceased entirely after double ovariectomy four years ago. Another patient, an epileptic for years, has had no seizures since removal of the testicles on account of a tuberculous process. For these and other reasons enumerated, Silvestri suggests research on the course of epilepsy in eunuchs and others after castration, with a view to possible therapeutic castration in epilepsy, if wider experience confirms the results of his experiments on rabbits.

161. **Bullet Lodging Harmlessly in Heart.**—A young man was shot in the back, the bullet passing through the third dorsal vertebra, severing the spinal cord, grazing the esophagus and bringing up against the wall of the pulmonary artery into which it finally perforated and at last dropped into the right ventricle where it was found at autopsy six months after the accident, the patient succumbing to complications of the paralysis resulting from the injury to the spinal cord. There were no symptoms discoverable from the presence of the bullet in the artery and heart. The only similar case that Viscontini has been able to find on record is that of Tegeler in which a bullet entering the aorta had lodged in the aortic valve but caused no disturbances except an accentuated diastolic sound. These cases emphasize the remarkable tolerance of the heart for even comparatively large foreign bodies.

162. **Technic for Artificial Sphincter.**—Ferrarini has been applying on dogs the artificial sphincter suggested by Girard and Tusini some years ago. A bunch of fibers on each side of the incision is drawn over to the opposite side and sutured, the result being an oval opening between the crossed fibers, the crossing enhancing their contracting and constricting power. He found that this elastic artificial sphincter admirably ensured continence even notwithstanding the fact that the muscle tissue is soon substituted by scar tissue. The latter retains the properties of contractile tissue sufficiently to answer the purposes desired.

161. **Spontaneous Reduction of Incarcerated Hernia Under Influence of Scopolamin.** Luxardo has found that a very small dose of scopolamin may act on the ganglia of the intestines sufficiently to permit the spontaneous reduction of an incarcerated hernia. He found 5 or 10 decimilligrams ample for the purpose in the four cases reported, the inguinal hernia in each case smoothly subsiding in from 30 minutes to two hours. This was aided materially by the displacement of the gases above under the influence of the drug.

Policlinico, Rome

June 12, XVII, No [illegible], pp. [illegible]

166 Bacteriologic Study of Fish Poisoning. (Contributo allo studio dell ictiosismo.) M. Pergola and A. M. [illegible]
167 Hemoglobinometer. Belosersky.

Riforma Medica, Naples

May 23, XXII, No. 21, pp. 561-588

168 Lactose in Saliva of Nurslings. (Ricerche sulla lattasi nella saliva del lattante.) G. B. Allaria.
169 Experimental Research on the Effects of Lesions of the Pancreas. (Contributo sperimentale allo studio degli effetti delle lesioni di continuo del pancreas.) L. Fioravanti.
170 *Senile Chlorosis. A. Conti.

170. **Senile Chlorosis.**—Conti had three patients between the age of 57 and 60 with general progressive weakness, lack of appetite, slight edema and pallor, for which no cause could be discovered until examination of the blood revealed typical chlorosis, with rapid recovery under iron. When one preparation of iron failed to benefit, another answered the desired purpose. He advises changing the preparation in three or four weeks or changing the method of administration, the physician having the choice between the gastric, hypodermic and intravenous routes; sometimes a rapid cure may follow a mere change from one to another ordinary preparation.

Hygiea, Stockholm

March, LXXII, No. 3, pp. 225-336

171 *Clinical Experiences with the Wassermann Reaction in 700 Cases. H. C. Jacobaeus. Commenced in No. 2.
172 The Maximal Doses in the Swedish Pharmacopeia for Potent Drugs. (Om maximaldoserna för en del af vora mera ofta använda heroica.) H. Enell.

April, No. 4, pp. 337-432

173 *Adenoid Vegetations and Tuberculosis. E. Wikner.
174 *Autopsy of a Typhoid Bacillus Carrier. (En tyfusepidemi genom en bacillbärare.) I. Jundell.
175 The Importance of Hypnotism in Treatment of Mental Disease Still an Open Question. (Kan hypnotismen få någon betydelse i sinnessjukdomarnas terapi?) E. af Geijerstam.

May, No. 5, pp. 433-592

176 *Local Treatment of Tuberculosis with Combined Action of Sodium Iodid and Ozone. (Ett fall af framskriden tuberkulos i svalget och struphufvudet, som gått till läkning genom användning af en ny behandlingsmetod. Demonstration af nya fall, behandlade med NaJ + O_3, jämte ytterligare några ord om denna behandlingsmetod.) S. A. Pfannenstill.
177 Pseudoleukemia and Tuberculosis. (Till kännedomen om Sternbergs "eigenartige Tuberkulose des lymphatischen Apparates.") A. Lichtenstein.

171. **Wassermann Findings in 700 Clinical Cases.**—In 13 cases of liver disease a dubious reaction was obtained in 2, but all the other patients reacted positively. A tumor was palpable in 4 cases and in 2 surgical treatment had been mistakenly applied. In 4 of these cases the spleen was considerably enlarged, but there was no jaundice in any case. Periodically recurring fever was observed in only one case but there was fever at times in several. In one case the liver had evidently been previously injured by abuse of alcohol as the liver disease developed in a serious form only 4 months after syphilitic infection, and 25.5 liters of ascitic fluid were withdrawn at the first tapping. The liver and peritoneum were probably affected in somewhat the same way as the skin; this view is sustained by the rapid improvement under specific treatment; the ascites disappeared more promptly than the liver symptoms. In one case of liver syphilis, the blood findings and other symptoms suggested Banti's disease and in two others this had been the diagnosis elsewhere. The positive Wassermann reaction in 3 out of 4 cases of supposed Banti's disease is suggestive, also the rapid recovery under antisyphilitic measures and the fact that no benefit was derived from them in the one case with a negative reaction. It seems evident that the Banti syndrome is in a certain proportion of cases a form of syphilis affecting the liver and spleen. In a number of the 13 cases of liver affections giving a positive reaction there were gastro-intestinal symptoms. A positive reaction was obtained also in 3 out of 5 cases of Mikulicz' disease. In 74 cases of syphilis of the nervous system a positive reaction was obtained only in about 50 per cent. of the cases in which treatment had been applied systematically, while it was positive in over 88 per cent. among the untreated patients. In 2 cases of typical tabes the reaction was negative and the patients also denied syphilitic infection and had never taken any specific treatment. A negative reaction in the absence of a history of syphilis and of specific treatment is decisive but not under other conditions. Jacobaeus' experience confirms the importance of continuing treatment as long as the reaction is positive, even after subsidence of all clinical manifestations. But a negative reaction does not have much significance and with it the clinical manifestations should govern treatment. The histories of the various cases are given in detail. The proportion of positive reactions in 100 cases of cardiovascular disease was surprisingly large; especially with aortic insufficiency.

173. **Adenoid Vegetations and Tuberculosis.**—Wikner found evidences of tuberculosis in the growths in only 1 of 27 cases of adenoid vegetation, and in this case it was manifestly secondary.

174. **Autopsy of Typhoid Bacillus Carrier.**—Jundell found the gall-bladder and small intestine crowded with typhoid bacilli in the case described. The gall-bladder was comparatively normal and yet the bacilli were found in incredible numbers and in pure culture. The blood and urine were sterile. The patient was a healthy woman of 83 who had beyond question been the source for a number of cases of typhoid in her environment in the course of the last twenty years.

176. **Two-Route Treatment of Localized Tuberculous Processes.**—Pfannenstill calls attention to the remarkable benefit derived in laryngeal and other accessible tuberculous processes from a method of treatment based on the principle of generation of a powerful antiseptic substance by the chemical union within the tissues of two substances introduced by different routes—one brought to the tissues by the blood, the other with inhaled air or otherwise. A chemical reaction results on and in the tissues. He has been experimenting in this line since 1890, and thinks that the combination of sodium or potassium iodid for the blood-brought element and ozone for the inhaled gaseous element answers the purpose admirably. The chemical union resulting liberates iodin in nascent form.

He describes a number of instructive cases demonstrating the remarkable curative efficacy of this method of treatment. The action is necessarily restricted to localized infectious processes, particularly in the upper air passages, of either tuberculous or syphilitic origin. The iodid is taken by the mouth, the ozone inhaled.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Diagnosis of Smallpox. By T. F. Ricketts, M.D., Medical Superintendent of the Smallpox Hospitals and of the River Ambulance Service of the Metropolitan Asylums Board. Illustrated from Photographs by J. B. Byles, F.R.C.S., Senior Assistant Medical Officer at the Smallpox Hospitals of the Metropolitan Asylums Board. Cloth. Price, $6 net. Pp. 154, with 136 illustrations. New York: Funk and Wagnalls Co., 1910.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VII. Cloth. Price, $7. Pp. 961, with 396 illustrations. New York: William Wood & Co., 1910.

Radiumtherapy. By Dr. Louis Wickham, Physician in Saint Lazare, and Dr. Degrais, Chief of the Laboratory in the Hôpital Saint Louis. Translated by S. Ernest Dore, M.D., Cantab. With an Introduction by Sir Malcolm Morris, K.C.V.O. Cloth. Price, $5 net. Pp. 306, with 92 illustrations. New York: Funk and Wagnalls Co., 1910.

A Manual of Personal Hygiene. Proper Living on a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, M.D., Member of the American Ophthalmological Society. Fourth Edition. Cloth. Price, $1.50 net. Pp. 472, with 131 illustrations. Philadelphia: W. B. Saunders Co., 1910.

Das Kystoskop. Eine Studie seiner optischen und mechanischen Einrichtung und seiner Geschichte. Lehrbuch für Aerzte und Studierende. Von Dr. Otto Ringleb, Spezialarzt für Urologie in Berlin. Paper. Price, 7.50 marks. Pp. 191, with 98 illustrations. Leipsic: Dr. Werner Klinkhardt, 1910.

The Straw Itch (Dermatitis Schambergi). A Disease New to American Physicians. By Joseph Goldberger, Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service. Paper. Pp. 8, with illustrations. Washington: Government Printing Office, 1910.

Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital, New York. Cloth. Price, $1.50 net. Pp. 281, with 81 illustrations. Philadelphia: W. B. Saunders Co., 1910.

Post Mortem Manual. A Handbook of Morbid Anatomy and Post Mortem Technic. By Charles R. Box, M.D. Physician to Out Patients, St. Thomas' Hospital. Cloth. Price, $2.40 net. Pp. 335. Philadelphia: P. Blakiston's Son & Co., 1910.

Syphilis. By Jonathan Hutchinson, F.R.C.S., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital. Cloth. Price, $3 net. Pp. 583, with 36 illustrations. New York: Funk and Wagnalls Co., 1910.

The Work of New York's Tuberculosis Clinics. A Critical Study of Its Own Work Made for the Association of Tuberculosis Clinics. By F. Elisabeth Crowell, Executive Secretary, May, 1910. Paper. Pp. 87, with illustrations.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV., No. 4 Chicago, Illinois July 23, 1910

THE STATUS OF VACCINE AND SERUM THERAPY IN OPHTHALMOLOGY *

JOHN E. WEEKS, M.D.
NEW YORK

The immunization treatment of infectious diseases is conducted by the introduction into the system of (a) substances—antigens—which stimulate the tissues to the production of antibodies ("active" immunization); and by the introduction of (b) antibodies that are already formed ("passive" immunization). To the first class of substances belong tuberculin and the bacterins; to the second the serums (substances containing antibodies). If the powers of the tissues of an individual are exhausted so that they can no longer respond to the stimulus of an antigen it is useless and even deleterious to introduce the antigen. Hence the necessity for knowing the condition of the individual in this respect and of avoiding overdosage. In the introduction of antibodies (serums) the conditions of the tissues relative to their ability to develop antibodies is not a part of the question. The problem here is how much of antibodies is required and how much the tissues will tolerate without injury. It will be seen that "active" immunization will be efficient or of no value in proportion to the ability of the tissues to respond and in proportion to the proper estimation of the dosage, always provided that the antigen is suitable. Broadly speaking, bacteriemia is an indication that the tissues are exhausted and that they will not respond to added antigen. In the second case it is a question of proper antibody and proper dosage.

VACCINES (BACTERINS)

TUBERCULOSIS

In the treatment of tuberculosis of the eye various tuberculins are employed.

1. Koch's original tuberculin, "T. O.," is a filtrate of an emulsion of bouillon culture of tubercle bacilli, containing products of the growth of the bacilli, substances extracted from the bacilli and the unaffected constituents of the bouillon. In process of preparation it is heated to a temperature of 70 to 90 C.; the heating is thought to impair its therapeutic value.

2. Koch's new tuberculin, "T. R.," is a centrifugalized extract of dried tubercle bacilli. The sediment obtained by centrifuging is dried, reground and dissolved in glycerin and water.

3. Bacillus emulsion, "B. E.," is made by filtering off the liquid of the bouillon culture and washing, drying and triturating the bacilli in a mortar until no whole bacilli remain. The powder is taken up in 0.8 per cent salt solution and added to 50 per cent. glycerin water so that 1 mg. of the powder is contained in 0.2 c.c. of the final preparation. The emulsion is subjected to a temperature of 60 C. in order to destroy any possible intact bacilli.

4. Bouillon filtrate, "B. F." (Denys), is the unheated filtrate of bouillon cultures of human tubercle bacilli.

It will be noted that the tuberculins are closely allied to bacterins; in fact, Koch's new tuberculin, "T. R.," and bacillus emulsion, "B. E.," are virtually bacterins.

Tuberculins may be prepared from bovine or human strains of the tubercle bacilli, may be used separately or may be combined in any proportion.

In any given case of ocular tuberculosis, it is desirable to ascertain the strain of bacillus responsible for the disease. If this is impossible, it is feasible to employ the tuberculin from the human or the bovine strain, whichever will give the best results; or a mixed tuberculin may be used.

As is well known, it is often necessary to resort to the reaction of the system or tissues in tuberculosis to make a diagnosis of tuberculosis of the eye, either by hypodermic injection by the conjunctiva (Calmette) or cutaneous (von Pirquet) test. It is now generally admitted that the only test that is of any value is that which induces a local reaction in the eye following the subcutaneous injection of tuberculin. A reaction to tuberculin, by whatever method employed, implies that there is a tuberculous focus in some part of the body, but unless the reaction is evident in the eye, there is absolutely no proof that the disease of the eye is tuberculous. Increased hyperemia of the ocular conjunctiva or of the growth and the surrounding tissues must occur. If this reaction takes place, the diagnosis is positive. If it does not take place, the probabilities are that the person is not tuberculous, but the possibility is not excluded.

The method of obtaining the general (and local) reaction of tuberculin by subcutaneous injections of tuberculin is admirably described by Dr. Trudeau as follows:

> The range of the patient's temperature is ascertained by taking it at 8 a. m., 3 p. m., and 8 p. m., for three days before making the test. The first injection should not exceed 0.5 mg., and if any fever is habitually present should even be less, and is best given early in the morning or late at night, as the typical reaction usually begins, in my experience, within six to twelve hours. Such a small dose, while it will often be sufficient to produce the looked-for rise of temperature, has under my observation never produced unpleasant or violent symptoms. An interval of two or three days should be allowed between each of the two or three subsequent injections it may be necessary to give, as reaction in very rare cases may be delayed for twenty-four or even thirty-six hours. On the third day a second dose of 1 mg. is given, and, if no effect is produced, a third dose, of 2 mg., three days later. In the great majority of cases of latent tuberculosis an appreciable reaction will be produced by the

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

time a dose of 2 mg. has been reached. If no effect has been caused by the tests applied as above, I have usually gone no farther and concluded that no tuberculous process was present. If some slight symptoms, however, have been produced by a dose of 2 mg., it may be necessary to give a fourth injection of 3 mg. in order to reach a positive conclusion. Nevertheless it should be borne in mind that in a few cases the exhibition of even larger doses may cause reaction, when the smaller do not, and indicate the existence of some slight latent tuberculous lesion, and the negative result should not, when applied within the moderate doses described, be considered absolutely infallible. It is evident that the size of the doses given has much to do with the limitations of this method for usefulness, and the correctness of the conclusions reached by its application. The tuberculin used is also a matter of some importance, in determining the dosage, as different samples vary considerably in their efficiency. If the test be pushed to the injection of such large amounts as 10 mg. or more, as advocated by Maragliano, such doses are by no means free from the objection of occasionally causing unpleasant and sometimes dangerous symptoms; and even if the amount given be not carried to the dose of 10 mg., which is known to produce fever in healthy subjects, it is likely that on account of individual susceptibility or the presence of some other morbid process in the body, reaction will be found to occur with the larger dose when no tuberculous process exists. The adoption of an initial dose so small as to guard against the absolute possibility of producing violent reactionary symptoms, and the graded increase of the subsequent doses within such quantities as are known never to produce reaction in healthy individuals, would seem to afford the best protection against unpleasant results and misleading evidence.

In the tuberculin treatment of tuberculosis of the eye, tuberculin "T. O." is used but little for therapeutic purposes because of its having been subjected to a quite high temperature. "T. R." and "B. E." apparently possess greater therapeutic value, although they may have been subjected to a temperature of 50 C. for a short time. "B. F." is thought to be the most efficacious.

The method of treatment (the diagnosis having been made) at present advocated by those of large experience is the method of von Hippel, beginning with a very small dose of "T. R.," "B. E." or "B. F.," not more than 1/500 mg., and increasing by 1/500 mg. each dose; the dose to be given every third day if no general reaction has been occasioned in the early treatment of the case; less frequently as the patient improves. The tuberculin should not be given if there has been any reaction until the temperature has returned to normal and has remained so for at least forty-eight hours. It is advised so to regulate the dose that the effect on the patient is just short of the general reaction. As the treatment advances, a larger dose will be tolerated, but the maximum dose should not exceed one milligram.

The tuberculin, properly diluted, is injected subcutaneously into the subcutaneous areolar tissue of the abdomen, subscapular region, or arm after the skin at point of puncture has been thoroughly rubbed with 95 per cent. alcohol. The puncture may be subsequently sealed with collodion.

In an article which I recently presented to the Section on Ophthalmology, Sixteenth International Medical Congress at Budapest, fifty-eight cases of tuberculosis of the eye, including tuberculosis of the eyelids, conjunctiva, cornea, sclera, iris, choroid, and retina were cited. These cases occurred in the practice of ophthalmologists in the United States and Canada. Of this number, virtual cures were observed in thirty-five and improvement in fifteen cases. The form of tuberculosis that is least amenable to treatment is the conglomerate tubercle which forms masses in the vascular tunic of the eyeball and in the optic nerve.

The preparations of dead bacteria used for inoculating individuals are termed vaccines. It has been conclusively proved that a vaccine which is prepared from the same strain of bacteria (autogenic), against which the vaccine is to be used, is the most efficient in the particular case. In other words, the vaccine is specific for the strain from which it is made. If this strain cannot be obtained for making the vaccine, some complementary element may be found in each of a number of heterogenous strains, the sum of which may almost equal the specific strain. The latter are termed "polyvalent" vaccines or "stock" vaccines.

Wright advises injecting the vaccine in the loose subcutaneous tissue as near the site of the lesion as possible and "up-stream" as regards the flow of the lymph, in order that the "opsonins" resulting may be carried as directly as possible to the disease area in the lymph-stream. The sites usually selected are the loose tissue of the back, the lumbar region, or the groin.

GONOCOCCIC VACCINE

As this micro-organism is not readily cultivated it is difficult to obtain autogenous vaccine. "Stock" gonococcic vaccine occurs on the market in bottles containing 1 c.c. of an emulsion in two strengths, one of 20,000,000 and one of 100,000,000. In regard to the dose, Cole and Meakins[1] gave an initial dose of 300,000,000 gonococci, and a dose of 1,200,000,000 did not produce any unfavorable symptoms. They say: "In no case have we seen the administration of gonococci vaccine do harm." It must be remembered that vaccines are antigens, and that their capacity to excite the development of antibodies depends on the capacity of the tissues to react to their stimulus and not on the size of the dose. It is held by the Wright school that the condition of the tissues in this respect can be determined by a study of the "opsonic index;" this study requires the time of a skilled laboratory worker, which is not always at the command of the clinician.

Many clinicians are of the opinion that the opsonic index does not furnish data that are of any more value than the clinical manifestations; they rely on the local and general reaction occasioned by the vaccine and the effects on the course of the disease. Although large doses of gonococcus vaccine are well tolerated, the tendency now is to give smaller doses than formerly; it may range from 2,500,000 to 50,000,000. In a case of metastatic gonorrheal iritis which I recently treated successfully the initial dose was 2,500,000, subsequent dose 5,000,000 each.

Gonococcic vaccine is regarded as valuable as an aid to the diagnosis of obscure affections due to the gonococcus. Irons[2] writes:

> A typical gonococcus reaction is characterized by a rise in temperature, often only slight . . . and a variable degree of malaise. The symptoms follow the injection in from eight to twelve hours and commonly last about twenty four hours. Frequently there is a decided tenderness at the site of the injection, greater than occurs after the inoculation of the same dose of the same preparation in normal subjects. Occasionally there is a marked redness and edema, lasting from twenty-four to forty-eight hours. . . The degree of reaction is influenced by several factors. After small doses (20,000,000 to 50,000,000) the reaction was not marked, and in a number of early cases either did not occur or was overlooked . . . The reaction is in many subjects similar to that which follows injections of tuberculin in cases of tuberculosis.

---

[1] Cole and Meakins: Bull. Johns Hopkins Hosp., June and July, 1907.

[2] Irons: Jour. Infect. Dis., June 4, 1908.

In obscure cases of uveitis, iritis and metastatic conjunctivitis, the gonococcic vaccine promises to be of service in clearing up the etiology.

It is now generally recognized that gonococcic vaccine is of little value in acute gonorrheal infection either of the urethra or of the eye. Of seventy-nine cases of acute urethral gonorrhea tabulated by Duncan[3] "satisfactory" results were obtained in nine, slight improvement noticed in ten, no improvement in sixty. The cases of acute gonorrheal infection of the conjunctiva treated with gonorrheal vaccine known to me are only three in number. In thirteen cases of chronic gonorrhea occurring in females, satisfactory results were obtained in eleven; no result in two. Of forty-six cases of gonorrheal arthritis, satisfactory results were obtained in forty-two; no result in four (Duncan). Of chronic gonorrheal affections of the eye, Posey (personal communication) reports a severe case of uveitis not benefited, and Dr. S. Hanford McKee three cases of metastatic gonorrheal conjunctivitis. All ran a mild course. The vaccine appeared to relieve the pain greatly in the joints affected with gonorrheal rheumatism in these patients.

Two cases of gonococcal iritis in patients with arthritis in which fluid from the synovial sacs gave gonococci were reported to me by Dr. Charles A. Oliver. On the use of gonococcic vaccine "both cases showed some local reaction with marked recrudescence of joint lesions. The first improvement was probably more rapid than I have formerly seen, but of this I am uncertain."

I have recently treated a case of double metastatic gonorrheal iritis occurring in a negro of 23 years who had a gleet. In the right eye the anterior chamber was about one-quarter full of plastic lymph; in the left eye there was very little plastic lymph. The patient was admitted to the New York Eye and Ear Infirmary. Rest in bed and atropin were the only measures employed other than the vaccine. The initial injection was one of 2,500,000 followed in twelve hours by a similar dose; twenty-four hours later a dose of 5,000,000, which was repeated in twenty-four to forty-eight hours. Recovery occurred in about twelve days. Some of the plastic lymph was removed from the anterior chamber of the right eye. It did not show gonococci, nor were cultivations obtained on blood-agar. The discharge from the gleet showed gonococci.

From the evidence adduced it is very well proved that gonococcic vaccine is a valuable therapeutic agent in the treatment of the manifestations of chronic gonorrhea.

STREPTOCOCCIC VACCINE

Streptococcic vaccine is put on the market in 1 c.c. quantities, the strength of the preparation being indicated on the package. The dose recommended by Sir A. E. Wright is 10 to 20 millions, the minimum dose to be the initial dose, this to be increased according to the toleration of the patient; injections to be intramuscular.

In 58 cases of erysipelas tabulated by Duncan,[3] seven patients were "cured;" in fifty the result was "satisfactory," and in one no result was obtained. This vaccine may be of value in cases of erysipelas affecting the eye. C. R. Holmes has employed the vaccine in erysipelas. "Some cases were greatly modified, but in none of them was there any decided result."

STAPHYLOCOCCUS VACCINE

With the staphylococcus, as with almost all micro-organisms, it is the opinion of clinicians that the vaccine made of the "autogenous" strain gives better results than vaccine made of a number of heterogenous strains combined (polyvalent).

It is well known that the staphylococcus is a factor in the production of the eczematous processes of the lids, conjunctiva and cornea, of some abscesses of the lid, of some forms of blepharitis marginalis, and of suppurations of the globe after traumatism of whatever kind

The following cases of the use of staphylococcic vaccine have been reported:

Alexander Duane of New York reports a case of sluggish purulent infection of the eye. Hypodermic injections of a polyvalent vaccine of the *Staphylococcus aureus* were given with apparently good results. Six injections were given in seventeen days, beginning with a dose of 240,000,000.

Frank C. Todd of Minneapolis reports one case of chronic hordeola, with pustules on the face and eczema around the nostrils. The patient had been treated for this condition from time to time for five years. Hypodermic injections of an autogenic vaccine of *Staphylococcus aureus* were followed by complete recovery.

Charles A. Oliver of Philadelphia has employed autogenic vaccine of the *Staphylococcus albus* in cases of recurrent hordeoli, injecting in the corresponding arm and upper dorsal region with apparent good results.

H. Gradle of Chicago has treated a number of cases of eczematous conjunctivitis and keratitis, with eczema about the nares, with autogenic staphylococcus vaccine with very successful results, not only as regards recovery from the local disease but also in improvement of the general condition of the individuals.

COLEY'S TOXIN

Coley's toxin is in reality a bacterin or vaccine composed of a mixture of *Streptococcus pyogenes* and *Bacillus prodigiosus*.[4] The method of preparation is described in Coley's article.[5]

The initial dose should be 1/4 minim, diluted with a few drops of sterile water, hypodermically injected, remote from the tumor. After a few injections, if the reaction is not great, the toxins in the same dose may be injected into the growth. The reaction when the toxins are injected into the growth is greater than when it is injected remote from the growth. Coley states that "the dose should be gradually increased by 1/4 minim when injected into the tumor, by 1/3 to 1/2 minim when injected outside the limits of the tumor, until the desired reaction is obtained. The best results are obtained by doses sufficiently large to produce moderately severe reactions, a temperature of 102 F. to 104, with or without chills." The dose is repeated when the temperature reaches the normal.

Coley states that carcinoma is not influenced by the treatment, and he has not had a recovery in melanotic sarcoma. He reports having treated 430 cases of inoperable sarcoma with the mixed toxins. In forty-seven cases the growth completely disappeared; in twenty-eight cases a period of from three to fifteen years has passed since the disappearance. The treatment has also been employed as a preventative to recurrence after operation, with apparent good results.

A number of brief reports of cases affecting the eye or orbit have been obtained.

W. E. Jack, Boston, Mass.: Sarcoma of orbit; toxins injected into the growth and into the arm. Local reaction occurred when the toxins were injected into the growth. Result negative.

---

[3] Duncan: New York Med. Jour., Nov. 6, 1909.

[4] This form of treatment originated from the recorded fact (J. Bland-Sutton: Tumors, Innocent and Malignant, Ed. 4, p. 303) that inoperable sarcoma has been known to disappear after an attack of erysipelas. The prodigiosus element was incorporated after it was shown by Rogers that by growing the *Bacillus prodigiosus* with the streptococcus of erysipelas the virulence of the latter was increased.

[5] Coley: Boston Med. and Surg. Jour., Feb. 6, 1908.

George E. De Schweinitz, Philadelphia: Inoperable sarcoma involving the antrum. Result "most unfavorable." Obliged to discontinue treatment.

Henry A. Beaudoux, St. Paul, Minn.: Two cases, one of which resulted in a cure. The second case resulted in death after exenteration of the orbit and the subsequent removal of a recurrent growth on the inferior margin of the orbit.

Coley mentions a personal report of R. Tilly of Chicago: "Adult male, aged 24; inoperable sarcoma of orbit which disappeared under three weeks' treatment with the serum."

J. E. Weeks, New York: Case of recurrent melanotic sarcoma of the orbital tissue in a man aged 72 years. After exenteration of the orbit, Coley's fluid was injected as a preventive to recurrence for three weeks and again after an interval of about three weeks for three weeks longer. The injections were given every third day. Metastasis, apparently in the liver, occurred three years later, causing death.

SERUMS

DIPHTHERIA ANTITOXIN

The great value of this serum is too well known to require further elaboration here. The initial dose is 1,500 to 6,000 units, according to the age of the patient and the severity of the infection. The diphtheria antitoxin globulins are employed in proportionate strength. The dose may be repeated in twelve hours if no improvement is noted; in twenty-four hours, if improvement is moderate. In ocular diphtheria two injections are frequently sufficient; should there be an arrest in the improvement, however, or should the improvement be very slow, a third or fourth injection may be given.

GONOCOCCIC SERUM

The serum of Rogers and Torrey is made by a number of manufacturers. It is obtained from the sheep some days after the injection of living gonococci into the peritoneal cavity.

The serum is usually injected into the loose subcutaneous tissue between the skin and deep fascia of the upper arm. Any other convenient place may be used. The dose is ordinarily 2.5 c.c., repeated every forty-eight hours. This general rule is modified by the general condition of the patient and the degree of reaction occasioned.

A number of cases of conjunctivitis have been treated with the serum, both by local application and by injection, with little or no benefit. With iritis the results have been very promising in the few cases treated by this method.

Dr. Arnold Knapp[7] reports the following case of gonorrheal iritis treated by Torrey's serum:

> J. W., gonorrhea contracted two and a half years previously, metastases in joints, pericarditis and three attacks of iritis. The last three attacks treated with Torrey's antigonococcic serum. Iritis characterized by pain, fibrinous exudate, marked ciliary congestion, no adhesions. Symptoms aggravated in both attacks after second or third injection. Condition of eyes then rapidly improved, clearing in from two to three weeks from onset. Ten injections on each occasion.

As far as one case could show, the serum is a remedy of value and deserves further trial. Thus far its action and mode of use are not understood.

Dr. Torrey, in discussing the above case, stated that the inflammation and exudate became more marked after the first injections. This corresponds to the action of the serum in gonorrheal arthritis.

In a personal communication Dr. Arnold Knapp reports having treated three other cases, with cure in two and an indefinite result in one.

Dr. C. W. Cutler[8] has employed serum treatment in a few cases of gonorrheal ophthalmia. He injected it hypodermically in the case of two infants and also dropped it in the eyes without any reaction or pain. Both recovered. One was a moderately severe case and seemed to improve after each injection. The routine treatment was continued, however.

Dr. George S. Derby of Boston, in a personal communication, reports one case of acute gonorrheal ophthalmia in which the Rogers-Torrey serum was employed. The result was negative.

Dr. R. H. Herbst[9] of Chicago gives the following results of the treatment of general gonorrheal infection which will be of value here as indicating what may be expected by use of this serum. Fifty-two patients, including almost every form of gonococcus infection, were injected with this serum. Of this number, 45 were treated in the clinic at Rush Medical College; 7 were private patients. They were divided into six groups as follows:

> 1. Acute gonococcus infection of the anterior or anterior and posterior urethra, with or without infection of the prostate and seminal vesicles.
>
> 2. Subacute gonorrhea of the anterior or anterior and posterior urethra.
>
> 3. Chronic gonorrhea of the anterior or anterior and posterior urethra.
>
> 4. Acute gonococcus infection of the epididymis.
>
> 5. Acute infection of the joints.
>
> 6. Chronic gonorrheal joints.
>
> In the first group, namely, the acute gonococcus infection of the anterior and posterior urethra, seventeen individuals were injected. These patients were given the maximum dose, 6 c.c., as frequently as the reaction would allow, without any change in the discharge from the urethra or other symptoms.
>
> In Group 2, subacute gonorrhea of the anterior urethra or anterior and posterior urethra, nine patients were injected. Eight of these did not show any improvement after repeated injections, one cleared up after the third injection.
>
> In Group 3, chronic gonorrhea of the anterior and posterior urethra, eleven patients were injected. Seven did not show any improvement; one cleared up after eight injections given during a period of four weeks, one after six injections given during a period of three weeks, and two passed clear urine after four injections given during two weeks.
>
> In Group 4, acute gonococcus infection of the epididymis, four were injected. Three did not improve so quickly as usually seen with local treatment. In one case the swelling subsided in two weeks without the return of the discharge from the urethra; this patient received six injections of 4 c.c. each.
>
> In Group 5, acute gonococcus infection of joints, four were injected. Two of them were aspirated and the gonococcus demonstrated. One patient is under treatment at the present time, three did not show much change.
>
> Group 6, chronic gonorrhea of joints, included seven patients. All improved promptly after the first few injections.

The conclusions to be drawn from the above are clear. First, the serum has absolutely no effect on acute gonorrheal infections; second, its value in subacute and chronic cases is very doubtful, although there were a few isolated cases in which the results were somewhat better than we see with local treatment; third, the value of this serum in the treatment of chronic gonorrheal joints is without question.

---

[6] Coley: Am. Jour. Med. Sc., 1906, cxxxi, 375.

[7] Knapp, Arnold: Arch. Ophth., 1908, xxxvii, 25[illegible]

[8] Cutler, C. W.: Tr. Ophth. Section New York Acad. Med., Feb. 17, 1906; Arch. Ophth., 1906, xxxv, 109.

[9] Herbst, Robert H.: Serum Treatment of Gonorrhea with Report of Cases, The Journal A. M. A., May 23, 1908, p. 1678.

STREPTOCOCCIC SERUM

The *Streptococcus pyogenes* is usually employed in the preparation of this serum. The serum is put on the market in hermetically sealed glass bulbs, each containing 10 c.c. The initial dose is 10 to 20 c.c. repeated in twenty-four hours if improvement is not marked.

My thanks are due to those named below for the following brief reports of cases treated with this serum.

Charles S. Bull, New York: Case of deep orbital streptococcic infection. Subconjunctival injection of antistreptococcic serum prepared by the Board of Health of the city of New York. The result was doubtful. There was an "apparent diminution of infiltration and shortening of the period of duration of the acute symptoms."

B. A. Ellis, Los Angeles: Has employed antistreptococcic serum in the streptococcic eye infections with "excellent results."

R. D. Gibson, Youngstown, O.: Has employed antistreptococcic serum in streptococcic eye infections by subcutaneous injections. Results negative.

Allen Greenwood, Boston: Has employed Marmorek's serum injected subcutaneously in large dose. Results were good in cases of erysipelas of the eyelids.

E. R. Lewis, Dubuque, Iowa: Has employed antistreptococcic serum "in probably a hundred or more cases" by deep intramuscular injection "of from 10 to 30 cc. at various intervals." Results negative.

F. T. Rogers, Providence, R. I.: Has used antistreptococcic serum by deep injection. Results negative.

Frank C. Todd, Minneapolis: Has employed the antistreptococcic serum by hypodermic injection. In one case of septicemia due to streptococci, recovery took place, owing, Dr. Todd thinks, to the serum. In other cases the result was negative.

D. N. Dennis, Erie, Pa.: Antistreptococcic serum employed hypodermically in a case of erysipelas and in corneal ulcer due to streptococci. Results very good indeed; the improvement was immediate.

N. L. Wilson, Elizabeth, N. J.: Has employed the antistreptococcic serum in a few cases, injecting hypodermically. Results "not good."

It will be noted that the results obtained by use of the serum have been very variable.

TETANUS ANTITOXIN SERUM

Tetanus antitoxin was first introduced by Behring and Kitasato. It is produced in the same manner as the diphtheria antitoxin and is standardized. This serum is manufactured by a number of municipalities and corporations in the United States and is reliable.

For immunizing purposes the dose is 1,500 units of the antitetanus serum injected intravenously preferably. Subcutaneous injections may be made, but are less effective (Park). For treatment 3,000 to 10,000 units should be injected intravenously to begin with, according to the severity of the case, and repeated every eight to twelve hours until the symptoms abate. The injections should be made at the earliest possible moment, as the degree of efficacy is in inverse proportion to the duration of the infection.

While of comparatively little value in ophthamology because of the rarity of the cases, some cases have been reported.

Bert Ellis, Los Angeles: Has employed the antitetanic serum in three cases, injecting the serum hypodermically. There were two recoveries. Further particulars fail.

E. R. Lewis, Dubuque, Iowa: One severe case of ten days' duration. Antitetanic serum employed. Deep injections at frequent intervals and varying dosage. Result, recovery. Lewis is favorably impressed with the serum.

E. J. Bernstein, Kalamazoo, Mich.: Has employed the antitetanic serum to control infection (immunize) in nine cases of wounds of the eye in which tetanus infection was suspected. Development of tetanus did not take place.

That this serum is of much value in the early treatment of tetanus is conceded by all who have used or studied it.

TYPHOID AND MENINGITIS ANTITOXINS

The serum of Chantemesse[10] (typhoid antitoxin) need not be considered in relation to the eye.

Flexner's serum (meningitis antitoxin) which has proved so beneficial in epidemic cerebrospinal meningitis, will probably never be of value in ocular therapeutics except in connection with its use for the systemic disease. The relatively infrequent affections of the eye due to the meningococcus will mend as the epidemic cerebrospinal disease improves under the use of the serum.

DEUTSCHMANN'S SERUM

Deutschmann's serum[11] is obtained from animals that have been fed on living yeast cells in large quantities. The serum as found on the market is prepared in two forms; one, the true Deutschmann serum with some trikresol added to prevent decomposition, marked "Deutschmann's serum," and one in which the active principle of the serum is precipitated by a method devised by Dr. Enoch of the Reute-Enoch Laboratory, Hamburg, then redissolved in water and designated "Deutschmann's Serum E." Both preparations are put up in bottles of 2 c.c. The latter is about twice the concentration of the former.

Deutschmann asserts that his serum is efficient as an adjuvant against pneumococcic, streptococcic, and staphylococcic infections.

The dose of the serum is to be governed by the effect on the pathologic process; in adults, 2, 4, 6, or even 8 c.c. may be injected twice, thrice, or even more times weekly. The injections are intramuscular, either in the chest or in the abdominal walls.

The following cases of its use have come to my notice:

H. Gifford of Omaha, Neb., reports one case of severe infection of the eye. Deutschmann's serum was injected. Results negative (further particulars fail).

Arnold Knapp of New York employed Deutschmann's serum in one case. Result negative.

This serum is of doubtful value.

CYTOGENIC SERUMS

Cytogenic serums were among the first produced. Von Dungern[12] suggested the possibility of using an epitheliolysin for the destruction of epithelial cancer-cells that were left in the body after the work of the surgeon. These serums all possess hemolytic and hemagglutinative properties and are specific against the cells of the organs from which the inoculation was made.

Working on the principle that "the accepted biologic principle at the present time is that the nucleus is the most important morphologic and physiologic portion of the cell, and hence it follows that its chemical constituents must be those most necessary for nutrition." S. P. Beebe[13] isolated nucleoproteids from various tissues and produced antiserums by their injections into the peritoneal cavity of alien animals, hoping to obtain specific serums. Active serums were produced.

---

10. Chantemesse: L'hyg. gén. et appliquée, October, 1907.
11. Deutschmann: Münchn. med. Wchnschr., 1907, No. 19.
12. Von Dungern: Münchn. med. Wchnschr., 1899, xlvi, 1228.
13. Beebe, S. P.: Jour. Exper. Med., 1905, p. 733.

At the suggestion of Dr. John Rogers, Beebe[14] endeavored to apply these methods to the thyroid, in the treatment of exophthalmic goiter. Thyroid glands from two human subjects who had died of exophthalmic goiter were first used. The nucleoproteids and the thyreoglobulins were extracted from the thyroid glands by Oswald's method.[15] A mixture of the two proteids was injected into rabbits, and the serum thus obtained was believed to possess both cytolytic and antitoxic properties.

As the difficulties attending the getting of the thyroid gland in cases of exophthalmic goiter would make it impossible to produce sufficient serum to place it on the market, normal human thyroid glands, obtained at autopsy, were employed. The nucleoproteids obtained from this source produced a serum less potent than the first, but sufficiently active. It was found that the best serum was obtained from the sheep.

Since it is possible to obtain serums from diseased glands in small amounts, which are more active than those obtained from normal glands, Rogers[16] proposes that the different serums be designated as "pathologic" and "normal" serums, respectively. Rogers,[17] referring to the results of the therapeutic use of thyroid cytoserum, gives the following statistics:

> Four hundred and eighty cases representing all stages and varieties of thyroidal diseases have thus come under my personal observation for a greater or less length of time, and Dr. Beebe has records of about as many more who have been treated with his laboratory products by many other physicians. In my series approximately 15 per cent. have been cured of all traces of their disease; some 10 per cent. have no abnormal subjective symptoms but still retain signs generally of goiter—less often of exophthalmos or other indication of their disorder noticeable to the trained observer; about 50 per cent. have improved to a greater or less extent, which usually means that after a month or two of treatment, with alleviation of symptoms, the patients have passed from observation and may at present be better or worse than when last seen; about 17 per cent. have failed to show any improvement and 8 per cent. have died from the natural progress of their disorder.

The cytoserum of carcinoma[18] has not been used as yet in carcinoma of the eye.

SYPHILITIC SERUM

Since the application of the method known as complement deviation[19] by Wassermann, Neisser and Bruck[20] to the diagnosis of syphilis and the discovery of the so-called Wassermann reaction, a method for the diagnosis of syphilis has been developed which is undoubtedly of value to ophthalmologists in clearing up the etiology of doubtful eye lesions. In regard to its value Butler,[21] after an exhaustive review of the literature on the subject, sums up as follows:

> The serum [Wassermann] reaction for syphilis is specific. It is found positive in from 90 to 85 per cent. of all cases with syphilitic manifestations . . . in 50 to 60 per cent. of latent cases . . . in from 70 to 80 per cent. of parasyphilitic diseases.
>
> A negative reaction does not positively exclude syphilis.

The Noguchi tests[22] based on the increased globulin content of syphilitic serum has proven to be reliable, and is a relatively simple means of diagnosing syphilis.

A comparison of the results by the Wassermann and the Noguchi tests, made by Noguchi, shows the latter to be of equal if not of greater reliability.

46 East Fifty-seventh Street.

ABSTRACT OF DISCUSSION

Dr. M. Wiener, St. Louis: The subject opens up a broad field for investigation and gives promise of a rich harvest in the domain of ophthalmology. My individual experience in this line has not been large, and has been limited mainly to the tuberculin and Wassermann tests. The latter I have found to be valuable in doubtful cases, especially those in which a positive reaction is obtained. One case that impressed me most forcibly was that of the mother of one of my students, who came to me with a double optic neuritis. I was sure that if the condition were syphilitic it must be accidental. There was a positive Wassermann with an uninterrupted recovery under mercury. I agree with Dr. Weeks' views relative to the tuberculin test, having had two sad experiences from the Calmette test. The Wright treatment is of undoubted good in certain cases. A case of successive crops of multiple, inflamed chalazia was successfully treated by Dr. O. H. Brown by using the opsonic index, after it had resisted every other means at our disposal.

Dr. H. Gradle, Chicago: I wish to describe the use of gonococcus vaccine in a single but striking instance of iritis. The patient had a history of gonorrheal rheumatism with iritis recurring since years in one or both eyes. I had treated him a year previously for a very persistent attack of iritis. The chamber was partially filled with a purulent exudate. According to my experience in his previous case and similar instances I could predict with certainty a severe and tedious course. I gave him 25 millions of stock gonococcus vaccine. The next day I found the exudate diminished and replaced partially by hemorrhage. From that day a rapid recovery ensued, so that in four or five days it cleared up to an extent that had seemed practically impossible. The other eye became involved to a very slight extent, while in other previous attacks the patient had had severe attacks in both. Under injections at weekly intervals he made rapid recovery. Dr. Weeks has referred to my experience with staphylococcus vaccine, particularly in phlyctenular troubles. Of course I refer to the persistent cases in which smears show the presence of staphylococci, which are presumably the (secondary) cause of the prolonged attack; for there is no reason to attribute phlyctenules primarily to staphylococcus infection. I can say with reasonable certainty on account of the uniform results, that in persistent and recurrent phlyctenular conjunctivitis vaccination with staphylococci will produce results. It is only after the second injection that I have observed benefit.

Dr. John Green, Jr., St. Louis: A case which may throw some light on the question of proper dosage of tuberculin in eye diseases is the following: The patient, whom I saw through the courtesy of Dr. Prince of Springfield, Ill., was a young woman who, five years previously, had passed through a severe keratitis and iritis of the left eye. At that time the nature of the trouble was unrecognized and the final outcome was disastrous: a large central opacity of the cornea and nearly complete posterior synechiæ. Vision hand motion. Some three months prior to coming under my observation there appeared a central keratitis of the right cornea. She consulted Dr. Prince, who recognized the tuberculous nature of the trouble and gave her injections of tuberculin TR, beginning with 0.001 mg. As the patient was coming to St. Louis Dr. Prince referred her to me. I began to use minimal doses, beginning with 0.003 mg., being influenced by Wright's dictum that we should begin with small doses. The dosage was controlled by the opsonic index and was slightly increased, at weekly intervals, up to 0.001 mg. The patient did very well for a time, the peripheral infiltration and the central masses cleared and she went to her home near by. About two months later she returned with a severe exacerbation—a dense infiltration of the cornea—and I began with larger doses, beginning with 0.002 mg., increasing the dose and giving it every second day until she was getting 0.02 mg. Rapid improvement took place and the periphery of the cornea cleared notably.

---

[14] Beebe, S. P.: Preparation of a Serum for the Treatment of Exophthalmic Goiter, The Journal A. M. A., Feb. 17, 1906, xlvi, 484.

[15] Oswald: Virchows Arch. f. path. Anat., 1902, clxix.

[16] Rogers, John: The Treatment of Thyroidism by a Specific Serum, The Journal A. M. A., Sept. 1, 1906, xlvii, 655.

[17] Rogers: Ann. Surg., December, 1909.

[18] [illegible], J.: The Serum Treatment of Carcinoma, The Journal A. M. A., Oct. 31, 1908, li, 1498.

[19] Bordet and Gengou: Ann. de l'Inst. Pasteur, 1901, xv, 289.

[20] Wassermann, Neisser and Bruck: Deutsch. med. Wchnschr., 1906, xxxii, 745.

[21] Butler, W. J.: Serum Diagnosis of Syphilis, The Journal A. M. A., Sept. 5, 1908, li, 821.

[22] Noguchi, H.: Jour. Exper. Med., January, 1909.

Unfortunately the destructive process had gone too far to permit of complete clearing. The vision at present is 15/150 with the pupil dilated; much less with the pupil its normal size. This experience indicates that we should not rely too much on the opsonic index as to the matter of dosage; it also bears out von Hippel's contention that relatively large doses are most efficient in tuberculous affections of the eye.

Dr. H. Gifford, Omaha: As to the value of the dead gonococcus in metastatic gonorrheal ophthalmia, I had a case a short time ago, one of the very few cases that I have ever seen, with severe involvement of the wrists and ankle-joints and very marked metastatic gonorrheal ophthalmia; in fact, I at first thought it was an ordinary gonorrheal ophthalmia, but examination of the secretions showed no germs. The patient was put on doses of 25,000,000 gonococci. He improved very much in twenty-four hours and in twenty-four more I gave another dose and he made a complete, rapid and satisfactory recovery. I shortly afterward tried the same thing in an ordinary infective case with no result.

Dr. A. G. Bennett, Buffalo, N. Y.: In the preliminary letter of inquiry that Dr. Weeks sent around he asked for experience with the pneumococcus serum. He did not mention it in his paper. My own experience has not been satisfactory. I have seen it used, and have used it in three cases. Two patients died and in the other case I could not see any particular improvement.

Dr. E. V. L. Brown, Chicago: Davis asserted two years ago that recurrences were too numerous with von Hippel's treatment. Koch advised him to use the bacillen emulsion, and in 13 cases there were no recurrences. I think that we should use it if we are to use von Hippel's treatment.

Dr. John E. Weeks, New York: In regard to the dose of vaccines I want to urge the necessity of bearing in mind that these are antigens, and that we ought to determine, as far as possible, the condition of the system in regard to the reaction to vaccines. I think that the tendency is to give smaller doses at first and work up until one gets the greatest degree of benefit, and that is one reason why I have spoken of such small doses of gonococcus vaccine. In regard to the pneumococcus serum, I have had but little experience myself, and that has not been satisfactory, nor have I been able to learn of any satisfactory results from treatment with pneumococcus serums, except from Römer himself.

It has been known that tuberculosis of the iris has disappeared under treatment with mercury, with, perhaps, potassium iodid added. I am, therefore, not at all surprised to hear the experience of some surgeons that the tuberculous variety has perhaps also disappeared under mercurial treatment, but that this treatment is not uniformly successful we all know, and that the tuberculin is much better, we are, I think, agreed.

The original tuberculin is not devoid of therapeutic value, but it is less efficient than the emulsion or the filtrate of Denys, because it is subjected to a temperature much higher in its preparation and a portion of the therapeutic value has been destroyed. The original Koch tuberculin as prepared by the Health Board of New York is a good therapeutic tuberculin.

It is not always practicable to employ the opsonic index, because many are without laboratory facilities. Those who have the facilities and who have studied the opsonic index have not obtained the satisfactory results they desired, and, I think, have omitted using it in consequence.

THE SURGICAL TREATMENT OF SEPARATION OF THE RETINA *

CASEY A. WOOD, M.D.
CHICAGO

As the subject of this paper has not been presented to the Section for many years, I thought it might be profitable to discuss what seems to be the most important of the procedures now claiming our attention.

HISTORICAL REVIEW

Whether or not Saint-Yves (1722), Morgagni (1740), Wardrop (1818), and Panizza (1828) fully appreciated the condition later described as amotio sive sublatio retinæ, there can be no doubt that some of the findings referred to by them as hydrops subchorioidealis and hydrops chorioideæ internus were genuine examples of detachment of the retina.

That William Mackenzie[1] was, even during the preophthalmoscopic era, well acquainted with the pupillary and anatomic appearances of detachment of the retina and the need for surgical interference in its treatment is quite evident from a perusal of his earliest textbook.

He says, *inter alia:*

> It has been ascertained by dissection that a watery fluid is sometimes present in sclerotic staphyloma between the sclerotica and the choroid whereby the latter tunic is pressed inward and the former outward. There are also good grounds for believing that a similar effusion forms occasionally between the choroid and the retina. If the fluid collected in the latter situation is not evacuated by puncturing the staphyloma, it may accumulate to such a degree as to press the retina before it, and having at last produced, by means of its continued pressure, an absorption of the vitreous humor, it will gather the retina into a cord, as sometimes happens in arthritic and in mismanaged cases of syphilitic ophthalmia. A third situation of the hydrophthalmic effusion is between the retina and the hyaloid. Perhaps within the hyaloid is as frequent a seat of the watery effusion as any other; and in this case the structure of the vitreous body is broken up and dissolved.

I would remind you at the outset that retinal separation is not a pathologic entity, but a sign of several quite different diseased conditions. Doubtless, when its pathogenesis is more carefully studied in both its clinical and laboratory aspects, we shall be better able to assign to each case its proper treatment—to attack the problem in a rational rather than in the empirical fashion we are now obliged to adopt.

Before we consider the most effective forms of surgical intervention there are a few preliminary matters to be detailed, an important one being the relations of reattachment of the retina to central and peripheral vision.

The diminished visual acuity and the lateral defects in the field of vision noticeable to the patient are, as a rule, much improved when the separated membrane is restored to its normal position. Still, this result cannot always be counted on, and its possibility or probability should be considered both by the patient and the surgeon before resorting to operative procedures.

It is not rational to suppose, when the percipient elements of the retina are from any cause seriously damaged, the optic nerve the seat of disease, or the ocular media cloudy, that a reattachment, however perfect, can, *per se*, be of much value to the patient. Such a situation, followed by reattachment. Hirschberg[2] calls "anatomische Heilung," because the result is purely mechanical and has nothing to do with the visual function. The postoperative condition in such cases is paralleled when a mature cataract is extracted in a case of advanced retinitis pigmentosa; the operation may succeed, but the hemeralope is not much better off, *quoad visum*, than he was before the operation. The possible improvement in eyesight may, fortunately, be closely estimated from the history of the case, by testing the projection, by use of the perimeter and by ophthalmoscopy. In any event, it is wise to take a conservative view of the whole situation; it is better to promise too little than too much.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Practical Treatise on the Diseases of the Eye, London, 1830, p. 460.

RELAPSES IN THE COURSE OF OPERATIVE TREATMENT

The hopes of both patient and surgeon are often doomed to disappointment because of secondary detachment of the replaced retina. It frequently happens that, after a complete reposition of the separated membrane (with demonstrable increase in both central and peripheral vision lasting for a considerable time) the retina is once more torn away from the chorioid. This accident, due to various causes, has, in some instances, taken place while the patient was lying quietly in bed, under atropin, and wearing a bandage.

Within the past few months I witnessed in my own practice this mournful accident. The patient, a man, aged 55, had recovered almost his whole field for white. He also improved in central vision, from 10/200 and no Jaeger to 20/50 and ability to read coarse print, as the result of three "simple bisections," followed by rest in bed, atropin cycloplegia and pilocarpin sweats. He then "caught cold" and had a sharp attack of acute bronchitis, with severe fits of coughing. In a week, despite all treatment, the detachment, involving the macular region and about one-fourth of the retina in the temporo-inferior quadrants, was as pronounced as before and vision rapidly sank to its former level.

A ray of comfort and hope is thrown on this discouraging fact in the surgical conduct of separated retina in that a number of brilliant and permanent cures have followed persistent treatment and the repetition of operations, in spite of these relapses. In my opinion, it is desirable in the preliminary discussion with the patient of the "pros and cons" of proposed operative measures that this irregular course of the disease be frankly stated. No surgical intervention should be undertaken unless all parties to it are willing to have the patient submit to repeated operations so long as there is a chance of recovery. Deutschmann, for example, has finally succeeded in several cases of relapse, after operating a dozen times or more.

SPONTANEOUS REATTACHMENT OF THE SEPARATED RETINA

Instances of this happy event, which Hirschberg calls "physiologische Heilung," have been reported by a number of observers, although authors greatly vary in estimating their frequency.

Deutschmann, in 300 cases, has seen 3 spontaneous recoveries, or 1 per cent. Hirschberg has seen 1 example in 558 cases, while Uhthoff reports a much higher proportion—28 cases out of 337—about 8:30 per cent.

Millikin[3] reports a case of detachment of the retina, confined to the macular region, occurring in a fairly healthy eye, that resulted in practical recovery without treatment.

H. M. Post[4] gives a history of two cases, in one of which the retina resumed its proper position while the patient was in bed waiting for the removal of a cataract in the other eye. In another patient the reattachment occurred without any known cause and without treatment.

This subject is exhaustively discussed by Müglich,[5] and later by Spumer[6] in the light of case histories from Uhthoff's clinics in Marburg and Breslau. In a number of these cases there remained slight defects in the visual field or small areas of unattached or imperfectly attached retina, not noticed by the patient.

In some instances, the period of observation (less than a year) was not protracted enough to give assurance that a return of the separation might not take place. In my judgment, one may place in the category of physiologic cures quite a number of replacements thought to be due to rest in bed, sweats, dionin, mercurials, iodids and other kinds of medical treatment, not to mention those following minor surgical interferences—subconjunctival injections, cauterization of the sclera, and the like. In any event, Müglich gives the histories of 136 reported cases (1891) of detached retina in which there was complete replacement of the membrane without resort to any surgical treatment whatever, and these figures by no means exhaust the list to the year 1910.

PROGNOSIS IN OPERATIVE TREATMENT

Even under favorable conditions permanent cure of this formidable disease calls for the exercise of much patience and endurance both by the surgeon and the sufferer, for the outcome is at least doubtful. One can, however, give a fairly definite reply to anxious enquirers after fully considering the causes, character, extent, duration and the coincident ocular changes of a particular example of retinal separation.

In a general way it may be said that, as Sattler[7] tersely puts it, the smaller the detachment and the more recent the case the more encouraging the prospect.

Schöler[8] found in his experience that those cases most successfully treated are recent and present a clear vitreous and a bagging of the detached retina, thus indicating the presence of a small quantity of subretinal fluid. He regarded as unfavorable concomitant disease of the media especially a fluid and turbid vitreous, high myopia, extensive detachment of the retina and marked disease of the chorioid.

In considering the propriety of submitting the patient to surgical measures it must not be forgotten that a committee of the Société Française[9] ended its report on all operations known to the members at that time with these words: "Since we cannot affirm the certainty of any operative measure it may be stated that, as a rule, it is good policy to abstain from any surgical interference in the treatment of detached retina."

However, at the present time, we are able to take a more encouraging view of the situation.

WHAT CONSTITUTES A CURE OF RETINAL DETACHMENT?

In my limited experience of this affection the patient is generally satisfied with useful central vision and the permanent disappearance of the lateral cloud in his visual field, though the reattachment be incomplete. On the other hand, even if there is a satisfactory anatomic cure from the surgeon's standpoint, the sufferer is, of course, not interested in that fact when his eyesight is not distinctly improved as a result of the treatment.

---

[2] Centralbl. f. prakt. Augenh., 1891, p. 168.

[3] Western Reserve Med. Jour., September, 1895.

[4] Am. Jour. Ophth., May, 1907.

[5] Inaug. Diss., Marburg, 1891.

[6] Inaug. Diss., Breslau, 1904.

[7] Deutsch. med. Wchnschr., 1905, Nos. 1 and 2.

[8] Zur operativen Behandlung der Netzhautablösung, Berlin, 1889.

[9] Bull. et mém. Soc. française d'opht., 1887, p. 67.

That a patient with detached retina may be properly referred to as cured, the reattachment should be complete, or so nearly complete that he does not complain of symptoms, and the retina has retained its normal position for at least a year.

SUPPLEMENTARY (NON-OPERATIVE) MEASURES

In all, or nearly all, forms of surgical intervention various kinds of medical treatment are also prescribed. While these operative aids are referred to because of this fact, it is only fair to add that numerous cures have been claimed for one and all of these non-operative measures alone, as well as for almost any two or three of them combined.

Perhaps the most important remedy is the prone position in bed for weeks at a time, varied by daily removals to a couch or lounge. During the period of rest the patient should studiously refrain from any considerable exertion and must avoid straining at stool, sneezing, hawking, laughing and, above all, coughing. During this state of complete relaxation he may, at the discretion of the surgeon, take such supplementary treatment as the case seems to demand.

Many observers combine with this form of rest cure the use of the artificial (Heurteloupe) leech, atropin, simple protective or compression bandages, tinted glasses, a darkened room, laxatives, sudorifics, a restricted diet and the employment of certain drugs said to have a specific effect on the vitreous changes, chorioidal disease, subretinal effusion and other accompaniments of the disease.

The most important of the internal remedies are large doses of potassium iodid, or sodium salicylate (Gifford), combined with sweat baths, with or without pilocarpin.

SIMPLE SCLERAL OR SCLEROCHORIOIDAL PUNCTURES—POSTERIOR SCLEROTOMY

This operation is intended to give vent to the subretinal fluid which, from the earliest years of the ophthalmoscopic era, was known to be an almost constant accompaniment of ablatio retinæ. It was the first rational operation performed for the relief of the disease and was first recommended and practiced by James Ware[10] in 1805. Ware's own words are:

> The operation was attended neither with difficulty nor danger. It consisted simply in the introduction of a common spear-pointed couching needle through the tunica sclerotica, a little further back than the part where it is usually introduced for the purpose of depressing a cataract. As soon as the instrument entered the eye a yellow-colored fluid immediately escaped, sufficient in quantity to wet a common handkerchief quite through. The needle was continued in the eye about a minute, in order to give the fluid a more ready way to come out; and as soon as it was withdrawn the discharge ceased. The tension of the eye was considerably diminished by the operation. A compress dipped in a saturnine lotion was bound on it, and the patient put to bed.

In the modern operation the point of a broad needle or narrow cataract knife is, by the aid of the mirror, passed through the bulbar wall just far enough to tap the postretinal sac. The retina itself is not wounded. The instrument is then withdrawn and in this act turned slightly, to allow a portion of the fluid to drain away. This maneuver may be repeated almost indefinitely at proper intervals, say, of three days or a week. Atropin should be used, and the patient is kept quiet in bed.

Scleral puncture seems to hold its own to the present time and, alone or in conjunction with other forms of treatment, is practiced more frequently in detached retina than most surgical procedures. Cures following its performance are not uncommon, and, when practiced within proper scleral areas, it is practically devoid of danger.

Greenwood,[11] for example, gives an account of a case treated by this means with improvement that was not, however, permanent.

De Schweinitz has had good results with scleral puncture when it is followed by large (30 mm.) subconjunctival injections of physiologic salt solution and has not found it necessary to increase the strength of the sodium chlorid solution beyond 5 per cent. Subsequent to this treatment the patient should remain in bed.

An instance of cure is reported by W. H. McMuller.[12] The detachment had persisted for eleven months, and after repeated punctures of the sclera, combined with rest in bed and a bandage, the patient entirely recovered.

M. Sachs has made a slight modification in the foregoing, in that he makes a small incision behind and parallel to the equator, and through it passes a sickle-shaped knife into the eye. In withdrawing the blade it makes a decided incision of the intraocular membranes and so increases the area of cicatricial exudation and subsequent adhesion of the wounded tissues.

SCLERAL PUNCTURE WITH INCISION OF THE DETACHED RETINA

As early as 1863 von Graefe[13] advised and practiced discission of the detached retina, an operation which he performed over fifty times. Only in one instance was this procedure followed by the loss of an eye. In about one-half the cases improvement was observed at once, although better vision was claimed for a year and longer in four instances.

DeWecker, Arlt, Bowman and others gave this procedure a fair trial with occasional good results, but it proved, on the whole, to be so unsatisfactory that it was finally abandoned. In more recent times it has received some support and has had a few advocates.

PUNCTURE OF THE EYEBALL WITH THE GALVANOCAUTERY

DeWecker and Masselon[14] were the first to employ this form of treatment, intended to bring about adhesive inflammation between the chorioid and the replaced retina.

The point of the electrocautery, heated almost to whiteness, is cautiously pressed against that (previously denuded) part of the scleral wall corresponding to the detached area and allowed to burn its way into the sac at the site of punctures previously made with the knife. The cautery point is then immediately withdrawn and the eye treated, as after a major operation, with a protective bandage, atropin and rest in bed. If no serious reaction sets in it is repeated as often as necessary to bring about a cure.

J. A. Craig[15] reports a case of retinal separation associated with 8 D. of myopia that seems to warrant the efficacy of this method. Simpler means having failed, scleral puncture was resorted to and reposition of the membrane followed, but became once more detached in four days. Again scleral puncture was tried, reinforced by galvanocautery application to the sclera. The separated retina now remained in position eight days. Again the sclerotic was punctured and the galvanocautery applied more vigorously. After this last treatment there was no relapse and twenty months later vision was 6/6.

---

[10] Chirurgical Observations Relative to the Eye, 1805, ii, 514

[11] Ophthalmology, January, 1905

[12] Trans. Ophth. Soc. of the United Kingdom, 1907, xxvii, 124.

[13] Arch. f. Ophth., 1863, xv, 3, 85.

[14] Ann. d'ocul., 1882, lvi

[15] Brit. Med. Jour., Dec. 20, 1905.

Wernicke[16] reports on 422 patients with retinal separation examined in the clinic of Uhthoff. Of this number, 36 patients were cured or greatly relieved; 8 were cured by operative treatment; 10 by rest and other minor measures, and 18 recovered without treatment. Wernicke is much in favor of the galvanocautery, which, he believes, will best secure extensive adhesions of the retina to the chorioid. In the statistics just referred to, in 2 out of 13 cases the retina was entirely reattached by the employment of this measure.

Elschnig[17] gives a complete account of this operation, a part of which I take the liberty of translating.

> The sclerotic is exposed by a meridional incision through the conjunctival tissues overlying the scleral coat which, after bleeding has stopped, is punctured at half a dozen or more points with the red-hot galvanocautery. This minor operation is done under cocain-adrenalin anesthesia, or, in the case of very sensitive patients, subconjunctival cocain injections may be employed. The conjunctival folds of transmission between two of the straight muscles are taken up with a fixation forceps and slit right to the corneal margin with scissors. The underlying fibers of Tenon's capsule are also cut through, thus making a wound 8 to 12 mm. long.

Sattler, having placed the cold cautery point in the wound, afterward turns on the current until the cauterization is completed.

If, on removing the cautery-point from the wound, it is found adherent to the tissues, the current should be again applied, when it is more easily removed from the charred tissues.

The edges of the conjunctival incision are now brought together with silk or catgut, the wound is dressed and a bandage applied. The sutures may be removed after two days.

The cauterization may be repeated as soon as the eye is once more free of irritation. If, however, the application is too frequently made, there is some danger of one of the straight muscles becoming attached, by scar tissue, to Tenon's capsule.

There can be no doubt, as Wernicke and others have shown, that this method does induce marked inflammatory adhesions of the retina to the chorioid.

H. Dor does not like the electropuncture, but prefers the actual cautery in the form of Guersant's needle, because that instrument is provided with a "stop" which prevents too deep perforation of the sclera. This needle is heated red hot in an alcohol flame and applied to the conjunctiva. The objection to this method is that it brings about a marked contraction of the ocular conjunctiva, as well as cicatricial adhesions of the overlying tissues to the sclerotic.

Elschnig considers the principal value of all these local cauterizations to lie in the fact that the sclera is contracted by the formation of scar tissue in it through these burns so that the size of the eyeball itself is reduced. In other words, galvanic and other forms of cautery bring about the same result that one gets in Mueller's operation. He has employed the cautery in connection with scleral puncture and believes that in this way, he obtains better results than ordinarily flow from either method alone.

H. Dor[18] reports some 40 cases of retinal detachment in which he makes use of a combined treatment, employing the artificial leech, punctiform cauterization and the injection into Tenon's capsule of 10 per cent. sodium chlorid solution. Seven of the patients were decidedly improved, 5 satisfactorily improved and in 3 there was small improvement. In 10 cases there was complete failure.

SUBCONJUNCTIVAL INJECTIONS

The *modus operandi* of subconjunctival injections in detached retina is not fully understood. Whether they act (in virtue of the local irritation) by stimulating absorption of the subretinal fluid, at the same time increasing the watery contents of the hyaloid cavity, or whether the process of osmosis (exosmosis of the subretinal fluid associated with endosmosis of the subconjunctival solution and pouring out of serum from the ciliary vessels into the vitreous chamber) best accounts for the beneficial results remains to be determined.

It may be mentioned, in passing, that dionin, inasmuch as it acts in a manner similar to saline subconjunctival injections, is indicated as a substitute for these agents in the treatment of displaced retina and, in some hands, appears to be of some value.

DeWecker,[19] probably influenced by Raehlmann's[20] earlier work, was the first to use this remedy extensively. He injected at first, without much effect, simple salt solution into Tenon's capsule, but later[21] added small proportions of gelatin (3 per cent.) to increase the local irritation and consequent diapedesis of the intraocular fluids. He found the effect on the detachment more marked than before and noticed that the disease of the vitreous was distinctly improved.

In 1896 Lodato[22] gave a favorable account of the use of sodium chlorid injections in 15 cases of separation of the retina. In 12 of these there was almost total reposition of the membrane; in two only was there complete increase in the central acuity.

During the following two or three years, in consequence of continued favorable reports, there was a widespread employment of this remedy by Gotti,[23] Mazzoli,[24] Dor, Sr.,[25] and others.

Dianoux prefers a mixture of 1 per cent. sodium chlorid and 1 per cent. cane sugar in distilled water. Of this, 4 or 5 c.c. are injected into Tenon's capsule on the first, second and fifth day of the treatment. He has found a series of ten such injections to be effective in detached retina.

Dor, Sr., at the Ninth International Ophthalmological Congress, reported the results of treatment of 21 patients. Of these, 11 were cured or much improved, several of them having no relapse after four years. His methods included chiefly injections into Tenon's capsule of 20 to 30 per cent. solutions of salt, the application of the Heurteloupe leech to the temple, thermocautery puncture of the sclera at the site of the detachment, a compression bandage and rest in bed.

Marple[26] has used subconjunctival medication in three cases, but without permanent improvement. He began with 5 per cent. sodium chlorid and gradually increased it to 25 per cent., although the stronger solutions were extremely painful.

Guibert[27] tried in three cases the serum-gelatin of deWecker and the serum of Truncek with one cure and temporary improvement in the other two cases.

---

[16] Klin. Monatsbl. f. Augenh., February-March, 1906.

[17] [illegible]

[18] [illegible] 1897.

[19] Traité complet d'Ophtalmologie, Paris, 1887.

[20] Graefe's Arch. f. Ophthal., 1876, xxii.

[21] Ophth. Klinik, 1897, No. 11.

[22] Ann. di Ottal., 1896, [illegible]

[23] Ancora sulla cura dei distacchi della retina, Bologna, 1898.

[24] Arch. di Ottal., 1900, vii.

[25] Ztschr. f. Augenh., Sept. 2, 1899.

[26] Rep. New York Eye and Ear Infirmary, 1904.

[27] Clinique Opht., Sept. 10, 1904.

A. Maitland Ramsay[28] has taken all his cases of this condition occurring in hospital practice over a period of four years and reported on the results of treatment by subconjunctival saline injections. The exact nature of the saline varied in different cases, but the solution ordinarily used was from 5 to 20 minims of 1 in 2,000 bicyanid of mercury with 8 per cent. chemically pure sodium chlorid. Dionin was occasionally added to the injection. Ramsay lays great stress on the need of attention in every way to the patient's general health, and especially to the state of the bowels, during his period in bed.

The average number of injections was five, and the average duration of treatment one month, but prolongation of the period in bed is probably beneficial if the case is one which is improving. On the other hand, if, after from 14 to 21 days, there are no signs of improvement, the case may be considered incurable. There were 50 patients treated by this author, of whom 27 received no benefit whatever. Of the remaining 23, 10 showed very decided improvement. Of these 10, 5 afterward relapsed, the shortest period being 2 weeks and the longest 4 years after conclusion of treatment; of the remaining 5, 3 were satisfactory after one year and 2 were lost sight of. The other 13 of the benefited patients showed moderate improvement; some of them relapsed. Ramsay concludes that the favorable cases are few, the unfavorable many; but, however hopeless the latter may at first seem, it is always well, before coming to the conclusion that nothing can be done, to try the effect of such simple treatment. It can at least do no harm.

Ramsay gives the following as the formulas of the various fluids used by him in the subconjunctival treatment of ablatio retinæ:

1

R.

Sodii chloridi (chemically pure)	8 per cent.
Sol. hydrarg. bicyanid.	1 in 2000

Misce.

2

R.

Dionin	1 per cent.
Sodii chloridi (chemically pure)	8 per cent.
Sol. hydrarg. bicyanid.	1 in 2000

Misce.

3—DOR'S FLUID

R.

	gm.
Sodii chloridi	5
Sodii carbonatis	10
Sodii sulphatis	10
Sodii phosphatis	10
Potassii sulphatis	40
Aquæ destillatæ, ad	20

Misce.

Staerkle[29] publishes the outcome of subconjunctival injections in 23 instances, with three cures. His conclusions touching this form of treatment are as follows:

1. The subconjunctival injection of common salt solution forms a harmless and almost painless means of stimulating the absorption of pathologic exudates within the eye.

2. Up to a certain point the stronger the solution the greater the effect. The writer employed 3 strengths only, 2 per cent., 4 per cent., and 10 per cent., and found these in every way adequate.

3. On the whole, the improvement in the anatomic conditions as well as in the visual fields and central vision, was more marked as time passed and the injections were continued.

4. The injections had a greater influence on recent, partial detachments than on long-standing and widespread examples of separation of the retina. Intermediate forms were variously affected by the treatment.

I may add my own experience of subconjunctival injections of 10 per cent. salt solutions in retinal detachment; it is that, as an aid to more serious operative intervention, they are distinctly valuable and deserve a permanent place in our armamentarium.

DEUTSCHMANN'S OPERATIONS

Bisection, With and Without the Intravitreous Injection of Sterile Animal Vitreous.—In 1895 R. Deutschmann[30] of Hamburg first published his classic description of two operations for which he still claims results unattained by any other form of treatment. He is opposed to waiting until non-operative measures have been tried, but advises us to proceed at once to the more effective employment of surgical intervention. The simpler bisection (*"Durchschneidung"*) method he regards as especially valuable in the more acute or recent cases; the combined procedure he reserves for the advanced and less hopeful forms of the disease Deutschmann asserts that bisection reduces the tension on the retina, which in his experience can be so marked that it is impossible to reattach it without making one or several incisions through the vitreous bands. He evacuates the retinal and preretinal fluids and tries to produce small inflammatory adhesions between chorioid and retina. With the injection of animal vitreous into the posterior chamber he produces a mechanical pressure on the detached retina against the chorioid, and a welding of both membranes on an inflammatory basis, with simultaneous refilling of the eyeball. Relapses may occur with either or both methods, but under these circumstances he repeats the operations in an attempt to regain what has been lost. The author refers to the favorable statistics of Horstmann (6.66 per cent. of cures) and Uhthoff (7.50 per cent.) as the result of operative interference, but believes that much better success can be attained by his methods. As evidence he gives his own experience. To July 1, 1909, he has operated on 267 patients with retinal detachment. Of these he cured 70, or 26.1 per cent., improved 94, or 35.2 per cent., failed in 103, or 38.7 per cent. From these totals, however, he subtracts a number of patients on whom the operation was performed as an experiment, without the least chance of recovery of sight (the patients fully understanding the situation), with these results: cured 31.1 per cent., improved 41.3 per cent., not cured 27.6 per cent.

Bisection of the Vitreous and Retina.—This operation[31] is never employed in cases in which the detachment is above the equator; when one has to deal with such it is better to wait, without treating the patient, until the subretinal fluid has gravitated downward. After thorough disinfection and cocainization a two-edged linear knife, about the width of a medium-sized Graefe knife, is entered at a tangent to the globe (through conjunctiva and sclera well back of the ciliary region), passed quickly forward and then downward and backward, sweeping toward a counter-puncture at the other extremity of the ocular diameter, so as to cut in two as much as possible of the vitreous chamber without wounding any surgically important structure. The knife is then drawn out as quickly as it was introduced, being turned a little on its axis in order to allow the subretinal as well as some of the preretinal fluid to escape. This maneuver may be repeated as often as twenty times or more, with sufficiently long intervals between successive operations to permit the eye to recover from the reaction which, however, is generally small or nil. Of course, this interval must be a longer one if one of the larger retinal vessels has been wounded, or any other unforeseen accident should occur. A celluloid shield should then be applied to both eyes, or if a bandage be used it should be a loose one for the first 24 hours. After the first day only the eye operated on is covered, and it must be kept under the influence of atropin during the whole period. The patient should be kept in bed 7 or 8 days after each operation and results watched with the ophthalmoscope.

---

[28] Ophthalmoscope, November, 1907.

[29] Inaug. Diss., Basel, 1900.

[30] Deutsch. med. Wchnschr., 1895, p. 345; and Beitr. z. Augenh., 1895, xx.

[31] Beitr. z Augenh 1904, No. 59; Ophthalmoscope, August, 1907, p. 410, and November, 1909, p. 737.

As a rule, when these directions are strictly followed under careful asepsis the operation is without danger to the eye.

Combined Bisection and Intravitreous Injection of Animal Vitreous.—Deutschmann reserves this operation for those cases in which vision has sunk very low or in which other means of restoring sight have failed. He says that, while one must not expect too much from it, yet by its use he has been able to save a small percentage of eyes in desperate cases. He also claims that, carried out under full cocainization and with strict aseptic precautions, it does not endanger either the eye operated on or the fellow eye.

The instrument employed by Deutschmann (glass syringe) allow only an advance of its piston. This arrangement is provided so that no deleterious suction can be practiced on the contents of the eye should the finger by chance be removed from the piston end. As nozzle for the syringe one may employ either a platinum-iridium canula or a double-edged knife canula. Deutschmann now employs ready-to-use sterilized vitreous body of absolutely fresh calf's eye, hermetically sealed in glass tubes. These are supplied by Dr. W. Mielck, Dammthor-Strasse, Hamburg. This chemist supplies two kinds of calf's vitreous: No. 1 is made by the filtration of freshly-boiled vitreous body, afterward resterilized by boiling in hermetically sealed glass tubes. This preparation has a weaker action than No. 2, which is composed of fresh vitreous body inspissated at 40 C. *in vacuo* and the residuum taken up with physiologic salt solution—sterilized by boiling—so that the component parts of normal, but concentrated vitreous body are contained in it.

The technic of this intravitreous operation, as given by the author, is as follows:

> To bring the retina once more as close as possible to the choroid by means of the pressure of the injected animal vitreous it is, of course, necessary to get rid of the subretinal fluid. If one uses the point of the ordinary platinum-iridium canula then the procedure is as follows: The syringe, filled with the animal vitreous, is first introduced in the region of the ora serrata, somewhat outward and downward. It is given to the assistant to hold while the operator, with the double-edged Graefe knife makes the usual simple bisection downward. After the completion of this maneuver, he, with the syringe, injects into the eye very slowly some of the contents of the barrel. It is generally sufficient to push forward the piston from 1 to 2 divisions, according to the consistency of the eye. Then the syringe point is withdrawn and the puncture closed with toothed forceps for some minutes, that none of the fluid injected may escape from the eye. To [illegible] the syringe with the [illegible] and insert the knife point of the syringe, filled with animal vitreous, in exactly the same way as is directed in the bisection operation with the Graefe knife. One can introduce the canula knife up to the point of the counter puncture, but in all cases avoid moving the knife from side to side.
>
> On the withdrawal of the syringe the subretinal fluid flows out. Then one can immediately press the syringe piston forward [illegible] the operation. The point of entrance is in this case also held together with forceps after the removal of the syringe.
>
> After the operation, both eyes are lightly bandaged for twenty-four hours, then one eye only. Further measures depend on the reaction shown by the eye. This reaction, again, is dependent on the concentration of the animal vitreous used. "I must here state, to spare my colleagues every unpleasant experience, that they must begin with the weaker preparation, and, since the operation can with perfect safety be repeated several times, gradually go on to stronger ones."
>
> The ocular tension is generally reduced after these operations.
>
> For the first injection one should dilute vitreous preparation No. 1 with equal parts of sterilized physiologic salt solution; for the second use the solution pure, and so on. Inflammatory symptoms, such as may appear at various periods up to the eighth day after the operations, can, as a rule, be easily controlled by atropin and hot applications. "If increase of tension sets in, one should at first wait quietly; only when the pain becomes very severe and perception of light is somewhat worse under the influence of the heightened tension should one interfere and do another simple bisection." Under ordinary conditions, however, it should always be borne in mind that after every injection the vitreous body will become more or less cloudy. This translucency gradually clears up completely. Even if it assumes a yellowish, abscess-like appearance, it becomes clear and normally transparent again in the course of a few months. It is only now and then necessary to assist absorption by hot applications or by an occasional salt injection.

The author's latest statistics[32] report 68 eyes treated by the use of animal vitreous. With repeated injections he cured 3 patients, improved 26, failed in 38, and 1 is still under treatment.

Since the publication of Deutschmann's first paper I have done the bisection operation on 10 eyes in 9 cases. Of these, there was complete reattachment of the retina with restitution of useful vision (Jaeger 1 and 20/30) in one instance. This improvement continued for over three years—as long as the patient was under my observation. In two others decided improvement of central vision followed, but with incomplete reattachment of the retina. In the others there was little or no improvement.

I cannot understand why Deutschmann refrains from giving patients the benefit of the milder, non-operative forms of treatment (known to bring about occasional cures) while waiting for the gravitation of the subretinal fluid to lower levels. When the detachment in the upper quadrants is not due to malignant tumor or other incurable cause I am in the habit of making a thorough inquiry into the probable cause of the separation, and with rest in bed, pilocarpin sweats, iodids, subconjunctival injections and the use of other means, more or less rational, endeavor to bring about some alleviation of the patient's symptoms.

MUELLER'S OPERATION

Resection of a Portion of the Scleral Wall.—The originator of the operation, Leopold Mueller,[33] was led to perform it because of his belief that many cases of detachment are due to disproportion between the swollen or shrinking vitreous humor and the ocular envelopes. He proposes a rather formidable but, he claims, successful remedy for this condition, no less than an attempt to reduce the size of the eyeball. Since it is impossible to attain asepsis of the conjunctiva, Mueller operates on the globe behind the equator.

Kroenlein's resection of the outer orbital wall forms the first stage of this new operation. This preliminary being accomplished, the temporal aspect of the eyeball is thoroughly exposed. The external rectus is then divided, the cut ends being secured by fine sutures, so that they may be later reunited. The operator then carefully and slowly excises with a sharp scalpel a biconvex piece of sclera 20 mm. long (with its length parallel to the equator) and 8 to 10 mm. wide, in such a manner that its anterior edge lies 1 or 2 mm. behind the insertion of the external rectus. Its posterior margin should correspond to the equator. The edges of the scleral wound are now brought together by five small stitches. In the performance of this operation care must be taken not to injure the chorioid, but, just before tying the scleral sutures, the subretinal sac is tapped with a narrow knife and some of the fluid allowed to escape. The cut ends of the externus are then carefully approximated and the bony plate, skin, etc., readjusted. When the wound is closed the whole eyeball is smaller than before.

---

[32] Ophthalmoscope, [illegible], 1909, p. 7[illegible].

[33] Klin. Monatsbl. f. Augenh., May-June, 1903, p. 159.

Mueller reports 3 cases in which he had done the operation, after which the separated membranes resumed and held the proper position for 10, 11 and 15 months, respectively.

It is, of course, too soon to pass judgment on this operation. Perhaps, in the majority of cases—those associated with the enlarged globe of extreme myopia—it may prove more valuable than any other operative procedure.

In this paper I have considered only those surgical methods that, in my experience, are most likely to be effective in this distressing condition. Such measures as iridectomy, electrolysis of the subretinal fluid, Schöler's operation of the intravitreous injection of iodin, injection of air into the hyaloid cavity, laceration of the retina, and many others are of historical interest chiefly. None of them is, in my opinion, so valuable as the procedures just detailed.

CONCLUSIONS

One who has made a study of the observations of others in the surgical treatment of detached retina and has added to it his own experience—though that may be limited—will, I think, come to these conclusions:

1. Inasmuch as separation of the retina is not a distinct disease but merely one sign—albeit a very important one—of several different affections, it is not to be expected that it is to be cured or much relieved in every instance by some particular operation. The "one-disease-one-operation" idea can have no place here.

2. A large percentage of retinal repositions, including an unknown proportion of those that follow operative measures, belong to the class of spontaneous cures. In such cases relief may have been assisted, hastened or rendered more or less permanent by the remedies exhibited, but the probability is that the patients would have recovered in any event.

3. So far as prognosis is concerned, the more hopeful cases are the recent, limited varieties—those produced by traumatism, postretinal hemorrhage and the like—as well as those resulting from removable causes. *Per contra*, old, extensive detachments, especially when associated with marked degeneration of the retina, vitreous and chorioid, are not likely to get well under any forms of treatment. A long-separated, starved retina rarely regains its lost functions.

4. Recurrence of the detachment forms a disappointing feature in the treatment of the disease, and this fact should be considered by both patient and surgeon when the subject of operation is broached. On the other hand, it has been abundantly demonstrated that patients with separated retina have recovered after several relapses and after having submitted to many operations.

5. No patient should be regarded as permanently cured until at least a year after the replacement of the detached membrane. It is true that relapses are recorded after an interval of several years, but they are unusual.

6. When a patient presents himself it is best to try for, say, a month—indefinitely as long as improvement continues—non-operative measures. A thorough study should be made of the case to determine, if possible, the cause of the detachment, that it may be treated *secundum artem* and, perhaps, removed. With this causal treatment give subconjunctival injections, instil atropin and keep the patient in bed. Pilocarpin sweats, with iodids or sodium salicylate, are also generally indicated.

7. Failing to improve vision or to replace the separated retina by milder means, resort should be had to operation, and the question of the best operation for the case in hand at once arises. We know that the function of the retina gradually weakens the longer it is displaced; consequently the sooner one makes a choice of operation the better.

8. Deutschmann advises against his operation as long as the postretinal fluid is held within the upper quadrants of the globe. If we are debarred by this circumstance from the use of his methods, there can be no objection to the employment of scleral puncture, combined with punctiform cautery of the denuded sclera over the site of the detachment. Why should we wait until the retina is further detached and degenerated?

9. In those cases in which the sac occupies, as it generally does, the lower aspect of the hyaloid chamber, Deutschmann's method of bisection should be the operation of election, whether or not there be evident rents in the retina or visible fibrillæ in the vitreous.

10. Two weeks after an intrabulbar operation a careful examination of the eye should be made—with the electric ophthalmoscope (so that the patient may keep the prone position), hand perimeter, ward charts, etc.—to decide if improvement has taken place in the local conditions as well as in central and peripheral vision.

11. Assuming the eye to have recovered from any operative measure, i. e., to be free from either intraocular or extraocular inflammation, the same or another operation may be done in from three to six weeks' time.

12. In unpromising cases Deutschmann's intraocular injections of animal vitreous is in order, although Mueller's exsection of the sclera seems a rational though formidable procedure, which an improved technic and a wider experience may yet demonstrate to be of great value in the conduct of this extremely serious condition.

72 Madison Street.

ABSTRACT OF DISCUSSION

DR. L. WEBSTER FOX, Philadelphia: As Dr. Wood has mentioned, the retina is normally attached to the chorioid only at the optic nerve and ora serrata, being kept in place by the internal pressure of the normal vitreous. Separation is therefore possible only when this pressure is reduced by disease or traumatism, the force acting behind the retina becoming greater than the vitreous pressure thus producing traction on the retina, or, in other words, separation. Frequently this shrinking of the vitreous tears the retina and permits some of the fluid contents in the vitreous space to find its way behind the retina and assist in the general separation which follows injuries or degeneration of the vitreous. As we all know, the ordinary treatment—rest in bed, potassium iodid, mercury, pilocarpin and electric light sweats, as well as conjunctival injections—forms one of the most unsatisfactory chapters in ocular therapeutics. I have found that the most satisfactory results obtained have been in those patients in whom I have made a puncture of the sclera, beneath one section and have thus withdrawn the subretinal fluid. This puncture is done with the broad knife-needle. The puncture is about three lines long and parallel with the scleral fibers, through the conjunctiva, which is made taut by the excessive rotation of the eyeball. When the eyeball rotates back into place the scleral wound is closed by the slipping back of the conjunctiva.

I am convinced that this operative procedure, which may be performed four or five times on the same eye, is a safe one. I consider Deutschmann's procedure much more difficult to carry out, therefore the simpler method should be given the preference. The younger the patient (10 to 22) the more favorable the outcome. Beyond the age of 10 the prognosis is unfavorable under any form of treatment, surgical or medical, but still one should make an effort to do one's part, and where the subconjunctival treatment as outlined by Ramsey fails, the operative method should be carried out.

Dr. Oscar Dodd, Chicago: Several years ago I was fortunate enough to secure a complete reattachment of the retina in a case by means of the Deutschmann operation, repeated twice, together with complete rest of the patient in bed. I believe the operation is well worth trial, although since that time I have used it in a great many cases, and while I have had some improvement, I have been unable to obtain perfect reattachment which has remained. With the simple puncture of the sclera, which Dr. Fox has described, the puncture with the galvanocautery, etc., I have been unable to get as good results as from the Deutschmann operation. There is one point in the treatment, however, which I think should be considered, and that is the extent to which your patient will coöperate. I find it difficult to get the patient to remain quiet in bed, and I believe my success in one case and improvement in several others have been largely due to the patient maintaining complete rest until adhesion between the retina and chorioid took place. I have never seen any benefit from the injections of salt solution, except as combined with puncture, and I think the two essentials in the treatment are the removal of the subretinal fluid and rest, allowing the hemorrhage or plastic exudate which is thrown out between the retina and chorioid to form an adhesion between them.

Dr. H. Gifford, Omaha, Neb.: I never could see the sense of the Deutschmann operation. It simply makes a scleral puncture and two holes in the retina. What we want to do is to let out the fluid behind the retina. That is what these holes in the retina will not do. All the good it does is simply from the scleral puncture, except in cases in which we can see distinct bands in the vitreous; then cutting these may possibly accomplish something. There is another objection to the Deutschmann operation. He says, don't do this operation until the detachment has settled to the bottom of the vitreous. Why should we wait until it settles to the bottom when we know that the sooner it is reapplied the better? In the few cases of cures I have seen the detachment has been in the upper part. When we know that the best chance to cure the patient is to let the fluid out, why should we not do this at once instead of trying rest alone for a month? It seems to me not enough attention has been paid to late detachments. I have seen two cases in which the detachment occurred four years after the injury. In one of these cases I examined the eye within a half hour of the injury, and found no sign of detachment. The patient had normal vision for four years and then had a detachment and he has not had much sight in that eye since. With regard to burning the sclera, I have never seen any reason for simply burning the sclera on the outside with the hope that it is going to draw the retina back into place. If you are going to do anything with the cautery, puncture the sclera with it.

Dr. S. L. Ziegler, Philadelphia: I wish to add my experience to the use of scleral puncture for cases of detached retina, which I perform a little differently from the methods that have been mentioned. In a few cases I have been very successful, in some moderately so, while others have been failures. I recall one case in particular in which vision was practically nil and in which to-day the vision has risen almost to normal and for three years the patient has been able to do his regular work, and in every way this may be classed as a perfect recovery. The technic I employ requires the use of the von Graefe cataract knife instead of the double-edged broad needle which Dr. Fox prefers. I make the scleral puncture about 6 mm. from the limbus, midway between the recti muscles, with the back of the knife toward the cornea, and penetrate just deep enough to enter the space between the retina and the sclera. I then rotate the knife sufficiently to allow the subretinal fluid to escape. When this has drained out I rotate the knife-blade back to the line of primary incision, and with a quick thrust pass the knife through the retina. Having gone through the retina I again rotate the knife at right angles and while drawing the knife out of the wound turn the edge of the blade back against the retina, so that the incision in the retina is made larger than the incision in the sclera. In this way I secure a double incision, in the shape of a T, which gapes sufficiently to permit the subsequent accumulation of subretinal fluid to escape and to allow the weight of the vitreous to press the retina against the sclera and to keep it approximated until union occurs.

Dr. Hiram Woods, Baltimore: The term "cure" seems to need exact definition. In one case seen by me there was spontaneous return of the detachment, without treatment; in a second there was reattachment after operation by puncture, and in a third after two months in bed with treatment by diaphoresis. One of the patients remained well, so far as the detachment was concerned, for eighteen months, and another for three years. Only in the third case mentioned was there evidence of improved vision. The upper half of the retina was detached and central vision was lost. After reattachment central vision became 20-30, but vision in the lower field was never regained. The loss of central vision I believe to have been due to the separated retina falling over the fovea, rather than to foveal detachment. I have never seen the separated retina regain vision.

Dr. Allen Greenwood, Boston: I think in all these questions of the operative treatment of separation of the retina, and in all the cases reported by the different men, it is fair that the underlying conditions be told us in every case, because the cause of separation varies much. Suppose the patient has a myopia of 20 D. The chances of operative cure are practically *nil*. If the myopia is not too high, operative interference gives us the best chance. I think operative treatment in simple cases of traumatic detachment of the retina is usually not necessary. It is so in cases of separation from edema filling beneath the retina. We all know that entire recovery sometimes occurs, particularly in cases occurring in pregnancy, and I think in reporting cures the underlying condition should always be mentioned.

Dr. Casey Wood, Chicago: As to Dr. Fox's operation, and preliminary to my discussion of what Dr. Fox has said, let me state that as a rule the detached retina tends to replace itself without treatment. It would go back if there were not something to drag or hold it away from the chorioid. That is especially true of recent cases and is the reason why simple puncture, with a Graefe knife or with the broad needle, sometimes induces a reattachment of the retina. Letting out the post-retinal fluid, particularly if there are rents in the retina itself, may assist in bringing about a cure. If there is no rent or opening in the retina you will easily see how impossible is a reposition of the separated membrane, because there could be no free flow of fluid through the membrane. One of the purposes of the Deutschmann detachment operation is to insure such openings in the retina. In passing the knife a section is made not only of the retina but through the fibrillæ of the shrinking vitreous, the contraction of which pulls the retina away from its original bed. I agree that simple puncture cures sometimes.

Dr. Dodd speaks of the difficulty of controlling patients in the treatment of this disease. In my judgment, the patient should remain in the hospital while under the surgeon's care. Home treatment is less likely to have good results. Not only should the patient remain in bed, but I should like to say, in reply to Dr. Gifford, that I do not believe it is justifiable to do even such a simple operation as simple puncture when one may more certainly cure the patient through "bisection." At the same time I would try the non-operative methods before proceeding to this more severe procedure.

In Dr. Ziegler's operation, which I believe is an advance on simple puncture, he has only one point of retinal puncture and consequently only one of possible reattachment. The Deutschmann procedure gives two, and for that reason the latter is the better. In speaking of cure, I referred to the continuous reattachment of the retina after an interval of at least a year.

If Dr. Woods had read my paper he would see that I referred to the dictum of Hirschberg, that one may secure a reattachment of the separated retina with a return of vision or an improvement in both central and lateral acuity—i. e., a "physiologic cure;" or the detached retina may resume its original position without visual improvement—"anatomic cure."

ALCOHOL AND NEPHRITIS

A CLINICAL STUDY OF 460 CASES OF CHRONIC ALCOHOLISM *

J. F. HULTGEN, M.D.
Pathologist to Englewood Hospital
CHICAGO

Amicus Socrates, sed magis amica veritas

Few problems in medicine are attended with so much confusion as the pharmacology of alcohol. Being a narcotic, a stimulant and a food, its uses are so manifold, and the dosage so variable that the study of its effects on the human body are exceedingly difficult of interpretation. Writers and teaching physicians have for decades upheld the view that chronic alcoholism is one of the chief causes of nephritis. This generally accepted view could not logically be questioned seriously until a fairly large number of carefully gathered clinical data had been furnished by a general practitioner. Clinical material from hospitals constitutes an unfair collection of patients, because they are either a decidedly inferior lot socially, or too superior, and therefore inaccessible for careful study.

Animal experiments with alcohol are also of little practical value, on account of the complexity of the technic, and the multitude of the sources of error. General practice, in my opinion, furnishes the best and the most nearly normal material for the study of alcoholism. In order to know our patients we must live among them. One may thus know one's tippling neighbor for several years before one is called on to treat him; and one is surprised to find that the much-expected nephritis is absent.

It is just this class of patients that directed my attention to the subject of alcoholism and nephritis. On tabulating the clinical findings, several interesting facts revealed themselves and the interpretation of these data will be the object of this paper. With this in view, I shall reproduce a synopsis of my own statistics from my own cases of chronic alcoholism. It is obviously beyond the scope of this paper to enter into a full discussion of alcoholism.

The following statistics are gathered from 150 patients treated by myself at the Iowa State Inebriate Hospital, in 1902, and from 311 cases in my own practice, from October, 1904, to June 1, 1910. A detailed comparison of these classes of patients would be too lengthy and will be the basis of a future publication. Suffice it for the present to study these collective tabulations and to submit my deductions therefrom.

METHOD OF STUDY AND RESULTS

The action of chronic alcoholic intoxication was studied under five heads, namely, the general nervous system, the gastro-intestinal system, the cardiovascular system, the lungs, and the kidneys. A comparison of the effects of repeated alcoholic excesses on these several tissues will demonstrate, graphically and conclusively, the varying frequency and intensity of psychic or somatic symptoms, such as are produced in chronic alcoholism. To study these facts individually and to judge them collectively is, in my opinion, a logical procedure.

1. Neuropathic and psychopathic lesions were found in nearly all chronic alcoholics, namely, in 92.5 per cent. of 461 cases. This once more confirms the teaching of pharmacologists that alcohol is essentially a narcotic; that a drinker without some nervous lesion is an exception. The trained clinician will seldom fail to discover morbid alterations in the central or peripheral nervous system, or both. Nerve cells contain more lipoid substances and lecithins than any other cells; hence the selective action of all narcotics on the neurons.

2. The effects of chronic alcoholic abuse on the gastro-intestinal systems are marked and striking. Pharyngitis, gastritis and hepatic disorders occurred in a fairly even proportion among drinkers, namely, to the extent of 82.7 per cent. of 461 cases. These morbid changes are, in my opinion, toxic in nature and not irritative from local action. The cells of the alimentary tract subserve metabolism primarily and mainly. They break up complex molecules into single ones, they come into close and prolonged contact with them, and thereby suffer damage. This explains the fact that the pharynx, the stomach and the liver suffer much more in chronic alcoholism than the eliminating organs, such as the kidneys and the lungs.

3. There are no cardiovascular symptoms which might be termed characteristic of chronic alcoholism, unless it be the peculiar fetal qualities of the heart-sounds which we know as embryocardia. I find this very frequent among drinkers, but I can offer only a tentative explanation for it, namely, the following: Embryocardia can occur only with low-tension blood-pressure, and in the absence of renal insufficiency. Hence it might be considered as a useful condition of no pathologic significance at all. That alcohol is a sclerogenic pharmakon and productive of arteriosclerosis with its usual train of symptoms may be a fact, but its demonstration would be difficult and is really not shown by my tabulations. There were cardiovascular changes, such as myocarditis, aortitis, valvular heart disease and arteriosclerosis in chronic alcoholics in 54.3 per cent. of 461 cases, but this by no means constitutes a proof of the causal relation between these lesions and the abuse of liquors. I believe it, nevertheless, to be good reasoning to ascribe the bulk of cardiovascular symptoms to the sclerogenic action of alcohol, while abstaining from an interpretation of its pathogenesis.

4. That excessive drinking is in itself injurious to the lungs cannot be proved from my statistics. These patients are usually hard workers, with careless habits and deficient protection against climatic changes. Cough is frequent among drinkers and in about 30 per cent. of all my cases it is the only ailment for which they consult the physician. In about half of these it is due to pharyngeal irritation and occurs without any pulmonary changes. The lungs excrete all narcotics, especially ether, chloroform and alcohol. They do not appear to suffer from the mere elimination of these volatile substances as such, but rather from the concomitant, de-

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

pressing and deteriorating systemic action. Indeed, there seems to be no limit to the frequency with which any cell, single or organized, can recover from a narcosis. The most characteristic actions of a narcotic such as alcohol, ether and chloroform, are these: A. It enters into a molecular association with the cell protoplasm whereby the latter remains passive. B. It leaves the protoplasm chemically intact and suspends only temporarily the cell's reaction to stimuli, reaching it by physiologic ways. The frequency of tuberculosis of the lungs among drinkers is, in my opinion, in no causal relation to the ingestion of alcohol. When a drinker has tuberculosis, I have never seen it to hasten the fatal ending of the disease; in fact, it seems to be of no significance in the morbidity or mortality.

5. From my statistics it appears that if chronic alcoholic excesses do have any deleterious action on the kidneys, we have no means, either clinical or biochemical, by which to detect such changes. Among 461 drinkers, only 42, or 9.1 per cent., showed evidences of nephritis, and only 24, or 5.24 per cent. showed temporary or permanent albuminuria, while 394 patients, or 85.7 per cent. of them show no evidences, either subjective or objective, of deficient renal depuration.

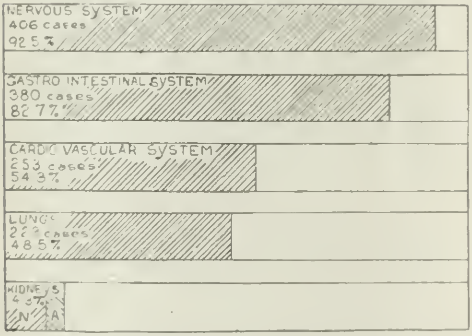


Chart showing percentage of morbid alterations in the various systems as observed in 461 cases of chronic alcoholism. N, nephritis, 9.1 per cent., or 42 cases; A, albuminuria, 5.2 per cent., or 24 cases.

Two explanations may be advanced: (a) we do not know as yet how to recognize renal lesions, or, (b) there is no lesion at all present.

NATURE OF NEPHRITIS

The diagnosis of a well-established nephritis is ordinarily easy, and is based on the anamnesis, the subjective and objective symptoms. But the recognition of the early stage of nephritis, at least of the contracted kidney, is attended with apparently insurmountable difficulties. Neither albuminuria alone nor cylindruria by itself would establish such a diagnosis. When we know the cell protoplasm, we shall be able to diagnose nephritis. It is a disease of metabolism initiated by some toxic process, either autogenic or exogenic in Nature. We must approach it as a general systemic disease not as a localized renal affection, such as the name nephritis inaccurately suggests.

If, now, in a patient whom we would rightly (according to our teachings) suspect of having renal lesions we find absence of the subjective as well as of the objective symptoms usually required in the diagnosis of nephritis, and if we find this repeatedly in the same patient, and collectively in so many cases, then we are justified in saying that all evidences lead only to one conclusion, namely, that nephritis in chronic alcoholics occurs only rarely, and if it does occur, it bears no relation to the ingestion of repeated doses of alcoholics.

The study of the comparative tabulations of morbid changes occurring in the other organs and tissues brings out a very striking contrast, and illustrates forcibly the pharmacologic properties of alcoholic liquors.

TABLE SHOWING PERCENTAGE OF RENAL LESIONS, CLINICALLY RECOGNIZABLE, AS OBSERVED IN 461 CASES OF CHRONIC ALCOHOLISM

	In Private Practice.		In Iowa State Hospital.		In Total Cases Observed.	
	Cases.	%	Cases.	%	Cases.	%
No evidences of nephritis	281	90.3	114	75.6	394	85.7
Albuminuria only, no casts	14	4.5	10	6.9	24	5.2
Temporary albuminuria	9	2.89	5	3.3	14	3.0
Nephritis present, alb. casts, etc.	16	5.2	26	17.5	42	9.1
Totals.	311	100	150	100	461	100

It is certainly remarkable that the organs and tissues whose function it is to eliminate alcohol, namely, the kidneys and the lungs, are affected least, and that the former remain almost intact in chronic alcoholism unless repeated exposures to cold, and a real cause for nephritis are added. The organs eliminating most of the alcohol are least affected by it, while the nervous tissues are always affected in some way, sooner or later. Since this low percentage of nephritis obtained in 150 cases under my care at the Iowa State Inebriate Asylum, as well as in 310 cases in my private practice observed and treated during the last six years there, I can not logically consider alcohol as a psychic and somatic disease-producer only, but also as an actual diuretic. It not only is an intoxicant and narcotic, but also a detoxicant, for it certainly eliminates incidentally with the ingested alcohol other toxins as yet unknown to us, but undoubtedly directly concerned with the production of nephritis, so called. In a future publication, I shall summarize the present status of our views on the etiology of nephritis. The discussion will perhaps bring out what I am forced to omit for the sake of brevity. Since I consider my opportunities for the study of alcohol and nephritis exceptionally good, however, and my statistics superior to general hospital reports, I wish to submit the following conclusions:

CONCLUSIONS

1. Alcohol when taken daily, as it is by chronic inebriates, dipsomaniacs or drinkers, is not an irritant to the kidneys.

2. When nephritis occurs in a chronic alcoholic, it is probably due to some other concomitant toxic agent, and not to alcohol.

3. Overeating, acute intoxicants, exposure to colds, autointoxications, infections either manifest or latent, and some metabolic disorders as yet unknown, are the real causative factors of nephritis.

4. Alcohol when taken by drinkers as food or stimulant, such as we see in chronic alcoholism, is a diuretic.

5. Those tissues which eliminate alcohol are least affected by it. This applies to the lungs and especially to the kidneys.

6. Alcohol, while an intoxicant, is also a detoxicant, ridding the body of various deleterious catabolic products.

7. The comparative integrity of the kidneys in alcoholics may be due to the fact that the renal cells contain very few lipoids and lecithins and that therefore they are not at all acted on by the narcotic molecule.

5041 South Ashland Avenue.

ABSTRACT OF DISCUSSION

DR. A. S. WARTHIN, Ann Arbor, Mich.: To what extent has Dr. Hultgen controlled this investigation by pathologic study? My experience is that the kidneys of alcoholics show a very high percentage of pathologic changes. I have never seen a normal kidney in a chronic alcoholic. I had an opportunity while in Vienna and Dresden to study the kidneys in a large number of cases of chronic alcoholism. Clinically, we may not be able to recognize these changes, which are not usually of the ordinary type of nephritis, the most common lesions being a sclerosis, scarring of the glomeruli, etc. The kidney has a smaller number of capable or normal glomeruli than has the kidney of a normal individual. The condition resembles that of the kidneys of people who have had repeated infections, whose kidneys have lost many glomeruli, being characterized by the presence of great numbers of hyaline glomeruli, and not necessarily presenting the picture of a nephritis.

DR. H. GIDEON WELLS, Chicago: My own autopsy experience has been largely with an alcoholic population in Chicago, and my general impression has been that the cardiovascular system escapes more than we have believed. My experience has been fully in harmony with that of recent German writers on the subject, that the blood-vessels of alcoholics show no earlier sclerosis than those of other persons, and are often in surprisingly good condition in proportion to the age of the subject. The kidneys I have found not commonly showing the ordinary forms of nephritis seen in the non-alcoholic individual; but that there are microscopic changes, I can well believe; a number of focal round-cell accumulations are often present, and we are also apt to get a low type of epithelium, dilated tubules, etc. We usually speak of the kidney of chronic alcoholism as a "hog-back" kidney. It is broad and round, yet looks macroscopically like a kidney in good condition; the functional capacity of that kidney is another matter. We should need a systematic study of albumin, casts, etc., as well as thorough quantitative tests of capacity to obtain accurate information on this point.

DR. DANIEL N. EISENDRATH, Chicago: Experience in general teaches that it is hardly fair to assume, from Dr. Hultgen's statistics and from the fact that the patients showed but small amounts of albumin in the urine, that there are no changes in the kidneys of alcoholics, for this reason: It is the indurative type of nephritis that is found most frequently in alcoholics, and in this form we seldom obtain in the urine more than minute traces of albumin. It sometimes requires repeated examinations before albumin can be discovered in such cases, as insurance examiners will bear witness. They say that alcoholics will come for examination day after day, without a trace of albumin in their urine; but that on the fifth or sixth day, there will be a trace of albumin. The same thing is true of casts. It is scarcely fair to draw the deduction, therefore, that alcohol has no bad influence on the kidneys. We know by such studies as I have spoken of that the chronic interstitial changes are the main features of the influence of alcohol on the kidneys.

DR. J. F. HULTGEN, Chicago: The same objection holds as for cardiopathic patients, the accompanying etiologic factors conditions which we find clinically render it difficult for the necropsist to assign the true cause to a given post mortem lesion. Overwork and exposures to cold are by themselves potent causes of nephritis. Hence the difficulty of measuring at the autopsy the significance of chronic alcoholism in the genesis of Bright's disease. In looking over the literature, one may find enormous figures—20 to 50 per cent. of nephritis among delirium tremens patients. Howship Dickinson says in Allbutt's last volume, "We found in forty-eight autopsies on men who had died of alcoholism that there was no larger percentage of contracted kidneys than in forty-eight post-mortems on others who had not been associated with any liquor traffic at all." This seems to me good evidence in favor of my contention that chronic alcoholism plays a very subordinate rôle in the causation of chronic nephritis. Indeed, as we can interpret it clinically, it does not seem to have any existence at all. What Dr. Wells said about the cardiovascular system is interesting. I think that it is a confirmation of the diuretic hypothesis of alcohol. If alcohol is a true diuretic, it should be a detoxicant as well. It eliminates from the system some catabolic substances which we do not as yet know. I cannot go into the physiology of alcoholism; but the expression "hog-back" kidney in these cases is a Philadelphia term, invented by Dr. Conner of that city, and has rather frail anatomic foundations. Dr. Eisendrath says that clinical findings alone are not good enough in the diagnosis. We cannot always diagnose nephritis clinically, but when a man who drinks to excess for many years is nevertheless free from all symptoms usually associated with nephritis, then there is good reason to believe that he has none. When, in addition, he lives for a long time and has neither the petit Brightism (Dieulafoy) nor uremic poisoning, one is inclined more strongly to believe that alcohol has no effect in this direction. I think that we shall have to fall back on clinical evidence, after all; and the internists' reasoning proceeds from facts which are no more circumstantial than those of the pathologist. They should walk abreast and not in single file.

THE INFLUENCE OF MAGNESIUM SULPHATE ON THE MOTOR CELLS OF THE CEREBRAL CORTEX [*]

H. F. HYNDMAN, M.D., AND W. E. MITCHENER, M.D.

Through extensive studies conducted by Meltzer, Auer and other investigators, it has been established, among many other important facts, that injections of magnesium salts produce anesthesia accompanied by a loss of reflexes, muscle tonus, and inhibition of the convulsions produced in tetanus. The effects are said to be paralysis of nerve cells, without preceding excitation, slight lowering of blood-pressure and shallow respiration.

The anesthetic dose, it was assumed, exercised an action directly on the nervous system, causing temporary sensory and motor depression, in that the nerve-cells of the cortex and centers in the medulla oblongata were affected. Furthermore, by local application of the magnesium solutions to the nerve trunks the conductivity of the nerve impulse is interrupted, while the contractile power of the muscle is not abolished by an anesthetic dose, since strychnin administered to an animal while under anesthesia caused convulsions to appear.

In considering the above facts, it became of interest to ascertain, whether the motor cells of the motor area in the cerebral cortex were paralyzed or affected by the dose, or whether the results secured were due to paralysis of the sensory cells only.

The investigations were conducted on rabbits, for which subcutaneous injections of 1.5 gm. of magnesium sulphate per kilo animal produced, in about fifty minutes, anesthesia, that lasted two hours.

Three sets of experiments were decided on, which, briefly outlined, were as follows:

First, in order to ascertain the minimum dose of Faradic current which, when applied to a definite locality in the motor area, produced a definite, measurable muscular response when the animal was put under ether anesthesia, during which the motor cells of the cortex were not paralyzed. The motor area was exposed and the minimum strength of current determined. With this known strength the motor cells were then tested under magnesium sulphate anesthesia. If the known muscular responses could be elicited, it would be assumed that the motor cells were not paralyzed.

---

[*] Read in the Section on Pathology and Physiology of the American Medical Association, at St. Louis, June, 1910.

[*] From the Physiologic Laboratory of the University of Kansas, Lawrence, Kan.

Second, in order to be assured that the current actually stimulated the motor cells and did not produce the muscular contraction by an escape of the current to the motor fibers, the thin layer of the cortex, containing the motor cells was carefully removed, the fibers exposed and again the minimum current determined that would, under this condition, produce the muscular response that was secured when the motor cells were intact. If this current proved to be equal to or less than that secured with the intact cortex we might be led to believe that the motor cells were paralyzed.

Third, to be perfectly sure that the motor cells were or were not paralyzed, it was further necessary to ascertain the strength of current that could produce a known muscular response, when the motor cells were stimulated by impulses reaching them through afferent nerve fibers.

With these three data, obtained under ether anesthesia, it was assumed that the means were at hand by which the desired information could be gained on the rabbits, under magnesium sulphate anesthesia.

In securing the results for the first set of experiments, the motor area was exposed under ether anesthesia. The strength of current was then ascertained, which would produce a characteristic contraction in the leg muscles of the side opposite to the side stimulated, when the insulated platinum electrodes were placed on a well defined area. Then the rabbit was allowed to come out from under the anesthesia and given a dose of magnesium sulphate. As soon as anesthesia set in, the procedure above described was repeated, for the same as well as for the opposite motor area. As a control, the same method was followed on a rabbit that had been given a dose of magnesium sulphate without the preliminary ether. A comparison of these results showed that it required practically the same strength of current to elicit the response under magnesium sulphate as it did under ether anesthesia.

The method followed to obtain the results for the second set of experiments differed from that described above only in certain particulars. As before, the minimum strength of current required to produce the characteristic contraction, when the defined area was stimulated under ether anesthesia, was first found. Then the cortex containing the motor cells of that area was carefully removed. Again, the least strength of current was determined that produced the characteristic contraction, when the electrodes were placed directly on the now exposed motor fibers. It was found that it required a greater strength of current to elicit the response when the fibers were directly stimulated, than when the impulses reached them through their motor cells.

The above procedure was next repeated on the motor area of the other side, but under magnesium sulphate anesthesia. Furthermore, as a control experiment, magnesium sulphate anesthesia was secured at the beginning, the minimum strength of current then found that produced the contraction in the opposite leg when the insulated electrodes were placed on the motor cells. This current was then compared with that secured after the motor cells were removed, and the fibers directly stimulated, both for the same as well as for the opposite motor area. It was interesting to find that the results agreed with those obtained under ether anesthesia.

The third set of experiments consisted in isolating the dorsal roots of the seventh and eighth cervical roots, and determining the strength of current applied to their central cut ends, that would cause certain muscles of the mouth to contract reflexly under ether anesthesia. These steps were then repeated under magnesium sulphate anesthesia, both for the same and for the opposite side. In this case, the afferent stimuli reached a motor cell in the nucleus of the facial nerve, which evidently was not paralyzed, and which responded to the same minimal strength both under ether and magnesium sulphate anesthesia.

A comparison of all the experiments showed that practically the same minimal strength of current was required to produce the same extent of contraction under ether as under magnesium sulphate anesthesia, whether applied directly to the motor fibers, indirectly to the fibers through the motor cortical cells, or when applied to afferent fibers that secured a reflex response through a motor neuron; and that a greater strength of current was required when applied directly to the motor fibers than when the impulses reached these through stimulation of the motor cortical cells. We conclude, therefore, that magnesium sulphate anesthesia does not paralyze the motor cells of the cerebral centers or cortex in the rabbit.

We take this opportunity to thank Dr. Ida H. Hyde, under whose supervision these experiments were conducted, for her many kind suggestions.

ABSTRACT OF DISCUSSION

Dr. Louise G. Robinovitch, New York: The article speaks of "blocking" impulses by means of electric currents when testing the effects of anesthetic agents. In my experiments of the last five or six years I found it impossible to rely on electricity for such tests, when anesthetics were being administered to dogs or other animals. I have been using special electric currents, instead of chloroform or ether, for analgesia for operative laboratory work. While experimenting on the method of resuscitation of dogs in a condition of apparent death caused by chloroform, the carotid artery was exposed while the dog was under the influence of electric analgesia; the artery was then connected with the manometer and the dog chloroformed intensively with the purpose of causing apparent death. If through error the chloroforming was commenced before the breaking of the electric current, the animal became extremely agitated, and the blood-pressure rose so high that the "rider" was thrust out of the manometer.

In my published papers on electric analgesia I also report the incompatibility of electric analgesia with morphinization. a normal dog was put under the influence of electric analgesia with some ten volts registering 1.5 milliamperes. On the following day, the same dog was thoroughly morphinized. The animal remained on the table in a stuporous and irresponsive condition. The electric current was then made to course through the animal's body, cathode at the forehead, anode over the loins. The dog became excited when ½ volt was turned on and jumped off the table when 1 volt was turned on, the amperage being too small to be registered.

The experiments showed conclusively that electric currents used for producing sleep produce the effect through a mechanism that differs from that characterizing the production of sleep or anesthesia with chloroform, ether, morphin, chloralose and other agents. Electricity should not be used as a "block" when testing analgesic effects of various other anesthetic or analgesic agents, because electric and other analgesics are incompatible.

THE RELATION OF THE BLOOD-VESSEL WALL TO COAGULATION OF THE BLOOD*

BERTRAM M. BERNHEIM, M.D.
Assistant in Surgery, The Johns Hopkins University
BALTIMORE

It has been shown by numerous observers, especially Wooldridge[1] and Morawitz,[2] that tissue extracts, such as those obtained from grinding up liver, kidney, muscle, etc. with salt solution, have a marked accelerating action on the coagulation of blood. Artus[3] has demonstrated that if salt solution was simply allowed to run over the surface of tissue which has been rendered as free as possible from blood the salt solution acquired an accelerating action. And if the solution of salt were run over the surface more than once, the accelerating properties of the salt solution increased in proportion.

This substance, or perhaps it would be better to say, these substances, although they have never been identified, have been given the name thrombokinase or zymoplastic substances.

And it was these to which Sahli[4] referred to in 1905 when, after a most careful study of hemophilia in all its aspects he came to the conclusion "that the cause of the absence of natural blood clotting in hemophilia is to be sought in that the injured blood-vessel wall, at the place where the thrombus ought to be formed, does not furnish sufficient quantities of thrombokinase or zymoplastic substances necessary to produce fibrin-ferment from the thrombogen or betaprothrombin."

This unusual conclusion he reached by a process of exclusion, bringing no experimental proof to bear. Indeed, the only mention of the blood-vessel wall extract that I have been able to find in the literature has been that of Loeb[5] in 1904, and that was only in passing.

Working in a field different from the other observers and from an entirely different point of view, I came on this subject by chance. And as it seemed to explain some of my difficulties, a number of observations were made. They were quite interesting and rather striking and may possibly add a little to our knowledge of this complex subject.

In the course of some recent work on the surgery of blood-vessels,[6] it was observed that clotting occurred on the adventitia of the vessels with surprising rapidity, following contact between it and the blood. Furthermore, in common with others who have worked in this field, we soon found that the success of a blood-vessel suture depended primarily on the proper treatment of the adventitia; unless every vestige of it was removed from the cut edge of the vessel and the line of suture, failure almost invariably occurred on account of the formation of a thrombus.

In considering this and in studying it with a view to overcoming the difficulty it seemed possible that this action of the adventitia might not be entirely mechanical, as hitherto believed, but that possibly there was in addition to this factor, a substance contained and secreted in the adventitia, which, on injury to the vessel, was poured out and aided in the clotting process. Further consideration led to the belief that possibly this substance was contained not only in the adventitia, but in the other two coats of the vessel as well, and that in all clotting and thrombus formation, both within and without the vessel, this factor had to be dealt with.

In an experiment based on this theory, then, a dog was bled to death, following which its aorta was removed. After this had been thoroughly washed in normal salt solution to remove all visible traces of blood, it was divided into its three component parts: adventitia, media and intima, a procedure accomplished without great difficulty. The three coats were then separately ground up in mortars containing sand and a little salt solution—10 to 20 c.c. The extracts thus obtained were filtered off into three separate dishes.

From the blood of another dog, some fluorid plasma (0.3 per cent.) was made, likewise some blood-serum. To 1 c.c. of the fluorid plasma, 0.5 c.c. of the extract of the adventitia was added; no clot resulted, but when to this, 0.5 c.c. of serum was added a solid clot formed in about one and one-half minutes. Plasma plus serum alone formed no clot. Plasma plus extract of the media plus serum, same quantities as before, formed a clot in about the same time as when extract of adventitia was used. The same phenomenon occurred when extract of intima was used.

With this knowledge then—that all three coats of the vessel acted alike—it was decided to work henceforth with the whole blood-vessel wall. And since it was feared that fluorid plasma might obscure matters, it was also decided to work with the pure blood, always using controls.

From the vessels of another dog, both veins and arteries this time, another extract was made in the same way as the former ones. Two test-tubes were then taken, thoroughly cleaned, dried and oiled inside with a neutral oil. In one a few drops of the extract were placed, in the other nothing (all work was done at room temperature). A dog was then placed on the table and after being etherized, a cannula which had been cleaned, dried and oiled exactly as the test-tubes had been, in order to retard clotting, was placed in one of its carotid arteries. Equal amounts of blood, about 3 c.c. were allowed to flow into each of the test-tubes. A solid clot formed in about forty-five seconds in the tube containing the extract. The blood in the other tube remained fluid for two and one-half to four minutes, clotting then gradually taking place—the usual coagulation-time for the dog.

As it was desired to get a blood that would not clot at all, a chicken[7] was procured and bled through a cannula absolutely clean, free from dust particles, dried and oiled, into centrifuge tubes prepared in precisely the same way. The blood thus obtained was centrifuged, a clear straw-colored plasma resulting, which remained fluid at room temperature for several days. A sodium chlorid extract was then made from the veins and arteries of another chicken, which had been previously bled to death; the vessels as usual were thoroughly washed in sodium chlorid before being macerated.

Two of the oiled test-tubes were again taken and into each the same amount of chicken plasma was poured. To one of them a few drops, about 0.5 c.c. of chicken vessel extract were added; to the other nothing. A solid clot suddenly formed in the one containing plasma plus extract within one and one-half minutes; the other remained fluid over a day.

---

* From the Hunterian Laboratory of Experimental Medicine.

[1] Wooldridge: Die Gerinnung des Blutes, Leipsic, 1891.

[2] Morawitz, P.: Beiträge zur Kenntnis der Blutgerinnung, Deutsch. Arch. f. klin. Med., 1904, lxxix.

[3] Artus: Jour. de physiol. et de path. gén., 1902, iv, 281.

[4] Sahli, H.: Ueber das Wesen der Haemophilie, Ztschr. f. klin. Med., Bd. 56, 1905.

[5] Loeb, L.: Virchow's Arch. f. path. Anat., 1904, clxxv, 10.

[6] Bernheim, B. M.: Bull. Johns Hopkins Hosp. 1909, p. 840.

[7] Delezenne: Arch. de Physiol., 1897, series 5, ix, 353. Compt. rend. Soc. de biol., 1896, p. 782.

As it was desired then to get a more concentrated solution, the veins and arteries of five dogs were taken, washed carefully in sodium chlorid and ground up with sand in a meat grinder. The resulting mass was mixed with kaolin, after which it was placed in a Buchner press, and the tissue juices expressed, about 20 c.c. of a watery-looking fluid resulting. Two-tenths of 1 c.c. of this fluid clotted 3 c.c. of a dog's blood in forty-five seconds, the clot beginning to form in thirty seconds. The control did not begin to clot until after two minutes, and was not finished until about three and a half to four minutes, the usual clotting time for dog's blood.

Then the tissue juices from pig's aortas, obtained and prepared just exactly as those of the dog had been, were obtained. A young pig was then procured and a cannula inserted into one of its carotids. Into one test-tube 0.2 c.c. of the juice was placed, into the other nothing. Three c.c. of blood were run into each tube. Clotting occurred within forty-five seconds in that tube containing the extract, in the other not until about the expiration of three and a half to four minutes. After repetition and confirmation of the test, the same juice from the pig's aorta was tried on dog's blood, with the result that a clot suddenly formed within forty-five seconds. Following this, the pig's juice was tried on rabbit's blood and here, too, clotting occurred with the same rapidity and constancy, while the controls remained fluid a normal length of time—two and a half to four minutes.

On heating these extracts and juices, it was found that they partially lost their activity and on prolonged heating they lost it completely. Likewise, the activity disappeared if they were allowed to stand at room temperature for any length of time—say over twenty-four or thirty-six hours. If they were kept on ice the activity remained much longer than if they were kept at room temperature.

A few drops of acetic acid added to the juice threw down a rather heavy whitish flocculent precipitate. This precipitate after being washed with sodium chlorid, and then taken up with a few drops of sodium carbonate, acted exactly like the whole juice, and with the same rapidity, while the filtrate was practically inactive.

It would seem therefore from the above that just as in the liver, muscle, etc., so in the blood vessel wall itself there is a substance which, once the vessel is injured, probably aids in the formation of a clot. And if this is true, those engaged in the field of vascular surgery have still another problem to consider in connection with the already very difficult and trying technic. The final solution of this problem, however, rests with the pharmacologists and physiologists, as is the case with many other problems of modern medicine.

5419 Linden Avenue.

Endemic Goiter in Brazil Due to Schizotrypanum. C. Chagas writes to the *Brazil Medico* to describe what he thinks is a new morbid entity, the cause a schizotrypanum named for Oswaldo Cruz. The affection in question is almost invariably accompanied by enlargement of the thyroid or parathyroids. The incipient goiter has been discovered even in infants less than six months old which shows, he says, that the water can scarcely be incriminated, the infants at that age being fed exclusively on breast milk. This tropical infectious disease seems to be responsible for much mortality, especially in children in the contaminated zones, and also for chronic illness and personal degeneracy due to the presence in the blood of the *Schizotrypanum cruzi*. His preliminary report is published in the *Brazil Medico*, 1910, xxiv, 163.

PHARMACOLOGIC FETISHISMS

A SECOND CONTRIBUTION*

WILFRED M. BARTON, M.D.
Professor of Pharmacology and Therapeutics in the Medical Department of Georgetown University
WASHINGTON, D. C.

Last April I had the honor of reading before the Georgetown Medical Society a paper with the above title, which was an attempt to refute the following therapeutic delusions: (1) that olive-oil will dissolve gall-stones; (2) that valerian is valuable in hysteria; (3) that tannic acid will stop internal hemorrhage; (4) that alcohol and ether hypodermically injected are indicated in shock and collapse; (5) that colchicum cures gout; (6) that the anilin dyes are tissue antiseptics; (7) that epinephrin given by the stomach or hypodermically acts as a heart stimulant; (8) that potassium iodid will affect the scleroses; (9) that chlorate of potassium will cure stomatitis; (10) that the hypophosphites and phosphates are beneficial in neurasthenic and adynamic states; (11) that lithium salts are indicated in the uric acid diathesis; and (12) that calcium salts will stop internal bleeding.

The article was published,[1] and to my great surprise it attracted more than a passing notice. Some letters reached me from various parts of the country objecting to the opinions expressed. Some of my confrères in the city likewise took me to task for my unorthodox beliefs. I hope that my continued adherence to all of the opinions delivered at that time will not be ascribed to stubbornness or egotism; and for the various pharmacologic and physiologic grounds upon which those opinions are based reference may be made to the original paper.

It is my desire at this time to present briefly another dozen of similar delusions and to attempt their discussion as impartially as possible, basing the arguments on what appears to be the only firm ground in matters pharmacologic, namely, the physiologic actions of the drugs concerned.

1. LEAD AND OPIUM WASH IN SPRAINS

In the out-patient department of the hospital some time ago, one of the students came to me and said "Doctor, will you please write me a prescription for lead and opium wash? I want to use it for a case of sprain."

"No," I replied, "such a thing would be contrary to rational pharmacotherapy and I am surprised that you have so far forgotten your instructions in the laboratory and the lecture room as to ask me such a thing."

And yet the student was morally justified in doing so under the circumstances, for while his pharmacologic training had supplied him with certain facts with respect to the local effects or rather lack of local effects of lead and opium, yet when his practical hospital dispensary experience began, he saw his leaders and his teachers daily applying the classic lotion of lead and opium. Why should he not follow their illustrious example? The following are the reasons why he should not:

Opium is entirely devoid of any peripheral effects, especially when applied to the unbroken skin. Even when applied directly to exposed nerves morphin has practically no effect on their irritability. The sensibility of the skin is lowered by a subcutaneous injection of morphin, but the action involves the whole superficies of the body, and is due to central action. Opium there fore, or even morphin itself, is of no service whatever as a local anesthetic, when applied either to the skin or mucous membranes. Absolutely the same is true of lead, which is one of the least corrosive, but one of the most astringent of the heavy metals. Applied to the skin, however, the salts of lead are devoid of action, because the precipitation of proteids is prevented by the intervention of the epithelium.

---

* Read before the Clinical Society of the District of Columbia, Feb. 11, 1910.

[1] The Journal A. M. A., May 15, 1909, lii, 1557.

The application of hot water is so simple, so cheap and so unspectacular that it does not appeal strongly to the imagination. But it is after all the most efficacious method of relieving the pain of sprains.

II. ACONITE INTERNALLY IN NEURALGIA

Once on a time I had almost infinite faith in the following prescription which I obtained from a manual of formulas:

R.	Crystallized aconitin	gr.	1/20
	Methylene blue	gr.	30
	Powdered nutmeg	gr.	30
	Codein sulphate	gr.	8
	Extract cannabis indica	gr.	4

15 capsules - one every four or five hours.

There is no doubt of the efficacy of this mixture, but the fetish consists in attributing to the aconite what is accomplished by the two narcotic ingredients, codein and cannabis indica, particularly codein. The first three ingredients are entirely superfluous. Aconite, when locally employed, first stimulates the peripheral terminations of the sensory nerves, more especially those of common sensation. The stimulation finally passes into depression, and thus induces a sense of numbness at the point of application, and when poisonous doses have been used, this numbness extends over the body. The rational inference from these facts is that the local application of aconite or of aconitin, particularly when measures are taken to effect their penetration, may be of some service in benumbing the sense of pain. Hypodermic injections are precluded on account of the severe and enduring pain which they cause. When, however, the drug is internally administered in therapeutic doses, the benumbing effects of aconite are not produced.

The methylene blue and powdered nutmeg remain to be accounted for, but while the former imparts to the urine a color familiar to the washerwoman, this is not sufficient excuse for its insertion, while the powdered nutmeg does not even increase the cost of the prescription enough to influence the psyche of the patient.

III. SPARTEIN AS A CARDIAC TONIC AND SUBSTITUTE FOR DIGITALIS

I had a long argument with an enthusiastic confrère some time ago on this subject, and at its conclusion we parted, each convinced of the other's ignorance. The argument degenerated into a dispute and nothing was accomplished. "A man convinced against his will, is of the same opinion still." In dealing with this particular fetish, I shall therefore attempt to be particularly cool and impartial, although the temptation is strong to treat it more summarily.

Spartein is a liquid alkaloid found in the common broom plant, along with a neutral substance, scoparin. Chemically it is a pyridin derivative and is so closely related chemically to two other alkaloids, namely, coniin and gelseminin, that they are always considered together. Now, although coniin and gelseminin are so closely related to spartein chemically and also in their pharmacologic behavior, no one has ever suggested using them as heart stimulants. It is not my purpose, however, to attempt to show why spartein was ever suggested as a cardiac stimulant, for indeed one may search through every experimental analysis that has ever been made of its action on the normal animal without finding the shadow of justification for it.

The peripheral termination of motor nerves are paralyzed by spartein (curare action). The rhythm of the heart is slowed and its contractions rendered weaker by it—a very strange action for a heart stimulant. No increase in the arterial pressure is observed.

Its advocates can say, with truth, that like digitalis, it slows the heart. But the heart can be slowed by choking the patient provided the process be kept up long enough to produce asphyxia. While spartein slows the heart it does so by depressing its ganglia. Digitalis, on the contrary, slows the heart by vagus stimulation. Spartein is less poisonous than coniin or gelseminin and this is why it was not found out sooner by the general practitioner, while to the pharmacologist the entire similarity of all three of these alkaloids has long been a matter of common knowledge.

Spartein is therefore of no value in heart disease and is no substitute for digitalis.

IV. NITROHYDROCHLORIC ACID IN DISEASES OF THE LIVER AND JAUNDICE

When the instructor in clinical medicine shows the senior class a case of icterus he naturally describes the various pathologic states which combine to produce it. In doing so his description is strictly based on well attested scientific facts.

In dealing with the application of drugs to the treatment of the case, however, the same care is not always bestowed. Custom and hearsay and empiricism are frequently allowed to rule. If this were not the case nitrohydrochloric acid would never have achieved the reputation which it seems to hold, that it possesses some occult and wonderful influence on the liver. As a matter of fact, dilute nitrohydrochloric acid can have only a simple acid function in the alimentary canal, and can be absorbed only after its neutralization.

A small amount of chlorin is, however, present in the acid, and it is not inconceivable that this may have some effect on the liver, but no proof of any such action really exists. One fact concerning the treatment of liver diseases by dilute nitrohydrochloric acid, which incidentally arrests the attention, is that some authorities advise its use as an external application over the liver or in a bath or even a foot-bath. If the acid works as well in a foot-bath as it does internally perhaps it would work as well in the bottle as out of it.

V. PHYSIOLOGIC SALT SOLUTION AS A HEART STIMULANT

Do not rise in immediate rebellion at this. I do not mean to say that normal salt solution is of no value, but simply that it is not a heart stimulant. When a considerable amount of blood has been lost through hemorrhage, the introduction of physiologic salt solution (0.9%) in varying amounts is much practiced, though the quantity used has been materially lessened of late years to the great benefit of the patients. For it has been shown that the introduction of large amounts of physiologic salt solution is not an entirely innocuous process. The blood becomes much diluted, then highly concentrated, and a considerable amount of hemoglobin is set free in the plasma and these effects may last a week. The remedial effects of the treatment have been denied by some (Feis). The advocates of the treatment have claimed that the heart is directly stimulated, and that consequently the transfusion of physiologic saline solution is of benefit in cases of cardiac weakness or failure not due to hemorrhage.

But the effects of the solution on the heart have been shown to be mechanical, and exerted only after hemorrhage; therefore the application of this treatment to heart failure is irrational. Even in hemorrhage the amount given should be carefully guarded. A good rule is to give not more than 250 c.c. at a time.

VI. NITROGLYCERIN AND AMYL NITRITE AS HEART STIMULANTS IN ANESTHETIC ACCIDENTS AND SHOCK

It is a sign of substantial progress that we see fewer anesthetists prepare a solution of nitroglycerin prior to anesthesia to be used in cases of collapse. The quietus on this ridiculous custom may be said to have been put by Cushny when he used the following words: "Amyl nitrite has been advised in accidents during chloroform anesthesia on the theory that it would benefit the circulation; but as a matter of fact it would appear strongly contraindicated in those cases, in which it is true that the heart is extremely depressed but in which the arterial tension is practically zero. Its use is especially irrational if, as has been suggested, the failure of the respiration is partly due to anemia of the central nervous system. The cases in which recovery has occurred after this measure may in fact be said to have recovered not owing to, but in spite of the use of amyl nitrite."

VII. CALOMEL AS A CHOLAGOGUE

The idea that calomel acts as a cholagogue is as classic among physicians as the idea that Franciscus Sylvius described and named the Sylvian fissure, but neither is entitled to credence. Our professor of anatomy, Dr. Baker,[2] showed the Sylvius notion to be wrong, and pharmacologic observations by Pfaff, Stadelman, and others have demonstrated the former to be equally fallacious. The beautiful blue Danube of Strauss is in reality a very muddy stream, and the green stools of calomel are only an accidental circumstance. Calomel behaves as a purgative by acting as an irritant on the intestine owing to its partial solution and the affinity of the mercury ion for the epithelium. The stools are often of a greenish color, owing to the fact that the bile present in the intestine is hurried through the bowel, and prevented from being converted into brown fecal pigment by the antiseptic power of the mercury, which prevents the growth of micro-organisms, upon which the conversion normally depends. But the secretion of bile by the liver is absolutely unaffected, as has been repeatedly demonstrated in animals and in man, in cases of biliary fistula. The liver does not seem to be at all affected by calomel and the removal of the so-called bilious symptoms is a result of the purgation and the antisepsis.

VIII. AMMONIUM CHLORID AS AN EXPECTORANT

It may be said at the outset that many of the so-called expectorants, such as benzoic acid, tolu, terpin hydrate, as well as the one under discussion have no such effect if by expectorant we mean a substance which has the power of increasing the secretions of the pulmonary mucous membrane. Most of them have an opposite effect where any result can be demonstrated. But chlorid of ammonium is so universally used in cough mixtures for its supposed expectorant quality that it is deserving of special attention. The following facts concerning the fate of ammonium chlorid after absorption demonstrate pretty clearly that the drug cannot act as an expectorant. Solution of chlorid of ammonium in direct contact with a mucous membrane may develop ordinary salt actions dependent on the degree of its concentration. Of course, when swallowed it does not come in contact with the pulmonary mucous membrane. Being a very soluble and diffusible salt it is readily absorbed into the portal circulation and carried to the liver and other organs. Here it is quickly decomposed and the ammonium ion is converted into urea. The chlorid ion is set free as hydrochloric acid, which is immediately neutralized by the ammonium which carnivorous animals form in their tissues for neutralization of acid substances. Thus some ammonium chlorid is reformed and rapidly secreted in the urine. The formation of ammonia in the tissues withdraws, of course, a certain amount of the tissue nitrogen so that the actual output of urea is not much increased. Ammonium chlorid is therefore entirely decomposed in the body, and is excreted in the urine partly as urea, partly as reformed ammonium chlorid. None of it is excreted by the pulmonary mucous membranes. It must therefore be sprayed on these membranes to affect them and the cough mixture is not usually given in this way.

IX. SWEET SPIRITS OF NITER AS A DIURETIC AND DIAPHORETIC

How ruthless is the hand of time! It seems almost a sacrilege to attempt to destroy this pretty little harmless delusion. But if it must be done, let it be done briefly. Spiritus ætheris nitrosi or so-called sweet spirits of niter contains some alcohol, ether, and aldehyd and a slight trace of ethyl nitrite, the last when freshly prepared.

The fresh undiluted solution has a slight nitrite action. But when it is diluted with water and administered the nitrite escapes and the only effect left is that of a very small amount of ether and alcohol, which is negligible. It does not affect the kidneys or the sweat-glands; consequently it is neither a diuretic nor a diaphoretic.

X. THE PEPSIN-PANCREATIN-DIASTASE FETISH

The administration of these ferments in the treatment of dyspepsias is like carrying coals to Newcastle—entirely superfluous. The digestive ferments completely disappear from the alimentary canal only after death and even then only some time after, so that the occasion never arises when they are seriously needed. There is no harm in them, however, so that, as long as we need psychic playthings in pharmacotherapy, they may be of use for that purpose.

XI. ERGOT AS AN INTERNAL HEMOSTATIC

The action of ergot is a complex one, being compounded of three actions, one a sapotoxin action, the second a convulsive action due to cornutin, and the third a vasoconstrictive action due to sphacelotoxin. The vasoconstriction may lead to gangrene, as can be seen in the rooster's comb. The vasoconstriction which is due partly to central but mainly to peripheral causes is not general, consequently the blood pressure is only moderately raised. Only certain vascular territories are affected, and it is quite impossible to exactly define their location. A bleeding vessel may or may not be constricted. As a hemostatic therefore, ergot is to say the least, uncertain. Its action on the uterine muscle is the only typical effect which may be produced with certainty so far as we know, and even here recent studies would indicate that the doses used for this purpose in medical practice are totally inadequate.

---

[2] Johns Hopkins Hosp. Bull., November, 1909.

XII. SOME TOXICOLOGIC FETISHISMS

There are several delusions participated in by many of us concerning the treatment of poisoning. This is due largely to the fact that our text-books are so frequently reprinted instead of being reedited, as they claim to be, that all that is necessary for the perpetuation of an error is to get it into an early edition, after which its subsequent exclusion is about as difficult as would be that of the book of Genesis from the Old Testament. Three examples of this kind of fetishism will be briefly discussed.

1. Old oil of turpentine in phosphorus poisoning.
2. Hydrated oxid of iron and magnesia in arsenic poisoning.
3. Sodium sulphate in phenol poisoning.

The thing which has killed my confidence in these time-worn antidotes is animal experimentation. They have been tried and found wanting. Copious stomach-washing has been found to be the only effective means of combating arsenic and phosphorus poisoning. The combination of phenol with sulphuric acid in the tissues actually takes place and the resulting compound is comparatively harmless, but the administration of sodium sulphate to supply the sulphate has been found wanting because the phenol will not combine with inorganic sulphates but only with organic sulphur compounds which are in process of being oxidized to sulphuric acid.

Some other pharmacologic fetishisms are as well worthy of consideration as the above which have been described, such, for example, as the use of hydrocyanic acid as a cough sedative, hydrastin as a hemostatic, veratrum viride in eclampsia, creoste, ichthyol and cinnamic acid in tuberculosis, and the use of the euphonious strontium and vanadium; but space is wanting and perhaps even the interest of those to whom these more or less iconoclastic thoughts are addressed is now exhausted.

It is unfortunate perhaps that he who contends for the strictly rational use of drugs earns for himself the derogatory title of a therapeutic nihilist, but though I "deny the allegation and defy the allegator" in this respect, I must exclaim in the strain of Patrick Henry: "If this be nihilism, make the most of it."

1338 H Street, N. W.

CATARACT-IN-CAPSULE EXTRACTION BY A NEW MEANS AND A NEW METHOD*

G. C. SAVAGE, M.D.
NASHVILLE, TENN.

The ideal operation for cataract is the one that insures the removal of the cloudy lens in its capsule. The means and the method that can make this operation easiest and safest are to be desired. At the meeting of this Section one year ago, while listening to Dr. Greene's paper on the Smith operation, it occurred to me that an instrument could be made that would tear loose the ligaments and make the expulsion of the lens in its capsule easy.

I immediately made a drawing of the newly thought of instrument, and two days later, in Philadelphia, had one made by Ferguson. The accompanying illustration is a perfect representation of the original instrument, which was briefly described in THE JOURNAL last year,[1] and on which, it seems to me, no improvement can be made. As well shown, it is a right- and left-handed instrument. Each end terminates in a double curve, one in line with the handle and the other at right angles to this line, the angle being at the point of union of the two curves. The two curves have the same radius, which approximates that of the anterior surface of the lens, and they are of the same length, not less than 5 nor more than 6 mm. There should be no sharpness at the angle of union of the two curves, nor at the free end of the second, or horizontal, curve. The edges of each curve should be well rounded. If thus made, the manipulation of the instrument will not rupture the capsule while tearing loose the ligamentous attachments. I believe the means to be as perfect for the purpose as is possible. I have named it the cataract-in-capsule detacher.

While my first conception of the instrument was perfect, the method of operating with it was evolved in the course of five operations. I will outline every step of the operation as I now do it, and as I believe it should always be done. Even the steps which are common to all cataract operations, and for which I can claim no credit, may be mentioned in connection with those steps that are peculiar to my operation, and are of my own devising.

1. After dilatation of the pupil, there should be thorough aseptic preparation of the patient, the instruments, the operator and the assistants.

2. The eye should be completely anesthetized by means of a 4 per cent. solution of cocain, one or two drops every four minutes for three instillations, the operation to begin at the end of another four minutes, or twelve minutes after the first drops. This method of using cocain makes possible a painless operation, in most cases.

3. The lid elevator should be used for controlling the upper lid, and this alone should be done by one assistant, the operator himself inserting the instrument and then placing it in the hand of the assistant, who should be instructed not to allow either the instrument or the lid to come in contact with the globe at any stage of the operation. The assistant should thus hold the lid elevator until the operator, having delivered the cataract, is ready to take the elevator into his own hands for the purpose of gently restoring the lid over the eye.

4. A second assistant, with the index-finger of his left hand placed on the skin of the lower lid, should draw it down gently, but not necessarily very far. In his right hand he should hold the iridectomy scissors, which he may, or may not, be called on to use. This assistant should stand to the right side of the patient, whether the eye be the right or the left, while the other assistant should stand on the side not operated on. The first assistant can be dispensed with entirely if the operator prefers the speculum to the elevator; and the only thing the second assistant would have to be ready for is the use of the iridectomy scissors. But it is safer to use the elevator than to use the speculum.

5. The lids out of the way, the operator, standing always at the head of his patient, should fix the eyeball by firmly grasping the tendon of the internus at its insertion, resting the hand holding the fixation forceps on the opposite side of the face and on the bridge of the nose, so that he may neither pull nor push the eye with the forceps—simply to steady the eye is the purpose. With a Graefe knife, sharp at point and edge, in his other hand, the operator makes the puncture and counter-puncture of the cornea with greater ease because of

---

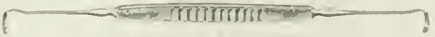
* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Savage, G. C.: A New Method for Detaching the Cataract in Its Capsule, THE JOURNAL A. M. A., Oct. 9, 1909, liii, 1186.

the character of the fixation, and then completes the incision, which need not include more than five-elevenths of the corneal margin. A conjunctival flap should be made when possible, but always the incision should be upward and in the corneal margin.

6. Still grasping the tendon of the internus, the operator lays down the knife and takes up the iris forceps with which he seizes the iris opposite the center of the corneal incision, and gently drawing it out, directs the assistant to clip it close to the forceps, thus insuring a small iridectomy. (Through several operations I wavered between a small iridectomy and no iridectomy, but have finally settled on the correctness of a small iridectomy. It facilitates the dislodgment and delivery of the lens, and the only objection attending it is the bleeding which sometimes follows the cutting.)

7. Still grasping the tendon of the internus, the operator lays down the iris forceps and takes up the detacher. He easily passes it through the corneal incision, directing the free point into the pupillary opening, and passing it beneath the nasal part of the iris, in contact with the anterior surface of the cataract. The angle of union of the two curves, and the vertical curve itself, are easily passed between the iris and the cataract. When thus passed, the horizontal curve must rest on the cataract about half-way between its center and its lower border, while the vertical curve must rest on the cataract half-way between its center and its temporal border; and both curves must be behind the iris, so that it may not be injured, when the dislodging pressure shall be made. This is the primary position of the detacher. On two easily executed movements of the detacher depends success in freeing the cataract from its ligaments: First, by rotating the instrument on its long axis outward the vertical curve is made to press the outer edge of the cataract backward, while it makes the inner or nasal edge advance to the same extent. This pressure, when properly made, tears loose the lateral (both temporal and nasal) ligaments, almost from top to bottom. The detacher is now returned to its primary position, and the second movement is effected by advancing the upper end of the instrument in such a way as to make pressure with the horizontal curve. This pushes backward the lower part of the cataract, while it causes the upper margin to advance to the same extent. This tears loose the remaining ligaments above and below, which were not torn by the first rotation. The rotation of the cataract, first on its vertical axis, detaches all lateral ligaments, and second, on its horizontal axis, detaches the ligaments above and below. The two movements together sever the ligaments throughout the entire circle. After the second rotation the detacher is returned to the primary position, and then removed in the reverse order of its introduction.


Cataract in-capsule detacher.

9. The fixation forceps, having been used while making the corneal incision, while doing the iridectomy, and while using the detacher, must now be laid aside. In one hand the operator now takes the Daviel spoon, with the back of which to make pressure on the lower part of the cornea for the delivery of the detached cataract. In the other hand he takes the cystotome, with the shank of which to make counter-pressure if necessary, until the cataract begins to emerge, at which moment, while keeping up the pressure, he ceases to make counter-pressure, and with the point of the cystotome transfixes the cataract from behind, and lifts it out of the eye. The moment after transfixion all pressure is removed, thus lessening the risk of escape of vitreous.

10. If any iris is in the wound, it is replaced; the edges of the corneal cut are coapted and the conjunctival flap, if any, is smoothed out. Now the operator takes the lid elevator in his own hand, and gently places the lid in its normal position.

11. The after-treatment is that usually followed, and is directed toward the prevention of infection of the corneal wound and to guard against iritis. Should either of these conditions arise, as they may after any operation for cataract, they must be vigorously fought with our best and most approved agents.

In the eight months since the detacher became a finished instrument, thirty-eight operations with it have been done in Nashville, nineteen by myself, twelve by Dr. Hilliard Wood, four by Dr. M. M. Cullom, two by Dr. George H. Price, and one by Dr. J. P. Crawford. The cases are too few and the time covered too short to justify a detailed report of results. Suffice it to say that I am satisfied, and that my local confrères share with me this satisfaction. My operation has been honored in its own city, which means much in its favor.

In closing, I may be allowed to make the following claims:

1. The detacher is my own invention.
2. The method of fixing the eyeball through three vital steps of the operation is mine.
3. The method of detaching the cataract is mine.
4. The method of doing the iridectomy is mine.
5. The method of transfixing the cataract, from behind, as it begins to emerge, and lifting it out of the eye, the pressure ceasing after the transfixion, is mine.

Before using my detacher and applying the methods as set forth above, on the human eye, free use should be made of fresh pigs' eyes. On pigs' eyes my operation will not suffer in comparison with the Smith Indian operation, or with any other operation. On the human eye, whether the cataract is ripe or unripe, the operation set forth in this paper is the easiest, the safest and the best.

137 Eighth Ave. N.

MY EXPERIENCE IN THE OPERATION FOR CATARACT *

J. L. THOMPSON, M.D.
INDIANAPOLIS

As so much is being written on the extraction of the lens in its capsule by those who number their operations by thousands, as do some operators in India, a few words may not be out of place by one who belongs to the large majority of operators in this country who cannot truthfully report forty cases in one year. I shall mention, therefore, some of the dangers which have beset my path, not in the more difficult operation above mentioned, but in the method of extraction as usually made.

After practicing medicine and surgery in private, and as surgeon in the army for nearly three years during the civil war, I studied eye diseases under the late Dr. E. Williams of Cincinnati in 1867, and entered his office

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

later as his assistant. Dr. Williams, according to the late Dr. Samuel D. Gross of Philadelphia, was the first regular physician in the United States to make eye diseases a specialty. Others treated eyes long before his day, but they practiced medicine and surgery also. While with Dr. Williams I took the names and records of every patient on whom he operated for cataract (and have them still) and they number but fifty-two in one year. His patients were very numerous; they came from our northern lake region to the Gulf of Mexico; from near Pittsburg to the Rocky Mountains. And it should be remembered that eye specialists were comparatively few in those days; now they are almost as numerous as laparotomists.

When in 1871 I located in Indianapolis there was but one regular practitioner who did much eye work, but he did not confine his practice thereto; nor did I know of another in the state. Now I know of no town in the state with a population of fifteen thousand that has not two or more specialists on eye, ear, nose and throat. From these figures how many do you suppose extract fifteen cataracts in one year? Would such men dare to extract the lens in its capsule?

The late Dr. George C. Harlan of Philadelphia tersely described the necessary qualifications of an eye surgeon as follows: "He must have good vision, a steady hand, coolness and judgment in difficulties and a full appreciation of his responsibilities." Other eminent men have added that he should cultivate ambidexterity, and by all means practice medicine and surgery for several years; then study under a master in eye work before beginning this highly important specialty.

Senile cataract (as the name implies) usually occurs in elderly persons; hence the importance of a very careful investigation as to the general physical condition of the patient before operation. Thirty-three years ago I operated on a farmer whose health seemed to be excellent, and he so reported it. The combined extraction was made; the man did well; on the twelfth day he could read ordinary print with a plus glass; but on the fourteenth day he had a severe chill, followed by a high fever with vomiting; this continued for some days and started an inflammation of the uveal tract, which caused the loss of his eye. Unfortunately he had failed to inform me that he had suffered from malarial fever the previous autumn. Three years later the lens of his remaining eye was ripe, when I made a preliminary iridectomy, and extracted it two months later, but before doing so satisfied myself that he was in no danger from malarial poison. The man is now past his eightieth year and can see to read very nicely. I encountered a similar case a few years after. A woman not 50 years old was brought to me by a physician from a neighboring town for operation. He reported her health as being the best. Her eye was examined in every way and found to be in favorable condition for operation. The extraction was done and the woman did well until the seventh day; then, when I called to dress the eye, she was raving, had torn the bandage off, and declared that the woman who kept the boarding house was trying to poison her. She grasped my wrists and said that she would not release me until I took her from the house. With the help of a physician she was taken to a hospital, where she died in a few days from typhoid fever. I learned soon afterward that before she came she had been nursing her husband through a very severe illness from the same disease, and that she had made him promise that as soon as he was better he would have her cataract removed.

One other patient I must mention. A farmer, over 70, was operated on and did well until the tenth day, when he complained of a severe pain in the calf of his leg on the opposite side to the diseased eye; in a few days the limb became cold, gangrene soon came on and the leg was amputated. When the surgeon removed the tourniquet no arteries required ligation, as they were calcareous. The man died in a few weeks. Some of his friends said that the operation for cataract caused the trouble in the leg. Others said "No," as it was on the opposite side. These cases show the importance of a thorough physical examination before cataract extraction.

I have had very poor ultimate results in patients addicted to the use of whiskey ten or more times a day for years. The operation may be faultless and the sight very good for a short time, but congestions and subacute inflammations hang on so long that vision is much impaired and often lost.

Women who suffer much for years after the menopause with flushed faces and eyes are not good subjects for cataract extraction. One of these is now under my care. She was operated on by the combined method two months ago, went home able to read, and was given my usual instruction to be very careful in no way to expose the eye for four weeks. When she reached home she found her husband very ill with appendicitis, from which he died. She was up with him night and day for ten days, getting but little sleep. I saw her one month afterward, with vision only 6 CC. I used the fluidextract of ergot internally, and her vision, she reports, is much better. Ergot has accomplished much in several of these patients.

In 1895 a retired capitalist from a distant city, who was blind in both eyes, was operated on—simple extraction. He did well and was ready and dressed for the train when he fell to the floor of the hospital and was unconscious for a short time; he was taken home on the following day and died shortly afterward. A dear old lady, aged 70 years and blind in both eyes, had a similar result after a simple extraction. When her husband and daughter came to take her home I put a glass on her to show the family that she could read; they were delighted, but their joy was soon turned to mourning. She was about to step into the carriage, fell to the pavement and was taken back to the hospital, where she died in one hour.

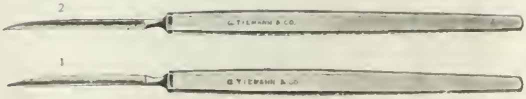
These cases depress one very much, and it is impossible to convince the friends and relatives that the operation was not the cause of death. I recall two simple cataract extractions in large fleshy women, both of whom had profuse retinal hemorrhage after faultless operations, and after the bandages were applied, and the patients were in bed; of course the eyes were lost.

I cannot conceive of anything which makes the operator feel worse than do these unlooked for results which so injure his reputation.

Three of my patients became maniacal in from two to five days after the extraction; they tore the bandages from their eyes and raised quite a disturbance; two of these were women, one a vivacious Irishman; I looked for bad results, but they did well. Some patients have been troubled with illusions and hallucinations. One of these was the wife of a poor physician in a small town, well educated and very fond of books; she had been blind for several years and had led a lonely life. I made a simple extraction on one eye, which gave her excellent vision. Some time after she returned home and found that she could read fine print; she was so happy that it slightly unbalanced her mind. She then sent to inquire of me if I ever prescribed glasses which enabled my patents to see their friends in the spirit world, as she did. What a gift this would be!

Others I have treated have returned home in two or three weeks delighted with their improved vision, but a few weeks later letters have been received concerning their failing sight, and when they came to me later I have found inflammation of the chorioid which, in spite of all treatment, has ended in blindness. Others have not only lost the eye from which the cataract was removed, but also the second eye from sympathetic iridochoroiditis.

Glaucoma is another dread monster which has occasionally attacked my patients years after a successful extraction resulting in good reading vision. I now have a patient, a woman, aged nearly 70, from whose left eye I made a simple extraction seven years ago, and did the same on the right eye nearly four years after. She had very white hair and light, soft blue eyes, the pupils were so round and natural that no one could see that an operation had been made. I felt very much pleased with the result, as did the patient. Recently she came to see me when I found the right eye very hard and the vision reduced to 10/CC. Myotics failed to reduce the tension and, to my great regret, an iridectomy had to be made. The eye is now better, vision is 16/C, but as to the ultimate result time alone can tell. Other patients have had hyalitis with dense floating bodies in the vitreous, some have suffered from chorioidal and retinal exudates and hemorrhages many years after ideal extractions. All operators long engaged in this work must have had many like results.



Knives with convex edge (1); and with concave edge and rounded back near the point (2).

For ten or more years I operated on both eyes if everything was favorable and the patient desired it. One of these patients was a farmer, aged nearly 88, tall, wiry-looking, straight as an arrow, who was a soldier in the war of 1812. His eyes were in the best condition for operation. I extracted both lenses with iridectomy. It was before the days of cocain; he did not squeeze his eyes or move a muscle during the operation, nor did he have one bad symptom in either eye. He remained at his daughter's home in the city for five weeks, when he returned home, fitted with glasses and able to read small type, which he continued to do until a few weeks before his death, which took place at the age of 106 years and 3 months. When I learned that one of the best operators in the land had lost both eyes of a patient from a double cataract extraction, I received such a shock that I immediately ceased to operate on both eyes at one sitting. Yet, strange to say, in those 11 patients which I recall (doubtless there are more on my books) I did not have a bad result. In one of these 22 eyes, in which the vision equalled from 20/L to 20 [illegible] in each case. When I think of this operative proceeding I almost tremble. Surely "the wind was tempered to the shorn lamb."

For a few years I operated on one eye if ripe, but only partially so in the other. I do so no more, but refuse to operate on one eye when the patient can read with the other.

PRELIMINARY IRIDECTOMY

This I found to be the safest of all methods in the treatment of cataract. With it I have saved many eyes which would most certainly have been lost had I attempted extraction; especially is this the case when the vitreous is fluid as water. In some of these I have couched the lens subsequently. One was as follows: A frail little woman, past the forty-fifth year, suffered from trachoma in early childhood; she had been cured, but had lamellar cataract in both eyes; she was able to read for years when the back was to the light, but when I saw her the periphery of each lens was opaque. I made a small iridectomy on one eye when some fluid vitreous trickled out. In a few weeks I couched the lens, and did the same in the other eye some months later. She was able to read with either or both eyes for years, but I learned that she had to be operated on later for trichiasis by an esteemed member of this society who resided near her in a distant city. She called to see me after a few years, when I saw the lenses floating in the vitreous humor as in water. In several cases patients have consulted me who had lost one eye from an operation made by able men in distant states. A small iridectomy was made when a rush of very fluid vitreous escaped. On the fourth day the chamber was clear and revealed a shrunken lens with a narrow artificial pupil above, which enabled the individual to go about the streets and discern large letters; I did not touch the lens afterward, but "left well enough alone."

We all know that a simple iridectomy, when properly made, rarely gives any trouble, but an iridectomy combined with the extraction of the lens is a very different matter, as the iris is then the main factor in inflammations and often causes the loss of the eye. With the iris healed and no synechiae the subsequent extraction is nearly always successful. It is my firm belief that if a preliminary iridectomy is made and followed in two months or more by the extraction of the lens our losses would not exceed 1 per cent.

EXTRACTION OF CATARACT IN THE CAPSULE

This is the most difficult and dangerous of all methods. I have done the operation on two patients (both of whom were preachers), but it was not intentional. In both of these a large corneal flap was made for a simple extraction. In one the lens presented immediately after the corneal section, fell out and rolled on the floor, the iris was replaced and the patient recovered without one untoward symptom. The second case only differed from the first in the turning of the lens on its axis and requiring a little assistance in its delivery. In this one, when I saw the unduly gaping wound, I feared a loss of the contents of the eyeball, but not a particle of vitreous presented, the iris was replaced and a beautiful round pupil remained. Both of these men had good vision for years. Here, again, there is a great difference between delivering the lens in its capsule, when from unknown causes it has become loosened from its supports, and our efforts to break up these attachments.

No one should attempt this most difficult operation short of placing himself under a master who has become skilful after thousands of operations. If we cannot do this, we should by all means refer patients who desire this method of operation to these experts. I flatter myself that I have had the usual percentage of success in cataract extraction, as heretofore practiced by the majority of ophthalmologists. But I could not be induced to make this operation short of a thorough training at the hands of those who have operated successfully on thousands of eyes. If the average man in the beginning attempts it he will soon discover that he not only ruins many eyes, but does himself great injury. How many of us would like to have this operation done on ourselves?

When I first commenced eye surgery I made the mistake of opening the speculum too widely and lost vitreous in a few cases by so doing. One cannot be too careful in selecting this instrument. It should be light, well curved, the spring not too strong, and one which can be quickly removed. I commenced with the Graefe right and left, but I have since found the one used by Dr. H. Knapp far better. For years I used the Graefe narrow, straight cataract knife, but fifteen years ago I had special knives made, some with ivory and others with metallic handles (Fig. 1). Knife 1, being convex on the edge, passes across the chamber and makes the corneal section easily and smoothly. It can be kept in order by the operator and retains its edge longer than does the very narrow straight knife, and, lastly, there is no danger of passing into the chamber the wrong way. Knife 2 has a concave edge and rounded back near its point, and I have found it very useful in preliminary iridectomies when no anterior chamber exists; one can then make the section with it just as narrow as he wishes. It is also useful in very severe glaucoma with no anterior chamber, widely dilated pupil and exceedingly narrow ring of iris. It can be worked across the chamber by passing its rounded back against the iris, thereby avoiding transfixing the iris or wounding the lens capsule as we are liable to do with the angular keratome.

416 American Central Life Insurance Building.

ABSTRACT OF DISCUSSION

Dr. Hilliard Wood, Nashville, Tenn.: My experience with this method of Dr. Savage is confined to 13 cases in which I have operated during the past fall and winter. I shall divide what I have to say about this method of Dr. Savage into (1) the objections and (2) the advantages.

1. Objections: A. It involves an appreciable increase of traumatism over the usual extracapsular extraction: and as a result of this a slight increase in the reaction following the operation. B. It is not suitable in the case of very nervous, or restless patients, because of the increased danger of the loss of vitreous. C. It necessitates, in my hands at least, an iridectomy, which involves a mutilation of the iris and a permanent deformity of the pupil. D. The most serious objection is the production of vitreous opacities. In only 3 of my cases have I been able to examine the vitreous some weeks after operating and in each of these there were floating opacities in the vitreous. These opacities were not dense, and the vision was fairly good: still the opacities were present in each of the 3 cases examined. I understand that such opacities in the front layers of the vitreous are frequently met after the Smith operation, so they would seem to be common to intracapsular methods of extraction.

2. Advantages: A. It enables one to remove unripe cataracts, thus avoiding the tedious delay required for ripening. It is, in my opinion, safer to remove the unripe cataract in its capsule than to resort to artificial ripening. B. Intracapsular extraction removes the possibility of secondary capsular opacities, an advantage which is manifest. The operation is not dangerous or difficult, for in fifty operations done by five operators in our city there was no failure that could be attributed to the method of operating.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: Too many operators with elastic consciences, who are known to have limited opportunities for operative work, glibly talk of their cataract operations by the hundreds and thousands and report such good results that the young and inexperienced operator is inclined to look on the cataract operation as one devoid of much risk and usually attended with good results, if the operation is properly performed. Altogether too many operators are inclined to put the best side out; to report their successes and purposely to neglect to report their failures. This has a tendency to lead the inexperienced operator to draw wrong conclusions and even to accuse himself falsely of error because his own results do not come up to the standard of those who report only their successes.

Loss of vitreous, caused by the squeezing of a speculum by the patient's lids, has led me to abandon the use of the speculum and to use a narrow lid-elevator which absolutely prevents squeezing of the lids. The frequency of prolapse of iris and glaucoma following the simple operation as observed in patients operated on by others as well as in the few operations of the kind which I have done has led me to adopt the combined operation, or extraction following some weeks after a preliminary iridectomy, as being the safest. The manner of incising the capsule has seemingly had but little effect on the necessity of doing a secondary operation in order to secure the best vision, and I do a discission in fully 50 per cent. of my cases. A few extractions of cataract in the capsule, done without intent, and with excellent results, have not led me to think that such an operation, done through intent, should be the operation of choice. My inspection of perhaps twenty-five patients on whom the so-called Major Smith operation had been performed, in whom fully 25 per cent. had suffered loss of vitreous, has also strengthened my belief that extraction in the capsule should not be the operation of choice for the average American operator who has to contend with a class of people far different in temperament and social and physical condition from the class of people on whom Major Smith and others in India operate so successfully. No doubt the fact that Major Smith has operated on thousands has given him an experience and a superior skill which can never be approached by any American operator, who is fortunate if he can number his cases by the hundred over a long series of years. The majority of the cataract patients in America are operated on and will continue to be operated on by the average eye surgeon whose experience is confined to less than twenty five cases per year. To the average man, therefore, a cataract extraction becomes a grave responsibility and he should not blindly grasp untried methods, or methods, though seemingly successful, that are only so because carried out by men who have had experience which but few can hope to duplicate, even in a small degree. I am not prepared to believe that extraction of the lens in its capsule, as a routine practice, is as safe a procedure, either during the operation or during the healing process, as the cataract operation as ordinarily performed by reasonably skilled operators, and the best results in any case will not be secured unless the operator takes the time and trouble to study thoroughly and to prepare carefully his cases. Emphasis should be placed on the point brought out in Dr. Thompson's paper that not only should the eye of the patient be studied, but the patient's general health and temperament should be carefully investigated before a cataract extraction is attempted, if we are to secure the highest element of success. When and how to operate should be decided with a view not only to present, but to ultimate effects.

Dr. J. L. Thompson, Indianapolis: After my paper had gone to the printer, Dr. Greene, of Dayton, Ohio, kindly invited me to witness the Smith Indian operation, on several patients. He also showed me a large number of old soldiers at the National Soldiers' Home, and several private patients, on whom he had made this operation, from one week ago to many months previously. In them I found pupils clear, no threads of capsule, no synechia, and with an acuity of vision equal to 20 xx in many of them. His corneal incision was made with one sweep of the knife, which is shaped like the one which is described in my paper as No. 2, except that his blade is one-fourth of an inch longer, which is necessary when one makes the section entirely in the cornea with but one sweep, if one needs no conjunctival flap.

This is certainly the ideal operation, but should be made only by those who have been thoroughly drilled, and have operated in a country where cataract patients are very numerous and operators few. I have operated on many hundreds of cataracts successfully, but shall not attempt this method. Had I known of it before I sustained a fracture of the neck of the femur some years ago, I would have sought an introduction to Major Smith, visited India, and placed myself under his instruction; but as this is now out of the question, I shall, as I have already commenced doing, send my patients who have immature, nuclear cataract to those who have taken such instruction and have operated in India under the eye of its originator.

Dr. Savage's "cataract-in-capsule extraction by a new means and a new method," to me, is the most complicated and dangerous of all the methods of extraction, except at the hands of the very able originator. It requires two skilled assistants, and a "detacher," which is manipulated inside, instead of outside, the cornea as is the Smith method. But it is comparatively an untried operation. Dr. Savage reports only thirty-eight cases by four operators in eight months. Major Smith reports over 2,000 in six weeks, and 20,000 already made.

"On pigs' eyes," says Dr. Savage, "my operation will not suffer in comparison with the Smith-Indian operation or with any other operation." It is not pigs' eyes, however, and especially dead pigs' eyes, that we are discussing. Dead pigs tell no tales. I have operated on eyes taken from pigs, and sheep, and on many human eyes, very soon after enucleating them; but have derived very little benefit therefrom. The pigs should be live pigs in order that the ultimate result may be followed up. Again must I emphasize the advantages of preliminary iridectomy. It tells us all about the behavior of our patient, and we have no hemorrhage in the anterior chamber to obscure our view. With the iris healed, we can operate with greater confidence of success.

We should urge the advantage to be gained by preliminary iridectomy as strongly as did Moses the teaching of the law.

Dr. D. W. Greene, Dayton, Ohio: I had not intended to say anything on the Smith operation, but Dr. Wood and Dr. Thompson have referred to it, and I would not be true to my obligation to that great man, Colonel Smith, for whom I entertain the most profound respect, if I did not say a word in defense of his operation, because I believe it is more rational and safe than the so-called operation of Dr. Savage, notwithstanding his five modest claims of originality.

Several instruments have been devised by different men at different times embodying all the principles of the so-called detacher. They may vary in size, in shape, but the principle is the same in all of them. It should be the discovery of new underlying principles, not simply modifications of old instruments, which are required to introduce new operations.

I have no practical knowledge of Dr. Savage's operation but we are making history here. What goes on record without a protest from some one will have the silent endorsement of this Section. I am sorry to be the one to dispute with my friend Dr. Savage the claims he makes for his so-called operation, but I do not think that he has a single peg to stand on so far as his claims go toward having an original operation. He catches the internal rectus muscle, instead of catching the eyeball below. There is not much difference in that from what we all do. He has two assistants, which is an objection. I think that his method of impaling the cataract on the [illegible] is objectionable because the capsule is so liable to rupture when pricked. In a paper written in 1866 Lucca of Naples described his method of delivering cataract with a flat probe which is passed over the anterior surface and underneath the [illegible] to the lens, and afterward delivered it by pressure. The instrument of Gradenigo, a zonulotome, is intended to cut the zonule and deliver the lens afterward. I bought the instrument in Paris where it has been made by Luer for ten or more years. The instrument of Professor Basso of Genoa has all the curve of Dr. Savage's instrument, even the curve to fit the anterior surface of the lens, which is for all purposes a cystitome. He calls it a zonulotome. Any person who has had the slightest experience with [illegible] operation knows that the slightest tear in the zonule is all that is necessary. If it is torn at one point the rest easily follows by the pressure in delivering the lens. In other words, it tears itself. In 1907, at the Atlantic City session, Dr. L. Webster Fox called my attention to an instrument which, so far as I am able to see, barring a slight difference in size and lacking a curve in the shank, is the same as Dr. Savage's detacher. It is fair to say that at that time Dr. Fox intended it for a zonulatome. I see another objection to Dr. Savage's so-called operation in that when he has detached the cataract he is only half way through the operation. He still has to deliver it. By the Smith method the whole process is completed by external manipulation and often by one movement. That, I think, is a point worth considering. There are some good points about the operation, but I think that there are many objections to it, and I would have to witness a demonstration of its advantages over the Smith operation before I will be willing to pass an instrument inside of the eye and be at the mercy of the patient even for a few seconds.

Dr. L. Webster Fox, Philadelphia: A cataract operation should always be approached with the feeling that one is about to perform the most delicate operation in surgery and one should try to realize its difficulties and obstacles. All ophthalmic surgeons should welcome a new method by which these obstacles may be lessened. I am not convinced that Dr. Savage has accomplished this with the instrument which he has shown us. In his dextrous hand the dislocation of the lens without loss of vitreous and the expression of the lens in its capsule may be accomplished with ease; but is it a safe method for the average operator to adopt? On mechanical lines, I fail to realize the justification of his claims, but still I am open to conviction. The method is not new and Dr. Savage does not lay claim to any new thought other than the fact that this instrument in his hands robs the "extraction of the lens in its capsule" of many of the difficulties found in Smith's method. Gradenigo and Delgado also devised instruments for the same purpose, and about five years ago I attempted the same method with an instrument modeled after the cystotome of Jaeger, and at a later date Dr. D. W. Greene and myself experimented with various instruments which in shape were exceedingly like Dr. Savage's instrument, the curve in the shank near the hook in the Savage instrument making the difference and giving it its originality. The results being negative, we discontinued the use of the instrument. If Dr. Savage can dislocate a cataractous lens with ease and safety, that is, without disturbing the iris and without loss of vitreous, as his writings and arguments imply, then he has added something to the technic of cataract operations which many of us will welcome. I must still be convinced, however, by demonstration, that this instrument can be used safely in the narrow confines of a corneal or scleral incision with the upper eyelid drawn forward with a Smith hook, thus more or less obstructing the field of operation.

If, after the cataract has been broken away from its suspensory ligament, it can be expressed through this small opening in the cornea then Dr. Savage has acquired a dexterity which the majority of operators have not attained.

Dr. G. C. Savage, Nashville, Tenn.: While Dr. Fox does not remember it, I suggested the corelysis instrument to him in his office on my return trip from the Boston meeting, June, 1906. The May *Bulletin* of Meyerowitz has a picture of my instrument giving Dr. Fox the credit for its invention. Meyerowitz has taken all the blame on himself. He said that he got the wrong name on the right instrument, or words to that effect.

Dr. Thompson is wrong in speaking lightly of operations on pigs' eyes. Without the use of pigs' eyes and the experience gained with them I would not have attempted my operation on a human eye. It is out of that experience that one learns just how to make the double movement of my detacher.

In answer to Dr. Greene, you can tear loose ligaments with my detacher and you tear at least 75 or 80 per cent. of it with the first of the two movements. Therefore lighter pressure attends the second movement. My first instrument was made after a design drawn on the edge of my copy of the program at Atlantic City, 1909, and I have in my hand the original drawing. This was made while Greene was discussing the Smith operation. I have it marked 6 mm. for each curve, which is the ideal length of the curve; 7 mm. is too large and 5 mm. is sometimes too small. I have all three and I would advise you to have all three. Use No. 7 on pigs' eyes and 5 and 6 on human eyes. There is no resemblance between my instrument and any of those exhibited by Dr. Greene. Preliminary iridectomy is good; I believe a preliminary iridectomy with preliminary detachment with my instrument would be almost an ideal operation. I have less irritation in the eyes after my operation than I have ever had since I have been operating. Eyes at the fourth day often look as if operated on four weeks before. And I want to tell you further that I turn the eye loose on the third day with only a pad of gauze in front of it. I let the patient wink, move the eye up and down with the other eye at the end of the third day, and I have no hesitation in doing it. I keep both eyes bandaged for two days. Furthermore, I cleanse the eye, but without looking at it, at the end of the first day. I dress the eye twice on the second day and afterward two or three times every day for two weeks. With a small iridectomy you are likely to have prolapse of the iris, unless you use atropin.

Have dead pigs' eyes by all means first. You will disobey my directions if you do not go to the butcher and get an abundance of pigs' eyes, not for the purpose of learning to make the corneal incision, for that you know, but to learn just how to make the double manipulation with the detacher. You will in that way acquire confidence for doing it on the human eye.

As to floating opacities, I have had them in some of my 27 cases, but I am sure they were there before, because the eyes had no irritation whatever about them. I have not been as lucky with all my cases as my confréres. All of their 23 patients had good recovery. I shall give you at some time the history of the cases. One of my cases was lost with a chorioidal hemorrhage. The patient became sick at the stomach a few hours after the operation and vomited, and the chorioidal hemorrhage thus caused ruined the eye. In one other case that white fluffy formation described by Dr. Knapp occurred in an eye free from irritation otherwise. The fluffy appearance disappeared, but the eye was not useful. I need not go into any further detail, but I want to call attention to what Dr. Wood has said, that in not one out of fifty eyes operated on is there one thing to be charged against the new operation itself.

ONE OF THE FUNCTIONS OF THE DUODENUM *

S. A. MATTHEWS, M.D.
CHICAGO

Last year J. W. Draper Maury[1] published the results of his study on intestinal obstruction based on observations made on 400 lesions, experimentally produced.

His observations led him to suggest the idea that the duodenum (dogs), independent of the secretions thrown into it from the stomach, liver, and pancreas, secretes something which is essential to the life of the animal. Any interference with this hypothetical secretion soon ends in "physiologic death." He also suggests that this protective secretion is furnished by the first 35 cm. of the duodenum and that its presence in the lower portion of the intestine will suffice to prevent death.

Independent of Maury, and while working on an entirely different problem, which, however, involved certain surgical operations on the pancreas, the bile-ducts, and the duodenum, I observed that whenever the operations involved the duct-bearing portion of the duodenum the mortality was very high without any apparent cause. This observation led me to inquire further into the cause of these seemingly unexplainable deaths.

Previous to this observation, and while studying the effects on dogs of long-loop gastro-enterostomies (35-40 cm.) with the pylorus closed, certain definite and characteristic changes were noted which seem to have more or less relation to the question in hand. This relationship may well be discussed here.

With the pylorus permanently closed, a gastro-enterostomy 12 to 15 cm. from the pylorus results in no untoward effects on dogs; but if the gastro-enterostomy be made 35 to 40 cm. from the pylorus conditions are altogether changed. An animal so operated on will soon recover from the immediate effects of the operation. Generally, for two or three days following the operation, there is more or less vomiting, and the stools become light-colored, soft, and fatty. But the most characteristic effect is a gradual loss of flesh. The animal will eat ravenously and drink copiously but to no effect in maintaining its body nutrition. It will continue to lose weight and will die in from five to six weeks in an extreme state of inanition. In fact, animals after closure of the pylorus and a long-loop gastro-enterostomy, behave much the same as they do after total extirpation of the pancreas; that is, the stools become light-colored, soft, and fatty, and the body nutrition cannot be maintained. After the former operation, the urinary findings indicate a condition of gradual starvation, while after the latter a diabetic condition. After the former, the fats are only partially digested and partially absorbed and the digestion of the proteids (meat) is somewhat interfered with; after the latter, the fats are not well digested and only partially absorbed and the carbohydrates are excreted in the urine unused. After a long-loop gastro-enterostomy dogs will live, on an average, about a week longer than after extirpation of the pancreas, but the degree of inanition is correspondingly greater.

As no very satisfactory explanation can be offered for these phenomena, it is permissible to enter the field of speculation. In the first place, as already pointed out, it makes a very decided difference whether the gastric discharge into the intestines is 12 cm. from the closed pylorus or 35 cm.; the former producing no effects, while the latter is followed by the changes described above. At first, one might be tempted to offer as an explanation a probable break in the chain of interactions which takes place in the duodenum, in which the gastric, liver, pancreatic, and duodenal secretions are all more or less interested, and which results in the formation of certain substances, as secretin, trypsin, etc., which either stimulate certain glands, as does secretin, or produce activated substances such as trypsin. Such a break might well be brought about by closure of the pylorus and by establishing a gastro-enterostomy too far from the pylorus to permit the acids from the stomach to act as a biliary stimulant, or to enter into the formation of secretin or other yet unknown activating substances. Such a condition of affairs in the duodenum might account for the digestive derangements, but no more than to close the pylorus, tie off the common bile duct, and drain the gall-bladder, tie off the pancreatic ducts, and to make a short-loop gastro-enterostomy. But even under the conditions imposed by this combination of operations, dogs do not die of starvation; but will live and enjoy a good degree of health. If this be true, then we are forced to assume that the presence of the gastric contents in the upper 12 cm. of the small intestines incites the formation of some substance (secretin or something of a similar nature) which is necessary for the health of the animal, and which is not formed if the gastric discharge is 35 to 40 cm. lower down.

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Maury, J. W. D.: Am. Jour. Med. Sc., 1909, cxxxvii, 725.

To inquire more fully into the merits of such a hypothesis the following series of experiments were undertaken. As a number of operations with certain modifications were made to demonstrate each point, the experiments will be described in terms of the type of operation used.

Type 1.—Operation: The pylorus was closed, the common bile-duct tied off and the gall-bladder drained, and both pancreatic ducts tied. A gastro-enterostomy was made 12 cm. distal to the pylorus. Dogs so operated on lived and enjoyed comparatively good health.

Type 2.—Operation: The pylorus was closed, the duodenum was closed 12 cm. from the pylorus, thus making a duodenal pouch 12 cm. long, and a gastro-enterostomy was made just distal to the duodenal closure. The duodenal pouch was drained to the outside. In some of the operations of this series the common bile-duct was tied off and the gall-bladder drained, and both of the pancreatic ducts tied off. Animals so operated upon lived only from forty-eight to seventy-two hours. It made no difference on the length of life whether the bile and the pancreatic juices were allowed to enter the duodenal loop or were drained directly to the outside. In all of the experiments of this type the dogs recovered promptly from the immediate effects of the operation and to all appearances were in good condition for forty-eight to seventy-two hours following the operation, when they would suddenly drop dead. All cases in which there was the least semblance of beginning sepsis were counted out.

Type 3.—Operation: This was the same as in Type 2, with the addition that the jejunum, just distal to the gastro-enterostomy, was brought up and anastomosed into the duodenal loop so that the loop drained into the upper part of the jejunum. After such an operation the contents of the stomach, after being discharged into the bowel through the gastro-enterostomy opening, would have to pass around by way of the duodeno-jejunal anastomosis and there meet the duodenal secretions. Animals so operated on lived and enjoyed a comparative degree of health. Here also the results were irrespective of the presence of the bile and the pancreatic juice in the duodenum. Six observations were made on this type of operation.

Type 4.—Operation: The pylorus was divided close to the stomach and the stomach opening closed; the duodenum was divided 12 cm. from the pylorus and the distal end closed, and a patch about 1.5 by 3 cm. was taken from the inner side of the duodenum with as little interference with its circulation as possible and transplanted into the bowel a convenient distance from its closed end. The remainder of the duodenum was resected, the common bile-duct tied, the gall-bladder drained and the duodenal portion of the pancreas removed. A gastro-enterostomy was established so as to permit the gastric discharge to come in contact with the transplanted patch of duodenum. This type of operation was quite difficult, but all the subjects (four) in which the patch united to form a part of the intestinal wall lived. The results here obtained were contrary to those obtained by the extirpation of as much as 12 to 15 cm. of the upper part of the small intestines.

Type 5.—Operation: These operations consisted in closing the bowel 12 cm. from the pylorus and of making a gastro-enterostomy, in some of the experiments just distal to the duodenal closure and in others 35 to 40 cm. from the pylorus. In most of the operations the common bile-duct was tied and the gall-bladder drained and the pancreatic ducts tied. The purpose here was to permit the duodenal secretion to pass upward into the stomach and hence be discharged into the intestines through the gastro-enterostomy. The animals lived after these operations irrespective of the position of the gastro-enterostomy.

It is obvious from the results of these experiments that the total extirpation of the duodenum is incompatible with life longer than about seventy-two hours. A number of investigators,[2] however, while studying the relation of the duodenum to sugar metabolism, claim to have made total extirpations of the duodenum presumably without causing death. Without attempting to discredit their results, it is altogether probable that they did not remove quite enough of the duodenum to obliterate all of its secreting surface. In some instances this will require about 15 cm.

About the only deduction that can be drawn from these experiments is that the duodenum exerts some influence, probably through the agency of a secretion, the removal of which from the body is compatible with life (dogs). So far as we know, Brunner's glands are the only structures located in the duodenum which might be capable of such a secretion, and indeed it is quite tempting to credit them with a specific secretion, the nature of which is yet unknown. In this connection, the crypt of Lieberkühn might play a rôle, but inasmuch as they are found in the jejunum this seems hardly probable. The fact that the fluid collected from a duodenal pouch differs little, or not at all, from the ordinary intestinal juice, in that it is a thin, clear, alkaline fluid, possessed of very feeble digestive powers, and when injected into the circulation in doses of from 10 to 20 c.c. exerts no effects at all, not even on the blood-pressure, might suggest that it acts on some other secretion formed lower down in the bowel, forming an activated substance which is necessary to life. The fact that the animal always lives whenever the duodenal secretion is permitted to drain into the part of the bowel below, by means of an anastomosis of the jejunum into the duodenal pouch, or by a rubber tubing connecting the duodenal pouch with the intestines lower down, or by permitting the duodenal secretion to pass into the stomach and be discharged into the bowel with the stomach contents through a gastro-enterostomy, argues further for some such conclusion.

Hull Laboratories, University of Chicago.

ABSTRACT OF DISCUSSION

Dr. Ida E. Hyde, Lawrence, Kan.: I should like to ask Dr. Matthews about the effect of the injection of an extract of the duodenum.

Dr. William Carpenter MacCarty, Rochester, Minn.: I should like to ask Dr. Matthews if the dogs which died showed any dilatation of the stomach or duodenum, and was there an extensive fatty degeneration of the liver?

Dilatation of the stomach and not infrequently the duodenum occurs in a certain number of cases which have undergone operative procedures in the region of the pylorus or bile passages. I have seen definite, apparently paralytic constrictions of the duodenum at autopsy on patients dying after operative measures on the gall-bladder and bile-ducts. If the patients who are suffering from this acute dilatation of the stomach and duodenum are not carefully watched and properly treated by washing out the stomach a large percentage of them die and present an extreme fatty change in the liver. The change in the liver is apparently due to some toxic substance absorbed from the distended bowel. The question arises: Is this substance the secretion of the stomach, duodenum, pancreas or liver itself or some bacterial product arising in the stagnant contents of the bowel? I should like to know if Dr. Matthews can throw some light on this subject.

Dr. J. F. Hultgen, Chicago: In considering this subject in a general way it seems to me that there are segments in the

---

[2] Cimoroni, A.: Lo Sperimentale, 1908, lxii, 523; Tiberti, N.: Lo Sperimentale, 1908, lxii, 479; Minkowski, O.: Arch. f. exper. Path. und Pharmakol., 1908, lviii, 271; Pflüger, E.: Arch. f. d. ges. Physiol. (Pflüger's), 1907, cxvii, Nos. 3, 4, 5, 7; 1908, cxix, No. 5; 1908, cxxiii, 253; Lauwens: Arch. f. d. ges. Physiol. (Pflüger's), cxx, 623.

gastrointestinal canal a good deal like the segments in the nervous system, as exemplified by the cutaneous distribution of the nerves; so I think that we can speak of metameric zones in the intestine, as well as in the skin. However, Starling and Bayliss have found that the secretin produced in the duodenum acts on the musculature by way of the circulation, and that it is a chemical product. I should like to know whether Dr. Matthews' experience agrees with that or not. There is no question that there is a segmental function in the intestine, the anatomic basis of which we have not been able to ascertain. I should like to ask Dr. Matthews how he stands on the question of gastroenterostomy from the view-point of the physiologist.

DR. W. G. MCCALLUM, New York: I should like to know whether Dr. Matthews observed any signs of injury to the nervous system in these regions after any of his operations—whether any convulsions followed them.

DR. J. T. PILCHER, Brooklyn: I should like to ask whether, after the speaker closed off the duodenum and made a fistula from the duodenum externally, and the dogs have become emaciated, he has tried to inject a stimulant such as hydrochloric acid through the fistula in the duodenum, to see whether it would activate a secretion there, and whether there was a secretion further down in the gut and where the secretion was reabsorbed? I have had some experience in experimenting on the pancreas, and have found that a number of the dogs died after ligating the entire blood supply as it comes into the duodenum; and it has seemed to me that this might explain the cause of death, through the lack of direct reabsorption.

DR. S. A. MATTHEWS, Chicago: In reply to the questions of Dr. Hyde, I can make no definite statements. So far I have not studied the effects of introducing an extract of the duodenum into loops made at different places along the intestines. I have introduced the duodenal secretion into the bowel lower down, but without any very satisfactory results. I am now carrying on experiments such as Dr. Hyde has suggested. I cannot say much about the point brought out by Dr. MacCarty. I have observed several times dilatation of the stomach in dogs, following operations on the duodenum like those described in my paper. In these cases the antrum pylori was found contracted down hard, while the fundus was much dilated. This condition comes on suddenly and the dog will live for only a few hours. Another condition noticed a number of times was intestinal intussusception. This generally took place in the lower third of the small bowel and ended in death in a few hours. The most characteristic symptom was muscular jerkings, simulating a state of tetany.

As stated in the paper, the deleterious effects of a gastroenterostomy on dogs depends on where the gastric contents are discharged into the intestines. If 12-15 cm. from the pylorus, no effect; if 35 cm. from the pylorus, death will invariably follow within six weeks. It may be possible to put animals with long-loop gastroenterostomies on some form of diet that will sustain life under the conditions imposed by such operations. In reply to Dr. McCallum I will say that tetany did not occur in any of the animals used in this work. As already stated, some of the dogs in which intussusception took place did develop symptoms of tetany. In reply to Dr. Pilcher I will say that I have tried the injection of dilute hydrochloric acid into the duodenal loops and also into the part of the bowel lower down, but without any effect. In fact, little or no absorption takes place in the upper 12-15 cm. of the small intestine. In the jejunum absorption does take place, but acids here had no effect on the life and health of the animal.

Carcinoma of the Femur. A case of metastatic carcinoma of the femur at the site of a fracture, occurring in a woman suffering from bilateral mammary cancer, is reported by Speese (*Proc. Path. Soc., Philadelphia*, February, 1910). The autopsy disclosed a single metastatic nodule in the liver and the carcinoma at the site of fracture, producing softened areas at this point.

MANUAL WORK IN THE TREATMENT OF THE FUNCTIONAL NERVOUS DISEASES *

HERBERT J. HALL, M.D.
MARBLEHEAD, MASS.

The task of treating the functional nervous diseases is so important and so perplexing that you who know the subject best will be most willing to weigh the experience of any one who has honestly investigated in the field. For this reason, although a general practitioner, making no claim to especial neurologic training, I venture to lay before you my conclusions after some years' experience with manual work as a remedy.

THE RATIONALE OF WORK

In order to understand the effectiveness of this simple therapeutic adaptation, we must assume that rational occupation of some kind is an essential of sound and successful living. We must also appreciate that in the functional nervous diseases, we shall not commonly find the patient rationally occupied but either overworking or idle. We shall also usually find that the patient, whether he is idle or overworked, has adjusted his mental and physical habits to his illness, thereby perpetuating the symptoms by making them consistent parts of his daily life. Moreover, it is in my experience almost always true that during periods of idleness or of overwork, the efforts of the patient to overcome his disease result in an accentuation and an accumulation of symptoms through self-consciousness and self-concern.

Manual work, used as a remedy, aims to introduce a new and objective interest, gradually forcing its adoption and increasing its prominence until the mental and physical habits of the patient are grouped about this wholesome center, rather than about the old standard of illness and complexity. It is found experimentally that this plan frequently does represent so radical a change that some at least of the troublesome nervous symptoms which may have become quite dependent on the old order drop out of sight. Manual work as a remedy, if it is appropriately and wisely used, may also, in the functional derangements, go far toward bringing about a state of self-forgetfulness, which if attained has often in itself meant a virtual cure.

SYNTHETIC VERSUS ANALYTIC METHOD

The work cure, while it has the same ends in view as the various other forms of treatment, differs radically from most of these in that its course is synthetic rather than analytic. The trend of the modern treatment of the mental element of the functional nervous diseases is distinctly analytic; the attempt is made to correct the psychoses by explaining away old fears and misunderstandings. The skilled psycho-analyst delves and probes until he has laid bare the secret mental life of the patient, thereby making the mistakes and faults of the past so evident that their correction becomes logical and so inevitable. But there are those who feel that in many cases, remarkable as are the results thus achieved, any analytic study beyond that required for a fairly clear understanding of the case may involve serious dangers, especially in the hands of the inexperienced and the unskillful. If it is true that a practical unconsciousness of self is an essential of normal living, is it not possible that the self-study necessary in these exhaustive analyses may sometimes defeat its own ends by bringing about new and unfortunate states of self-consciousness? The experienced psychotherapeutist should be able to avoid such dangers, but the average man who attempts this kind of treatment must not infrequently find himself involved in difficulties beyond his understanding. To those who have this fear of complications, the work cure will undoubtedly appeal, for it takes the patient as he is, and seeks first to improve the mental and moral condition by substituting for the well known confused and faulty habits of life a simpler and saner order of living.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

THERAPEUTIC VALUE

If we succeed in establishing simple habits of industry within the limitations of the patient and in spite of the continuance of many untoward symptoms, the therapeutic value of such accomplishment is obvious. The neurasthenic patient who after long years of worry and over-doing has made a failure of his vocation and who has had idleness forced on him, may be by this course not only improved physically and mentally in ways that any one may see, but through the action of forces we may never analyze he becomes a man who can at last be reached by argument and who can respond fully and permanently to the stimulus of wise suggestion. I need only say that the patient, except for his natural limitations, has in this course a chance in some measure to substitute success for failure and that he may frequently go back to his old life so schooled in simple straightforward living that the vicious complications do not return in force.

The difference between the analytic and the synthetic courses is, to be sure, frequently one of sequence only, for in the end we shall have accomplished in each case a virtual analysis, and in favorable cases a logical cure. But the difference in sequence is sometimes very important, and has, I feel sure, not infrequently made the difference between order and confusion.

WORK CURE ONLY AN AID

The work cure, at its best, is, of course, but a supplement and background for careful medical diagnosis and treatment. It does not attempt to discredit any of the methods of treatment now in vogue but may go hand in hand with them. In certain cases it may not be appropriate at all, while again it may render all other treatment unnecessary. The principle involved in the work cure is as old as humanity but it will bear frequent emphasis. Its full recognition has, in my own case at least, made the adequate treatment of the functional nervous diseases a greatly simplified problem.

WORK CURE INSTITUTION

About six years ago, I began to consider the possibility of an institution which should make practical application of the principle of industrial therapeutics and which should serve as a laboratory for experimental research in this direction. The development of the plan, although beset with many difficulties, has been most interesting and encouraging.

Perhaps other occupations and other details would have been as well or better, but the choice fell on certain of the ancient crafts such as could be accomplished without haste and without the use and danger of complicated machinery. We have to show for our efforts a considerable industrial plant, well equipped and well attended. For many reasons, the idea has been from the first that the shops be as good as good craftsmen could make them, and that the products should command respect and interest everywhere. This end has been accomplished by making the shops essentially independent of their clinical use. At the present time we have seven workers who may be properly classed as expert craftsmen or designers. Besides these, there are several assistants who will soon assume rank as craftsmen. These people go to the shops every day and work at their various crafts. The patients are introduced from time to time as pupils or apprentices. The craftsmen who do the teaching have had enough experience with illness so that, under direction, they can successfully manage the work of the pupils. With a basis like this, the patient who comes as a pupil has at once the feeling of support afforded by a permanent organization. He has the example of good work always before him, and the advantage of a selling agency where his own products, as well as those of the professional craftsmen, have a chance for the final approval which comes with purchase by disinterested parties. Another advantage of a well organized shop is that it makes it possible to supply the patient with approved designs, tested materials and careful supervision, so that from the start his time and strength are not wasted but are extended in profitable channels. You will readily appreciate that these practical points are important clinically as well as commercially and artistically, for there is nothing so sure to fail as indecision and uncertainty.

The crafts which we have employed are pottery making, hand weaving, wood carving and metal working, with separate shops and separate instructors in each craft.

PRACTICAL SIDE

For three years these shops represented a very considerable expense, but during the past two years they have become nearly self-supporting, through the sale of their excellent products and quite independently of their medical use. I believe that such plants on a smaller or a larger scale may be successfully established anywhere, and I hope that the success of this venture may encourage similar experiments by men who are interested in the subject. I believe it would be a revelation to most of you to know how little argument, how few of the long and trying conversations with the neurasthenic patient are necessary even at the first, when the industrial method is pursued. It is my custom in suitable cases to explain to the patient that his symptoms are at any rate intensified by the kind of life he has been living and that we shall be able to make readjustments and corrections with greater facility when he has reduced his living to the simplest terms—to terms of work and rest—and when he has left behind him the hopeless entanglements of the life he has been living. The patient is very rarely asked to overcome his symptoms directly, a thing his experience assures him is impossible. He is instead given simple directions for work and rest, he is assured and his common sense tells him also, that these first easy things are quite possible and within his capacity, and that further steps may be a matter of reasonable progression.

RESULTS

In a recent article[1] I have given a list of 100 cases of functional nervous diseases treated for the most part synthetically and by the industrial method. Whether my results[2] compare favorably with similar cases treated in other ways I do not know, and it is probably impossible to judge. But I feel that in addition to a fair proportion of the usual clinical successes, the training in simple, uninvolved living has been of the utmost value to the patients.

---

[1] Work Cure. A Report of Five Years' Experience at an Institution Devoted to the Therapeutic Application of Manual Work, The Journal A. M. A., Jan. 1, 1910, p. 12.

SIGNIFICANCE OF THE PRINCIPLE

I cannot refrain from directing your attention for a moment to the possible significance of this industrial principle as applied to a field reaching far beyond the confines of the functional nervous diseases. So many people are suffering in mind and body because of the attempt to accomplish too much, or from idleness which is not necessary, that a therapeutic readjustment would mean preventive and curative medicine on a large and important scale. Nor is achievement along these lines impracticable. Last year, in a stimulating and suggestive article, Dr. Jacoby of New York reviewed the work of two large charitable institutions in Germany[3] where appropriate work is part of the treatment of nervously broken down patients. Here and there in our own country are men awake to the possibilities of handicapped labor, both from the humanitarian and clinical point of view, and because of the really important clinical results to be secured. In the sanatoria, where such a thing has been quite unknown until within the past two or three years, productive industry is rapidly finding a place. A final and most hopeful consideration is this, that the work of the invalid and the handicapped may mercifully be kept within the limitations of the individual capacity and may still be so carefully designed and so well directed that it equals or exceeds in value much of the accepted product of those who are sound and well.

No. 69 Pleasant Street.

GYMNASTICS AND MASSAGE IN THE TREATMENT OF NERVOUS DISEASES *

HALDOR SNEVE, M.D.
Clinical Professor of Mental and Nervous Diseases, University of Minnesota
ST. PAUL, MINN.

Perhaps the greatest field for gymnastics and massage is in the domain of nervous diseases, because the problem here is generally one of nutrition and restoration of muscular function. Every specialist in these diseases should, in my opinion, have a practical training in these branches of mechanotherapy, because otherwise he cannot intelligently direct such treatment, and a considerable portion of it should be performed with his own hands. I shall not here discuss the technic further than to call attention to a few points and procedures. Nearly all patients with nervous disease suffer from digestive troubles, constipation and poor nutrition, and in abdominal massage which should be performed by the physician, or an experienced masseur or masseuse in exceptional instances, we have, to my mind, the most valuable single remedial agent for these conditions.

ABDOMINAL AND GENERAL MASSAGE

Abdominal massage should be performed through a single covering; for instance, the undershirt, and should consist of kneading of the colon in circles by the palmar tips of one hand, with the tips of the other making the requisite pressure on the middle knuckles, this to be followed by deep stroking along the course of the colon from the ileocecal valve to the sigmoid; then by a vibration of the entire abdomen with the flat hand applied over the navel region. Lifting of the transverse colon and stomach with vibration in Glenard's syndrome, which I might say in passing is far more common and of far less significance than is usually supposed, is at times of assistance. All other manipulations I believe to be superfluous. With daily treatments until the bowels reacquire the habit of moving once in the twenty-four hours, I advise the patient to strengthen the psoas and iliacus and the external abdominal muscles by the exercise of rising from the supine position on the floor to the sitting, without bending the knees.

Whenever general massage is indicated it should be preceded, in my opinion, by passive movements of each limb, because the circulation is thereby so much enhanced that it practically doubles the value of the treatment.

The vibrator invented by Liedbeck, of Stockholm, and so much exploited in this country the past few years, has physiologically the same effect as electricity in exciting muscular contraction and thereby stimulating the circulation and metabolism, and will fail in specific remedial action just as does electricity, if blind faith instead of an exact knowledge of its physiologic effects guide its use. As a sedative to nerve irritability and pain it surpasses the electric current, but it is not nearly so powerful a stimulant to muscles and nerves and thereby to nutrition and function, but it is generally more pleasant to have applied.

The extravagant claims for massage by lay operators and ignorant practitioners, together with the confusing and repelling elaboration of technic by authors on this subject, have resulted in the avoidance of a study and use of this really valuable therapeutic aid. Many manipulations require practice, but really the art is very simple and requires mainly anatomic and physiologic knowledge.

The principles which guide us in prescribing exercise or massage practically resolve themselves into a consideration of physiological action. Under gymnastics and massage we include also all exercise.

PRINCIPLES OF MASSAGE

We may view the human being as a machine, made up of a neuromuscular system whose activities are paramount; which is fed and oiled by the gastro-intestinal and circulatory apparatus; and we can employ the much and frequently misused term "reflex action" and say that its whole function is to convert sensation into motion. Not only is the integrity of the muscular system dependent on the intactness of ganglion cells, as shown by the rapid atrophy following, for instance, poliomyelitis; but if intrauterine disaster results in am-

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[2] The results of work-cure quoted from the above-mentioned article are:

Name of Disease.	Number Treated.	Improved.	Much Improved.	No Relief.
Hysteria	18	15	1	2
Insanity	5	2	2	1
Neurasthenia severe	12	7	4	1
Neurasthenia mild	20	12	8	0
Neuroses	17	8	5	4
Psychoses or fixed idea	8	1	3	4
Unclassified	20	14	1	2
Totals	100	59	27	14

In reference to the insanity cases it should be said that it is not intended to treat at Marblehead any case of insanity. These cases were accepted in the early days of the institution.

[3] Jacoby, G. W.: A Colony Sanatorium for the Nervous and Neurasthenic: A Much-Needed Work of Philanthropy, New York Med. Jour., April 18, 1908.

putation of a limb, the motor cortex and spinal cells governing its activities do not develop, so that it is just as essential for the growth and maintenance of the efficiency of the machine to exercise the muscles as it is to use the neural elements.

The stimulation of mental function by exercises is strikingly shown by the success of Witmer, of Philadelphia, and by the work of the Elmira Reformatory. At the latter place in cases in which lessons could not be learned previously, the mind was virtually reached through the muscular system. I do not think that we appreciate how much the proper condition of the nervous system is dependent on the afferent impulses from the use of the muscles; it may be compared to the influence of the sensory neuron on the motor. The muscles form the furnace of the body and the greater part of our body heat comes from their use; their contractions exert a profound influence on the circulation in arteries, veins and lymph vessels, on respiration, metabolism and excretion, altogether, on nutrition.

VARIETIES OF EXERCISE

Exercise of the muscles should mean more than the habitual use of the legs in walking about in our shops or offices, or the use of our hands in our daily vocations; it should mean some game or movements which calls into play practically all of the muscular apparatus, and at the same time pleasantly occupies the mind. To do the most good it should be a daily affair, even if of short duration, and taken out of doors whenever possible.

The physiologic action of exercise on vital functions makes it the most important single prophylactic against the development of nervous disease. Realizing that neural expenditure is greater than muscular and far more exhausting vitally in all "willed" movements, we have the key to the kind of exercise to prescribe for the individual patient. If they are extremely run down we begin with passive movements and exercises of imitation, progressing to complicated evolutions requiring cerebral initiative later. Sawing wood or any other work calling into play the greater part of the muscular system is valuable exercise. Of gymnastic systems the Swedish is easily first. Its essentials are: active and passive movements of which each joint is capable, with or without resistance on the part of the operator or patient, a proper position of the trunk, and a progressive sequence of exercises. Systems advertised by "strong men" in our newspapers, which consist of joint movements with strongly contracted muscles, develop more muscular strength but are of very little value therapeutically. Machines for exercise from the complicated and expensive Zander's to Sargent's pulley weights are very commendable. Dr. Gulick's Y. M. C. A. system of exercises is commendable. The German turnvereins make more for developing strength, especially of the upper extremities, and teach self control, but are not so valuable for the rounding out of the individual as general athletics, and are not well adapted to therapeutic ends.

EXERCISE AND MASSAGE

Physiologically speaking, massage differs from exercise in that the latter has cerebral initiative, and with the motor impulse, and is both more intense in its general action and also more exhausting. Movements and massage increase the functional activity of the glands of the skin, and for our purposes, massage has a pronounced sedative effect locally and a hypnotic effect generally. On the blood-pressure massage produces an initial rise followed by a fall, obeying in this case the same law that obtains in all forms of stimulation; namely that "reaction is equal to action;" this holds good for exercise.

FATIGUE

Fatigue is a phenomenon of double origin; one form is due to exhaustion of the nerve elements, and the other to a heaping up of work products locally in the muscles. We usually deal only with the first, as it is our consciousness of tire of the nervous apparatus governing motion that we speak of as fatigue; the impulses from the motor centers—the cerebral initiatives—exhaust the highly differentiated nerve structures first, so that a long-distance runner, for instance, after establishing the equilibrium between respiration and circulation which we call getting the "second wind," shows fatigue first from exhaustion of the nervous mechanism—from "willing" the movements—and lastly from tire of the muscles. It is probably safe to say that directing the attention to the execution of movement uses up the pabulum of the ganglion cells, while waste products accumulate, so that the fatigue of the nervous system is essentially the same as that of the muscles. Ranke washed out fatigued muscles with a saline solution, immediately restoring them to vigor, and Zabludowski restored muscles exhausted from faradization by massage. In other words removing the waste products restored working capacity.

There is another element in fatigue which is of peculiar interest to us as neurologists, and that is the mental factor. We see a young man in fine physical condition go into training for some athletic contest, living the "simple life," and then all at once begin to lose weight, perhaps developing a diarrhea or troubled sleep; in short he goes "stale"; his expenditure seems to exceed his income, nutritionally speaking. This can be explained only by the hypothesis of an exhaustion of the neural elements, of the cells governing his higher cerebration; in the last analysis, a fear in the mind. We know that emotion is far more exhausting than physical exercise. The high tension of the runner, waiting for the pistol-shot, exhausts him far more than the muscular effort of running. A neurasthenic is an individual gone stale.

NEURASTHENIA, HYSTERIA, HYPOCHONDRIA

For our purposes we may divide nervous diseases into functional and organic. The great functional diseases are neurasthenia, hysteria and hypochondria, all three of which are essentially mental troubles. Neurasthenia has been considered a fatigue neurosis, the pathology of which has been assumed to be a chronic malnutrition of the nerve cells due to some auto-intoxication or other chemical or physical disturbance. I firmly believe that in a few years we shall all recognize that the determining underlying cause is a disorder of the thought apparatus which will demand mental treatment. Breur and Freud have thrown a flood of light on hysteria and the psychology of automatisms, dreams, and various psychopathic states, and whether we treat a case of hysteria by psycho-analysis or by the reasonable persuasion of DuBois, we all recognize that the essential thing for a cure is to supplant the "sick idea" in the mind of the patient with the healthy one. Hypochondria undoubtedly is a disorder primarily of the mind, and when we can remove the fundamental fear we have started the patient on the high-road to recovery.

The clinical manifestations vary in these three disorders but are largely the result of perverted neuromuscular function, and as it aids in the removal of these, mechanotherapy is of the greatest utility, and besides is of value as part of the mental treatment. The Weir-Mitchell rest-cure has been a favorite measure in the treatment of these diseases, but its main value, as Du Bois says, is to give the physician mental control of his patient. There are patients who will derive benefit from this procedure, but I think that the vast majority will do better with a routine of exercise and massage graduated to the degree of functional impairment.

Gymnastics, games with balls, of which golf is easily first for the adult, horseback riding, walking, dancing, out-of-door work, rowing, fishing, and hunting are the exercises indicated. General massage combined with passive movements of the joints is of great value frequently. Since the nutrition usually is below par, abdominal massage because of its beneficial action on the "kitchen" of the economy has been of the greatest service in my experience, and will remove the chronic constipation of these sufferers if a regular habit is insisted on at the same time.

Insomnia is a symptom which is again a disorder of thought mainly, and removal of this is the important thing, but an important aid is general exercise and the general massage treatment; especially when succeeded by sedative peripheral stroking with the hand or a brush, administered at bedtime.

If we stop to think of it, nearly all our so-called functional nervous troubles are essentially "thought" disorders, and exercise, gymnastics and massage are valuable aids to the mental treatment.

MASSAGE IN ORGANIC TROUBLES

Organic troubles can all derive benefit from movements and massage. In some diseases, such as the spastic spinal disorders, care must be taken to be very gentle in all manipulations or the treatments may easily do as much harm as good. The paralyses following acute anterior poliomyelitis appear at first glance hopeless, but in no other serious impairment of the use of the muscles can such brilliant results be obtained as here. Massage, active and passive movements with and without resistance, and the maintenance of a correct position of the limbs by suitable orthopedic apparatus will restore life and function to withered and apparently dead members. To my mind these results must depend partly on a central stimulation of ganglion cells from the periphery, aided by impulses coming from the cortex. We should stimulate the latter by encouraging the patient to "will" the movements which we execute passively, before any movement is possible by the patient.

Locomotor ataxia demonstrates well what possibilities lie in persistent practice of movements. Frenkel accepts the anesthetic theory of ataxia, and believes that the persistent practice of the exercises bearing his name compensates for the absence of the sensation of the movements; while Goldscheider thinks that through these exercises, the irritability of certain uninjured cord neurons is heightened and in that way act vicariously for the degenerated pathways. These exercises depend on the degree of disability and are not difficult of application; some are to be made in bed, others sitting, standing or walking. Fatigue is to be guarded against, and the movements must be executed with methodic precision. In my own experience the practice of the elementary movements of walking are of the greatest utility to the patient. Massage and movements are of the greatest aid in keeping up nutrition and function in the imperfectly used muscles and joints.

Facial palsy responds kindly to massage in conjunction with galvanism and other measures.

The various forms of occupation neuroses such as writers cramp should be treated by coordinated muscular exercises which do not call into play the same group involved in the cramp, and with these passive movements and massage are to be used.

In the various forms of neuritis, when inflammation has subsided, as indicated by the absence of pain, movements and massage are of the greatest value.

210 Lowry Arcade.

ABSTRACT OF DISCUSSION

Dr. C. R. Woodson, St. Joseph, Mo.: Employment of a congenial nature, either in or outdoors, is beneficial in the treatment of some nervous troubles, and is not necessarily confined to functional forms. Employment outdoors ordinarily brings better results than indoor employment, from the fact that there is more diversion in it. And outdoor employment brings a little fatigue and necessarily has associated with it some sunshine; fatigue and sunshine have much to do in bringing appetite; and the three combined are Nature's best remedies in producing sleep, and that is the greatest nerve restorer that we have. There are many persons who suffer from nervous diseases who do not obtain relief of the pent-up forces without employment, and it is especially good for an exalted type of mental disease, particularly where it has passed the exhaustive stage or period. Take the commonest cur and tie it up and it becomes vicious as a bulldog; but let it give off the pent up forces and it becomes so docile that our little children can play with it.

In regard to massage and gymnastics in the treatment of functional nervous diseases, in some respects I agree with the essayists, but I have found that massage is more commonly beneficial with organic disease. Massage is good where there is defective circulation; in the old it is good in the various paralyses; especially is it good in the treatment of poliomyelitis; that is, associated with other things, and gymnastics; or I will even stop short of gymnastics and say, exercise. The fact that you teach the child that suffers from poliomyelitis to try to do the things that it cannot do, is beneficial. Employment in the treatment of those who are congenitally defective, or those who suffer from acquired defectiveness, may be beneficial because of the close relationship of the hand and mental centers. The individual who suffers from nervous troubles of a functional nature, if young, in many instances may be benefited by gymnastics, but they are not appropriate in the old. That massage does help to correct many defective metabolic changes there can be no question, and it should be used; but to lay down a rule of treatment, employment in industrial buildings or outdoors, or massage and gymnastics, is as broad as taking any one of the numerous therapeutic agents and saying it is good. They are all good, but it requires much more than these to effect a cure in most cases. In melancholia in which the individual's mind is not impaired, but dwells on his miserable condition, employment takes the patient's mind off from himself, his appetite increases and sleep comes, all helping to effect a cure.

Dr. John Punton, Kansas City, Mo.: Of interest to the neurologist as well as to the internist is the care and treatment of the neurasthenic, especially the poor neurasthenic, the man or woman without means such as are found in all large cities. I think that Dr. Hall deserves credit in suggesting to us the method which seems to me to practically solve that problem in many cases. When he can institute and organize a method of treatment which after a few years of experimentation has become so practical in all its methods that it becomes self supporting, it does seem to me that our state authorities can well afford to introduce in the larger cities at least a psychopathic hospital where many of these poor unfortunates can be treated with just such treatment as he suggests, and in a very short time could be made self-supporting, so that the state itself would be at no great expense.

Dr. Hall did not state in his paper whether he used other treatment or not. I presume that he did, but if he did not I cannot quite understand how he can meet all cases. Those having some experience with the treatment of this class of patients which he referred to, know as well perhaps as I, that many of them are wholly exhausted when we first see them. In other words, I believe that there are degrees of exhaustion even in neurasthenia, and many times it depends on the state that you find your patient in as to whether or not this method of treatment would apply at the time that you see him. But I believe that there comes a period in the course of the disease when this method can be put to good use in most cases.

It was especially interesting to know that Dr. Hall recognized the fact that it does not apply to all cases of neurasthenia. I believe he is correct, because I can well understand why some of the neurasthenics could not be satisfied with this method of treatment; but the large majority of them could be greatly benefited by it, and I think that the doctor deserves congratulation on his success.

Dr. Frank R. Fry, St. Louis: I want to commend Dr. Hall's careful methods. They are by all odds the most important contribution to employment therapy that we have had in this country. In the course of time he will receive due credit.

There are many of us—all of us, in fact—who practice neurology, who know that a great deal can be accomplished by work-therapy. In this instance, as in other similar matters of therapy, we do not get at it right. For instance, we are too apt to send the patient to somebody to get massaged, and too often that is about as far as we go with it. We should know the details of massage better. The same is true of exercise. I do not believe that anybody ought to attempt to prescribe exercise for a patient in a case of any importance, unless he is familiar with some of the processes of gaining exercise; unless he knows something technically about what exercise means. For instance, a patient cannot walk because he has bad feet; he must have exercise; another one because the pelvic contents are uncomfortable when she attempts to walk must have other exercise. How are we going to prescribe exercise unless we are fairly familiar with the methods of getting it? This work that Dr. Hall and Dr. Sieve explain in their papers so well is important. Gradually a larger contingent will gain the kind of intimacy that is necessary to make it effectual. We must recognize the rapidly increasing importance of all of these methods, and the necessity of availing ourselves of them if we are going to hold our own in America with neurologists in other countries.

Dr. Philip Zenner, Cincinnati: I wish that Dr. Hall would manage to read a paper of that kind often, and try to interest not only medical men, but the public in it, so that we possibly might get what Dr. Punton spoke of, some assistance from the public or from the state for these purposes.

There is one thing the doctor mentioned in connection with occupation treatment that is important and that is, that it often takes away from the patient's mind the effort to control himself, the effort that he makes over himself to overcome his symptoms and to get well. That is often a difficult point with us. Effort means everything to the patient in order to get well; and yet we see many cases in practice in which that effort doubtless is one thing that is keeping him from getting well. It is difficult sometimes for us to decide what to do in this matter, and very often the wisest thing is to tell the patient not to make any effort over himself.

Dr. C. P. [illegible], Clifton Springs, N. Y.: A visit to Dr. Hall's sanatorium interested me so much that I have tried this therapy in the many cases that come under my notice each year. It is true that among a certain number occupation therapy is valuable. For instance the carpenter shop is a very good thing for many clergymen and school teachers but not among the farmers or day laborer.

I was much interested while connected with the Johns Hopkins Hospital, and working in the social charity work of the city, to find how many society persons were willing to do in the way of occupation therapy, social work among the poor. [illegible] Of course our purpose is to decentralize the person, but nevertheless it seems to us that what is needed first is a good, thorough rest, a good course of purgation, a very, very simple diet, hours and hours out in the sunlight and fresh air, without any physical exercise. Then the occupation therapy is in order. One must study the case. What work will interest and decenter the person? It may be this, that, or the other; art for some, the carpenter shop for the clergyman and school-teacher, who have spent most of their lives in closed rooms; and the corn field, let me say, after the patient is well rested, is also better for him than a Zander apparatus.

Dr. L. H. Mettler, Chicago: This question of exercise in the treatment of nervous diseases is a much broader one than would appear in the discussion of it in these papers. The last speaker, as well as Dr. Punton, has intimated that which seems to me to be the most significant point in the whole matter, namely, the establishment of the particular character and purpose of the exercise to be employed and the particular disease in which the exercise seems to be called for.

Many perfectly healthy individuals would derive benefit from the discipline and activity involved in the manual training of the workshop, the systematic reading of select literature, or any other means of physical and mental activity. We have all seen plenty of people, apparently in a state of perfect health, to whom gymnastics might be of the greatest advantage. To iterate and reiterate that exercise is a good thing in the treatment of nervous affections, without further specification of the why and wherefore, is a useless waste of time. Indeed it brings to mind the old story of the physician who advised his neurasthenic patient to take more physical exercise, and found his advice to be a bit ridiculous when the patient slyly informed him that he was a letter carrier. The trouble with all such advice and with papers like the second one that we have just listened to, is that they are so beautifully indefinite. The grain of truth discoverable in the midst of all their elaborate phraseology is that walking, bathing, gymnastics and exercise are highly commendable because they somehow improve the circulation. Such an ancient saw, however, does not call for any elaborate expenditure of ink and paper in its exposition. It would be far more to the point, especially before such an audience as this, to give some detailed description of the exercise, the nature of the disease in which the exercise is to be employed, and the therapeutic relationship between the selected exercise and the pathological process in question. As Dr. Fry intimated, such a discussion of gymnastics as we have just listened to, makes one think of the exploitation of certain serums. It amounts to saying, "It is a good thing; give it!"

And again, let me say I am amazed that anyone, like the reader of the second paper, should have the hardihood to rise up before a neurological audience, such as this, and with a wave of the hand dismiss hypochondriasis, neurasthenia, psychasthenia and hysteria as being all more or less alike in representing merely some form of mental trouble. Many neurologists, I know, would be most happy if they could settle so satisfactorily the many difficult problems connected with these distinct and long recognized clinical entities. I am still of the opinion that many of the neurasthenic cases that I see are far from being merely psychasthenic. In such cases I have been able to detect weaknesses and deficiencies that represented something more than merely a psychic disturbance. They may have been denominated functional or incipiently organic, but they certainly occurred in the physiologic rather than in the psychologic sphere. In their treatment absolute rest, exalted nutrition, and the overcoming of intoxication of some sort have effected cures where psychotherapy would have utterly failed. In some of these cases exercise and gymnastics would have proved disastrous. And only after proper eliminative, restful and highly nutritional treatment, when the patient was well along toward convalescence, would selected exercise, both physical and mental, be recommended. I desire most emphatically to assert that the indiscriminate recommendation of exercise and gymnastics as a grand and useful therapeutic measure, without such recommendation being always and everywhere guided and guarded by a full realization of the nature of the disease process for which the exercise is being commended, is close to the border-line of quackery and is wholly unwarranted in the light of modern neurology. It will be the cause of much damage and will be recognized by every intelligent neurologist as a form of malpractice.

Dr. Theodore Diller, Pittsburg: In the employment of any therapeutic agent we must use discrimination; and I assume that the gentlemen who have advocated work would of course apply these therapeutic measures with discrimination; the whole treatment of functional nervous diseases therefore comes down largely to a matter of personal equation. Some one has said that no one should become nervous until he becomes rich. We know how badly we are handicapped in the treatment of nervous diseases by lack of financial resources. I recall that Lord Salisbury some years ago made a very able address, which I have often recalled, in which he made the statement that the greatest single advantage—surpassing all others—of surplus wealth, was the confidence and resources that it gave us in case of illness. With wealth one can rest without worrying about financial matters; he can procure the best doctors and nurses, and he can travel or take a long vacation.

Now with this generalization I should like to express my warm conviction that there is a therapeutic agent which goes with massage, with exercise and with rest, and which I believe is extremely important in the treatment of functional nervous diseases; I mean having fun. I have long been convinced that all other things being equal, the very best way to get exercise is by a game while having fun. We know that this is true of healthy children; the best way that they get exercise is by a game. Contrast the boy whitewashing the fence with the boy playing baseball. We have golf coming along now, and I should like to see it put in all our parks. I believe in this spirit of fun, and the more you can make exercise a game, the better it will be. Of course these other things have their peculiar and especial application, and I think no one can doubt the value of regular work for many nervous persons. I believe that it is one of the greatest things, not only for patients with functional nervous diseases, but as a promoter and conserver of good health.

Dr. Herbert J. Hall, Marblehead, Mass.: I tried to make it clear that I have not confined myself at all to industrial treatment. I stated in my paper that the work cure at the best is but a supplement and background for careful medical diagnosis and treatment.

Dr. Haldor Sneve, St. Paul: I wish to commend Dr. Hall for the valuable new procedure that he has described to us. But I want to utter a word of warning that we should not treat it as a routine cure-all, and prescribe the latest fad. We are prone to faddism in medicine, and especially in neural troubles I believe; and I want to say that I think the main element of cure in Dr. Hall's method, if it may be called that, is the mental element. I am sure Dr. Hall recognizes that, and I want to utter a word of warning that it is not just because you do the work and occupy yourself that suffices, because if we did not recognize the mental element behind it, the treatment would fail.

Now as to general gymnastics, exercise, massage, etc. I took particular pains in the few observations I made in this paper to say that these are not to be prescribed indiscriminately, and the paper really resolves itself into a consideration of the physiologic action of gymnastics and massage; and to lay down, as one of the last speakers said, definite rules, is impossible. You must use the gray matter in your brains. You must understand the physiologic process involved. We cannot lay down primer rules in things of this kind; and they must remain more or less indefinite.

Reward for Hard Work. When republics fail to produce men they fail all along the line. To the toiler belong the victories and the power. There is only the space of a man between Lincoln's log cabin and the White House. It is the brain that is cultured, not the brain that is sugar-cured, that gives out the thoughts which men believe in and are willing to trust. The man who is afraid of soiling his hands might as well write his epitaph. The angels of God help the man who is doing his best to get there.—*United Presbyterian.*

NERVOUS AND MENTAL DISTURBANCES OF THE MALE CLIMACTERIC*

ARCHIBALD CHURCH, M.D.
Professor of Nervous and Mental Diseases, Northwestern University
Medical School
CHICAGO

It may be acknowledged at once that the term "male climacteric" is a bit sensational, in view of the fact that it is not specifically recognized by any physiologist. For instance, the "American Text-Book of Physiology" denies that the male presents either a monthly molimen or a climacteric comparable to that in the female. If we confine our attention on the subject of menstruation entirely to the monthly flow, and see in this rhythmic manifestation nothing but an ovarian activity, we need go no further in the discussion of the question of a male climacteric.

But it is a well-established anatomic fact that the early months of embryonic life show no sexual differentiation, and that all of the constituents that subsequently under variation develop into the sexual apparatus of male and female, are indifferently present in either sex, not only up to a certain period of intra-uterine life but in a rudimentary form throughout the entire period of human existence. The statement is a common one that before the age of puberty boys and girls are physically much alike, and it is also a matter of common observation that old men and old women again become alike both mentally and physically through the loss of sexual differences.

MONTHLY RHYTHM IN MEN

We must, however, take a broader view of the monthly periodicity which shows itself so significantly in the female. This matter has been carefully studied, among others, by Campbell.[1] He lays stress on the fact that the monthly rhythm affects females not only before the appearance of the menstrual flow, but in the post-menstrual period for an indefinite time that extends in some instances to the end of life. He believes, although he brings nothing of great significance forward to prove it, that the male is similarly the subject of a twenty-eight to thirty-day rhythm, and his conclusions are that man, like woman, passes through monthly cycles, which begin with the beginning of life and continue until death, and that menstruation as ordinarily understood, that is the monthly flux, is a reproductive function which has, in the case of the human female become engrafted accidentally, so to speak on this primordial rhythm.[2]

Bearing on the subject of the monthly molimen, a number of studies have been made. A German observer carefully followed the temperature in a number of soldiers living under uniform conditions, and found that, as in the case of women there was a distinct monthly variation or curve. Unfortunately, the name of this observer and the reference have escaped me.

Dr. Clelia D. Mosher[3] as a part of a long study of the arterial pressure conditions in women, with particular reference to the menstrual period, followed the same plan with five men. She found in nine women and five men thus observed for a long period of months, that there was a rhythmic fall of blood-pressure occurring in both at definite intervals. The fall in pressure in women occurs near or at the menstrual period, preceded by a preliminary rise three to five days before the onset of the main fall, and these variations are not peculiar to either sex in the general features of the pressure curve or the periods of high and low tension. Both men and women who have a tendency to digestive disturbance find themselves likely to be more subject to such disturbance at the period of low pressure; or when a slight chronic catarrh exists there may be marked increase of symptoms at that time. With the high pressure, which in women precedes the flow for some days, in both sexes there is a sense of well-being, of superior activity in all directions, and apparently an increase in the resistive powers of the body against fatigue and infections.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Campbell, Harry: Differences in the Nervous Organization of Man and Woman, London, 1891

[2] Campbell: Differences in the Nervous Organization of Man and Woman, p. 274

[3] Bull. Johns Hopkins Hosp., April, May, June, 1901.

Dr. W. T. Belfield of Chicago advises me in a personal communication that he has followed the variations in weight and temperature in two healthy young men for a period of three months, and that he found a distinct tendency, which he would not denominate a wave, toward a rise of weight but not of temperature, about every two weeks, with a phosphaturia analogous to that presented by women just before menstruation.

Sanctorius (1728), the great Italian clinician, was perhaps the first to suggest a monthly cycle in the organism of men. He based the suggestion on a careful study of the weight of the body with reference to the amount of excretions, and found that a monthly increase to the amount of one or two pounds occurred in men, followed by a critical discharge of urine, the crisis being preceded by feelings of heaviness and lassitude.

So, too, Stevenson has insisted that menstruation is not confined to the female sex, and that there also exists in men a cyclic wave which is really a manifestation of a general law of vital energy.

A number of observers have attempted to establish a cycle of sexual impulses in men, but for obvious reasons, though their findings are somewhat suggestive of such being the case, they are not sufficiently definite to justify any generalizations.

Julius Nelson, Stanley Hall, Perry-Coste and other observers have been able to note a monthly rhythm in the frequency of nocturnal emissions in men living a chaste life.

A number of morbid conditions also seem to present such a monthly regularity as seems to be significant in this connection. I have the histories of two carefully observed male cases of epilepsy, extending over five and seven years, respectively, in which the attacks have occurred with as much regularity as the menstrual function in women, at periods of from twenty-eight to thirty-four days. This rhythm in each instance was occasionally broken by the use of large doses of bromid at the time of the expected attack, but again resumed its regularity on the withdrawal of the bromide. In both these cases the onset of the disease was at the age of puberty. Neither have attained an age that would present any modification due to involutional processes.

I have observed a case of migraine in which the attacks in a male varied from twenty-four to thirty-six days, over a period of several years; and the patient asserted that these attacks had been of similar periodicity for a number of years before he came under my notice. Incidentally, I have repeatedly seen migraine in the male subside between 55 and 65 years, just as it does in women at the climacteric, and typical periodical drinking in men usually follows the same rule.

Campbell[4] reports an interesting case of a man 62 years of age, who for twenty or thirty years had suffered a monthly hemorrhoidal flux; so regularly did it occur that he spoke of these periods as his "monthlies." Far from feeling any evil effects from the bleeding, he invariably experienced great benefit, the improvement expressing itself in improved vigor and more perfect bodily health. At the age of 60 the flux ceased to appear regularly and then he began to experience a long train of minor nervous symptoms, such as appear in the climacteric in women. He suffered from constant flushes of heat, during which he felt "groggy." These heats ascended and were attended by palpitation. He also suffered from marked tenderness of the scalp, and became highly emotional and almost hysterical. All these symptoms were greatly relieved by the sudden recurrence of a profuse hemorrhage. After this occasion he did not lose any blood for two or three months, and then it reappeared irregularly for eighteen months. All this time he was liable to the same nervous symptoms, but finally the flux resumed its former regularity, after which time he considered himself in perfect health.

Somewhat similar cases are also to be encountered here and there in the literature, as, for instance, one recited by Brierre de Boismont.[5]

Gall noted in a man a hemorrhoidal flux of a periodical character similar to the case already detailed.

Chopart cites a curious case of a soldier who had a monthly discharge of bloody urine; and a similar case is reported by Rayer.

Havelock Ellis,[6] who has given this subject as much attention as anyone, reports with great detail a case of cardiac asthma, the attacks of which recurred at about thirty-day intervals for many years.

Sir Henry Halford[7] as long ago as 1831, described a condition which he termed the "climacteric disease" occurring in men between 50 and 75 years of age, but did not make a close analogy between this condition and the climacteric of women.

The involutional period of male life has frequently been referred to as a climacterium in a rather loose manner, the writers not apparently intending to imply that there was a monthly variation in the male. For instance, Freud[8] says very definitely: "There are men who show a climacterium like women, and merge into an anxiety neurosis at the time when their potency diminishes."

MANIFESTATIONS OF MALE CLIMACTERIC

If, as seems not altogether improbable, the human male shows a monthly periodicity, there can be little surprise in observing manifestations of a similar character at the involutional or climacteric period in both sexes. Since my attention has been directed along this line—that is, for the past ten years—I have accumulated a large number of observations on which I purpose to outline certain generalizations, without burdening this communication with the details of case histories.

Involutional insanity in men, as in women, is of tolerably frequent occurrence and presents practically no distinctive and no regular form of psychosis. I find that in both sexes there is almost invariably a well defined tendency to mental instability, frequently well-marked family histories of insanity or of the major neuroses, and often former attacks of mental alienation in the patient himself. The particular interest of my subject does not pertain to the insanities, but to minor psychoses and neurotic disturbances. These, one and all, however, have a mental background.

---

[4] Campbell, Harry: Flushing and Morbid Blushing, London, 1890, p. 110.

[5] De la Menstruation, p. 136.

[6] Ellis, Havelock: Studies in the Psychology of Sex, F. A. Davis Company, 1900.

[7] Essays and Orations, London, 1831.

[8] Selected Papers on Hysteria, p. 113.

Aside from the insanities above alluded to, any considerable degree of elation, delirium, or maniacal manifestations finds no mention in my case records. Almost invariably, there are expressions showing an anxious tone of mental feeling. This varies from the actual anxiety neurosis of the Germans, with all the obsessions and phobias that mark the psychasthenic, to the rather simple anxieties of the neurasthenic and the hypochondriac. Naturally this mental attitude is attended by more or less depression, and if the patients have had an attack of insanity earlier in life or come of a tainted family, fears of mental overthrow bulk largely in their list of worries. I have been struck with the frequency of various adolescent forms of mental disturbance among these early patients.

The mental features of worry and anxiety tend markedly to fluctuate, but I have been unable to notice that the fluctuations show any monthly periodicity. Daily alternation is much more marked than in similar neuroses earlier in life, and very commonly such patients will be tolerably bright and free from their worries and anxieties in the latter part of the day, the early waking and morning hours being those of decided depression.

On the physical side almost invariably there is a loss of weight and the patients present a higher arterial tension than has seemed to me to be altogether attributable to their age or general physical condition. As they tend to improve the arterial tension subsides to some degree. Gastro-intestinal activities are reduced. Indigestions and all sorts of intestinal complaints are common. These patients show easy fatigue and some general neurasthenia.

Almost invariably the patients who have been subject to periodical neuroses, such as migraine or periodical drinking, lose these attributes. As a rule the men shun alcohol, are willing to give up tobacco, and readily modify their habits in any direction advised. I have notes of one or two men who had histories of periodical drinking, who became for a period of several years steady drinkers; that is, they began to take two or three drinks a day, a practice which had been foreign to their entire life-history and was finally followed by complete abstinence. In another patient steady excessive drinking developed.

Headaches, oppressed feelings in the chest, sudden sensations of an alarming nature, especially vertigos, are commonly described. Cold extremities and heat in the head are generally mentioned.

These conditions run a variable course of from eighteen months to three years, after which the patients regain a fair degree of their former mental and physical characteristics and go along comfortably, with naturally some reduction of their former capacities.

MANAGEMENT

The management of these patients is a task requiring extreme tact, great patience, and a variety of expedients. For some, change and travel answer fairly well, although they are not happy in it. A reduction of the daily work is almost imperative in every case. General measures which serve to ease and improve the general circulation and build up the physical health, answer a good purpose. Vasodilators have seemed to me to be of essential value. Any tendency to sclerotic processes in arteries, liver or kidneys—conditions, of course, commonly found at the age presented by patients of this class—have their own indications. On the whole, the development of any of these nervous and mental manifestations in men between the ages of 50 and 65 is not of itself of serious import.

I have felt that the recognition of these climacteric features would more frequently enable physicians to take a hopeful view, and thereby maintain a more encouraging attitude towards this class of sufferers.

14 Adams Street.

THE PREVENTION OF BLINDNESS [*]

F. PARK LEWIS, M.D.
BUFFALO, N. Y.

There has never been a time when, as now, the world has given such careful thought and scientific study to the causes of disease and the most effective measures for its prevention. Within the last decade public health has assumed a new importance. As medical knowledge has become more exact, the needlessness and the costliness of disease have become more evident and the public has joined forces with the advance guard of the medical profession in the development of what is practically a new science—preventive medicine.

In the evolution of this work, certain facts have taken on new relationships and have stood out in greater prominence than ever before. We have come to realize that the social fabric of our modern life is woven together by the forces that make for the physical well-being of the people. We now know that disease is neither an accident nor a mysterious incident in a vast number of cases, but that it is the logical resultant of conditions which have preceded it, and an essential factor in maladjustments which must follow it. If, then, we so govern existent conditions that the level of human efficiency may be raised, or at least so interpose that conditions may not obtain whereby it shall be lowered, we thereby advance all human progress to a degree which we can never estimate. The inspiration, for example, that has come from the study of so universal a malady as tuberculosis has led its investigators far afield in inquiries concerning collateral relationships, social conditions and remote results. It is found to be a resultant of poverty and related to crime, and wider knowledge concerning the conditions under which it develops has modified the lives of thousands who may never have been threatened by it.

In like manner, a study of destructive diseases of the eye, or even those impairing its usefulness, will be found to have economic and social bearings as well as those of a strictly medical character.

Ophthalmology has been among the later of the branches of medicine to institute any broad inquiries in relation to preventive medicine—perhaps because, while ophthalmology is one of the more distinctive departments of medicine it is at the same time one of the most technical, and, by common consent, diseases of the eye are supposed to be relegated, both by the lay public and by the general practitioner, to those whose studies and experience peculiarly fit them for this work.

If it can be shown, then, that blindness to any large extent exists which under more favorable conditions should have been avoided, it manifestly becomes the duty of ophthalmologists to initiate such measures as may be necessary for the public safety, because others neither knew that eyes are lost which should be saved, nor are they informed as to what should be done to prevent such disasters.

---

[*] Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Recognizing these important points, it is the purpose of this paper, not to suggest detailed measures for the prevention of blindness, but rather to emphasize the fact that a problem exists and that, as yet, no public movement has been organized for the purpose of solving it. The whole subject is new and as yet is merely in its inception. But with the cooperation of the ophthalmologists of the United States it gives promise of limiting human suffering and increasing human happiness to an immeasurably greater degree than could be obtained by our combined efforts as physicians and surgeons, directed to the relief of conditions which have already obtained: just as the prevention of disease is always and from every standpoint better than is its most successful cure.

When we speak of blindness, moreover, it should be borne in mind that the preventive measures which may be suggested are equally applicable in a vast number of cases in which total loss of sight has not occurred, but in which one or both of the eyes have suffered damage to such a degree as to lower the visual efficiency, and these are as the sands on the seashore. The lack of definite official action on this medico-social subject is shown at the very beginning in the absence of any authoritative definition as to the meaning of blindness.

The instructions given to the enumerators of the Bureau of the Census for securing data for the twelfth census of the United States, that for the year 1900, required the enumerator to ask "whether all persons enumerated have good sight and good hearing, i. e., can see and hear well." "And should it appear that the sight is so seriously impaired that it is impossible for the person to read a book, even with the aid of glasses," the enumerator was directed to note such person as "blind," even though he or she may have some slight power of sight. In most schools for the blind, a candidate for admission is considered blind who does not possess sufficient sight to be educated in schools for the seeing.

The Massachusetts Bureau of Statistics of Labor provided the following definition of blindness for the guidance of enumerators in taking the decennial census, and this was also adopted by the New York State Commission for the Blind in 1906. It included persons who "with the aid of glasses are yet unable to distinguish form or color, to count the fingers on the hand at a distance of one foot, or to read writing or ordinary print."

It would at once be evident that all these definitions lack exactitude because of the elasticity of the term blindness itself. The fairest and most just and discriminating definition of blindness is that of Dr. Lewis Stricker, given in the article read before the Ohio State Medical Association on blindness in Hamilton County.

He proposes a standard defining blindness of three degrees. The first is total or absolute blindness in which the light sense is completely abolished. The second, which might be termed relative blindness, is that in which the vision with either eye, with proper corrective glasses adjusted, is so low that fingers can no longer be counted at one meter or three feet, but movements of the hand or moving objects may still be discerned. The third, practical blindness, is that in which moving objects may still be discerned at three meters, or nine feet, but in which the field of vision has become so restricted (concentric contraction of the field down to five degrees or less, or in which central vision is entirely abolished and a small area of eccentric vision remains, or in which disseminated scotomata exist, or in which is found only a sector of eccentric vision) that no useful vision remains and the individual gets about with great difficulty. Fourth, only those are to be considered as blind who are hopelessly and incurably so. As a basis for any statistical data that may be secured, it would seem necessary that this or some other equally precise definition should be officially adopted so that all records taken may have at least a relative degree of precision.

INACCURACY OF THE FEDERAL AND STATE CENSUS REPORTS

The absence of any accurate definition of blindness has been followed as a natural consequence by the greatest inaccuracy as to its extent as indicated by our national and state census reports.

Many individuals with uncomplicated cataracts have been placed among the ranks of the blind, to be practically but not technically taken from this list after the eye or eyes had been successfully operated on. Many persons were recorded as blind who had one defective eye or who had had one eye removed. The enumerators who took the census for the New York State Commission for the Blind found that many persons had been recorded as blind who were not blind at all, having some weakness of the eyes simply, while others back in the country from the trunk railroad lines who were actually blind were, in many instances, entirely overlooked.

It is evident that for scientific purposes the only records that are of any value are those which are made by trained and experienced ophthalmologists, but these are conspicuous by their absence where we would reasonably expect to find them.

ABSENCE OF ACCURATE DATA CONCERNING BLINDNESS

The lack of accurate study on this subject is evinced in the almost total absence of any large amount of reliable data and in the inexactness of those which are obtainable.

There are four sources to which we might look for statistics concerning the relative incidence of blindness and the causes which produce it: the federal and state census reports, the records of public institutions having ophthalmologic departments or being devoted to the diseases of the eye, the reports of ophthalmic examiners of schools for the blind, and the private records of ophthalmologists.

The records of most of our public institutions as a basis for the study of statistical data concerning the amount of blindness which exists seem to be absolutely worthless. The annual reports of ten of the largest institutions in the United States for the treatment of diseases of the eye were carefully examined and none of them appear to contain other than the most superficial notes on the character of the cases presented. It is of very little value to the public or to any one else to know that there were so many cases treated involving this or that tissue of the eye and that the cost of maintaining the institution was so much. Yet in none of them, except possibly the Eye, Ear, Nose and Throat Hospital of New Orleans, was anything more than this attempted.

The possibility of utilizing the vast amount of material which passes annually under the observation of the skilled men connected with these various institutions seems to be neglected. A careful study of each case, or group of cases, with the method of treatment employed, together with the average number of days which the patients were under treatment and the final results obtained would be of great value and would add but little to the clerical labor involved.

For example, it interests no one to any large extent to know that three hundred and fifty cataracts were extracted at an institution during the year. But when the operation in a certain proportion of these cases has failed to give good results it interests every student of ophthalmology to know why. It is important to all of us to know whether higher visual acuity with greater or less corneal astigmatism is obtained by a section made in one way or in another, and when blindness results it adds a scientific value to the record if it is shown what conditions supervened to produce this disaster.

When an iridectomy or sclerotomy is made for glaucoma we should all like to know what the vision was before the operation and what it was six months or a year later. When vision for any reason has been reduced, while the patient was under treatment for corneal ulcer or other cause, it is a matter of definite value to know how long the patient was under treatment, what medical measures were employed and exactly what results followed.

If such records were made in all public institutions, two beneficial results would follow: First, the aggregation of a number of facts from which definite, helpful conclusions might be drawn as to the relative value of different methods of treatment. Second, the greater care which we would all use if we knew that our work was open to public criticism.

A third available source of study as to the causes of blindness should be our schools and institutions for the blind, but, except in very few cases, the causes of blindness are so unscientifically given as to make the record of doubtful value.

In several important schools for the blind no ophthalmic examiner is employed and no records whatever are made as to the causes of blindness. In a statement from one of the most important schools in the United States I read among the causes of blindness, in one case "meningitis," which probably means "optic atrophy," but it does not say so. The next is exophthalmic goiter, without any statement as to the condition of the eyes producing blindness. A third is "accident," another "disease of the blood," but this is starred as not the oculist's statement, which by inference would mean that the others were. Still another is "glaucoma," which is said to have occurred "in a child of 2 years of age," another "measles," another "congenital," simply, still another is "consanguinity," with an interrogation point, whatever that may mean. "Neuritis, whooping cough, uremia," etc., are also other assigned causes. Certainly none of these were obtained as the result of an accurate physical examination made by a competent examiner, and, for scientific purposes, they have practically no value whatever.

In some cases, however, the most exact and detailed pathologic statements are given and the record obtained is of corresponding value.

There should no doubt be a uniform record blank in every institution for the blind, on which the condition of each eye should be accurately specified, the age at which blindness occurred and the cause, so far as can be ascertained, on which the loss of sight was dependent. If this were carefully noted in all institutions, it would add another source of exact and practical, available knowledge.

But the most useful and easily accessible source of data of this character would be our own daily records. It would be a simple matter if each man had on his desk a printed blank on which an exact record could be made, taken from his case book, of the age and sex of the patient, the eye involved, the degree of blindness and, when ascertainable, the cause of the loss of sight. On this could be briefly included those cases presenting during the morning's work which came under the accepted definition of blindness, with an opinion as to whether or not it might have been prevented.

It is astonishing how relatively frequent are the cases in which but one eye is blind. But they probably would not number more than a dozen during the course of the week, and the accumulated observations made by a number of carefully trained men, while taking but a minimum of effort, would when aggregated give exceedingly valuable results. Such data must be secured before we shall have any absolutely dependable basis on which to establish our future work in prevention.

THE VALUE OF SOCIAL SERVICE

The prevention of blindness from the medical viewpoint may be interpreted in any terms which make for better care of the eyes. Most of our clinics are too large for the limited time in which a long line of people must be seen, and there is very little left for the consideration of the individual. We lose the human element, and this frequently is the key of the whole situation.

Here the great value of social service supplemental to and in harmony with the medical or surgical work is especially evident. In my service in the Charity Eye, Ear and Throat Hospital of Erie County a poor woman with several children presented herself with corneal ulcer. Before applying the conventional treatment the woman's appearance constrained me to ask if she had enough to eat. She reluctantly admitted that she was starving. A note to the Charity Organization Society verified her story, but developed the additional fact that a well-to-do relation would gladly aid her when he learned of her condition. It was necessary only to bring the two together. Treatment under such conditions would have been mockery until her immediate necessities had been supplied, and without proper nutrition a cure would have been impossible.

On another occasion a 16-year-old girl appeared with functional amblyopia in one eye. She had been visiting the clinic for some weeks before her home conditions were investigated. This poor child was found living alone with a decrepit, insane mother. When the mother had been put in a hospital for the insane and the child placed under proper influences, the hysteria which was possibly prodromal to more serious nervous disturbances spontaneously disappeared. The home surroundings, the social life, the conditions under which the eyes are used are frequently such as to make successful treatment of serious trouble impossible. Diseases of the eyes due to malnutrition from improper feeding are more commonly the result of ignorance than of poverty, and helpful advice as to the adoption of better methods is usually not only welcomed, but gladly followed.

It is often impossible for the physician, even if he had the time, to get behind the barrier of timidity and apprehension within which the poor patient is barricaded; and yet such knowledge is often essential to effect relief which can be obtained only by the intelligent and sympathetic intervention of the social visitor, who by supplementing and explaining the advice of the surgeon of the urgent necessity of an iridectomy for glaucoma or an enucleation for sympathetic ophthalmia may save eyes that through neglect would otherwise be lost. By the adoption of such measures as these the frequency of visits on the part of the patient to the clinic will be greatly reduced and time will be allowed for other and more scientifically profitable cases.

PREVENTABLE INDUSTRIAL ACCIDENTS

Another cause of unnecessary blindness is found in the preventable industrial accidents. Johnston,[1] in an admirable article on this subject, divides these injuries into four classes:

1. Those occurring as the result of handling high explosives in mining and railroad construction.
2. Those occurring from the bursting of locomotive oil and water gauges.
3. Those occurring in mills, foundries, machine shops and the building trades.
4. Those occurring in the agricultural pursuits.

In precaution he advocates: (1) Government inspection of manufacture of all explosives; (2) licensing of "foundermen"; (3) protection of water and oil gauges by wire or plateglass screens; (4) the placing of guards on all emery wheels, lathes, etc.; (5) education of the laity as to the seriousness of even slight injuries when infected.

To this may be added, as Ayers of Cincinnati has shown, the danger of poor tools, which readily chip and which constitute another prevalent source of unnecessary injuries. The obligatory use of properly tempered steel hammers would materially limit the number of accidents of this character.

THE PREVENTION OF HEREDITARY BLINDNESS

Just how far it is practicable or possible for the state to exercise control in eugenics is still a moot question, but as to the urgent necessity of employing every moral agency in preventing the marriage of those whose progeny is sure to be defective there can be no question whatever.

In the New York State School for the Blind is a child who represents the fourth generation of blind individuals. These, with a collateral branch, number eighteen people who have inherited blindness from a great-grandmother, and most of these have been charges on the state. The least unhappy result of this unfortunate inheritance has been the cost to the state of thousands of dollars. The real tragedy is the bringing into the world of a race of weak-minded degenerates, whose propagation may be continued endlessly.

This is a public calamity. It is a duty resting on all of us that measures be taken whereby this frightful state of affairs be brought to an end. It would be economy and wisdom on the part of the state to make some provision for the permanent institutional care of such unfortunates, separating the sexes and preventing in every way possible the further increase of their kind. This is, indeed, but one phase of a large subject, but it is one demanding consideration and some form of effective action.

BETTER TRAINING NEEDED IN OPHTHALMOLOGY

It is an unfortunate fact, but one which must be admitted, that many eyes are lost through the inadequate training of those who assume to treat them. Many operations result badly, either because they were ill-advised or clumsily performed. For this we are ourselves largely to blame. We have no standard by which may be determined the qualifications of a physician who undertakes such expert and delicate work and work requiring such precise and technical knowledge as ophthalmology.

Recent graduates, after a few months of desultory observation in a large clinic and with inadequate preliminary training in physics, pathology or surgery, with the audacity of ignorance, attempt the most difficult operations on the eye, thereby verifying the classic though monstrous dictum of Baer, that "it takes a hatful of eyes to educate an oculist."

Modern aseptic methods have made the domain of surgery so tempting that it is not alone on the eye that operative sins are committed. Our most capable surgeons everywhere are recognizing the great dangers that are resulting from the bad work of unqualified men. It is a grave question whether the time has not come when our profession should consider the desirability of providing special degrees in surgery and ophthalmology, as has for so many years been done in Great Britain. An adequate curriculum and scholastic teaching, with a final degree in ophthalmology, given only to those of proved ability, as is now done at Oxford, were they provided in our great medical centers, where clinical material is so abundant and where the ablest teachers are to be found, would make it unnecessary for the ambitious student to cross the ocean in order to secure the best instruction in ophthalmology.

It is not the purpose of this paper to consider in detail the various preventable conditions which result in blindness, and no attempt has been made to deal with causes which would occur immediately to all who are familiar with the subject. Nothing has been said of Independence Day accidents, blindness due to wood alcohol and other toxic substances, of ophthalmia neonatorum and other forms of infectious diseases of the eyes, because all these have been more or less generally considered and it remains only to devise methods by which prevention may be made generally effective. But a vitally important subject, which has not received adequate attention, is the protection of the eyes of school children by securing for them suitably lighted and ventilated study rooms and properly printed books. It is in the school room that the foundation is laid in a large number of cases for the development of diseases which result in limitation of vision, if not in actual blindness.

It would seem that much might be accomplished by having a special committee from this Section representing the American Medical Association to consider all these subjects, to confer, if deemed wise, with a like committee chosen by the National Educational Association, so that these two great bodies, with possibly the cooperation of the various boards of public health, might together work out a solution of these problems for each of the states.

While many architects are familiar with proper forms of school construction and members of the association have worked out problems in lighting of rooms, relative size and character of lights, etc., there are no uniform regulations concerning the adoption of fundamental principles of hygiene and buildings continue to be erected and school books continue to be published so glaringly out of harmony with scientific methods that they ought not to be tolerated in progressive communities. Organized effort on the part of the medical profession for the purpose of obtaining better protection of the eye, if in conjunction with intelligent and discriminating social work, would do much in limiting the disasters which are due to controllable causes.

---

[1] Ophthalmology, July, 1909.

There is no more splendid work in which we could engage than in preventing conditions which our best skill is so often unable to mend. Such work would add dignity and importance to our branch of the profession by making it an essential element in the general preventive movement which is now everywhere occupying public attention. It is especially important just at present when those engaged in large philanthropic movements have given us the encouragement of their support The directors of the Russell Sage Foundation in recognition of the practical and effective means which had been adopted in almost all of the states looking toward the prevention of ophthalmia neonatorum, felt that the time had come when a greater work for the prevention of blindness, due to other causes, might wisely be undertaken. Supplementing their former generous appropriations which provided an office and staff for the committee on the prevention of blindness of the New York Association for the Blind, and which has cooperated so effectively with the Committee on Ophthalmia Neonatorum of this association, a further appropriation was recently made, making possible the employment of a trained man who would be prepared to assist the medical and sanitary committees in the various states in carrying out a plan of work similar to that which has been so effectively inaugurated in Massachusetts, New York and Ohio.

To make this successful, however, the hearty approval and cordial support of the medical profession is imperative. With this the possibility of far-reaching and effective results through these combined agencies is so great that the movement which has been started bids fair to be second in importance only to that for the prevention of tuberculosis. It is earnestly to be desired that action may be taken by the Section on Ophthalmology at this meeting in support of this movement thus assuring those who are doing so much to advance this cause of the approval of and cooperation of the members of the Association throughout the country in this important work.

454 Franklin Street.

ABSTRACT OF DISCUSSION

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: I think this subject demands further attention on the part of this Section, and it occurs to me that one of the ways of getting at the matter is to enlarge the sphere of usefulness of the Committee on the Prevention of Ophthalmia Neonatorum. It seems to me that this Section ought to further the study of blindness which has been inaugurated by Dr. Lewis, and I think he has prepared some resolutions touching on the subject.

The question of preventable blindness from trachoma is a very important one. To all intents and purposes the government seems to be rather rigid in the inspection of immigrants coming to this country, and yet to my personal knowledge cases of trachoma do get in, owing, of course, to laxity of inspection. Blindness from industrial accidents is also very important. Much of the blindness that occurs as the result of industrial accidents may be prevented by proper education of labor organizations as well as of employers of labor. I hope, therefore, that the scope of this committee will be enlarged and that this Section will stand sponsor for the work of the committee.

Dr. Lucien Howe, Buffalo: I think the same thing was in the minds of most of us, and it would be advisable to formulate a plan for an American association for the prevention of blindness.

Dr. A. E. Bulson, Jr., Fort Wayne, Ind.: To avoid multiplicity of committees why not enlarge the scope of the present committee? It seems to me the committee we have on the prevention of blindness from ophthalmia neonatorum is sufficient, but if necessary let that committee be enlarged, with the added duties mentioned by Dr. Lewis.

Dr. J. A. Donovan, Butte, Mont.: About eleven people a day are killed by the railroads in the United States, to say nothing of the other industrial accidents, which are becoming numerous, so that I believe we should have a separate committee to consider this, and to educate the people in their prevention. Several years ago I read a paper on injuries from blasts in our section where we produce one-third of the copper mined in this country. Injuries from blasts have been reduced two-thirds through education of the people. These injuries and those from railroads and machine shops come mostly from new men. The employers are anxious to avoid these accidents, as claims are made amounting to hundreds of thousands of dollars every year. Some intelligent committee from this society that would study the prevention of blindness in the industries would have a subject broad enough to require its entire attention.

Miss C. C. Van Blarcom, Secretary New York Committee on Prevention of Blindness, New York: It seems rather pointless for me to address a body of ophthalmologists on the subject of the prevention of blindness, for I am only a lay-worker and view the problem from the layman's standpoint. However, since the courtesy of the floor has been extended to me, I am glad to speak on one or two questions which have already been touched on and which are, perhaps, of more importance than the medical profession in the abstract appreciates.

The question of the prevention of blindness is not a single definite piece of work, but is a complex and intricate undertaking, involving many problems, both medical and social. With one accord we look to the medical profession to initiate and guide the movement for the prevention of blindness, but we feel that the ultimate results will only be accomplished through harmonizing the many elements which bear on the solution of this problem. It is a social question, requiring education, legislation and cooperation for its solution, and so it seems to me that the work of preventing unnecessary blindness cannot be carried on by the medical profession alone.

That branch of the great work devoted to the prevention of blindness due to ophthalmia neonatorum is only one phase of the work, and I, and many others also, feel that we are weakening our cause by limiting it too closely to a medical campaign. Ophthalmia neonatorum and its resulting blindness must be prevented, but there are so many other causes of preventable blindness that the work ramifies indefinitely and we find ourselves overlapping and dovetailing with so many other workers that it is important that there be a coordination of those forces referred to in Dr. Lewis' paper, namely, physicians, sanitarians, educators and social workers. We feel strongly that the question of preventing unnecessary blindness from all causes must be approached from many standpoints, and that the desired end will only be accomplished through this hearty cooperation already mentioned.

Mr. S. E. Eliot, Organizer Russell Sage Foundation, New York: A word as to my appointment. The correspondence in this matter grew on the hands of Dr. Lewis and the New York committee to such an extent that it seemed justifiable to Miss Louisa Lee Schuyler, chairman of the committee on the prevention of blindness of the Russell Sage Foundation, to have a secretary appointed to go to the different states, work with the nucleus already furnished by the committees on ophthalmia neonatorum and organize associations on the lines of the New York association, of which Miss Van Blarcom is a representative. This work will have to proceed by working with local situations as they are found. As I go on the ground in any state I shall endeavor to ally all agencies connected with the subject, such as health boards, authorities connected with the schools for the blind, and the public schools, and finally the social workers, thus forming associations with part of the group composed of the medical men, and the rest composed of social workers and others who are working for this one end, the prevention of blindness.

Dr. Mark D. Stevenson, Akron, Ohio: It appears to me that in dealing with the general question of the prevention of blindness this Section ought to have a committee entirely from its own members. The committee on ophthalmia neonatorum is very properly composed of a sanitarian, an obstetrician and an ophthalmologist, but of what special interest is the general prevention of blindness from industrial accidents, etc., to the obstetrician; or, for that matter, of what interest is it to the great majority of sanitarians? It seems to me the original motion which provided for the appointment of a committee from this Section by our chairman for the general prevention of blindness was the better one. The Committee on Ophthalmia Neonatorum should be a separate committee, possibly related to this one by having its chairman a member of this committee. This Section ought, above all, to be identified with and be responsible for this important movement for the general prevention of blindness.

[The Section adopted a resolution (printed in THE JOURNAL, July 2, p. 58) and sent it to the House of Delegates for approval. That body approved the resolution in modified form (THE JOURNAL, June 18, p. 2076).]

FALLACIES IN THE UNDERSTANDING OF ANTISEPTICS AND GERMICIDES WITH SPECIAL REFERENCE TO MERCURIC CHLORID *

MARSH PITZMAN, M.D.
ST. LOUIS

A study of this subject brings into discussion fundamental principles of surgery and is therefore, I trust, of general interest.

An infected wound in this country, in the hands of the majority of surgeons, is treated by a bichlorid of mercury moist pack. To this general procedure I take only the exceptions noted later. A large number of textbooks state and surgeons believe that mercuric chlorid exerts an antiseptic action on the bacteria within the tissues. That bichlorid of mercury as used does not exert such antiseptic action is my main proposition.

CHEMICAL CONSIDERATIONS

We must consider first the chemical structure of mercuric chlorid. As the name implies, two atoms of chlorin are combined with one of mercury. It is due to the mercury that mercuric chlorid possesses its specific action on syphilis and, in case of overdoses, its poisonous activity. It is due to the chlorin that mercuric chlorid possesses its caustic and general germicidal action; for mercury, combined with white of an egg at 1 to 1200, shows absolutely no antiseptic or germicidal action, though of course it would be antisyphilitic and poisonous.[1] Therefore, when mercuric chlorid is used as an antiseptic or germicide, the mercury atom is merely the carrier of the active halogen (chlorin).

In regard to the combination of mercuric chlorid with albuminous fluids, as employed in practical surgery, the literature is confusing and contradictory. That is due to the fact that a sharp distinction has not been drawn between mixtures of mercuric chlorid and albumin with, and those without excess of mercuric chlorid.

My work in the Hygienic Institute of Berlin proves, I believe, that mercuric chlorid combines with albumins in a direct ratio of quantities; that, until excess of mercuric chlorid is present in the mixture of mercuric chlorid and albumin, there is absolutely no antiseptic or germicidal action; further, that, when excess of mercuric chlorid is present in the mixture of mercuric chlorid and albumin, it acts promptly as a germicide, but never as an antiseptic against vegetative (non-sporulated) forms of bacteria. In human serum this division point—this point at which mercuric chlorid begins to exist as a free germicide—is approximately 1 to 10000.

Now let us turn to the practical application of these facts. If mercuric chlorid is to exert any trace of antiseptic or germicidal action on an infected area, it must exist in the affected part in amounts greater than 1 to 10000 of serum. As the albuminous fluids of the body are continuous and circulating, the affinity of all albumins of the body would have to be satisfied before there would be a local excess of free mercuric chlorid. On account of poisoning this is out of the question. Moreover, while free mercuric chlorid, in excess of 1 to 10000 of serum, would act as a germicide on all bacteria, it would be irritant, caustic, and destructive to the body cells as well. At the price of the destruction of body tissues, the use of free mercuric chlorid would again be out of the question. For these two reasons, I maintain that free bichlorid of mercury does not exist as an active chemical in the infected areas, and, therefore, has no antiseptic or germicidal action. Here I might well rest my case.

But the belief that bichlorid in practice does exert an antiseptic action on the progress of an inflammation, is so firmly fixed in the surgical mind that many will undoubtedly remain skeptical. Some, who have seen cases of salivation and even of mercurial poisoning from absorption, will insist that mercuric chlorid is absorbed and in quantities sufficient to exert a germicidal action. The answer is that salivation and poisoning are so extremely rare—are so uncommon even in large lacerated wounds—as to justify the conclusion that mercuric chlorid is but rarely absorbed into the body serum from a dressing. To put the question to a scientific test, however, during my service at St. Louis City Hospital in March and April, 1908, eight patients with large infected wounds, who had been treated throughout with liberal bichlorid packs, were directly examined for absorption. The chemical tests were based on the fact that mercuric chlorid absorbed into the serum is excreted in the urine. The work was done under Dr. Warren, professor of chemistry in Washington University. The method used was that in which organic matter was destroyed with potassium chlorate and hydrochloric acid; the mercury in the solution obtained was precipitated as sulphid, the sulphid dissolved in acid, and the mercury in this solution precipitated on copper wire. The test was sensitive, by control, beyond 1/500 grain bichlorid. In four cases, used as control, in which bichlorid medication was used internally, mercury was present in the urine. The eight patients under bichlorid pack all failed to show presence of mercury in the urine.

The literature contains no contrary reports.[2] Therefore I feel justified in concluding that mercuric chlorid, as used in a moist pack, is not ordinarily absorbed into the tissue fluids.

To recapitulate, I maintain that bichlorid of mercury does not exert its reputed antiseptic action on the bacteria in the tissues for the following reasons:

---

* Read before the General Section of the Missouri State Medical Society, at Hannibal, Mo., May 1, 1910.

[1] Pitzman, M.: Ueber das desinfizierende Verhalten des Sublimats und Silbernitrats in Eiweisshaltigen Flüssigkeiten, Hyg. Rundschau, 1909, No. 12.

[2] The classic researches are the following:
Koch, R.: Mitt. a. d. k. Gsndhts-amt., 1882, i.
v. Behring: Bekämpfung der Infectionskrankheiten, Leipsic, 1881.
Geppert: Berl. klin. Wchnschr., 1890, No. 11.
Kronig and Paul: Ztschr. f. Hyg., 1897, xxv, 100.
Other important references are to be found in Kolle and Wassermann's Handbuch der Pathogenen Mikro-Organismen, Jena, 1904, Vol. iv, Part 1, in the chapter on Disinfection, by Prof. E. Gotschlich.

1. It would have to exist in the tissues as excess free bichlorid, which is scientifically hardly conceivable.
2. If it existed as free bichlorid, it would destroy the body cells as well as the bacteria.
3. It is ordinarily not absorbed from a dressing.

CLINICAL CONSIDERATIONS

Like most other scientific facts, the one just demonstrated has its practical bearings, and these practical bearings are what has interested me in the subject. I do not advocate the rejection of bichlorid of mercury from practical surgery; far from it. My object has been simply to define what may rationally be expected of it. Neither do I advocate the substitution of other antiseptics or germicides. None other that I know of is more suitable for practical use. In fact, I should strongly advocate the use of the well-known antiseptics, whose powers and limitations we know, rather than "fly to others that we know not of."

Do any of the other germicides really exert an antiseptic action on the bacteria in the tissues? I feel confident that they do not, for, if they did, they would soon have superseded mercuric chlorid on clinical test. And certainly none has, or has had, the scientific standing of bichlorid of mercury. As regards the judgment of the newer antiseptics every day offered the medical profession, it is a peculiarly significant fact that, after more than twenty years of clinical and research work by the best medical minds of the age, there are still such fundamental differences of opinion in regard to our standard germicides.

Are antiseptics and germicides then valueless? On the contrary, their use from time immemorial has proved their immense value. Their prompt application to a fresh wound will prevent infection, and their use in infected wounds will in great measure prevent reinfection with a more virulent organism. If asepsis approaches perfection—which it does rarely—then antiseptics and germicides may be dispensed with in infected wounds. The strong surgical belief in the antiseptic action of chemicals on infected wounds is due, according to my best lights, to this check on the asepsis, this prevention of reinfection.

But there is a greater, a more serious fault, due in great part to the belief in the actual antiseptic power in the tissues. I refer to the neglect of rest, that first principle of surgery. Hilton's classic on "Rest and Pain," and, in modern literature, Ochsner's "Clinical Surgery," in which the arguments are put clearly, strongly and convincingly, must be unknown to many of the modern surgeons. In their eagerness to apply antiseptics, surgeons dress acute spreading infections many times during the twenty-four hours, to the neglect of rest! In cellulitis they incise before pus can localize, so that the antiseptic may penetrate, again forgetful of that prime requisite, rest! The belief in the actual antiseptic power of chemicals must bear its full share of that grave charge—than which there is no fault more crying in modern surgery—the neglect of rest.

In more serious infections the error of using strong antiseptics is common, and often grave in its consequences. If the solution be strong, or the skin irritable, so that a dermatitis follows, rest would be disturbed. In such cases therefore it is important to use a very weak antiseptic, or perhaps preferably plain water or saline solution. Such a pack with splints should be undisturbed for at least forty-eight hours, as Ochsner so convincingly shows. To those who have accepted my argument there can no longer be mystery in the use of the saline pack.

The question of cleansers, stimulants, astringents, ointments, and dusting powders has been purposely omitted from the discussion, on the ground that their action is not due to their antiseptic or germicidal properties. Often confusion arises from the fact that the same chemical may be used for different ends; as, for example, silver nitrate as a germicide prophylactic against ophthalmia neonatorum, whereas in chronic conjunctivitis its use is dependent on its stimulating and astringent qualities. The question whether the clinical value of many chemicals is due to their antiseptic, or, on the other hand, to their cleansing, stimulant, or astringent properties, is in many cases still *sub judice*.

In conclusion let me state that I practice what I preach. I shall not insult your intelligence, however, by reporting cases which, in comparison with the observed material, could be but as a drop in an ocean.

FURTHER INVESTIGATIONS REGARDING THE ETIOLOGY OF TABARDILLO, MEXICAN TYPHUS FEVER*

H. T. RICKETTS, M. D., and RUSSELL M. WILDER
CHICAGO

In a previous article[1] we have reported certain experiments which indicated the rôle of the body louse (*Pediculus vestamenti*) in the transmission of Mexican typhus fever. Since that date we have been able to confirm the results of our first investigations, and also to obtain certain other experimental data concerning the etiology of this disease. The experiments which we wish to report at present[2] relate to the hereditary transmission of the infectivity of the louse and the possible rôle of the bedbug and the flea in the transmission of typhus.

HEREDITARY TRANSMISSION OF THE INFECTIVITY OF THE LOUSE

The following experiment was undertaken with a view to determining whether the young of infected lice were themselves infected. The adult louse contains in its ovaries many mature eggs. These eggs are covered with a compact shell which we thought might prove impermeable to micro-organisms. Hence it was decided to rear young lice to maturity on the bodies of typhus patients, so that if the eggs were susceptible to infection at any stage of their development, they would have every opportunity of being infected within the ovary.

On March 29, 140 adult lice of Group 17 (*Pediculus vestamenti*) 70 males and 70 females, were placed in a stocking on the leg of a typhus patient (No. 11). The stocking was sealed above with adhesive tape to prevent the escape of any of the insects. Two days later 1,000 eggs were found adhering to the fibers of the stocking. The lice were removed and replaced on the patient in a fresh stocking, while the stocking containing the eggs was put on the patient's other leg. Approximately 800 more eggs were subsequently laid by this generation of lice.

By April 6 many of the eggs began to hatch and by April 15 about 500 young lice had been collected.

---

* From the Department of Pathology of the University of Chicago and the Memorial Institute for Infectious Diseases, Chicago.

[1] The Journal A. M. A., April 16, 1910, p. 1304.

[2] It is planned to publish at some later date a more comprehensive report of our investigations of typhus fever.

These were placed in a fresh stocking which was kept constantly on the leg of a patient in an early stage of fever. For this purpose Patients 47, 49, 50, 52 and 53 were used. Many of the young lice died but approximately 250 of them reached maturity and in turn laid eggs.

When a sufficiently large number of these presumably infected eggs of the second generation had been obtained, all of the adult lice were removed and placed in a new stocking on the same patient. The stocking containing the eggs was then sealed and incubated between the sheet and the mattress of a patient in an early stage of convalescence.

Monkey 42, of the species *Macacus rhesus*, who served for this experiment, had been recently imported into Mexico from a district free from typhus. As the eggs hatched, the young lice were collected and placed on this normal monkey in the following manner. The animal's skin was shaved over the entire abdomen and a piece of finely woven linen, two inches by three, was tightly secured to the skin by means of a border of two-inch adhesive tape. One edge of the cloth was left unattached and the open end of a tube containing the young lice inserted beneath this edge, the lice being dumped into the pocket formed between the cloth and the skin. The mouth of the pocket was then sealed with tape and the animal clothed in a heavy canvas jacket in order to prevent interference with the lice. Thus on April 28 fifty young lice were placed on the monkey. On April 30, thirty more were added. At this time it was noted that the lice of April 28 had fed, their bodies being gorged with blood. On May 2, twenty-five additional lice were collected from the stocking and placed on the monkey. Thus in all 105 lice, the offspring of infected lice, but themselves never directly infected, were given an opportunity of feeding on Monkey 42.

Unfortunately the temperature of this animal could not be taken regularly during the following three or four weeks, nor was he under very careful observation during this period. On May 26, however, he appeared to be in good health. But more important is the fact that he proved resistant to a subsequent immunity test described below.

In our work on transmission with lice we have, with one exception, never succeeded in provoking a very characteristic febrile reaction in the macacus monkey by means of the bite of lice, the relative insusceptibility of the monkey to typhus probably accounting for his resistance to infection by lice. It has been found, however, that monkeys who have been subjected to the bites of infected lice are thereby rendered immune to subsequent inoculations of typhus blood which constantly produces in normal monkeys a high febrile reaction. This immunity has been interpreted as indicating that the animal has been infected by the lice and has suffered a mild attack of typhus, and the immunity test thus constitutes the chief criterion for determining whether or not an animal has been infected by insects.

Such an immunity test, consisting of the intraperitoneal inoculation of 3.5 c.c. of virulent typhus blood from a typhus patient (No. 58) was given to Monkey 42 on May 27. For the following three weeks the animal remained in perfect health, although controls inoculated with the same quantity of the same material all contracted a typhus of moderate severity, their temperatures maintaining an elevation of 104 to 105.7 F. for a period of ten or eleven days.

Table 1 shows the temperatures of Monkey 42 on the successive days following the inoculation, Table 2 those of the control monkey (No. 44).

TABLE 1.—IMMUNITY TEST OF MONKEY 42

	A. M.	P. M.		A. M.	P. M.
May 28	102.6	102.2	June 10	102.3	102.1
May 29	101.6	101.9	June 11	102.0	102.5
May 30	101.2	101.9	June 12	102.0*	102.8
May 31	101.6	102.0	June 13	100.8	102.0
June 1	101.4	101.8	June 14	99.6	100.6
June 2	101.6	102.2	June 15	100.3	101.5
June 3	102.0	102.4	June 16	101.2	101.4
June 4	101.6	102.4	June 17	100.9	101.9
June 5	*104.1*	*103.7*	June 18	100.4	102.0
June 6	*103.2*	103.0	June 19	101.9	102.2
June 7	*103.0*	102.8	June 20	100.8	101.7
June 8	101.6	103.0	June 21	100.2	102.4
June 9	100.4	102.2	June 22	101.3	101.8

TABLE 2.—TEMPERATURE OF MONKEY 44 FOLLOWING INOCULATION WITH TYPHUS BLOOD

	A. M.	P. M.		A. M.	P. M.
May 28	102.3	102.5	June 8	*104.0*	*105.5*
May 29	102.0	102.5	June 9	*104.1*	*104.7*
May 30	101.9	102.0	June 10	*105.6*	*103.9*
May 31	101.5	102.3	June 11	*104.6*	*105.2*
June 1	100.8	101.6	June 12	*103.2*	*103.1*
June 2	101.6	*103.7*	June 13	101.8	102.1
June 3	*102.6*	*103.4*	June 14	101.0	102.2
June 4	*105.6*	*105.7*	June 15	101.0	101.6
June 5	*104.0*	*104.3*	June 16	100.6	101.6
June 6	*103.3*	*103.3*	June 17	100.3	101.0
June 7	*103.5*	*104.9*			

It has been our experience to find a great variation in the daily temperatures of normal macacus monkeys. These animals are prone to slight intestinal disorders and a sporadic elevation of one, or even two degrees, has been frequently noticed. The normal afternoon temperatures of many of our monkeys lay constantly between 103 and 104 F. Hence there arises a certain difficulty in interpreting the slight elevation of temperature shown by Monkey 42 on June 5 and June 6. This may or may not be a mild effect of the virus, but in any case the effect was far less than that obtained before in all normal animals, including the control monkey (No. 44) of this particular experiment, and it is quite probable that the elevation observed was purely accidental.

We appreciate that the result of one experiment does not constitute decisive proof, but the definiteness of the result justifies us, in our opinion, in concluding that Monkey 42 owed his immunity to his previous infection by the young lice of Group 17, and that hereditary transmission of the infectivity of the louse is established to the extent of reasonable probability.

INFECTIOUSNESS OF THE FLEA AND OF THE BEDBUG

Theoretical considerations make it seem extremely probable that neither the bedbug nor the flea plays any role in the transmission of typhus. We have called attention to this in a previous article,[3] and Anderson and Goldberger[4] have expressed the same opinion. The bedbug is only rarely carried about in the clothing and yet it is well known that people who handle the clothing of typhus patients, such as laundresses and servants, are frequently stricken with typhus. A number of cases of typhus have occurred during the last year among the nurses and servants of the typhus pavilion of the general hospital of Mexico City. A careful search failed to reveal any bedbugs in this building. Furthermore, if the bedbug transmitted typhus we should expect the disease to be a "house disease"; but cases are constantly occurring which it is impossible to trace to any "typhus house."

---

[3] The Journal A. M. A., Feb. 5, 1910, p. 463.

[4] Pub. Health Rep., Feb. 18, 1910, No. 7.

The flea also seems innocent. Did it play any rôle, the distribution of typhus in Mexico City would be much more general than is the case, for the flea is widely distributed. Typhus, however, is confined almost exclusively to those living under less satisfactory hygienic conditions. Finally, as previously mentioned, the season of typhus is the winter and early spring whereas the period of greatest prevalence of the flea is the summer.

In order to throw further light on this question the following experiments were undertaken.

EXPERIMENTS ON THE INFECTIOUSNESS OF THE BEDBUG

A group of about fifty bedbugs was fed on three successive days on patients at the general hospital. The bugs were confined beneath a small wide-mouthed glass bottle inverted over the skin of the patient. In this way ten or twelve could be fed at one time. All were given the opportunity of gorging themselves with blood.

On April 2, two days after their last feeding on a patient, they were placed on the shaved abdomen of a monkey (No. 35) and allowed to feed. On April 3 they were again placed on the monkey, only eight feeding. On April 4 they were not fed. On April 5, twenty-eight bugs fed well on the animal; April 6, eighteen bugs fed lightly; April 7, seventeen bugs fed lightly; April 12, 29 bugs fed well, gorging themselves with blood.

The animal showed absolutely no rise in temperature, and continued in excellent health during the following thirty-two days. Unfortunately he died from an accident before an immunity test could be given him, and hence the experiment cannot be taken as proof of the non-infectiousness of the bedbug. It does seem to eliminate the possibility that the bedbug can transmit typhus more readily than can the louse, in so much as both the period of feedings on the infected host and the period of feeding on the monkey were considerably in excess of the feedings of the louse in certain of our experiments.

EXPERIMENTS ON THE INFECTIVITY OF THE FLEA

Human fleas, of flea Group 2, were infected by repeated feedings on typhus patients at the general hospital in the following manner: One or two fleas were confined in each of several long and narrow tubes. These tubes were made of 1 mm. glass tubing, were sealed at one end and cut sufficiently long (20 cm.) to prevent the escape of the flea by jumping. For this purpose also they were slightly bent in the middle. The fleas were fed by inverting this tube on the patient's skin.

Subsequent to their last feeding the fleas were allowed to rest for about sixty hours. The entire bodies of ten of the group were then emulsified in physiologic salt solution and rubbed into scarifications of the abdominal skin of a normal monkey (No. 41), the technic employed in this procedure being the same as that used in the scarification experiment performed with the intestinal contents of lice and previously reported[1]. The wounds healed with but little suppuration. The animal's temperature was taken twice daily for the following thirty-four days and during this time he remained in perfect health.

On May 27 this monkey was given an immunity test, receiving an inoculation of 3.5 c.c. of typhus blood from patient 58. After an incubation period of seven days he began to run a fever which lasted for twelve days, his temperature being recorded in table 3.

TABLE 3.—TEMPERATURE OF MONKEY 41 AFTER RECEIVING AN IMMUNITY TEST

	A. M.	P. M.		A. M.	P. M.
May 28	102.6	102.6	June 10	*104.4*	*105.0*
May 29	101.8	102.0	June 11	*104.4*	*105.6*
May 30	102.3	102.8	June 12	*103.6*	*105.5*
May 31	101.6	102.6	June 13	*104.6*	*104.8*
June 1	101.9	101.9	June 14	*103.5*	*104.8*
June 2	101.9	102.7	June 15	*103.9*	*103.7*
June 3	101.4	102.3	June 16	102.9	102.8
June 4	*103.1*	*104.1*	June 17	102.5	102.8
June 5	*104.5*	*104.5*	June 18	102.5	102.0
June 6	*103.1*	*104.1*	June 19	101.5	101.8
June 7	*105.0*	*105.3*	June 20	101.6	102.5
June 8	*103.2*	*103.6*	June 21	101.5	102.6
June 9	101.4	*103.1*	June 22	101.9	102.3

On June 4, a leukocyte count was made[5] which showed 30,350. The animal was very irritable and his coat dry and ruffled. On the 5th he had diarrhea and until the 14th of the month seemed very sick. His subsequent recovery was rapid and complete.

In brief, No. 41 had not been infected by the fleas, as is shown by the fact that he was not immune to a subsequent inoculation of typhus blood.

These results seem to strengthen our previous position as to the unimportance of the flea and the bedbug in the transmission of Mexican typhus fever.

We take pleasure in expressing our obligations to Dr. Liceaga and his assistants of the Superior Board of Health of Mexico, to the authorities of the general hospital and to Dr. Goviño of the Bacteriologic Institute for numerous courtesies. In particular we wish to acknowledge our indebtedness to Dr. Genaro Escalona, Dr. Francis E. Prestley and Sr. D. Perez Garca, of Mexico City, for coöperation and assistance.

5811 Monroe Avenue.

THE VALUE OF COMBINATIONS OF NARCOTICS AND ANTIPYRETICS

A. HERZFELD, M.D.
NEW YORK

It is a well-known fact that certain drugs acquire their highest therapeutic efficiency in combination with other drugs. In such combinations not only is their therapeutic effect increased, but in addition possible disagreeable by-effects are neutralized and not infrequently the therapeutic action of the adjuvant is made more prominent. As familiar examples of such combinations may be mentioned iron and arsenic, mercury and potassium iodid, quinin, iron and arsenic or strychnin. Furthermore, I have observed that the disagreeable effects of chloral may be minimized by combining it with a bromid, codein or morphin. Well-known are the excellent results which have been obtained by the combination of morphin and atropin, morphin and scopolamin, cocain and adrenalin, and lately a combination of physostigmin and pilocarpin has been highly recommended in the treatment of glaucoma. In this connection I will discuss a number of combinations of narcotics with the synthetic antipyretics, drugs which have played a prominent rôle in modern therapy.

Soon after the introduction of lactophenin by Jaksch in the treatment of typhoid, I experienced in two different patients symptoms of severe collapse after ordering therapeutic doses of this drug.[1] Doubtless there occurred here the well-recognized profound toxic action of this p-amido-phenol derivative on the ganglion cells of the motor zones in the cerebrum and medulla oblongata. Whether these patients had an idiosyncrasy for the drug or not it is impossible for me to say, because the severity of the typhoid and the collapse precluded a continuance of the drug. Since then, I have used lactophenin in combination with caffein citrate and codein and have never again witnessed toxic effects. Conditions are similar in regard to acetanilid. If acetanilid is given alone, toxic symptoms are liable to ensue, owing to its cumulative effects, due to the low solubility of this drug and the consequent accumulation of considerable quantities of anilin oil in the intestine. This drug acts on the motor centers in the cerebrum and the respiratory center in the medulla similarly to lactophenin. The toxic effects can be minimized by combining acetanilid with bromids, codein, caffein, etc. The reason why acetanilid in the proprietary headache powders as an analgesic or antipyretic does not more frequently cause toxic symptoms is that the drug is usually combined with one or more of these adjuvants. Combinations of the synthetic antipyretics are most efficient in the treatment of acute febrile diseases and inflammations of various character than when either of these drugs is used alone and without a narcotic, an observation which I made soon after the introduction of phenacetin into our therapeutics.

---

[1] N. Y. Med. Monatschr., November, 1903.

[5] Leukocytosis is observed in nearly all cases of typhus in man. In conjunction with Dr. Francis E. Prestley of Mexico City, we have made a series of leukocyte counts of most of the monkeys in our possession. It was found that monkeys sick with typhus fever usually showed a marked increase in the number of white blood corpuscles over the normal which approximates 12,000. Differential counts based on the same material will be reported in a later communication.

In this connection I may mention the interesting experiments of Spiess,[2] that inflammations are very susceptible to cure if the reflex in the sensory centripetal nerve from the focus of the inflammatory process can be excluded (areflexia). This may be obtained by excluding the pain, which is caused by the irritation of the sensory nerve, by a narcotic; in this way the hyperemia disappears, though the sympathetic inervation of the blood-vessels remains intact. As proof of this theory, Spiess cites the example that in sleep the active phenomena of inflammation subside and that in syringomyelia and hysteria severe destructive processes may occur without active inflammatory phenomena. He also believes that the healing effect of Bier's hyperemia—the subsidence of the symptoms of inflammation—is brought about by the disappearance of pain, which phenomenon in turn relieves the active congestion. According to Hans H. Meyer[3] the narcotic effects of anesthetics and narcotics are due to the fact that a physical alteration in the composition of the cell lipoids is brought about by these drugs causing a change in the ion-permeability of the cells, and hence the chief cause for the chemical process of irritation and inflammation should be abolished in this way.

Two simultaneously or successively administered narcotics act more quickly and more powerfully than the simple addition of the effects of these two narcotics would indicate.[4] This multiplication of narcotic effect of two different narcotics or anesthetics is particularly pronounced when these two substances are not related chemically. As an instance I would cite the administration of a small dose of morphin before a general anesthetic or scopolamin and morphin, in obstetric practice. I have also shown (in collaboration with Dr. Reich[5]) that the administration of veronal a few hours before any surgical operation is performed will reduce the quantity of the general anesthetic required to a surprising extent. Buergi[4] asserts that the cells can absorb more of the pharmacologically active substance out of a mixture of drugs when the cell possesses a different receptor for each substance. When two drugs have the same cell receptor, as the narcotics of the fatty acid series, for instance (paraldehyde, ethyl carbamate (urethane), chloral), when given in combination, their narcotic action is not a multiple, but merely an addition of the effects of the two drugs combined. According to Buergi, lactophenin, antipyrin, pyramidon and phenacetin possess definite narcotic properties and their subcutaneous injection enhanced the action of pure narcotics, as urethan, for instance. The antipyretics have much in common in their therapeutic effects with the hypnotics. My experience with acetylsalicylic acid (aspirin) and other salicylic acid derivatives taught me that their beneficial therapeutic action as antipyretics was due chiefly to their anesthetic and narcotic effect. For this reason, I have been using for many years with excellent therapeutic results in the treatment of infectious fevers (influenza, rheumatism, pneumonia, etc.) a combination of phenacetin (0.25—0.5 gm.) salicylate of soda (0.5—1.0 gm.) caffein citrate (0.03—0.05 gm.) and codein sulphate (0.01—0.02 gm.). The leading thought in this and similar combinations of medicaments is to attack the disease on various points. The excellent clinical results obtained by such drug combinations have been reported repeatedly,[6] but only experiments of Spiess and Buergi gave them a scientific foundation.

221 West Twenty-fourth Street.

A STUDY IN THE PREVENTION OF ADHESIONS *

DRS. J. R. CLAYPOOL, B. M. VANCE, P. R. ROBERTSON AND CYRUS W. FIELD

LOUISVILLE, KY.

For many years papers have appeared intermittently recommending the use of oil in the peritoneal cavity to prevent the formation of adhesions.

When we began our work in the laboratory on this subject we could find no paper dealing with it from an experimental standpoint; though while this work was in progress the paper by Wilkie[1] appeared. He formed adhesions in twelve animals (cats) by irritating the peritoneum. At the end of six or eight weeks these adhesions were broken down and in six of the animals a liquid paraffin was smeared over the raw surfaces. At the end of a month the animals treated with the paraffin showed fewer and less dense adhesions than the controls. The oil was not found free in the peritoneal cavity after fifteen days in macroscopic quantities.

In the work performed by us we have used dogs entirely and have compared the value of olive oil and a colorless liquid petrolatum. Every experiment has been controlled, the animals being used in pairs. The peritoneal cavity in both dogs being irritated in the same way. The peritoneal surfaces were cauterized or scraped until they bled and in some cases strips of the peritoneum were removed with scissors. One of a pair of dogs so treated received 25-35 c.c. of oil in the peritoneal cavity, after the peritoneum had been injured.

---

[2] Münchén med. Wchnschr., 1906, p. 748.

[3] Münchén med. Wchnschr., 1909, No. 1.

[4] Buergi: Deutsch. med. Wchnschr., 1910, Nos. 1 and 2.

[5] Therap. Monatsh., Nov., 1908.

[6] Troupel: Deutsch. med. Wchnschr., 1909, No. 40.

* From the Laboratory of Pathology of the University of Louisville.

[1] Wilkie, D. P. D.: Surg., Gynec. and Obst., February, 1910.

PROTOCOLS OF EXPERIMENTS WITH OLIVE OIL

Here are typical protocols of such experiments, olive oil being used in these cases to prevent the formation of adhesions.

Dog 9.—The animal was operated on Feb. 8, 1910. The parietal peritoneum was scraped on the right and left sides until it bled, also several loops of intestine, and three sterile pith-balls were placed in the cavity and olive oil (about 30 c.c.) was then poured into the abdominal cavity. The dog was killed Feb. 15, 1910—that is, one week after the operation.

Autopsy.—Free olive oil, about 25 c.c. was found in the abdominal cavity. There were very slight adhesions of the omentum to the parietal peritoneum on the right side, while the left side showed no adhesions, nor were there any between the intestinal loops.

Dog 10.—This was a control, operated on Feb. 8, 1910, and killed Feb. 15, 1910, one week after operation. It was given exactly the same treatment as Dog 9, except that no oil was put into the abdominal cavity.

Autopsy.—The parietal peritoneum was firmly adherent to the omentum on both right and left sides, and the loops of intestine were adherent to the parietal peritoneum in five places. There were numerous adhesions between loops of the intestine, and the pith-balls were bound up in adhesions on the surface of the intestines.

Dog 11.—The animal was operated on Feb. 9, 1910, and killed March 2, 1910, three weeks after operation. The parietal peritoneum, liver and portions of intestine were scraped with a knife until they bled. Olive oil (about 30 c.c) was poured into the abdominal cavity.

Autopsy.—No adhesions were found. Olive oil completely filled the cavity, about 20 c.c being removed.

Dog 12.—This was a control, treated the same as Dog 11, except that no olive oil was used.

Autopsy.—The liver was adherent to the parietal peritoneum, and there were dense adhesions between the loops of intestines.

Dog 20.—The animal was operated on Feb. 21, 1910, and killed March 7, 1910. The parietal peritoneum was scraped over as large an area as could be reached and olive oil was poured into the abdominal cavity.

Autopsy.—Two weeks after operation the autopsy showed scar tissue where the parietal peritoneum was scratched. There were no adhesions in any portion of the abdominal cavity. Clear yellow oil, about 10 c.c., was found in abdominal cavity.

In the ten dogs treated with olive oil only one showed any adhesions, and in that case only along the line of incision between the peritoneum and omentum.

PROTOCOLS OF EXPERIMENTS WITH LIQUID PETROLATUM

In six dogs treated with liquid petrolatum all but one showed adhesions.

Dog 24.—The animal was operated on March 14, 1910. The parietal peritoneum was scraped until it bled, and then liquid petrolatum, about 30 c.c., was poured into the abdominal cavity. The dog was killed April 7, 1910.

Autopsy.—Firm adhesions of intestines to parietal peritoneum were found. A small quantity of liquid petrolatum (about 5 c.c) was found in the abdominal cavity, in an emulsified form.

In twelve dogs in which no oil was used adhesions were found in all but one. On another series of dogs the peritoneum was irritated and then the wound closed, and adhesions allowed to form. At the end of two or three weeks they were opened and the adhesions broken down.

In one dog in each case the wound was at once closed without any further treatment. In the other, oil was introduced and the wound then closed. The dogs were allowed to live three or four weeks after the second operation. In those in which olive oil was introduced the adhesions were not reformed, but the controls and those treated with liquid petrolatum showed the presence of numerous adhesions.

The following is a protocol of such an experiment with liquid petrolatum.

Dog 14.—The animal was operated on March 11, 1910. The intestines were scratched until they bled. The abdomen was reopened on March 17, 1910. Adhesions of intestines were found along the right and left side of parietal peritoneum and also between the loops of intestines. The adhesions were broken up and 30 c.c. of liquid petrolatum poured into the abdominal cavity.

Autopsy.—March 30, 1910. Adhesions of intestines to parietal peritoneum were found and of loops of intestines between themselves. Liquid petrolatum was found in an emulsified form.

In the following case both olive oil and liquid petrolatum were used at different times on the same dog:

Dog 13.—The animal was operated on Feb. 14, 1910. The parietal peritoneum was scraped till it bled freely. Olive oil (30 c.c.) was introduced into the abdominal cavity, which was reopened on March 11, 1910. No adhesions or olive oil were found in the abdominal cavity. There was scar tissue where the parietal peritoneum had been scraped. The small intestine and peritoneum were scraped and liquid petrolatum poured into the cavity.

Autopsy.—March 30. The intestine was found very firmly adherent to the parietal peritoneum in several places. Liquid petrolatum was found in the abdominal cavity in an emulsified state.

BEHAVIOR OF THE OIL IN THE PERITONEAL CAVITY

At the end of three weeks we have uniformly found 5 to 20 c.c. of clear olive oil in the peritoneal cavity. At the end of four weeks the olive oil may still be present but not usually in sufficient quantity to measure. Liquid petrolatum on the other hand, is absorbed slightly sooner and forms an emulsion within the cavity. In other words, it does not form a film over the serous surface, as does the olive oil, which later forms a definite oily layer over the whole peritoneal surface.

In the case of olive oil two points have to be guarded against.

The first is that the olive oil must not be heated to such an extent that the fatty acids will be liberated. It may be sterilized at 115 C. for fifteen minutes. This temperature is not sufficient to split the oil. If free fatty acids are present they irritate the peritoneum and the oil is found as a thick white emulsion which on microscopic examination shows the presence of enormous numbers of polymorphonuclear leucocytes, though even with this irritant, adhesions were not found.

The second point to be guarded against is allowing the oil to come into contact with the tissues about the abdominal incision. This may be done in two ways; the first is by pouring the oil into the peritoneal cavity by aid of a funnel whose end reaches well within the cavity, and the surface of the wound carefully retracted upward during the closure. The second method, and without question the better, is the introduction of the oil into the peritoneal cavity by the use of a large syringe attached to a needle whose inside diameter is at least 1 mm. After the needle is withdrawn the abdomen is gently massaged so as to spread the oil throughout the cavity.

CONCLUSIONS

1. Olive oil does seem to prevent the formation of adhesions in dogs and is worthy of a thorough trial in human surgery.

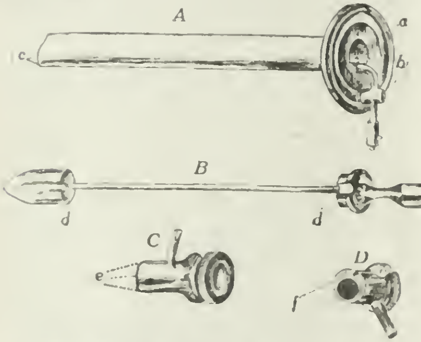
2. Liquid petrolatum has but slight value for such a purpose.

PNEUMATIC ILLUMINATED INFANTILE SIGMOIDOSCOPE

A NEW RECTAL INSTRUMENT

W. H. AXTELL, M.D.
BELLINGHAM, WASH.

This instrument was designed primarily for the examination and treatment of rectal diseases in children. Reflected light gave very unsatisfactory results because of the resistance and struggle of the little patients. The light could not be placed and fixed at the point to be examined as it can with this instrument. These drawings and designs were made by me and sent to the Electro-Surgical Instrument Company of Rochester, N. Y., who produced a most satisfactory instrument. It is simply a modification of Dr. James P. Tuttle's 6-inch illuminated pneumatic proctoscope. I claim originality only for the instrument being made for the examination and treatment of children. The modifications are as follows:



Pneumatic illuminated infantile sigmoidoscope; actual working length of instrument (A) 6 inches, inside diameter of tube (a) [illegible] inch; b, auxiliary chamber or tube for light carrier wholly within the main tube of instrument; c, flint glass bulb fitted in distal end of auxiliary tube to protect light bulb; *B*, obturator, diameter (*d*, *d*) [illegible] inch; *C*, window outside diameter (*e*) ⅝ inch; *D*, window showing light carrier (*f*).

1. The instrument is very much reduced in caliber.
2. The auxiliary chamber is placed wholly within the tube in order to make the instrument as small as possible and yet give ample room for making applications through it.
3. The obturator is more tapering than those of the Tuttle instrument. This facilitates its introduction into an invaginated bowel and during the straining of the child.
4. On account of the smallness of the instrument, the window had to be so constructed that the light carrier must be removed before the introduction or removal of the window. The light carrier and lights are the same as in the Tuttle instrument.

The instrument was primarily and originally designed for the treatment of rectal diseases in infants and children, but on an extended use of it I find it a most useful instrument for diagnostic purposes in all kinds of cases both of children and of adults. It is particularly useful in all irritable and painful conditions of the anus, such as strictures, fissures and fistulas; and in nervous women and timid men. I have found it very serviceable in securing easy and painless treatment of all conditions of the rectum and lower sigmoid. It is very easy of introduction, even in infants. When made of proper length the instrument serves the triple purpose of an anoscope, proctoscope and sigmoidoscope for infants and children.

Therapeutics

SOLID CARBON DIOXID

It has long been recognized that most abnormal tissues can be removed most quickly and satisfactorily with the knife. Under some circumstances, however, burning the tissues by means of the actual cautery or the electric cautery has seemed to possess distinct advantages. In a limited range of cases destruction by electrolysis produces results which cannot be obtained equally well in any other way. It is only rather recently that the destruction of tissue by means of extreme cold has become practically available in the treatment of a variety of superficial lesions, in which the methods of treatment hitherto employed have not accomplished as good results as seemed desirable both to the patient and to his physician. This form of treatment has been rendered available by the recent progress in physics which has enabled the profession to obtain atmospheric air in the liquid state, and carbonic acid as a solid. The difficulty in reducing air to the form of a liquid is so great and the process is so expensive that it has been used far less extensively than the solid carbonic acid.

Although carbonic acid in its natural state is a gas, it is a well-known chemical fact that by the combined action of pressure and low temperature it can be reduced to the form of a liquid. This change takes place under a pressure of thirty-six atmospheres at a temperature of 32 F., or 0 C., the freezing-point for water. At ordinary temperatures a pressure of fifty or sixty atmospheres would be requisite.

Liquid carbonic acid is colorless and transparent, and when exposed to the air evaporates rapidly with the result that a far higher degree of cold is produced, and this results in a part of the fluid being reduced to a loose white solid substance, which disappears without resuming the liquid form. The change of the solid into the gaseous state occurs more slowly than the evaporation of the liquid, and, for this reason, it becomes available for therapeutic use. The temperature of the evaporating solid is about —80 C. This may be reduced to 110 C. by mixing the solid with ether.

Dr. William S. Gottheil, of New York City, (*New York State Journal of Medicine*, January 1910) in an instructive, practical article gives minute details for preparing the carbonic acid snow. The carbonic acid is procured in the form of a compressed gas in tanks holding twenty gallons which are in common use in soda water fountains to carbonate water, and in saloons to furnish pressure for beer pumps. It has also been used for quickly freezing tissues for microscopic examination. Gottheil describes the manipulations incident to preparing the solid mass of carbonic acid as follows: "The screw cap over the vent having been removed, a towel folded so as to form a cylinder with a hollow the size of the mass required is firmly bandaged onto the vent. There is no limit to the size or shape of the hollow receptacle thus made; I usually have mine twice the thickness of a broomstick in diameter and four or six inches in length, so that I have a good handle to work with. If a large flat mass is needed the receptacle is shaped accordingly. A piece of chamois skin or blotting paper may be used inside the towel or between its folds; the closer texture facilitates the hard freezing of the outer layers of the mass, but this is not necessary. An important point is the very tight and thorough bandaging of the towel cone to the neck of the vent. As much resistance to the gas pressure as is possible together with a porous material that will allow the ice to freeze up in its interstices is required. The entire appliance is then firmly closed and bound up with another bandage. Improper closure, and especially insufficient bandaging around the vent permits the too rapid escape of the gas and inefficient packing of the ice.

"The cylinder is then laid on a table or chair, partially inverted so that the vent is lower than the body of the container, and by means of the key and upper stopcock, the gas is allowed to run into the towel cylinder fairly slowly. There will be some escape of gas and snow under any circumstances; but the less there is the more successful will be the drawing. If there is a large escape at any one point, and this is especially prone to occur around the vent, it must be reinforced with more bandaging. The gradual hardening and getting cold of the bandaged mass shows the filling of the cylinder with the solid material; and the dioxid is frozen solid in the interstices of the containing towel, chamois, and bandages. There is now a mass of softer solid dioxid contained in a hard resistant envelope of frozen material, and this must be packed into ice. The stop cock is now opened wider so that gas escapes in a series of short and violent jets; a distinct crackling of the mass shows that solid hard ice has formed. The tank is then closed, the bandage removed, and the solid dioxid ice is ready for use. It will always be found that the hardest part of the ice cone is that formed at the vent of the cylinder; hence that is the end to be employed when applications of extended time and with pressure are to be made."

By this method a mass may be obtained of any degree of hardness and of any size. It may be shaved or whittled into any desired shape. Being formed in large and solid masses it will last for hours if properly protected, so that it can be prepared in the office and carried to the patient's home. Wrapped in paper and placed in the ice box, or out of doors in cold weather, it will last for from four to six hours. It will also remain as ice for hours if placed in a vacuum bottle.

The solid material may be made into any shape required, but the mass should be at least an inch in length, on account of the rapidity with which it disappears. The duration of the application may vary from thirty seconds to two minutes. The amount of pressure depends on the extent of action desired.

The application may be so light and of so short duration that only a slight erythema, without vesiculation, is produced, and the normal condition is soon resumed.

If a somewhat firmer pressure is used for a somewhat longer time, distinct vesiculation follows, which is succeeded by the formation of a thin scar.

If the application is more vigorous and continued for a still longer time, the entire thickness of the skin may be destroyed.

The result of an ordinary application of medium intensity with moderate pressure for thirty seconds is described by Gottheil thus: "As the ice cone melts down, the skin around it swells up slightly, so that when the application is over we have a snow-white solid congealed area that is depressed below the skin and is surrounded by an erythematous, hard, raised border. The congealed area rapidly thaws out from the periphery, and in a few minutes it has disappeared. The treated area becomes red and swells up, and in half an hour or so vesiculation is distinct. The bleb is left to dry up of itself; no dressing is applied except when it is necessary to protect the lesion from injury; and in a few days it forms a dry crust."

The applications are attended by but a slight amount of pain. After the thawing there is some burning and throbbing which does not last more than two or three hours.

If the tissues are not frozen deeply, there is no necessity of applying any dressing. When, however, the parts are frozen to a considerable depth, and the patient is careless and uncleanly, so that infection occurs, the same treatment must be followed as in other infected wounds.

The treatment may be repeated if necessary after intervals of one or more weeks.

When the lip is treated a layer of dry cotton must be placed between it and the gum to protect the latter from being frozen. Similarly when treating the eyelid it must be pulled away from the eyeball and cotton used between the two to prevent undesirable extension of the freezing. Care must be taken to dry the parts and to keep the cotton dry lest such accidental moisture should become frozen. After light applications there will either be no scar tissue or it will be so superficial as to be almost invisible.

Gottheil says that when the destruction of tissue has been deeper a veil-like covering of connective tissue can with careful applications be secured with a texture which can hardly be distinguished from that of normal skin, and with such thickness and contractility as is desirable. This may be useful in covering up extensive or deep-seated lesions whose complete destruction is impracticable.

The scar when visible is smooth, superficial and soft, and cannot be duplicated in these particulars by any other method.

This refrigeration by means of the carbonic acid snow is applicable to a variety of skin diseases which have not hitherto been treated very satisfactorily by other methods. Gottheil enumerates birthmarks of every variety and all sizes, port-wine stains and angiomata, superficial and deep, pigmentary, hairy, and hypertrophic congenital deformities of all kinds, and even cavernous angiomata. In leucoplakia and precancerous keratosis it is useful, and it also removes the warty and degenerating growths which appear on the hands of those who use the Roentgen ray. Rodent ulcers and superficial epithelioma may be apparently cured. In deeper infiltrating cancer of the skin, in keloid and lupus vulgaris its value has not yet been definitely determined. Senile warts, papillomata and other small tumors are successfully destroyed by it. Gunpowder stains and other foreign substances embedded in the skin may be removed by its use. In lupus erythematosus it surpasses all other forms of treatment.

Readers of The Journal who may wish to read further on the subject will find that we have published the following articles, among others:

Tousey, Sinclair: Blotting Paper Mold for Obtaining Crayons of Carbonic Acid Ice, The Journal A. M. A., 1910, liv, 1519.

Stelwagon, Henry W.: A Convenient Source of Carbon Dioxid Snow, The Journal A. M. A., 1909, liii, 1205; The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Lesions of the Skin, The Journal, 1907, xlix, 1354.

Pusey, W. A.: Expensive Molds for Solidified Carbon Dioxid, The Journal A. M. A., 1909, liii, 459.

Hutchins, M. B.: Mold for Carbon Dioxid Snow, The Journal A. M. A., 1909, lii, 786.

Sutton, R. L.: Mold for Carbon Dioxid Snow, The Journal A. M. A., 1909, lii, 464.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 23, 1910

MILK AND DISEASE

That food is the most important immediate means through which bacterial diseases are transmitted to man is becoming more and more evident. Air and water were at first given the chief credit, but it is now believed that they are more frequently intermediate agencies in the spread of such diseases; for bacteria do not multiply rapidly in water, on account of the lack of nourishment, and in the air desiccation and sunlight tend soon to destroy them.

While bacteria in sufficient numbers to produce disease may be ingested with water and taken in with the air, yet undoubtedly the most frequent means of transmission is through food products which have been infected by contact with the air, water, flies, inanimate objects and persons handling them.

Among food products as mediums of bacterial transmission, milk, on account of its physical state as a liquid, and its chemical advantages as a culture medium, occupies a place of first importance. The surface of solid foods under the most favorable conditions would not furnish as good a culture ground for bacteria as milk, and doubtless the digestive juices destroy large numbers of them. But in milk, bacteria multiply with amazing rapidity, the rate, of course, depending on the temperature. The products of milk—butter, cheese and margarin, both fresh and salted—may contain and preserve for considerable periods the tubercle bacillus and various pathogenic bacteria. The milk itself may become infected with the bacillus of bovine tuberculosis either through the blood or lymphatics, from local lesions of the udder or from the feces, which latter, in cattle with tuberculosis, have been found to contain large numbers of tubercle bacilli. The list of diseases found to be transmitted through milk is increasing, and in addition to tuberculosis and typhoid fever, we have scarlet fever, diphtheria, possibly measles, and diseases such as actinomycosis, anthrax and cowpox, as well as some of the gastro-enteric infections produced by the colon group and streptococcus infections.

A safe raw milk would be milk from healthy cows, drawn and handled in a cleanly manner by healthy attendants, transported, handled and delivered to the consumer at a temperature not exceeding 50 F., and within the least possible time. Much effective work has been carried on in many parts of the country to obtain legislation which secures a purer milk supply for cities, and the ascertained improvement in general health conditions, and especially in the death-rate of infants and children, is most gratifying, but much yet remains to be done in securing proper supervision and a better understanding on the part of the producers and consumers as to the danger from contaminated milk and the method of avoiding it.

In the production and handling of milk, however, the sources and possibilities of contamination are so numerous that even under the most rigid precautions from producer to consumer, the conditions may never attain the essentials of reasonable safety. In some recent investigations by the laboratory of the United States Public Health and Marine-Hospital Service in Washington, where much work has been done in dairy and milk sanitation, it was found that the bacterial content of samples of milk, some of which were being used in the hospitals, reached in one instance the enormous number of one hundred and eleven million to the cubic centimeter. While not all of these bacteria were pathogenic organisms, it must be admitted that the ingestion of such cultures is liable to produce disease. Therefore, in addition to the enforcement of the production of clean milk by legislation, education and inspection, the safe thing to do is to employ sterilization or pasteurization, not, as has been said, for the purpose of making bad milk good, but to render milk of doubtful wholesomeness safe. Pasteurization is a simple and measurably efficient method of accomplishing this result, and although pasteurized milk may have some disadvantages for younger children, there can be no more objection to heating milk for children on a general diet, and for adults, than to cooking many other forms of food. Pasteurization, to be effective, should be done under proper regulation and inspection, for much of what passes for commercial pasteurization is little better than no treatment at all, in that it leads to a false sense of security on the part of consumers. But until all the conditions for the production and handling of a strictly clean and sanitary milk can be complied with—an enormous task, and one requiring much time to accomplish—proper pasteurization offers without delay and with the least expense a reasonably efficient means of preventing much disease and death. Opposition to this measure by municipalities, as is seen in the case of pending legislation in Chicago, is unfortunate and not based on a correct understanding of the value and necessity of this simple method of lessening or preventing the spread of many bacterial diseases.

SMALLPOX IN THE UNITED STATES

Smallpox has been unusually prevalent in the United States during the past ten years. In the three years 1901 to 1903 the disease reached epidemic proportions; during this time four thousand six hundred and fifty-eight deaths were recorded.[1] In 1902 Massachusetts reported two thousand three hundred and fourteen cases; and in the same year New York probably had no less than nine thousand cases. Trask,[2] who has recently studied the subject, found that there were thirty-five thousand one hundred and seventy-four cases officially recorded in the United States in 1908. The actual number was undoubtedly twice this, or over seventy thousand. Last winter smallpox prevailed to a greater or less extent in almost every state in the Union. So imperfect, however, are the vital statistics in most of our states that we are in ignorance of the actual amount of smallpox occurring. We can only guess whether the disease is on the increase or on the decrease, and it is impossible to trace its spread.

The mortality of a disease like smallpox, which varies greatly in its virulence, gives no estimate of its prevalence. Thus, during the past ten years in this country the smallpox mortality rate has varied at different times and places from less than 1 per cent. to over 30 per cent. While the disease for the most part has been mild and the mortality on the whole comparatively low, yet, as has been observed in all countries during the prevalence of smallpox, or during epidemics, it may flame up in a most virulent form at any time among the unvaccinated population and result in frightful mortality and lasting and costly morbidity. This country is in no way exempt from such a possibility. It is estimated that at least one-tenth of the population of our country is not vaccinated. This means that there are some eight to nine million people who are fuel for the flames. It seems that with this large number of unprotected people smallpox will be with us for a long time. Costly epidemics should not be allowed to occur by reason of a foolish relaxation of this remarkable preventive measure, and the agitation against it by a few misguided individuals should not prevail against incontrovertible facts and figures.

When we compare the smallpox situation in our land with the superb results obtained in Germany since 1874, through compulsory vaccination and revaccination, we have reason to feel humiliated at the backwardness of our public health forces.

The prevention of smallpox constitutes a public health problem which is elemental in character. The eradication of this disease is very easy when compared with the difficulties and intricacies of such problems as the stamping out of typhoid fever, or the suppression of tuberculosis.

ACCIDENTAL DEATH IN EPILEPSY

The sixteenth annual report of the Craig Colony for Epileptics at Sonyea, Livingston County, New York, is of more than passing interest because it calls attention to the special necessity for guarding epileptics from accidental death during their seizures. During the existence of the colony there have been 2,732 individuals under treatment with 582 deaths. In spite of this large death-rate the average age at death was over thirty years, though the occurrence of more than half the deaths between fifteen and twenty-nine and the largest number of deaths at nineteen, shows that the expectation of life is materially shortened in epilepsy. This, however, is not (as would ordinarily be thought) so largely due to the disease as it is to the number of sudden deaths from accidents of various kinds that occur during the attack. Altogether there were ninety-nine sudden deaths, more than one-sixth of all the fatal cases. Attention is called to the fact that this is the most serious danger for the epileptic and that the death-rate would be very materially reduced and the expectation of life in these patients brought up very nearly to normal if these accidents could be guarded against.

The death within the year of Miss Jean Clemens as the result of drowning in a bath-tub during an epileptic fit, which proved the last straw of misfortune for her distinguished father, is a typical instance of these cases. The Craig Colony report adds stories with regard to patients falling in their attacks with their throats across a wire or other edge, or in which the patients during the attack have rolled on their faces during the rigid phase, burying their mouths and nostrils deep in soft pillows with resulting suffocation. It is probable that many of these fatalities could be avoided if their danger were more definitely realized and more generally kept in mind. The fact that they occur at Craig Colony, in spite of the thorough appreciation of the danger, shows that not all of them can be prevented, but certainly many of them might be. Even so simple a precaution as a hair pillow instead of one of feathers would probably save a certain number of lives every year. The precaution of having some one in attendance whenever an epileptic takes a bath, especially in a large tub, would save some. This practice should be carried out even when there are long intervals between the attacks. It is troublesome, but every year some fatalities call attention to its necessity.

With the increase of intelligent care for epileptics, especially the simple life which has been proved so beneficial in the colony system, and which of course can be applied in private life where patients are able to afford it, even better than in institutions, the length of life of epileptics, their usefulness to themselves and their possibilities of happiness are much enhanced. The question, therefore, of the prevention of accidental death becomes more and more important. Not very long ago, when such patients died suddenly, there was a feeling that after all it was best for them, since they could not look forward to any usefulness or happiness; and while this feeling did not foster actual neglect, it did somewhat lessen the vigilance exercised over the epileptic. Now all this has been changed; and so the [illegible] of accidental death in epilepsy must be before every physician's mind who has epileptic patients under his charge. The danger must be carefully impressed on those who are in close relations to patients in order to secure just as many precautions as possible against such an unfortunate occurrence.

---

[1] These figures are taken from the Public Health Reports of the U. S. Public Health and Marine-Hospital Service.

[2] Trask, John W.: Smallpox in the United States, Am. Jour. Pub. Hyg., February, 1910, xx, 133.

Current Comment

PRESS COMMENTS ON THE REPORT OF THE CARNEGIE FOUNDATION

Any movement directed toward the securing of better-trained physicians will usually meet with public approval. Hence it is not surprising that almost universally the newspapers have made favorable comment on the report on medical education recently issued by the Carnegie Foundation for the Advancement of Teaching.[1] Some of the few adverse comments still show concern for the "poor boy who wants to study medicine" and for the "sparsely settled country districts," which, according to the argument, would be without physicians if fair educational standards were maintained. That even the country districts have no reason to be alarmed regarding physicians is shown by the Knoxville (Tenn.) *Sentinel*:

> The more compact settlement of the country, the spread of good roads, the telephone and the automobile will in time make it possible for the distant farmer to summon from the city, doctors learned in all the lore of the German, the Austrian, the French and of the American universities. When that time comes doctors will have to seek the best schools or risk having no patients. Even now unnecessary multiplication of medical schools should be avoided and many of those in existence might be merged with advantage to all concerned except the doctors who get valued advertising from their position as teachers.

As to the "poor boy" argument, the Omaha *Bee* says:

> It is not narrowing the lines of opportunity to the poor but ambitious young man and woman to reduce the number of medical schools by raising the standard of efficiency. There are always ample opportunities for those who make good in medicine as elsewhere and for the physician who has the making of success the best medical school preparation is none too good.

That the profession is at present overcrowded and that higher standards of medical education and licensure are needed are recognized in the following from the El Paso (Tex.) *News*:

> It is extremely deplorable that so many doctors and lawyers are every year turned loose on the public, many of whom are utterly unfit to render the service demanded of them. The efficiency and capableness of both doctors and lawyers depend on the standard of the schools from which they graduate, and the standard of the schools, law or medical, depends in many instances on the regulations prescribed by the state laws. Where the state does not require a very high standard of efficiency and is willing to grant licenses on a mediocre basis, schools of inferior rank are bound to spring into existence and it is from such schools as these that hundreds of badly and improperly trained doctors and lawyers are annually turned out.

Regarding the statement that higher standards will tend to reduce the number of physicians to fewer but better prepared men, the New York *Times* says:

> On the face of it, a plan to restrict the physician's career may seem a wrong one to those seeking to enter it, may savor of the denial of the individual freedom to which we Americans are devoted—and addicted. But there will remain complete liberty for the more competent, and that the competent only shall be allowed to practice is one of the plain, universal, unalienable rights of the whole community.

The New York *Globe* draws a pointed comparison between the St. Louis college which brought suit for damages against the Foundation for publishing its shortcomings and the action taken by an Iowa college which did not raise a cry of "slander" but began an energetic campaign whereby sufficient funds were obtained to put it on the right basis. Regarding the continuance of low standards it also adds:

> If the doors of the state university, rich in educational opportunities, qualified to turn out real doctors, lawyers, engineers, and the like, are open to all, why should the manufacture of feebly qualified professional men or other be tolerated at all?

Although there may be statements of detail which might be criticized in the Foundation's report, generally speaking the statements made are recognized as the truth by those who are in position to judge. While the truth sometimes hurts, nevertheless any presentation of the actual facts cannot result otherwise than in good to the cause of medical education. The need of improvement has long been recognized by the majority of medical colleges, and these schools, rather than decry the Foundation's criticisms, will earnestly endeavor to correct their faults and thereby obtain real benefit from the Foundation's investigation.

SCARLET RED FOR ULCERS

In 1906 Fischer,[1] of Bonn, observed that the subcutaneous injection of scarlet red in olive oil was followed not only by an inflammatory reaction but also by an active multiplication of the epithelial cells of the skin. By this means such marked overgrowth of epithelium occurred that the microscopic picture of carcinoma was closely simulated. These experimental lesions, however, differed from true carcinoma in that they retrogressed and degenerated after the injections were stopped, and never formed metastatic growths. Because of these facts, he suggested that scarlet red might be used therapeutically. H. F. Helmholz[2] in the following year confirmed Fischer's experiment. But it was not until Schmieden's[3] research that any results from a therapeutic use of the drug were recorded. At his hands marked improvement was found to occur in the healing of old ulcers. Later reports by others were equally enthusiastic. Last year Davis[4] reported the results obtained by him in the treatment of about sixty cases of various sorts of ulcers. His conclusions are that in general the time of healing and epitheliation is greatly shortened by the use of scarlet red and that "the stability, thickness and normal appearance of the healing" are noteworthy.

---

[1] This report should be read by every physician. While it is a book of 346 pages it may be obtained by merely sending 17 cents for postage to the Carnegie Foundation, 576 Fifth Ave., New York City.

[1] München. med. Wchnschr., 1906, liii, 2041.
[2] Bull. Johns Hopkins Hosp., 1907, xviii, 365.
[3] Centralbl. f. Chir., 1908, xxxv, 153.
[4] Bull. Johns Hopkins Hosp., xx, 176.

UNTRUE AND MISLEADING ADVERTISEMENTS

The State of New York has a law that prohibits the publishing of "untrue and misleading advertisements." Few people are aware of its existence, but the other day Assistant District Attorney Moscowitz of New York City resurrected it to good effect. A dealer advertised that he had purchased several thousand raincoats at a "customs seizure" and was going to sell them at marvelously low prices. The deputy collector of the port swore that no such seizure had been made. Hence the arrest and arraignment of the dealer. Now that the ball has been set rolling, the possibilities of this resuscitated law seem great. For instance, the Dr. A. C. Sanden Company advertises in the New York papers the wonderful virtues of its "health belt." A man wearing this device "cannot grow old; he must be young forever." Would this come in the "untrue and misleading" class? In another New York paper of the same date we are told of the "miraculous cures of cataract," in fact, of "all eye diseases," which the "Magic Eye Lotion" brings about! Can this be "untrue and misleading?" And, in another line of activity, we are told through a New York paper that the "bland qualities" of "White Rock" "make high-balls harmless." Either this is "untrue and misleading" or physiologic chemistry needs revising. These are but a few to start with, but the field is broad and there is no lack of material to work on.

AUTOMOBILES AND THE BIRTH-RATE

Mr. E. T. Fairchild, who has taken the school census for the present year in Kansas, says that since the appearance of the automobile in rural circles the number of births has decreased. We doubt whether this reasoning will hold, although we do not question the coincidence. By the same token, droughts, grasshoppers and mortgages must have had a stimulating effect on the birth-rate in the prairie state. The decreasing birth-rate and the increase of the farmer's bank account are alike caused by the growing wealth of the farmer and the changed standards of living as a result. The automobile should not be held responsible for the relative absence of babies, although it has probably served as a substitute in many cases.

ALLOPATHY A MEANINGLESS TERM

On another page a correspondent protests against a statement regarding the use of the term "allopathy" contained in the Chapter on Sects in the Flexner Report, an abstract of which we published two weeks ago. Mr. Flexner's article was reprinted, not only for its able discussion of the problem of medical sectarianism, but quite as much because it presented the subject from the standpoint of the layman. It does not necessarily follow that THE JOURNAL endorses all that was contained in the chapter. Webster defines "allopathy" as "that system of medical practice which aims to combat disease by the use of remedies which produce effects different from those produced by the special disease treated—a term invented by Hahnemann to distinguish the ordinary practice as opposed to homeopathy." If this definition means what it says, then there are very few allopaths, for we doubt if any physician administers or has administered remedies in accordance with any such theory. The term is a meaningless one and is disclaimed by all physicians, not only because it is meaningless but because the true scientific physician belongs to no school and to no sect; he bases his methods of diagnosis and his treatment on no dogma and on no ism. He is simply a physician, and he neither needs nor desires any adjective to modify the term. On the other hand, the word "regular" is equally objectionable to the sectarians, and naturally so since its use, by inference, classes them as "irregulars." Whatever sectarian distinctions exist, however, have been created by the sectarians themselves, and, with the exception of those who proclaim themselves the followers of some special creed or prophet, the term "physician" is amply descriptive and distinctive.

Medical News

COLORADO

Personal.—Dr. Alexius M. Forster, Baltimore, has purchased Cragmoor Sanitarium, near Colorado Springs, for $50,000. A large sum will be spent in renovating and improving the place. ——Dr. Joseph E. Peairs, city health commissioner of Pueblo, has resigned to go east for postgraduate work. ——Dr. Laura L. Liebhardt, Denver, has gone to Europe for a year's study. ——Dr. Charles B. James, county physician at Denver, has been succeeded by Dr. Allen, South Denver. ——Dr. Marion S. Middlekamp has been appointed county physician at Pueblo, vice Dr. William H. Campbell, resigned, and Dr. Elmer A. Elder has been appointed health commissioner of the city of Pueblo.

ILLINOIS

Hospital for Ottawa.—By the will of the late S. E. Kivg, Ottawa, $40,000 has been left for a hospital in Ottawa.

Personal.—Dr. Robert S. McCaughey, Hoopeston, is in Germany. ——Dr. John W. Huston, Virginia, has gone to Asheville on account of his health.

Chicago

Officers of Surgical Society.—At the last meeting of the Chicago Surgical Society the following officers were elected: President, Dr. Jacob Frank; vice-president, Dr. Charles Davison; secretary, Dr. Frederic A. Besley, and treasurer, Dr. Dean Lewis.

Fresh Air Schools Open.—Fresh air schools for weak or tuberculous children were opened in the north, west and south sides of Chicago July 12 by the board of education in cooperation with philanthropic agencies. No definite course will be given, but instruction will be given the children in hygiene and dietetics. Four meals a day will be furnished the children by the Chicago Permanent School Extension Committee of the Woman's Club, and a physician will be provided by the Tuberculosis Institute.

For Better Health.—The campaign for better health conditions in Chicago includes a permanent milk commission, which will have an appropriation to carry on its investigations and experiments; milk ordinances are to be strengthened, and the transportation of milk is to be looked after more carefully, the making of ice cream is to be supervised; further attention is to be given to the dumping of refuse into the lake; dry sweeping in the down-town section will be reduced to the minimum, and the ten-hour law for women, recently upheld by the supreme court, will be vigorously enforced.

Campaign Against Typhoid.—Chicago, the second largest city in the United States, has the lowest death rate from typhoid fever of any of the large cities in this country, the record being 12 deaths for every 100,000 of population. In order to reduce this figure, a systematic study of typhoid fever in Chicago will be made this season. Dr. Leslie L. Lumsden, passed assistant surgeon U. S. P. H. and M-H. Service, has been detailed to investigate typhoid in Chicago, in cooperation with the Chicago health authorities. The plan is to make an extensive study of typhoid in as many parts of Chicago as possible. In this work Dr. Lumsden will have the help not only of the health department but of the Visiting Nurse Association and other organizations. The medical inspectors and laboratory of the health department will report typhoid directly to Dr. Lumsden. The cooperation of physicians is also requested. It is desired that physicians shall report the termination of all cases of typhoid, giving date of recovery, in order that examination may be made to determine if the patient is safe. Nurses and inspectors will visit each case to inquire into the measures employed for the safeguarding of the community. This is only for supervision, and will leave to the physician in attendance every detail of the treatment. Blood examinations and blood cultures will be made in the laboratory, in which work it will be assisted by Prof. Jordan, of the University of Chicago. Dr. Lumsden has had wide experience in the investigation of typhoid outbreaks in numerous points throughout the country, and it is hoped to make the record of Chicago equal to that of European cities like Berlin, Vienna and Rotterdam, where the average is between three and six deaths for each 100,000.

INDIANA

Tuberculosis Colony Reopened.—The Indianapolis city council has voted a fund for the maintenance of the City Tuberculosis Colony which was closed recently because of lack of funds.

Children's Dispensary.—The Children's Medical Dispensary was opened on July 5, at 1325 West Division Street, Indianapolis. The work of the dispensary is to be largely educational. Milk will be supplied for babies and advice given to mothers in regard to infant feeding.

Meeting of Alumni Association.—At the meeting of the Alumni Association of the Indiana University School of Medicine, Dr. Alfred Stengel, Philadelphia, was the guest of honor. Dr. Norman E. Jobes, Indianapolis, was elected president, and Dr. Benjamin P. Weaver, Fort Wayne, secretary.

District Meeting.—At the meeting of the Third Councilor District Medical Association, held at New Albany, the following officers were elected: President, Dr. James B. Duncan, Bedford; vice-president, Dr. James P. Salb, Jasper, and secretary, Dr. Isaac N. Ruddell, Jeffersonville. Dr. Joseph M. Mathews, Louisville, was the chief speaker of the meeting.

Personal.—Dr. William Palm, Harmony, has been appointed physician of the Orphans' Home at Knightsville.——Dr. Edward J. Dubois, Indianapolis, has been appointed bacteriologist and pathologist of the city laboratory.——Dr. Orange G. Pfaff, Indianapolis, was seriously injured in an automobile accident at Little Falls, N. Y.——Dr. William A. Spurgeon, Muncie, and Dr. Moses S. Canfield, Frankfort, have been reappointed by the governor on the State Board of Medical Registration and Examination.——Dr. Frank B. Wynn, Indianapolis, has been appointed chairman of the Civil Improvement Commission.

KENTUCKY

Physicians Graduate.—At the commencement exercises of the Medical Department of the University of Louisville June 20, 202 physicians were given diplomas.

Personal.—Dr. Louis H. Mulligan, for a number of years superintendent of the Central Kentucky Asylum for the Insane, Lakeland, has resigned. Dr. William E. Gardner, who was first assistant under Dr. Mulligan, succeeds him.——Dr. [illegible], Louisville, has been appointed United States marshal for the district of Kentucky.——Dr. Joseph L. Barr, physician at the Frankfort penitentiary, has resigned and has been succeeded by Dr. Elijah H. Maggard, Ashland.——Dr. John A. Watkins, physician at the Eddyville penitentiary, has become assistant physician at the Hopkinsville asylum. He was succeeded by Dr. Richard H. Moss, Hodgenville.——Dr. Edward L. Pennington, Owensboro, has been appointed coroner of Daviess County.

LOUISIANA

Personal.—Dr. Marion S. Souchon, demonstrator in anatomy at Tulane University, has resigned, as have also Dr. J. Frank Points, assistant demonstrator in anatomy, and Dr. Israel S. [illegible], instructor in chemistry.——Dr. and Mrs. Otto Lerch, New Orleans, are in Europe.

Panama Exposition.—At the meeting of the State Medical Society in May a resolution was adopted approving of the plan of holding a world's Panama exposition at New Orleans in 1915, and expressing the belief that a proper impetus would be given thereby to matters of sanitation.

For Fraudulent Use of the Mails.—Dr. Roland Register, Dr. Alexander S. Dyar and Dr. W. H. Hale, New Orleans, have been found guilty of using the mails to defraud, in sending out circulars making false claims and guarantees of cures, and have been sentenced to the federal prison at Atlanta and given large fines.

Tulane Medical School.—The Medical School of Tulane University has inaugurated a summer medical school. It opened in May with over twenty matriculates. Harvard and the University of Michigan are the only other big colleges in the country that have summer schools of medicine. A considerable part of the work of the school relates to the subjects and courses covered in the regular curriculum, and is intended for the purpose of review. There is also offered advanced work, including research work for students and physicians. The course will be extended and lengthened hereafter. The medical alumni of Tulane residing in Arkansas met May 4 and organized a state association, and on May 11 they organized a similar association in Texas. During the life of the medical department, more than 4,600 physicians have been turned out by Tulane.——The alumni of Tulane held its annual reunion in St. Louis during the meeting of the American Medical Association, and a banquet was held at the Hotel Jefferson. Dr. Robert B. Bean, recently connected with the School of Medicine of Manila, P. I., has been elected associate professor of anatomy in place of Dr. H. W. Stiles, who has accepted a professorship in anatomy in Syracuse University.

MARYLAND

Fahrney Reunion.—The Fahrney family annual reunion of several hundred descendants of Dr. Peter Fahrney, a picturesque character of Washington County, Maryland, will be held at Mapleville, Md., July 30. The membership extends over several states.

Baltimore

Warren Prize Awarded.—The Warren triennial prize for 1910, consisting of $500, has been awarded to Dr. George H. Whipple, Johns Hopkins Hospital, for his essay entitled "The Pathogenesis of Icterus."

To Assist Commission.—Mr. Alex. A. Wilson, head of the Phipps Institute, Philadelphia, has been appointed by the municipal tuberculosis commission to assist in its investigation. He will spend three days each week here until his report is completed. Mr. Wilson has done important work in Boston and Chicago.

Floating Hospital Advocated.—Dr. R. Martin Burns advocates the founding of a floating hospital for babies. He urges the chartering of two steamers accommodating 600 children, with operating room on each, under a physician and surgeon, and a staff of young physicians and nurses. They should be anchored down the bay and should accommodate children, both white and colored, up to 5 years of age.

Library Bequest to Dr. Welch.—Major Richard M. Venable, who died June 10, bequeathed his library to Dr. William H. Welch. He was a great reader and in his will he says: "In this library will be found quite a collection of books on religious and theologic subjects. These and the notes on them by me represent a protracted struggle for the light." Dr. Welch is also left $100 to purchase some memento of the deceased.

New Hospitals.—Building operations on the Phipps psychiatric clinic at Johns Hopkins Hospital begin this week. Mr. Phipps gave $1,000,000 and the building will cost $750,000 or more. It will be 175 by 110 feet and will require about eighteen months to complete. The Pittsburg Building Company have the contract. It will be a five-story brick structure.——The Harriet Lane Johnston Hospital for Children is approaching completion.

Medical School Opened to Women.—The faculty of the Maryland Medical College announce that with the coming session the doors of that institution will be opened to women. The instruction for the first and second year students will hereafter be given in the evening. At a meeting of the faculty and alumni, July 12, a "clinical society" was organized, which will meet on the second Tuesday of each month. The following are the officers: President, Dr. A. E. Grempler; vice-president, Dr. J. G. Selby; secretary-treasurer, Dr. James A. [illegible]

Personal.—Dr. J. F. Hawkins was operated on for appendicitis at University Hospital July 13.——Dr. John M. Bergland has gone to Biddeford Pool, Me., as resident physician.——Dr. John R. Winslow left July 16 for a summer in Germany and Holland.——Dr. Andrew H. Whitridge sailed for Europe July 16.——Dr. John T. King sailed for Naples July 16.——Dr. G. Halsted Boyland, who has lived in Europe several years, is visiting Baltimore.——Dr. Roland B. Whitridge is traveling in Spain.——Dr. R. Y. McLeod, a confederate veteran, of Sumter, S. C., is at the Johns Hopkins Hospital for treatment of wounds received during the civil war.——Dr. William J. Messick was elected treasurer of the Delaware Society of Maryland.

Standards for Ice Cream.—Dr. Charles Caspari, Jr., pure food and drug commissioner, is the official judge of ice cream in Maryland. He has divided it into three kinds—plain, fruit and nut. He demands that there shall be 4 per cent. of butter fat in the first two and 6 per cent. in the last. In none must there be more than 1 per cent. of gelatin, which is used by manufacturers to give it firmness. He is providing labels which manufacturers are to put on the outside of the containing vessels. These give the exact amount of the substances used and when the article was packed. A corps of assistants will see that the law is enforced. Violations are punishable with a fine of $500 or imprisonment for a year, or both.

MICHIGAN

New Home of Wayne County Association.—The property at 33 High Street, East, Detroit, has been purchased by the Wayne County Medical Association. The building will be remodeled for a meeting-place and club house. It will be fitted up with a large auditorium, a library and a clinical laboratory.

Antituberculosis Dispensary.—The offices and headquarters of the Houghton County Antituberculosis Society have been moved to Calumet. One of the first acts of the society will be to open a free dispensary in connection with the new headquarters, in charge of Miss Ehlert, the society's visiting nurse.

Personal.—Dr. Ellsworth Orton, health officer of Pontiac, has resigned.——Drs. William P. Melody and D. E. Binning have been appointed city physicians of Detroit by the poor commission.——Dr. Arthur M. Hume, Owosso, has been appointed chief surgeon of the Ann Arbor Railroad to succeed Dr. Louis L. Syman of Toledo, who resigned.——Dr. Jacob W. Rothacker, a former city physician of Detroit, has been appointed coroner to succeed the late Dr. John F. Bennett.——Dr. M. Maywood Sears, Kalamazoo, was seriously injured by jumping from his automobile to avoid a collision with a train.——Dr. Beverly D. Harison, Detroit, has received the degree of A.M. from the University of Michigan.——Dr. Freeman A. Jones, Lansing, has been reappointed city physician.

College Commencement.—At the forty-second annual commencement of the Detroit College of Medicine, thirty-seven physicians were graduated. Chase S. Osborn, Sault Ste. Marie, made the principal address to the graduating class. He suggested that the practice of medicine, especially scientific hygiene and sanitation, should be placed on a public basis. Local, state and government health departments are doing much but not enough. The public must be awakened along every line. The annual banquet was held at the Hotel Cadillac. Dr. John N. Bell acted as toastmaster.——At the annual meeting of the alumni, 330 members registered. Dr. Gilbert J. Anderson, Detroit, was elected president; Dr. William T. Henderson, Mobile, Ala., vice-president; Dr. Frederick G. Buesser, Detroit, secretary (reelected), and Dr. J. H. Dempster, historian of the alumni association.——According to the president, Dr. Richard E. Mercer, there is no possibility of a merger of the Detroit College of Medicine with the University of Michigan, as has been rumored.

MINNESOTA

Personal.—Dr. Herbert G. Lampson, Minneapolis, has been appointed to the faculty of the Medical Department of the University of Minnesota.——Drs. Joseph B. Budd, Two Harbors, and Charles P. Robbins, Winona, have gone to Europe, the latter for a year's study.

Society Meetings.—The forty-second annual meeting of Wabasha County Medical Society was held at Millville July 7. The following officers were elected: President, Dr. Ernest A. French, Plainview; vice-president, Dr. M. J. Shaughnessy, Wabasha; secretary-treasurer, Dr. William F. Wilson, Lake City; delegate, Dr. William J. Cochrane, Lake City; alternate, Dr. Emery H. Bayley, and censor, Dr. Jesse A. Slocumb, Plainview.——The Southern Minnesota Medical Association will meet in Winona August 4. An interesting program has been prepared.

Changes in Faculty.—The following changes have been announced in the University of Minnesota College of Medicine and Surgery: Dr. Frederick A. Dunsmoor, formerly professor of clinical and operative surgery, has been made professor of clinical surgery, and Dr Herman A. Bouman, clinical instructor in surgery. The following clinical instructors have been made assistant professors: Dr. Frank F. Burch, in ophthalmology and otology; Dr. Elmer H. Parker, in rhinology and laryngology; Dr. J. H. Hewitt, demonstrator in pathology and bacteriology, and Dr. Olaf A. Olson, clinical instructor in surgery.

MISSOURI

Personal.—Dr. Isaac E. Hill has been appointed pension examining surgeon at Hannibal to succeed Dr. Richard Schmidt, resigned.——Dr. Milton P. Shy, Knobnoster, has been appointed surgeon of the M., K. & T. Railroad, vice Dr. McNeil, resigned on account of ill health.

Milk Commission Named.—Dr. Charles R. Woodson, president of the St. Joseph-Buchanan-Andrew County Medical Society, has appointed a milk commission for St. Joseph, consisting of Drs. John M. Bell, Oliver C. Gebhart, Emmett S. Ballard and Clarence A. Good. The commission will inspect and examine milk furnished for sale in St. Joseph, and pay particular attention to methods employed at dairies and endeavor to improve the sanitary conditions which surround the preparation of milk for the market. The commission will work in connection with the medical society for this cause.

St. Louis

Traveling Tuberculosis Exhibit.—The Missouri Association for the Relief and Control of Tuberculosis has arranged for a traveling tuberculosis exhibit occupying two cars. The trip began July 20, and will be in charge of Dr. James Stewart, medical adviser of the board of education, who will deliver lectures in all towns visited, assisted by local physicians in each place. The whole trip will consume nine months and practically every town in the state will be visited.

Staff Appointments Announced.—St. Louis University has announced the following staff appointments at Alexian Brothers' Hospital for the ensuing year: Dr. Charles H. Neilson, visiting physician, chief of staff; Dr. Ralph L. Thompson, pathologist; Dr. William W. Graves, neurologist; Dr. Carroll Smith, surgeon; Dr. Harvey S. McKay, surgeon; Dr. John W. Marchildon, physician genito-urinary department; Dr. Clarence Loeb, oculist; Dr. William M. C. Bryan, laryngologist.

Personal.—Dr. Michel Hanna has received appointment as physician to the government board of health at Zagazig, Egypt. He is a graduate of St. Louis University.——Dr. Floyd Stewart has been reappointed surgeon-general of the United Sons of Confederate Veterans.——Dr. Guthrie McConnell has been offered the position of assistant professor of pathology in the University of California, Berkeley.——Dr. H. O'Hara May, of the medical corps of the British government, of the Gold Coast, West Africa, who is making a trip through the United States, is spending some time in St. Louis.

New Medical Instructors.—Dr. Frederick A. Baldwin, Dallas, Texas, who was assistant bacteriologist and pathologist of St. Louis during the World's Fair, has accepted the chair of pathology and clinical medicine at the American Medical College.——The trustees elected Dr. Thomas G. Atkinson, until recently professor of nervous diseases in the Chicago College of Medicine and Surgery, to the chair of neurology, and George M. Heath, instructor in pharmacy and chemistry in the University of Michigan, has been elected professor of physics and physiologic chemistry. The new instructors will assume their duties September 6.

NEW JERSEY

State Society Meeting.—At the meeting of the State Medical Society at the Chalfonte, Atlantic City, June 30, the following officers were elected: President, Thomas H. Mackenzie, Trenton; vice-presidents, Daniel Strock, Camden; Norton L. Wilson, Elizabeth; Enoch Hollingshead, Pemberton, corresponding secretary, Harry A. Stout, Wenonah; recording secretary, William J. Chandler, South Orange; treasurer, Archibald Mercer, Newark. A report of the proceedings will appear in THE JOURNAL.

State Pediatric Society.—The first annual meeting of this society was held in the Hotel Chalfonte, Atlantic City, June 27, 1910, the president, Dr. H. L. Coit, presiding. The attendance was large. The officers were: President, Dr. Henry

L. Coit, Newark; vice-president, Dr. Alexander McAlister, Camden; treasurer, Dr. B. Van D. Hedges, Plainfield; secretary, Dr. M. J. Synnott, Montclair; council, Drs. J. Finley Bell, Englewood, Thomas N. Gray, East Orange; Burdette P. Craig, Jersey City, Emery Marvel, Atlantic City, and F. H. Glazebrook, Morristown. After the evening session a reception was held by the president and Mrs. Coit for the members, their families and friends.

State Board Meeting.—The State Board of Medical Examiners met at Trenton, July 7, and elected the following officers for the ensuing year: Dr. William K. Watson, Jersey City, president; Dr. Horace G. Norton, Trenton, secretary, and Dr. Armin Uebelacker, Morristown, treasurer. The committee on legislation comprises Dr. Richard Barrington, Mount Holly, chairman; Dr. Charles E. Groves, Orange, and Dr. William Borden, Passaic. The board discussed the action of the New York board which had cancelled reciprocity relations with New Jersey because the latter had not adhered to the desired requirements as to preliminary education. (See New York news, this issue.) The New York board has been asked to reconsider its action. Unless this is done New Jersey threatens to refuse indorsement to New York applicants.

NEW YORK

Personal.—Dr. William A. Howe, of Phelps, has been appointed deputy commissioner of health, a position created by the last legislature.——Dr. and Mrs. Alfred W. Hoyt, of New Rochelle, have gone to Europe.

Scarlet Fever Epidemic.—It has become necessary to close the Pelham summer home which has been conducted for the benefit of poor children of New York City, because of an epidemic of scarlet fever in that institution.

Speaks for National Health Department.—Dr. Harvey W. Wiley delivered an address to several thousand persons at Chautauqua, July 15, where he spoke enthusiastically for a national health department and pointed out what it would do for the safeguarding of the public health.

Inoculations Against Typhoid.—The officers and men stationed at Fort Wadsworth, New York harbor, have been inoculated against typhoid. This is the first of a series of experiments in the United States army similar to those which proved eminently successful among the British troops during the Boer war.

Laboratory Course for Health Officers.—During the month of July the State Hygienic Laboratory has conducted two courses for the benefit of the health officers of the state. July 11 to 14 the course was on general and clinical microbiology. July 13 to 16 on sanitary water analysis. Each person was provided with a working table, microscope, material and all accessories. The course was practical and largely attended.

Reciprocal Relations Discontinued.—It is reported that reciprocal relations with New Jersey have been discontinued by the New York board of regents. This was said to be due to a recent decision by the governor and the attorney-general of New Jersey that a student did not need to have a high school standing as a prerequisite to the study of medicine, but that he might be permitted to complete such secondary education up to within ten days of his examination for license. New York on the other hand requires that all conditions in high school work must be made up before the beginning of the sophomore year in medicine.

New Hospitals and Dispensaries.—The State Board of Charities at its quarterly meeting refused to issue a license for the conduct of a dispensary in New York City by the New York Osteopathic Clinic of Manhattan.——Applications for approval of certificates of incorporation were denied the Emmanuel Hospital of Brooklyn and the Zion Hospital and Dispensary.——Plans were approved for the proposed tuberculosis hospital to be erected in connection with the Cattaraugus Almshouse at Machias, and also plans for the erection of new buildings on the cottage plan by the Hebrew Sheltering Guardian Society of New York at Pleasantville and for alterations of the buildings of the German Hospital and Dispensary of Brooklyn.

Vital Statistics in May.—There were in this state 16.760 births and 13.901 deaths for the month of May, of which 888 were from epidemic diseases, 1.234 from consumption, 213 from other forms of tuberculosis, 1.829 from other diseases of the respiratory system, 400 from diarrheal diseases and 739 from accidents and violence. In the five months of this year there have been 267 cases of smallpox against 285 for the same months of last year. The urban rate of mortality for the month is 28 per 100.000 of population and the rural 11, the average urban mortality for this month being 21.4 and the average rural being 8.4. Thus far this year there have been 325 more deaths from scarlet fever and 100 more from diphtheria than there were during the same period of 1909. It was interesting to note that influenza was especially a rural disease; the actual number of reported deaths in the cities was 529 to 650 in the rural districts for six months from December 1 to June 1. This disease reached its highest mortality in March, when there were 1.400 deaths from this cause. At this same time the highest point of mortality was reached by other pulmonary diseases and by diseases of the nervous system, the digestive system and Bright's disease, suggesting the inference that influenza was a factor in increasing their fatality.

New York City

Crocker Fund in Hand.—By the sale of the estate of the late George Crocker, Columbia University has come into possession of a fund of $1.500.000 provided for in the will of the late millionaire to fight cancer, mention of which has been made before in The Journal.

Personal.—Dr. Walter Guernsey Frey has been appointed a medical officer of the fire department.——Dr. and Mrs. A. M. Shrady and Dr. Walter Lester Carr have sailed for Europe.——Thomas Andrew Storey, M.D., Ph.D., hitherto associate professor and director of the department of physical instruction and training in the College of the City of New York, has been made a full professor and the departmental name changed to physical instruction and hygiene.

Society Organized.—The Society for Clinical Serology was organized at the Mt. Sinai Hospital in New York City on May 9, 1910, when the following officers were elected: Dr. David J. Kaliski, president; Dr. Howard Fox, vice-president; Dr. Walter J. Heimann, treasurer; Dr. Mortimer Warren, secretary, 39 East Twenty-Seventh Street. The object of the society is the cultivation of serological methods as applied to clinical medicine. Meetings will be held on the second Friday in October, December, February and April. The society is making an effort to effect a standardization of material used in the Wassermann reaction in order to bring about uniformity of results.

Hoffman Island Hospital.—The new hospital on Hoffman Island for the accommodation of contagious diseases coming into the port of New York was opened for inspection July 3. The hospital can accommodate 250 patients and can also provide for relatives and friends of the patients. In connection with the hospital there will be a school for instruction in communicable diseases. Two health officers from different parts of the state will be assigned to the hospital every four days for the study of the latest and best methods of treating and combating contagious diseases. A permanent group of state officers will be maintained to carry on the work of instruction, and also a training school for nurses.

Hospital Bequests.—The will of Henry Dexter, president of the American News Company, leaves over $1.000.000 to charity; among these bequests the Society for the Suppression of Vice receives $30.000, the Association for Improving the Condition of the Poor, $20.000; St. John's Guild, $10.000; Charity Organization Society, $10.000; St. Luke's Hospital, $100.——The will of Mrs. Margaret A. Bromley leaves $3.000 to the Mothers' and Babies' Hospital.——The will of Mrs. Margaret M. Coakley leaves $500 to St. Joseph's Hospital for Consumptives and a like amount to the Cancer Hospital at Hawthorne.——The annual patriotic celebration of the French Benevolent Society netted $2.000 for the French Hospital.

Infant Mortality in New York and Brooklyn.—For several years physicians and social workers have been at a loss to account for the fact that the infant mortality of Brooklyn has been considerably higher than that of New York. Dr. Lederle has appointed a special committee to investigate this matter. Brooklyn physicians were of the opinion that the widespread use of condensed milk might account to some extent for the prevalence of intestinal troubles. There is a much better observance of sanitary laws in the crowded sections of Manhattan than in those of Brooklyn. The number of children in Manhattan suffering from diarrheal diseases has been much smaller during the recent hot spells than in similar weather in former years. This is attributed to the more general instruction of tenement mothers.

PENNSYLVANIA

Epidemic Ended.—The Columbia Board of Health announced that the scarlet fever epidemic is at an end and that Columbia is almost entirely free from communicable diseases.

Infantile Palsy at Bethlehem.—State Health Commissioner Samuel G. Dixon has ordered an investigation into the reported existence of infantile palsy in Bethlehem and vicinity. Two well defined cases are understood to have appeared in that portion of the Lehigh Valley.

School Inspection.—Through the efforts of Dr. Henry H. Herbst, the city of Allentown has made an appropriation for medical inspection of school children. A superficial examination of the 18,000 pupils shows that 10 per cent. are suffering from defective vision; 6 per cent. from defective hearing; 19 per cent. from defective teeth; 10 per cent. from defective breathing, and over 6,000 pupils are above normal age for their grade.

Health Department and Rural Physician.—Dr. Samuel G. Dixon addressed the McKeesport Academy of Medicine July 15 and described how Pennsylvania, through its department of health, is cooperating with the family physician, especially the rural practitioner, who is cut off from urban advantages. "Pennsylvania has come to the aid of the medical profession in its daily work," said Dr. Dixon, "to a greater degree than any other state in the Union, and possibly indeed, than any country in the world."

Personal.—Dr. C. F. Bingaman has returned to Pittsburg after spending several months in touring around the world. —— Dr. J. King Love, Easton, is in Europe. —— Drs. L. C. Mundy, Wilkes-Barre; H. H. Walker, Linesville, and Gibbs Biscoe, of Arkansas, have completed their service in the Altoona Hospital, and their places will be supplied by Drs. H. L. McCarthy, Altoona; Logan E. Hull, New Florence, and H. F. Schrader, St. Paul, Minn. —— Dr. Charles H. Schlesman, Allentown, has gone to Europe for study.

Resolutions Supporting Dr. Guth.—At the regular meeting of the Warren County Medical Society, July 12, resolutions were adopted expressing the surprise and grief of the members at the dismissal of Dr. Morris S. Guth as superintendent of the state insane hospital at Warren. The resolutions state that Dr. Guth was connected with the institution since its foundation, and because of his high character, his great ability as a physician and alienist and because of his efficiency as a manager it was felt that the trustees, in taking this action, had committed a grave error, and that it would require reasons of the strongest kind to convince the society that the change was either necessary or desirable.

Typhoid Epidemic at South Fork.—Until a few days ago there were thirty-three well developed cases of enteric fever reported within a brief period of time at South Fork, near Johnstown. Two sanitary engineers representing the state health department are on the scene and will remain there until the situation is under control. The two large reservoirs were treated with 500 pounds of copperas with the view of destroying the causative pathogenic bacteria. The disinfectant was placed in burlap sacks and trailed behind boats paddled over the surface of the water. The copperas is proportioned 1 to 1,000,000 parts of water. No deaths have as yet occurred and the authorities hope the epidemic can be checked without any loss of life.

Philadelphia

Sane Fourth Reduces Tetanus Mortality.—There has been but one death from tetanus in this city as the result of the Fourth of July celebrations just past. This excellent record is partly the result of the observance of the use in all hospitals of antitetanic serum and the decreased use of explosives and firearms.

Phipps Institute Clinical Staff.—The directors elected the following physicians as members: Drs. H. R. M. Landis, J. D. Blackwood, Jr., T. W. Busch, F. A. Craig, J. M. Cruice, W. T. Cummens, G. Fetterolf, I. Kaufman, C. M. Montgomery, H. J. Off, J. T. Ullom, M. Jacobs and W. Turnbull. These men will have charge of the patients in the wards and of the treatment of the dispensary patients.

New Eye Hospital Opens.—A free non-sectarian hospital and dispensary for the treatment of eye diseases in general, and trachoma in particular, was opened July 18 at 228 Pine Street. It will be known as the Trachoma Institute of Philadelphia. The institute will endeavor to arrange with the immigration authorities of this city for the treatment of immigrants afflicted with trachoma, where there is a prospect of curing them, so as to save them from being deported on that account.

Personals.—Dr. W. W. Hawke, chief resident physician to the insane department of the Philadelphia General Hospital, resigned his position to assume duties as superintendent of the state hospital for the insane at Warren, Pa. Dr. J. Allen Jackson, of the Central Indiana Hospital for the Insane at Indianapolis, was appointed to succeed Dr. Hawke. —— Drs. Ernest La Place, John A. Boger and George C. Stout sailed for Europe.—— Dr. James Hendrie Lloyd has been elected visiting neurologist to the Methodist Episcopal Hospital.

Proposed Improvements to City Hospital.—Dr. Joseph S. Neff, director of the department of health and charities, in his annual budget of expenditures for the year 1911 asked for an appropriation of $5,000,000. Among the improvements that he recommends are the development of Byberry as the home for the city's insane wards; $300,000 for improvements at the Philadelphia General Hospital; $100,000 for the construction of an annex for the feeble minded at Byberry; $500,000 to complete the hospital for contagious diseases. If the plan for the improvements is approved by councils Philadelphia then will have the most complete institutions of their kind in this country.

Charitable Bequests.—The Supreme Court of Pennsylvania, in a decision rendered recently, sustained the validity of the will of the late Anna T. Jeanes, and the result is that the following bequests are made possible: The incorporated trustees of the Philadelphia Yearly Meeting of Friends, for the establishment and assistance of hospitals and infirmaries, $250,000; joint committee of the Quarterly Meeting House for Aged and Infirm Friends, for the establishment of a hospital for cancerous and nervous ailments, $200,000; the Women's Hospital, $64,000; the West Philadelphia Hospital for Women, $10,000; Hahnemann Hospital, $10,000; the Philadelphia Home for Incurables, $10,000; the Women's Homeopathic Hospital, $10,000; the Pennsylvania Hospital, $10,000; the Red Banks Sanitarium, $5,000.

GENERAL NEWS

Tri-State Meeting.—The Tri-State Medical Association, comprising Indiana, Ohio and Michigan, under the presidency of Dr. Charles B. G. De Nancrede, Ann Arbor, met at Elkhart, Ind., July 12. Dr. Victor C. Vaughan, Ann Arbor, delivered the principal address, on "Tuberculosis."

American Public Health Association to Meet.—The American Public Health Association will hold its thirty-eighth annual meeting in Milwaukee, Wis., September 5 to 9. The association will discuss methods for the correlation of the work of various public health organizations which have been invited, and for cooperation with a view to increasing efficiency and economy. Sanitary engineering will occupy a conspicuous place on the program. Information concerning the meeting can be obtained by addressing Dr. William C. Woodward, secretary, Washington, D. C.

Tracing Tuberculosis in Cattle.—In 1908 government veterinary inspectors found 706,046 tuberculous hogs, an average of 2,000 per day, among hogs that went to packing houses having government inspection. These hogs probably became infected from tuberculous cattle. As a method of tracing to the source this tuberculosis, Burton R. Rogers proposes a plan of requiring all cattle shipped to the markets where government inspection prevails be tagged with a metal tag in the ear giving a number that will indicate what particular farm the cattle came from. In that way the source of the tuberculosis could be traced and tests made and the sources of infection thus eradicated.

Medical Exposition for Centennial.—The department of public instruction of Mexico in connection with the celebration of its centennial has named a committee consisting of Drs. Fernando Zarraga, Regino Gonzales and Alfonso Pruneda, to prepare a medical exposition to be held in the medical school during September, the purpose being to bring together in one place modern surgical instruments and appliances for the benefit of visiting physicians. The committee have sent out circulars soliciting exhibits. The whole collection will be photographed when placed and pictures will be presented to all who apply for them during the centennial month. It is hoped to make the exhibition the nucleus for a permanent national museum.

Medical Library Association.—The thirteenth annual meeting of the Medical Library Association was held in St. Louis June 6. The secretary's recommendation was approved, that the constitution, by laws and a list of members be printed. The treasurer's report showed a balance from the previous year of $725.81; receipts for the year were $410; total receipts, $1,135.81; expenditures for the year, $1,093.48, leaving a balance on hand of $43.33. The report of the manager of the exchange showed that during the year the material belonging to the exchange moved from Brooklyn to Baltimore, and arranged and listed for distribution consisted of unbound numbers, reprints, etc., 7,707, and bound volumes, 11,919.

The following officers were elected: President, Dr. John H. Musser, Philadelphia; vice-president, Mr. C. Perry Fisher, Philadelphia; secretary, Miss M. R. Charlton, Montreal, Que.; treasurer, Dr. John Ruhrah, Baltimore; executive committee, Drs. John W. Farlow, Boston; Lewis H. Taylor, Wilkes-Barre, Pa., and William Browning, Brooklyn; finance committee, Drs. Frank J. Lutz, St. Louis; Carl E. Black, Jacksonville, Ill., William S. Halsted, Baltimore; George N. J. Sommer, Trenton, N. J., and Miss M. M. Loomis, Chicago.

FOREIGN

Personal.—Sir William Ramsay has been elected a foreign associate of the Paris Academy of Sciences to fill the vacancy caused by the death of Alexander Agassiz.——The Albert medal of the Royal Society of Arts for this year has been awarded to Madame Curie for the discovery of radium.——Mr. Robert Newstead, lecturer at the Liverpool School of Tropical Medicine, has gone to Malta to investigate the rôle of the sand fly as a carrier of disease.——The Order of C. M. G. has been conferred on Dr. A. D. P. Hodges, principal medical officer of the Uganda Protectorate, in recognition of his services in suppressing sleeping sickness.

The Approaching International Congress of Gynecology.—Every effort is being made to have the Fifth International Congress of Obstetrics and Gynecology, which convenes at St. Petersburg, Russia, in September, surpass in attendance and interest all previous meetings of the kind. An exhibition is to be held in connection with the congress and the committee of organization is inviting exhibits from all parts of the world, especially surgical instruments, modern and ancient; objects pertaining to the equipment of laboratories, operating and lying-in rooms, etc.; objects relating to the nursing of new born infants, plans of obstetrical clinics and gynecologic sections of hospital; objects for the study of midwifery and gynecology; portraits of medical men who have distinguished themselves in the history of midwifery and gynecology; books on gynecology and midwifery; pharmaceutical preparations, etc. Exhibits should be delivered at their destination not later than September 1, addressed as follows: "For the Exhibition in connection with the Fifth International Congress of Obstetrics and Gynecology, No. 3 University Line, Vasilevsky Ostroff, St. Petersburg." The most interesting exhibit, however, probably will be the new model institute for midwifery and gynecology built to realize Professor Ott's ideals. Among the special questions to be considered by the congress are "Cesarean Section," by Baum, Brandt, Doléris and Routh. "Non-Operative Treatment of Cancer of the Uterus," by Mangiagalli, Bétrix and Meyer; "Comparative Value of the Different Procedures in the Treatment of Displacements and Deviations of the Uterus," by Schauta, Westermark and Hofmeier; "The Vaginal Route," by Martin, Jung, Treub and Wertheim; "Influence of the Nervous System in the Origin and Control of Uterine Hemorrhages," by Macnaughton-Jones and others. Registration fee is $5.25. The transactions will be sent free to all members whether they attend or not. Other information may be obtained from Dr. Charles A. L. Reed, Chairman of the Committee for the United States, 60 The Groton, Cincinnati.

CANADA

Personal.—Drs. Helen MacMurchy and R. A. Reeve, Toronto, have gone to England.——Dr. Charles Sheard, Toronto, has been reappointed medical health officer for Toronto.——Dr. William Oldright, Toronto, has resigned from the chair of hygiene in the University of Toronto and Dr. John A. Amyot has succeeded him.——Drs. Gibb and Willinsky, of Toronto, [illegible] of [illegible] (Ont.), and Kelley of Hamilton, are doing postgraduate work in Vienna.——Dr. G. Sterling Ryerson, Toronto, is in Paris, France.——Dr. Oskar C. Gruner, late clinical pathologist to the Infirmary, Leeds, England, has been appointed pathologist to the Royal Victoria Hospital, Montreal, and lecturer on pathology at McGill University.——Dr. J. D. [illegible], [illegible], Ind., has been visiting in Toronto and at his old home, [illegible], Ont.

Annual Meeting Ontario Medical Council.—The forty-fifth annual meeting of the Ontario Medical Council was held in Toronto, [illegible]. The meeting was made unusually lively owing to charges by a medical journal of Toronto that the finances had been mismanaged. Dr. J. Lane, Mallorytown, was elected president, Dr. R. [illegible], vice-president and Dr. John L. Bray, Toronto, registrar. The council unanimously approved of the amended Roddick bill as favored at the recent meeting of the Canadian Medical Association. A statement of the finances showed that the funds had decreased during the past year by [illegible]. As this is the last session of the present council, elections taking place in December, next, suggestions to retrench, to economize, to reduce examinations and reduce representation were duly discussed, but no definite action taken thereon. The council decided to engage the service of a chartered accountant as auditor, and to allow the complaining editor to examine the books. It was decided to cease issuing a stenographic report of the proceedings.

LONDON LETTER

(From Our Regular Correspondent)

London, July 9, 1910.

Lead and Dust in Pottery Works

The committee appointed by the government in 1908 to inquire into lead poisoning and other injuries to health in the pottery trades has, after a most exhaustive inquiry, issued what is probably the most important report on this subject ever published. Many pottery works in different districts were visited, delegates from manufacturers and workpeople's associations were interviewed, many witnesses were examined, including factory surgeons, inspectors and workpeople of various kinds. The inquiry covers 550 pottery works employing 63,000 persons and 7 lithographic-transfer works. The special dangers to which pottery workers are exposed are two fold—lead poisoning and inhalation of dust without lead. Attention has chiefly been drawn to the former but it appears that the latter affects a much larger number of workers and produces more serious consequences. Out of the 63,000 workers only 6,856 (11 per cent.) are brought into contact with lead, whereas 23,000 (36 per cent.) are exposed to inhalation of dust. The remaining 53 per cent. are not exposed to any particular danger to health. Dr. Reid, health officer for Staffordshire (in which the greater number of the potteries are situated) has worked out the excess of mortality attributable to the two causes and finds that the excess among those exposed to lung disease from inhalation of dust is 7 per 1,000, whereas among the lead workers it is only 0.8 per 1,000. When the proportion of those exposed to risk is reckoned the fatality of the former cause is more than 8 times greater than that of the latter.

The morbidity caused by lung disease is believed to be also greater in at least the same proportion. In recent years the number of cases of lead poisoning has considerably diminished; in 1898 they numbered 457 and in the following years 249, 200, 106 and 87, respectively. But since 1902 there has been no diminution until 1909, when the number was only 58. From 1898 to 1902 the number of attacks fell from 74 to 13 per 1,000, but since then there has been no further improvement until 1909.

Only a small proportion of cases of plumbism are fatal; the average death rate for the last 11 years is 1 per 1,000 workers in lead. But short of definite symptoms the general health is impaired in many operatives and miscarriages are abnormally frequent among married women working in lead. Lead is used in pottery in the form of glazes and of colors. The great majority of cases of poisoning are caused by the former. Special attention was paid to the question of leadless glazes which has been the subject of much controversy. Evidence was invited from every firm known to make a specialty of leadless glazes. Only 2 manufacturers out of 11 said that they were entirely successful in using leadless glaze for the whole of their output and these made a very cheap class of pottery. Some firms have had partial success and others have abandoned the attempt. Dr. J. W. Mellor, technical instructor in pottery manufacture, has been conducting researches for some time and is not sanguine of finding a substitute for lead. A number of government departments have been buying leadless ware for some years but they say that the price is enhanced and the quality unsatisfactory. After 5 years the war office has given up the exclusive use of leadless wares. The general conclusions drawn by the committee are that in all classes of pottery every article can be manufactured in a high state of perfection with leadless glaze but that in the better class owing to the excessive number of "seconds" the cost is increased and that owing to difficulties in reproducing old patterns, colors, or methods of decoration, certain wares cannot be made without lead. An alternative to leadless glaze is the rendering of lead insoluble to weak acids (and consequently nonabsorbable into the system) by "fritting" it with siliceous matter. In 1900 the government proposed to make the fritting of lead compulsory and to prohibit the use of any material containing more than 2 per cent. of soluble lead compound. But the manufacturers objected and as the result of an inquiry a standard of 5 per cent. was proposed, but even this was not rendered compulsory. Manufacturers were encouraged to adopt it by being exempted from conditions, including compensation for lead poisoning. Only a small number of factories have taken advantage of this provision. The question has been again investigated by the committee with much the same result. The weight of evidence was against the practicability of the general use of low-solubility glazes. The committee simply urge that manufacturers should be encouraged to persevere with experiments in leadless and low-solubility glazes by the relaxation of restrictions in factories where such glazes are used. An important point is the condition under which the industry is carried on in competing countries; in the United States and in Germany there are no special rules and in France the regulations relate only to ventilation, the wearing of masks, the use of tongs or gloves for dipping, etc. Among the recommendations of the committee is that women and young persons should partake of milk or cocoa made with milk in the morning before commencing work in scheduled lead processes and shall not be employed more than 46 hours a week.

The Antituberculosis Conference

The National Association for the Prevention of Tuberculosis has held its annual meeting at Edinburgh. The proceedings opened July 2 with the inauguration of the Royal Victoria Hospital Farm Colony. On Sunday a semi-religious meeting of the students of the university was held at which Prof. Osler delivered an interesting address on the antituberculosis movement entitled "Man's Redemption of Man." The Countess of Aberdeen opened the exhibition and described the great success of the work of the Woman's National Health Association of Ireland (of which she is president) in combating the disease. The first tuberculosis exhibition was held at Dublin in 1907 and was subsequently divided into two, one of which went north and the other south, and 80 exhibitions were held in different parts of Ireland. Traveling vans were also sent out and visited 223 places giving popular lectures. So excellent was the work done that the association was awarded a prize of $1,000 at the tuberculosis congress in New York for the most effective work done by any voluntary association in the world.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, July 8, 1910.

Vaccination of Foreigners

A senator, M. Louis Martin, has just presented a bill providing that every foreigner who makes a declaration of residence in France shall be obliged to produce a certificate of vaccination or of revaccination dated not more than three months previously for himself and for all members of his family.

Substitution of a Medicament in a Prescription

A Paris pharmacist undertook to replace 50 cg. of musk by tincture of musk in a physician's prescription. The physician who gave the prescription proved the substitution and prosecuted the pharmacist. The courts condemned the pharmacist and his apprentice each to pay a fine of $100 (500 francs) on the ground that the pharmacist had arbitrarily denatured the principal element in the prescription so as to be able to give it at a lower price than other pharmacists. The judgment affirmed that pharmacists were forbidden to substitute one drug for another, or even to modify the nature or the proportions of the elements in the prescription.

Jubilee Book Dedicated to Prof. J. Teissier

The excellent German custom of publishing, on the jubilees of celebrated professors, *Festschriften*, to which the pupils and friends of the master contribute, has been followed in France on the occasion of the twenty-fifth anniversary of the professorship of Dr. J. Teissier, professor of clinical medicine at the Lyons College of Medicine (THE JOURNAL, Jan. 15, 1910, p. 218.) The jubilee book, made up of a series of original memoirs dedicated to Professor Teissier, contains, it is particularly interesting to know, contributions not only from French professors, such as Arloing, Bard, Chauffard, Pierre Marie, Widal, etc., but also from foreign professors, especially Italians, such as Bacelli, Bossi, Maragliano, Mariani and Patella. Dr. His, professor of clinical medicine at the Berlin college of medicine, has also contributed a memoir on chronic rheumatism in gout. He concludes with a declaration of his great satisfaction in being able to testify to Professor Teissier that his works, which have contributed to the elucidation of this difficult subject, as well as the views of the French school, have found beyond the frontier the appreciation which they justly deserve.

The Albert Medal Awarded to Mme. Curie

The British Royal Society of Arts has just given its highest award, the Albert medal, to Mme. Curie. The former recipients were Lord Kelvin, Pasteur, Edison, Lord Lister, Lord Rayleigh and Sir Andrew Noble.

Election of Two Foreign Correspondents to the Academy of Medicine

On July 5 the Académie de Médecine elected as foreign correspondents Drs. Pagliani of Turin and Filehne of Breslau.

Dr. Huchard and Reform of Medical Instruction

Dr. H. Huchard has just addressed to the professors of the medical schools an open letter enumerating the principal reforms which he considers necessary in medical instruction. In the first place, in certain university centers, especially in Paris, the number of students ought to be limited. In the interests both of the students and of the patients in the hospitals the distribution of the *stagiaires* in the hospital services ought to be made more uniform and more equitable. The requirements of the *concours d'agregation* ought to be enlarged so as to permit all physicians who are competent to participate in instruction. All the *concours d'agregation* ought, moreover, to be held, as formerly, in all the medical colleges which would thus be emancipated from Paris. While declaring himself a convinced partisan of the system of the *concours* which gives less opportunity for unfairness, Dr. Huchard thinks that certain *concours* might be suppressed without loss. Thus the hospital externs might be appointed merely in accordance with their records at the end of the year. The appointment of professors for vacant chairs might be made from a list of eligibles composed of two *agrégés* and one unattached professor not an *agrégé*, who had given proof of ability by published works, discoveries and instruction. Moreover, there ought to be no age limit for professors, because advanced age does not always mean diminished energy. Some theoretical chairs, especially those of medical and surgical pathology, ought to be transformed into clinical and therapeutic chairs at the hospitals. There are practical specialties indispensable to young practitioners which, though given abroad, are taught insufficiently or not at all among us: such are otolaryngology, stomatology, clinical bacteriology, electrotherapeutics, climatotherapy and hydrology. Dr. Huchard recommends the payment of professors both by the government and by the pupils

International Conference for the Suppression of Fraud

The International Congress of Applied Chemistry, held at Rome in 1906 passed the resolution that the unification of legislation for the suppression of fraud ought to be preceded by the unification of methods of analysis, in order to avoid divergencies in the definition of fraud, which might become a source of conflict in international commerce. For this purpose the Italian government proposed the holding of an international conference at Paris because it is in France that the analysis of foodstuffs has been carried farthest. The conference will be held in Paris. Besides France, the countries represented are Belgium, Bulgaria, China, Denmark, the United States, Great Britain, Greece, Italy, Mexico, Norway, the Netherlands, Portugal, Sweden and Switzerland.

Disadvantages of Holding Several Congresses at the Same Time

The Third International Congress of Educational Hygiene will be held in Paris, August 2-7, at the same time as the *Congrès des aliénistes et neurologistes de langue française*, which will be held in Brussels, and at the same time as the annual meeting of the *Association Française pour l'avancement des sciences*, which will be held at Toulouse. This coincidence illustrates once more the fact that the organizers of scientific and medical congresses take no pains to ascertain whether the date which they choose conflicts with that of other scientific meetings. The *Bulletin Médical* calls attention to the disadvantages, especially in the present instance, of this neglect. The alienists and neurologists have placed the question of abnormal mentality in schools on its true basis. It is therefore deeply to be regretted that a congress on educational hygiene could be deprived of the valuable assistance of psychiatrists by such a conflict of dates as occurs. Moreover, the *Association Française pour l'avancement des sciences* has an important part in the scientific development of our country and it seems unfortunate that an international congress to be held in Paris did not choose some other date than that of the annual meeting of this association. Such undesirable events might easily be avoided by care and forethought on the part of the organizers.

A Reward for Professional Courage

During the efforts made to rescue from the sea those who were shipwrecked in the submarine *Pluviose*, the exemplary conduct of Dr. Savidan, physician in the marine service, has attracted particular attention. The government has just made Dr. Savidan chevalier of the Legion of Honor for "exceptional service rendered during the operations of the *Pluviose*, where he gave proof of courage, devotion and the highest professional qualities in directing the reclaiming of the bodies of the victims." The President of the Republic himself intends to pin the cross of the Legion of Honor on Dr. Savidan.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 30, 1910.

Hygiene in Hotels

In spite of all the efforts of the medical and lay public to secure the observation of hygienic principles by hotel-keepers, much remains to be desired. The same may be said for health resorts. The German association for popular hygiene at its last session adopted the following requirements: 1. The bed articles must be either completely covered with a linen tick or they must, according to the custom in England and partly in France, be placed under a washable spread. 2. Under the sheet there must be either a horse hair mattress or a woolen tick. 3. The room must be thoroughly cleansed before the reception of a new guest and the bed must be shaken up and thoroughly aired. 4. The carpets in the room must not be nailed down or be held by heavy articles, but with the exception of tables and chairs they must lie between the furniture so that they may be cleaned at any time. 5. The ventilation of the closet must have an outlet into the chimney and to the outside air. 6. The napkins must either be thoroughly cleansed after use or must be made of paper and thrown away after a single use. 7. Dogs must not be allowed in the restaurant rooms. 8. The food exhibited, even bread, must be placed as far as possible under glass bell jars and especially the handling over of the rolls, etc., on the tables must be forbidden. No charge for a seat or an increase in the price of the food should be introduced for the consumption of alcoholic beverages. Also it would be very desirable if the restaurants provided small bottles of fruit juices for the preparation of lemonade as they now do with spirits.

Personal

The Heidelberg surgeon Professor Narath, retires from teaching at the end of the summer semester on account of his health. His successor is Professor Wilms of Basel. Professor Narath succeeded Professor Czerny.

Professor Bruns of Tubingen will retire at the end of the summer semester from his position as director of the surgical clinic at Tubingen. Since Professor Anschütz of Kiel has declined the call, Professor Payr of Greifswald has been offered the place but it is not probable that the latter will leave Greifswald for Tubingen.

Unveiling of the Virchow Monument

The Rudolf Virchow monument was unveiled June 29. As I told you at the time, the model selected created quite a sensation, especially among Berlin physicians. It was impossible to change it because the monument committee had too hastily concluded a fixed contract with the sculptor. It is the general impression that the monument in no way answers the requirements of giving a correct representation of Virchow's personality. The principal part of the monument presents a robust athlete of gigantic dimensions who has seized by the throat a fabulous beast provided with a tail and is choking it to death. By this it is supposed that the fighting nature of Virchow is symbolized. Virchow himself is in fact represented on a medallion which is placed on the pedestal. The well known tired features of the great investigator contrast in the most striking way with the athlete's figure. On the posterior side of the pedestal is a tablet which is to immortalize the principal contemporaries of Virchow.

Number of Students at Universities

About [illegible] students have matriculated in all the twenty-one German universities, including 2,200 women. Berlin has the greatest number, 7,902, next comes Munich with 6,890, and Rostock has the least, 834. There is again an increase in the number of medical students from 9,462 last year to 10,682.

Ehrlich's Syphilis Treatment

At the internal medicine congress Ehrlich made a report on the remedy discovered by him in conjunction with Hata, an arsenic preparation called dioxydiaminoarsenobenzol, from which it appears that remarkable curative results have been achieved with it. This impression is distinctly confirmed by the statements made by the dermatologist, Dr. Wechselmann, and others at the last meeting of the Berlin Medical Society. Professor Neisser has also published a similar report in the *Deutsche medizinische Wochenschrift*. According to his observations the remedy produces a marked and surprising effect, not only on the spirochete but also on the products of syphilis. The spirochetes in many cases, not only in animal syphilis but also in that of men, disappear in from 24 to 48 hours from primary lesions and condylomata in which they were abundantly present before the administration. Syphilitic processes retrogress in many cases so rapidly that there can be no doubt as to the specific action of the remedy. Neisser reports a case of severe syphilis of the brain, in which treatment with large doses of mercury and potassium iodid had been unsuccessful, in which a single injection of 0.3 gm. produced a remarkably rapid disappearance of all subjective and objective symptoms. When possible the remedy is injected intravenously. Intramuscular injections usually occasion notable local pains and hard infiltrations; these disappear in from six to eight days leaving no trace. As a result of intravenous injection, a rise of temperature to 39.5 C. (103 F.) has occasionally occurred and vomiting has been frequent; after a few hours the symptoms disappeared. Neisser is convinced of the value of the new remedy in all respects. [An article on this substance appeared in The Journal, July 16, page 216.]

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 1, 1910.

The Eighth International Congress on Physiology

This meeting of physiologists will take place on September 27-30 in Vienna in the Physiologische Institut, IX Währingstrasse. The languages of the congress will be German, English, French and Italian, and apart from the scientific transactions of the meeting, a very interesting social gathering is expected, because the municipality of the city will give a banquet in honor of the foreign guests.

The Hungarian Antituberculosis Society

The report of the Hungarian Sanatorium Society for Poor Phthisical Patients, which has existed now for 12 years, offers a few interesting figures. In 1909, no less than 767 patients, who stayed over 46,000 days, had to be housed and cared for. The ratio of cures was 35 per cent. Cures are regarded as complete, if the patient is able to return to his usual light work without danger. The society has spent 1,000,000 kronen ($200,000) in erecting a new wing of the existing Elizabeth Sanatorium which has proved too small for the demands on it. This shows how much the people appreciate the opportunity. Tuberculosis is not very frequent in Hungary except in the towns where modern industries cause a flocking of laborers into them under very unhealthy conditions, as in all rapidly developing countries.

Report of the Budapest International Congress, 1909

The executive committee of the Sixteenth International Medical Congress has now published its report. The transactions of the congress comprise 800 pages in one volume, and will be distributed to the members. Owing to grants by the government and the capital and to financial sacrifices of 21 presidents of the sections, a surplus was obtained which will be devoted for the purpose of a yearly grant or scholarship. This will be international, open to all competitors, and will be granted by the Budapest medical faculty.

Expenditures for Medical Institutions

In consequence of very energetic action by medical students and professors, the ministry of education, to whose province the medical institutions belong, has at last decided to devote a large amount for the purpose of obtaining the most urgent institutes. Thus the erection of the physical and chemical institute, which has been promised for four years, has actually been begun this summer, and a sum of 5,000,000 kronen ($1,000,000) has been fixed as the limit for expenditure for this item. Another 300,000 kronen ($60,000) will cover the cost of new book-stacks for the enormously increased medical library of the university in this city. A sum of 3,500,000 kronen ($700,000) has been granted for the clinical, gynecologic and pathologic-anatomic institute in Graz, which city is badly in need of modern teaching facilities. The cost of remodeling the obstetric clinics in Prague will be $50,000, while an equal sum has been devoted for the purpose of a botanical garden for teaching purposes in Lemberg. The University of Cracow has received $70,000 for the veterinary institute and hospital. A sum of $300,000 has been devoted (and really paid, which is the most remarkable fact), for improvements in various other medical institutions in all the seven universities of our country. Legislation being somewhat haphazard here on account of political differences between the various and numerous national and racial parties, a bill, even when passed, cannot be regarded as valid until it is really put into effect by an energetic official. Luckily, we have at the head of the sanitary departments of our ministry of education, as well as in the home office, men who understand that progress in medical science cannot wait until the funds are granted but who build first, and then get the money for the institutions at all costs.

Marriages

Wallace Blanchard, M.D., to Miss Gahfea Brandt, both of Chicago, July 12.

Albert Neil Legg, M.D., to Miss Clara Wood Barger, both of Philadelphia, June 30.

Bird Hagans Miller, M.D., to Miss Mattie Strachan, both of Blockton, Iowa, June 29.

Henry J. Pyle, M.D., to Miss Frances Van Zoeren, both of Grand Rapids, Mich., June 9.

Amos McK. Jones, M.D., Anson, Texas, to Miss Winnie Brooks, of Evant, Texas, July 6.

Lewis W. Dudley, M.D., Elgin, Ill., to Miss Marion T. Connell, at Fond du Lac, Wis., June 29.

Harry Ephraim Plummer, M.D., to Miss Mabel Dibblee Price, both of New York City, July 6.

James Louis Early, M.D., Saltville, Va., to Miss Melita Rorer Wilson, of Radford, Va., June 30.

Mial R. Lyman, M.D., Bad Axe, Mich., to Miss Elizabeth E. Deno, of Saginaw, at Cuba, Ill., June 30.

George Carroll Rhoades, M.D., U. S. Navy, to Miss Elizabeth Selden Baxter, of Elizabeth City, N. C., July 7.

David Yandell Roberts, M.D., to Miss Alla May Sweeney, both of Louisville, Ky., at Jeffersonville, Ind., July 1.

Alexius McGlannan, M.D., Baltimore, Md., to Miss Sally Porter Law, of Hartford, Conn., at Philadelphia, July 2.

Deaths

Mihran K. Kassabian, M.D. Medico-Chirurgical College of Philadelphia, 1898; a member of the American Medical Asassociation; vice president of both the American Electro-Therapeutic Association and the American Roentgen-Ray Society; formerly in charge of the Roentgen laboratory and instructor in electro-therapeutics in the Medico-Chirurgical Hospital and College; director of the Roentgen Ray Laboratory of the Philadelphia General Hospital; author of "Electro-Therapeutics and the Roentgen Rays;" an Armenian who came to this country in the year 1894 to study medicine; died in Philadelphia, July 12, from dermatitis, as the result of burns received during many years of practice with the Roentgen rays, after having several operations performed in an effort to check the progress of the malady, aged 42.

Walter Joseph McEvilly, M.D. Barnes Medical College, St. Louis, 1903; a member of the American Medical Association; president of Tama County, Iowa, Medical Society; of Dysart, Iowa; was killed by being struck by a train near Lombard, Ill., July 19, aged 41. With his wife and daughter he was on his way home in an automobile he had purchased, and all three met death together.

Charles Nathaniel Hewitt, M.D. Albany (N. Y.) Medical College, 1857; of Red Wing, Minn.; a veteran of the Civil War; executive secretary of the Minnesota State Board of Health for twenty-five years from the time of its organization in 1872; for some years professor of public health in the state university; died at the home of his daughter in Summit, N. J., July 7, aged 74.

Wallace Kilbourne Oakes, M.D. College of Physicians and Surgeons, New York City, 1873; a member of the American Medical Association; of Auburn, Maine; formerly a member of the State Board of Health and a member of the United States Board of Pension Examining Surgeons; died suddenly at Poland Spring, Maine, July 8, from cerebral hemorrhage, aged 59.

Frederick Augustus Lyons, M.D. College of Physicians and Surgeons, New York City, 1876; a member of the New York Academy of Medicine, the New York Medico-Surgical Society, and the American Academy of Medicine; surgeon to the New York Fire Department since 1885; died at his home, July 5, from sarcoma, aged 55.

Robert J. Walker, M.D. Columbus (Ohio) Medical College 1884; a member of the Ohio State Medical Association; of Toledo, Ohio; was found dead on a sleeping car on the Michigan Central Railroad at Rochester, Mich., while returning to Toledo from Mackinac, July 7, from cerebral hemorrhage, aged 48.

James Philip Wallace, M.D. Jefferson Medical College, Philadelphia, 1864; Bellevue Hospital Medical College, New York City, 1866; regimental surgeon of the Fiftieth Indiana Infantry during the Civil War; of Colorado Springs, Colo.; died at Nogales, Ariz., June 19, from nephritis, aged 69.

John Benton Farley, M.D. Vanderbilt University, Nashville, Tenn., 1886; a member of the Medical Association of the State of Alabama; a well known planter and practitioner of medicine; died at his home in Farley, Madison county, Ala., July 7, from typhoid fever, aged 50.

Henry Clay Grover, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1855; surgeon of the Twentieth Indiana Infantry during the Civil War; a member of the state legislature in 1879; died at his home in Rushford, Minn., July 4, from senile debility, aged 79.

Richard Temple Walker, M.D. Medical College of Virginia, Richmond, 1871; a member of the Florida Medical Association; acting assistant surgeon, U. S. P. H. and M.-H. Service, stationed at Cedar Keys, Fla.; died at his home in that place, June 26, aged 58.

Asahel Norton Brockway, M.D. College of Physicians and Surgeons, New York City, 1861; assistant surgeon in the United States Army during the Civil War; of New York City; died at Clinton, N. Y., July 4, from cerebral hemorrhage, aged 74.

Claude Van Bibber, M.D. University of Maryland, School of Medicine, Baltimore, 1877; a member of the Medical and Chirurgical Faculty of Maryland; of Baltimore; died at St. Joseph's Hospital in that city, July 11, from nervous disease, aged 57.

Thomas Cammack, M.D. Medical Department of the Columbian University, Washington, D. C., 1845; an active practitioner of medicine of Milford, Ind., for sixty years; was found dead in bed at his home in that place, July 9, aged 87.

John Bartlett, M.D. University of Louisville (Ky.) Medical Department, 1850; a member of the American Medical Association; a pioneer physician of Chicago, having practiced on the north side since 1862; died at his home, July 18, from pneumonia, aged 81.

William Alonzo Upperman, M.D. Western Pennsylvania Medical College, Pittsburg, 1903; physician for the Pittsburg Plate Glass Company at Ford City, Pa.; died at his home in that place, July 3, from heart disease, aged 35.

Henry Clay Paddock, M.D. University of Michigan, Department of Medicine and Surgery, 1879; physician to Manhattan Eye, Ear and Throat Hospital, New York City; died in that city, Nov. 9, 1909, from pneumonia, aged 61

Patrick Thomas Sullivan, M.D. Georgetown University School of Medicine, Washington, D. C., 1895; of McKees Rocks, Pa.; died at Mercy Hospital, Pittsburg, July 6, from cerebral hemorrhage, aged about 40.

Nathaniel R. Gerry, M.D. University of Maryland School of Medicine, Baltimore, 1864; of Catonsville, Md.; died at St. Agnes Hospital, Baltimore, where he had been a patient for nearly a year, July 2, aged 78.

Chesterfield Harrell Smith, M.D. Atlanta (Ga.) Medical College, 1880; of Arcadia, Fla.; died at Candler, N. C., where he had gone to spend the summer, June 28, from cerebral congestion, aged 54.

J. Louis Gahm, M.D. Medical College of Ohio, Cincinnati, 1887; a member of the American Medical Association; of Jackson, Ohio; died at Grant Hospital, Columbus, July 6, from mastoiditis, aged 48.

William W. Cleaver, M.D. University of Louisville (Ky.) Medical Department, 1850; a member of the Kentucky State Legislature in 1893; died at his home in Lebanon, Ky., July 4, from paralysis, aged 83.

Philip Dickes, M.D. Bellevue Hospital Medical College, New York City, 1886; a member of the American Medical Association; died at his home in Greenville, Ohio, July 7, from cancer, aged 57.

Daniel C. Carroll, M.D. University of Arkansas, Little Rock, 1881; a member of the Arkansas Medical Society; of Tillar, Ark.; died at Eureka Springs, June 30, from hepatic cirrhosis, aged 52.

William Trect Mahon, M.D. Jefferson Medical College, Philadelphia, 1883; a member and president of the Nanticoke, Pa., Board of Health; died at his home, July 1, from nephritis, aged 58.

George W. Bowen, M.D. Hahnemann Medical College and Hospital, Chicago, 1863; a resident of Fort Wayne, Ind., since 1858; died in that city, July 7, from senile debility, aged 84.

Thomas R. Newman, M.D. University of Tennessee Medical Department, Nashville, 1890; died at his home in Nashville, July 4, from congestion of stomach and liver, aged 43.

Charles Lewis Wingfield, M.D. University of Pennsylvania, 1848; a member of the Medical Society of Virginia; died at his home in Warren, June 27, from diabetes, aged 84.

John W. P. Bates, M.D. Jefferson Medical College, Philadelphia, 1862; a resident of Baltimore for nearly fifty years; died in that city, July 8, from nephritis, aged 74.

C. L. Clarke, M.D. Memphis (Tenn.) Hospital Medical College, 1893; of Manchaca, Texas; died at the Muskogee, Okla., Hospital, July 6, following an operation, aged 43.

Franklin Raymond Rawls, M.D. Vanderbilt University, Nashville, Tenn., died suddenly at his home in Taft, Tenn., April 26, from heart disease, aged 55.

Thomas J. Davison (license, Ind., 1881); a veteran of the Civil War, died suddenly at his home in Ebensburg, Pa., July 1, from angina pectoris, aged 72.

John Park Mason, M.D. University of Buffalo (N. Y.) Medical Department, 1880; formerly of Houghton, Mich.; died at Elmira, N. Y., July 4, aged 56.

William Arthur Snoke, M.D. Drake University College of Medicine, Des Moines, Iowa, 1898; died at his home in New Corydon, Ind., July 1, aged 35.

E. Miles Willett, Jr., M.D. Memphis (Tenn.) Hospital Medical College, 1881; of Memphis; died at St. Joseph's Hospital in that city, July 11, aged 46.

Adam A. Hessell, M.D. College of Physicians and Surgeons, Chicago, 1891; died at his home in Put in Bay, Ohio, July 7, from heart disease, aged 42.

Jacob Randall (license, 1878, Ill.); said to have been the oldest physician in Washington County, Illinois; died at Okawville, Ill., July 8, aged 85.

Ludwig Ullmann, M.D. Pennsylvania Medical College, Gettysburg, 1861; died at his home in Springfield, Mo., June 30, from cystitis, aged 80.

Pharmacology

MRS. CORA B. MILLER'S HOME TREATMENT *

Another Fraud Put Out of Business by the Post-Office Authorities

[illegible] has long been known to the readers of not-[illegible] and magazines as the headquarters of a philanthropic lady who for some years has been spending a fortune in giving medical treatment absolutely free to suffering women—Mrs. Cora B. Miller. The scheme was to send a free treatment to all women applying for it and to get the prospective victim to take the regular treatment—price, $1. Form letters, "follow up" letters and the other paraphernalia of the mail-order house were used in the usual way to relieve the gullible sick of their money. How well it succeeded was recently brought to light when the postal authorities looked into the concern and found that the gross receipts of the business were in excess of $100,000 a year. In fact, the postmaster of Kokomo testified that during the fiscal year ending June 30, 1909, over $81,000 was paid to the concern on money orders presented by it and that a great deal more had been received by registered mail.

The "dope" furnished by "Mrs. Cora B. Miller"—apparently the same for all cases, whether a mild leucorrhea, a displaced uterus or a uterine carcinoma—was analyzed in the government laboratory, and according to the analysis, found to consist of:

Boric acid	39.96 per cent.
Tannin	5.78 per cent.
Cacao butter	54.03 per cent.
Carbolic acid	Trace.

(Average of three analyses.)

A box of this nostrum sold for $1; the cost of it probably was less than six cents. It is not surprising to read, therefore, that "Mr. Miller is without other source of income and has grown rich in this business . . . his holdings in real estate are probably more valuable than those of any other person in the county in which he lives."

Throughout the advertisements and circulars the implication was made that a woman—to-wit, Mrs. Cora B. Miller—was in charge of the business, had originated the "treatment" and directed the medical treatment of the dupes who wrote to the concern. All circular letters were signed "Mrs. Cora B. Miller," and every effort was made to convey the impression that a woman was running the business. As a matter of fact, the government showed that the business was conducted by Frank D. Miller, who started it under the name of the Kokomo Medicine Company and conducted it under this name until after his marriage, when it was reorganized and incorporated in his wife's name. According to the report, Mrs. Miller had nothing whatever to do with the conduct of the business, had never had any training that would fit her to prescribe for women's ailments and, in fact, her name was evidently used only as an advertising asset much in the same way as the old Lydia Pinkham advertisements exploited that long since-deceased individual.

Miller himself is not a physician and the investigation showed that the medicine was compounded by the clerks and stenographers whom the concern employed; the same clerks also answered—by means of form letters—the inquiries sent in by the victims. Miller claimed that his concern employed a "consulting physician" in the person of Dr. Chancellor, who was supposed to call at the office of the concern about once a week. Dr. Chancellor was very rarely consulted, in fact, there was no need of it apparently, if all the victims received the same boric acid and tannin mixture.

Testimonials? Of course. There was never a medical fraud so blatant nor an imposition so brazen but could show testimonials in its favor. As the assistant attorney general said in summing up the case against this concern: "The treatment, because of its antiseptic and astringent character, will undoubtedly palliate certain symptoms, and it is plain that the patients who have given these testimonials have been troubled only with conditions that the medicine will help. . . . . This is, in fact, one of the most pernicious characteristics of this business, the company is aided greatly in its efforts to foist this remedy on the public by these statements which are, no doubt truthfully quoted, but which are the result of self-deception and known to be so by the promoters of the business."

In view of the evidence, the assistant attorney general declared the concern to be "a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises," and recommended that a fraud order be issued against the Mrs. Cora B. Miller Company. The order was issued.

---

* A more complete account of the government's action in this case will be published in pamphlet form, illustrated, suitable for physicians to distribute among their patients. Price, four cents.

Alkalithia and the Council

The following letter is from Dr. Albert Mueller, Commissioner of Health, Rock Island, Ill.:

To the Editor:—A detail man for the Keasbey & Mattison Company (Ambler, Pa.) was in my office to-day and left samples of their goods, such as Alkalithia, etc.

"On questioning him, as I do all these people, whether Alkalithia had been submitted to the Council for approval and insertion in New and Nonofficial Remedies, he replied that several years ago such a procedure was done and that the Council *accepted Alkalithia* but wished to censor the advertising matter sent to physicians. To this Dr. Mattison would not agree He added that for $100 the product would be accepted, and all could be "fixed up" with the Council, therefore intimating that the Council could be bribed.

"I am writing this because in my opinion such stories can do the Association much harm and bring discredit on the Council, if they continue unrefuted. I, for one, am heartily in favor of the good work the Council is doing and account for this criticism as being due to the malice and spite of rejected manufacturers."

A copy of Dr. Mueller's letter was sent to the Keasbey & Mattison Company with a request for an explanation. The firm in replying stated that it "would not countenance any statement of this kind." The president of the Keasbey & Mattison Company in a later letter said that the agent in question had denied having made the statement reported by Dr. Mueller, and the president intimated that he did not believe the agent ever made such a statement.

The question thus resolves itself into one of personal veracity between Dr. Mueller and the agent for Alkalithia. Whether it is more likely that a reputable physician of high standing in his community should fabricate a slander on the Council, with no conceivable object in view than that the agent for a proprietary product that has been rejected by the Council should do so, we leave for the medical profession to decide.

If any other physicians have had an experience similar to that reported by Dr. Mueller, we should be pleased to hear of it. Such coincidences would prove interesting.

Correspondence

The Term Allopathy—A Protest

To the Editor: In the article, "The Medical Sects," THE JOURNAL, July 9, 1910, p. 146, occurs the following passage: "Allopathy was just as sectarian as homeopathy. Indeed homeopathy was the inevitable retort to allopathy." Here is given a false impression indeed, a misstatement of the facts. Both terms were the invention of Hahnemann; with him began the "pathies" and it is certainly time that scientific medicine put an end to them.

JOSEPH A. COGAN, Boston.

Smallpox and Vaccination in Japan

To the Editor:—The opponents of vaccination in England and in the United States are circulating the statistics of smallpox in Japan in recent years with a view to discrediting the prophylactic effect of vaccination in that country. They point out that Japan, which is supposed to be a thoroughly vaccinated country, has had, in the twenty years from 1889 to 1908, 171,500 cases of smallpox, and that in 1908 there were 18,139 cases. If the inhabitants of Japan were all thoroughly well vaccinated, these figures would seriously challenge the effectiveness of vaccination as a preventive measure against smallpox. There is, however, information at hand to show that a very large number of Japanese subjects have not been successfully vaccinated, and this information comes to us from an unimpeachable and authentic source. Dr. T. Amako, director of the Municipal Hospital for Infectious Diseases in Kobe, Japan, has recently published an article entitled "A Study of the Variola Epidemic in Kobe" (*Arch. f. Schiffs- u. Tropen Hyg.*, 1909, xiii, 409). He prefaces his statistics by stating that "fearful epidemics of smallpox have raged in Japan 70 times between the years 551 and 1884." He says that "vaccination was introduced into Japan in 1848, but was carried out very incompletely. In 1885, the first imperial vaccination law was passed and since then the former murderous epidemics of smallpox have been tremendously lessened through vaccination." In the year 1908, in the city of Kobe, with a population of 372,751, there were 4,184 cases of smallpox. Amako had an opportunity of observing 3,463 patients and of noting the relation between vaccination and smallpox in these cases. Of the entire number 1,607 patients, representing 46.4 per cent., were vaccinated and the remaining 1,856, or 53.5 per cent. were either unvaccinated or vaccinated unsuccessfully. Of the vaccinated patients, 116 died, representing a mortality of 7.2 per cent.; of the unvaccinated or unsuccessfully vaccinated patients, 851 died, representing a mortality of 45.8 per cent. It is thus seen that the mortality among the unvaccinated patients was nearly seven times as great as among the vaccinated cases.

There is certainly nothing in these figures which can possibly be construed to be unfavorable to vaccination. When by actual examination of the patients, an official finds over 50 per cent. of those suffering from smallpox to be unvaccinated or unsuccessfully vaccinated, there is no justification for the expectation that Japan should be free of epidemics of smallpox. It must be remembered, furthermore, that 18,000 cases of smallpox in a population of over 49,000,000 crowded together on a relatively small island is not excessive when compared with the number of cases in other countries. According to the estimate of John W. Trask, of the U. S. Public Health and Marine Hospital Service, there were probably more than 70,000 cases of smallpox in the United States in 1908. It is thus seen that the smallpox statistics of Japan as compared with the United States are much in favor of the former country. As indicating the opinion of the Japanese government of the value of vaccination, we may take its attitude towards vaccination in Korea. The total number of persons vaccinated in Korea in 1908 was 544,630. Japan has established 30 official committees of vaccination among the 13 provincial Korean governments, and has appointed 600 official vaccinators among the district magistracies and prefectures. In addition, 48 noncommissioned official doctors have been attached to important local police stations to aid in the work of vaccination. (See abstract in *Literary Digest*, June 25, 1910, p. 1253). It is evident that this vaccination campaign is costing Japan enormous sums of money, but this progressive nation recognizes that the work is of great importance to its development and to the development of Korea. In view of the attitude of the Japanese government (which is certainly in possession of all the facts concerning vaccination within its own domain) the criticism of English and American antivaccinationists, interpreting the results of vaccination from afar and crying "failure," will convince no one save themselves.

JAY FRANK SCHAMBERG, Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SALT FREE DIET

To the Editor:—Please give me more or less in detail, the salt free diet treatment advocated by Dr. Magnus Levy?

S. W. SAPPINGTON, Philadelphia.

ANSWER.—The term "salt free diet" is scarcely appropriate, as the diet advocated by Magnus Levy Widal and others is a diet poor in salt, but not necessarily free from it. A diet poor in salt can be secured by the use of a milk diet for a time, but if milk is to be used to supply the total nutriment of the patient, it will itself contain too much salt. Therefore it is better to construct a diet consisting of carbohydrates, vegetables, fruit, milk and even some meat, to which no salt is added in the cooking. Such a diet is found to satisfy the nutritive requirements of the patient and yet to give less salt than if a pure milk diet is employed. The following directions are given for a salt-poor diet by F. Kraus and T. Brugsch ("Therapeutische Technik für die Aerztliche Praxis" by J. Schwalbe, 1910): 1. The bread should be baked without the use of salt. 2. Unsalted butter should be furnished. 3. Not more than 1 liter of milk should be used. 4. Meat should be boiled and given the patient without the broth. 5. Vegetables should be boiled for a long time in water and this water poured off. 6. The cook should be forbidden to use salt in any way in the preparation of food for nephritics. Such a diet is well borne by some patients, but others become tired of it and the question then arises whether the addition of some salt cannot be permitted. [illegible] has found that in such cases it is sufficient to allow one daily addition of from 1.5 to 2 gm. to be applied to the meat, which is the most insipid for these patients.

DISCOVERY OF THE CAUSES OF MALARIAL AND YELLOW FEVER

To the Editor:—1. When and by whom were the causes of malarial and yellow fever discovered? 2. Who lost their lives through these researches? 3. Which of the workers along this line are living? H. W. Jones, Arthur, Ill.

Answer.—1. The parasite of malarial fever was discovered by C. L. A. Laveran of Paris, in 1880. The transmission of malarial fever by the mosquito was suggested by Sir Patrick Manson, demonstrated by Major R. Ross and later confirmed and more fully developed by G. B. Grassi of Rome. The agency of the mosquito in transferring yellow fever was suggested by Dr. C. Finlay about 1880, but this agency was not demonstrated until 1900, when the experiments of the U. S. Army yellow fever commission, consisting of Major Walter Reed, James W. Lazear, James Carroll and A. Agramonte, were made.

2. We recall no deaths of investigators experimenting with [illegible] Carroll and Lazear allowed themselves to be bitten with yellow fever infected mosquitoes. Dr. Carroll suffered a severe attack of the disease and Dr. Lazear died from yellow fever thus communicated. Dr. Carroll's obituary was published in The Journal, Sept. 21, 1907, p. 1048.

3. We believe that the principal workers on the theory of malaria transmission are still living. Of the American yellow fever commission only Agramonte survives.

OLIVE OIL IN DISEASES OF THE STOMACH

To the Editor:—Please give me some references concerning the use of oil in diseases of the stomach. O. L.

Answer.—Hodgdon, A. L.: Olive Oil in Obstruction of the Esophagus, The Journal, Dec. 28, 1907, p. 2152.

Rodonet, L.: Oil in Treatment of Stomach Affections, *Cor.-Bl. f. schweiz. Aerzte*, Nov. 1, 1908; abstr. in The Journal, Dec. 5, 1908, p. [illegible]

Bach, W.: Benefits of Oil Treatment of Ulcers and Stenosis of Pylorus, [illegible] *f. Verdauungsk.*, xiii, No. 6; abstr. in The Journal, [illegible] 8, 1908.

Cowie, D. M., and Munson, J. F.: Experimental Study of Action of Oil on Gastric Acidity and Motility, *Arch. Int. Med.*, January, 1908; abstr. in The Journal, Feb. 22, 1908, p. 643.

Graham, E. A.: Olive Oil for Postanesthetic Nausea, The Journal, Dec. 18, [illegible], p. 2094.

BOOKS ON DISEASES OF OLD AGE

To the Editor:—Please refer me to books on diseases of the aged. H. W. Howard, Prosser, Wash.

Answer.—

Crichton-Browne: Prevention of Senility, Macmillan Co.

Lorand: Old Age, F. A. Davis Co.

Metchnikoff: Prolongation of Life, G. P. Putnam's Sons.

Minot: The Problem of Age, Growth and Death, G. P. Putnam's Sons.

Weber: Means for the Prolongation of Life, John Bale Sons & [illegible], London.

DATA WANTED ON BLOOD-PRESSURE AMONG RAILROAD EMPLOYEES

To the Editor:—[illegible] work been done among [illegible] and if so, where can I procure the publications? [illegible] M. [illegible], M.D.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 16, 1910:

Foster, George R., Jr., lieut., will report to the president Army Medical School in this city for a continuation of the course of instruction.

Michie, Henry C., Jr., lieut., will proceed to Fort Lincoln, N. D., for temporary duty.

Harris, Jesse R., capt., relieved from treatment at Army General Hospital, San Francisco, and will return to his proper station.

Hopwood, Lucius L., capt., is assigned to command of the one-half of Co. B, Hospital Corps, Camp of Instruction at Leon Springs, Tex., and at Atascadero, Cal.

Tignor, Edwin P., dental surgeon, granted 20 days' leave of absence about July 15, 1910.

Wertenbaker, C. L., M. R. C., relieved from duty at Fort Jay, N. Y., and ordered to Fort Gibbon, Alaska.

Ferrin, Carlisle F., contract surgeon, granted 28 days' leave of absence.

Shepard, John L., capt., relieved from duty at Fort Logan, Colo., and ordered to Philippine Islands for duty on transport sailing from San Francisco, November 5.

Howell, W. O., M. R. C., relieved from duty at Presidio of San Francisco, and ordered to Scofield Barracks, H. Ty., for duty.

Gunckel, George L., dental surgeon, left Fort McPherson, Ga., on 20 days' leave of absence.

Dean, Elmer A., major, left Fort George Wright, Wash., en route to camp at American Lake, Wash.

Pulver, A. L., M. R. C., reports in temporary charge of attending surgeon's office, New York City.

Fauntleroy, P. C., major, left Fort Benjamin Harrison, Ind., en route to Camp Douglas, Wis.

Boyer, Perry L., capt., granted 30 days' leave of absence on surgeon's certificate of disability, with permission to apply for 15 days' extension.

Barney, Charles N., major, assigned to duty as inspector instructor at encampment of Connecticut Militia at Niantic, Conn., July 18 to 23, 1910.

Patterson, R. F., dental surgeon, reported for duty at Fort Sheridan, Ill.

Knox, Howard A., lieut., left Fort Hancock, N. J., with the 10th Cavalry, en route to Camp of Instruction, Pine Camp, N. Y.

Edger, B. H., Jr., major, left Fort Meade, S. D., en route to Fort D. A. Russell Target and Maneuver Reservation.

Reynolds, C. R., major, left Washington Barracks, D. C., en route to Camp at Gettysburg, Pa.

Stuckey, H. W., M. R. C., to return to station Fort Hamilton, N. Y., on return of Captain William L. Little, Medical Corps, to Fort Adams, R. I.

Sherwood, John W., M. R. C., ordered to proceed from Fort Williams, Me., to Fort Banks, Mass., for temporary duty.

Ashburn, P. M., major, will report to commanding general, Department of California, for assignment to duty at the camp of instruction at Atascadero, Cal.

Wolfe, Edwin P., major, will repair to this city for consultation with the Surgeon General of the Army.

Whitney, Walter, M. R. C., relieved from Fort McPherson, Ga., and ordered to Fort Egbert, Alaska, relieving Captain Alexander Murray, Medical Corps.

Murray, Alexander, capt., on being relieved from duty at Fort Egbert, Alaska, proceed to Seattle, Wash., and report by telegraph to The Adjutant General of the Army for further orders.

Smith, L. L., capt., relieved from duty, West Point, N. Y., and ordered to Army Medical School, Washington, D. C., for a special course of instruction.

Richards, Robert L., capt., relieved from special course of instruction at the Army Medical School, Washington, D. C., and ordered to New York City, for duty as attending surgeon.

Delaney, M. A., capt., granted 2 months' leave of absence.

Marietta, S. U., M. R. C., left Fort Des Moines, Iowa, with Troops C and D, 6th Cavalry, on detached service.

Scott, Minot E., dental surgeon, returned to Vancouver Barracks from temporary duty at Fort Lawton, Washington.

Stuckey, H. W., M. R. C., reports from temporary duty at Fort Adams, R. I., to detached duty with troops from post in camp at Fort Wetherill, R. I.

Wing, Franklin F., dental surgeon, left Fort D. A. Russell, Wyo., on 1 month and 20 days' leave of absence.

Harris, J. R., capt., returned to Fort George Wright, Wash., from treatment at Army General Hospital, San Francisco.

Casaday, George H., dental surgeon, reports for temporary duty at Fort Baker, Cal.

Hardy, Herbert I., M. R. C., Now at Gettysburg, Pa., will report in person to the commanding officer of the camp of instruction at that place for temporary duty, and on the completion thereof will revert to a status of absence with leave.

Hathaway, L. M., capt., ordered to proceed from San Francisco, to the Presidio of Monterey, Cal., for station and duty.

Medical Corps, U. S. Navy

Changes for the week ended July 9, 1910:

Seaman, William, P. A. surgeon, from awaiting orders to duty at the Naval Recruiting Station, New York.

Geiger, Albert J., P. A. surgeon, from duty at the Navy Yard, Mare Island, and such other duties as may have been assigned him, to duty at the Naval Hospital, Mare Island, Cal.

Cameron, Clyde B., asst. surgeon, from duty at the Naval Hospital, Norfolk, Va., to duty at the Naval Hospital, Las Animas, Colo.

[illegible], Walter A., asst. surgeon, from duty at the Naval Hospital, Las Animas, Colo., granted 2 weeks leave. On the completion of this leave, to temporary duty at the Navy Yard, Mare Island, Cal.

Miscellany

Report on Drunkenness in Massachusetts.—In 1909 the legislature of Massachusetts authorized the trustees of the Foxborough State Hospital for Inebriates to investigate the subject of the treatment of drunkenness in Massachusetts, including the classification of inebriates, proper equipment for their treatment, the subsequent care of discharged patients and inmates and the opportunity for the cooperation of private citizens. The report, prepared under the direction of the trustees by James Ford, Ph.D., instructor in the department of social ethics of Harvard University, and published as a state document, is a pamphlet of 70 pages. Its preparation has involved a careful study, chiefly from printed data, of the public treatment of inebriety in this country and Europe. The report gives statistics of drunkenness in Massachusetts in 1908, defines drunkenness, discusses types of cases, court procedure and disposition of cases, giving figures, and comments on defects in present criminal procedure as follows: Release, which is an excellent and proper disposition for first offenders and the accidental drunkard, has been applied to old offenders on account of a lack of a central record bureau of cases in all courts, and occasional drunkards have been allowed through neglect to develop confirmed inebriety and become burdens on the state. Probation was applied to less than one-tenth of all offenders though over one third of all those sentenced were released. Probation should have been applied in more cases, but the number of probation officers is too small to permit of the extension of this feature. The fine is usually open to serious objection because it is imposed at a time when the prisoner has no money to pay, and hence falls on his family or friends; the prisoner himself does not bear the penalty. Imprisonment for non payment of fine is unjust both to the prisoner and to the state. It defeats the intention of the judge to punish, while it doubly penalizes the man. Suspended sentence, permitting payment of fine while on probation, is a great saving to the state, both in fines collected and in homes protected. Imprisonment for drunkenness too often fails as a correctional measure. The prisoner's family suffer a penalty because they lose the man's wages. The incarceration costs the prisoner his employment, which was his chief claim to respect, and he finds it difficult to obtain work on his release. The children of a prisoner are looked at suspiciously for signs of evil inheritance. The Foxborough State Hospital is intended for young persons concerning whom there is a good prognosis; it receives inebriates and drug habitués on voluntary submission to treatment, under conditions prescribed by the acts of 1909, and on commitment on application of relatives or others. It has been found unwise to retain patients incapable of cure, as they create an undesirable workhouse atmosphere. Treatment relies largely on the building effect of pure air, good food, abstinence from alcohol and drugs, regular hours and out-of-door skilled labor. Medicine is given where needed. But this is not sufficient to cure the pathologic inebriate, and the education of the will is one of the objects sought, supplemented by various environmental conditions and oversight after leaving the institution. Recommendations are made as follows: The statutes should be so modified that imprisonment for non-payment of fine be abolished and suspended sentence substituted, permitting the fine to be earned and paid to a probation officer. Probation is essential in the early career of drunkards and it should be applied to a larger proportion of cases. Institution treatment should provide for ample and flexible equipment for the different types of drunkard. For certain types of occasional drunkard short sentences to the house of correction is the proper course. In vicious, vagrant and criminal cases, indeterminate sentence to the farm is urged. For the treatment of the non-criminal habitual inebriates, a hospital for curable cases and a farm colony for incurables are needed.

The Control of Scarlet Fever. The control of scarlet fever in a community, so far as our present knowledge allows us to proceed, means the control of seasonal prevalence, the limitation of occasional outbreaks and the destruction of endemic or sporadic foci (Crookshank, *Proc. Roy. Med. Soc.*, February, 1910). We cannot learn the natural history of scarlet fever either in the hospital or the laboratory. The bacteriologist or the superintendent of a hospital is no greater authority on the natural history of the disease than is a keeper at the Zoo on the habits of the tiger in his jungle. In studying scarlet fever in the natural state in epidemics in Ireland, Graves formulated the axiom that "a constitutional affection, produced by morbid animal or vegetable poisons, may display its evidence by only one or two of the numerous symptoms which usually accompany it," and this character appears to have been noted chiefly in connection with epidemics. The statistical tables almost invariably show that outbreaks of any magnitude (other than those due to milk) run for about eight months, and the period of greatest activity is always about six weeks. We have been taught that scarlet fever always breeds true; that a case at the present day is in direct descent from the first case that ever existed; that epidemics are due to neglect of sanitary precautions, and that epidemics come to an end after a process known as stamping out. There is also another belief that they come to an end through exhaustion of the soil. The soil varies, and "exposure to infection" is not a fixed quantity and cannot easily be defined. Does not the effective potency of the virus to produce certain specific effects vary? The classical experiments of Pasteur with rabies and chicken cholera prove that it does. Crookshank has never known the virus from a typical case of scarlet fever after passage through two removes to reproduce in a fourth case the typical symptoms. An exception is seen apparently, in isolation hospitals but here the experiment is not a pure one, and a return case is not necessarily a return of the original virus, but may be another strain of the same virus carried by an imperfectly immunized patient. It is a clinical observation also that a process of intensification occurs. One child in a family has sore throat but no rash, no peeling, and little fever. Another child a week or two later has a sore throat, greater fever and a peeling tongue. A third child develops a typical case. Such a series frequently occurs at the beginning of an outbreak. Is it not a fair deduction that epidemics of scarlet fever (except milk outbreaks) follow the intensification of a virus by passage through the bodies of responsive persons, and that they terminate after attenuation by passage through a further series of bodies? Crookshank believes there can be no doubt of it, and that a series from its first manifestation to its disappearance usually consists of about six cases, of which the third and fourth are commonly the most typical and most severe. The normal cycle of epidemic scarlet fever does not extend beyond a sequence of six cases. He thinks that this is a far more reasonable explanation than is the alleged termination from exhaustion of the number of susceptible persons. Notwithstanding this he believes that the removal of scarlet fever patients to isolation hospitals reduces the incidence of the disease, and is about the best thing for the average citizen as it insures him against expense in case his household becomes stricken and safeguards him against business or professional loss.

The Treatment of Facial Neuralgia by Local Injections As opposed to radical operations. A Sicard of Paris (*Proc. Internat. Med. Cong.*, Budapest, 1909) strongly advocates the treatment of facial neuralgia by means of local injections (alcohol, etc.). He describes the technic of injection in the various forms of facial neuralgia, gives his results in 168 cases so treated and a short historical sketch of the development of the treatment of facial neuralgia by local injection. Two distinct types of facial neuralgia are described: a neuralgia facialis essentialis and a secondary facial neuralgia. The neuralgia facialis essentialis may be attributed (in agreement with Bissaud) to a narrowness of the foramina at the base of the skull through which the sensory nerve branches pass, and is more often found on the right side; the secondary neuralgia may be due to either peripheral or general causes. The neuralgia essentialis seldom affects all three branches of the nerve. The paroxysms are, however, very severe, local myoclonia, a strong hyperemia of the skin, an overflow of tears, and a hypersecretion of the esophageal glands often result. It is easy to distinguish this paralysis from unilateral trental migraine. In treatment by the injection method the chances of serious complications are small. Large temporary hematomas may arise around the point of injection. To be certain that the treatment is successful it becomes necessary only to establish a persistent anesthesia in the skin or mucous membrane of the area supplied by the affected and injected nerve branch. In cases of myoclonia Sicard likewise found it sufficient to inject with alcohol the peripheral branches of the motor facial nerve. In all the 168 cases of facial neuralgia so treated beneficial results are reported. Relief was also afforded in one case in which the Gasserian ganglion was injected directly with alcohol through the foramen ovale. For injection Sicard used a very fine platinum needle 4 to 6 cm. in length. The skin was anesthetized with a 1 per cent. solution of stovain. For injection fluid 80 per cent. alcohol with or without the addition of stovain, but never mixed with chloroform, was most generally employed. Good results were also obtained by using the following solution for injection: 50 c.c. of 80 per cent. alcohol, 1 gm. menthol and 50 gm. novocain. [NOTE: Those who wish to look this subject up further will be interested in the articles by Patrick in THE JOURNAL, Nov. 9, 1907, xlix, 1567, and Dec. 11, 1909, liii, 1987, and by Hecht in THE JOURNAL, Nov. 9, 1907, xlix, 1574.]

Tuberculin in Progressive Paralysis.—In the face of the great skepticism which exists among the majority of the medical profession regarding the curability of progressive paralysis, Jauregg von Wagner (*Proc. Internat. Med. Cong.* in Budapest, 1909) reports many cases of apparent cures by means of the injection of tuberculin or by a combination of tuberculin injection and antiluetic treatment (mercury, iodids, etc.). The reported results are, moreover, not in accord with those obtained by Ziehen, Kraepelin, Krafft-Ebing and Obersteiner. Wagner began experimental work in 1891 to obtain evidence of the possible therapeutic worth of tuberculin in paralysis and to perfect the technic of treatment. In 1900 a great many paralytic patients, taken as they came and without choice, were injected with tuberculin. The results were throughout beneficial. There were noted pronounced remissions of very long duration, and it is claimed that the patients who received the injections of tuberculin, as far as could be made out, lived longer than those who did not receive this treatment. Among the patients in his own private practice (where one as a rule gets them in an earlier stage) Wagner says the cures and remissions were even more pronounced. The proper dosage of tuberculin for such treatment ranges from 0.01 c.c. to 0.1 c.c. and is to be regulated according to the condition of the patient. A uniform dose of 0.7 c.c. of tuberculin for a given series of patients was used, however, with good results, with intervals of two days, and the number of injections required by each patient was regulated by their own reactions. In most cases 7 to 12 injections were required. The increase in the dosage can be regulated by the degree of fever reaction. A fever reaction of as much as 39 C. is by all means to be avoided. After trying out a number of combinations of tuberculin injection with antiluetic treatment the course of treatment which gave the best results was determined to be the administration of iodids and mercury along with the tuberculin injection. For the general class of patients who are received at the hospitals in Vienna, this combination, as a routine treatment, proved to be more effective than the simple tuberculin injection. It was not uncommon to notice among the patients during treatment an increase in body weight (which in some cases amounted to several kilos) and other evidences of a general systemic improvement.

Health Supervision of the Public Schools of California.—In 1909 the legislature of California passed a law establishing health and development supervision in the public schools. According to George L. Leslie (*Psychological Clinic*, April, 1910) this law authorizes boards of education or school trustees to establish annual physical examinations of school children, with a follow-up service to secure correction of defective development; to require physical examination of all candidates for teachers' positions to determine their vitality and efficiency; to adjust school activities to health and growth needs and development processes of pupils; to study mental retardation; to exercise expert sanitary supervision; to organize a corps of experts in physiology, hygiene and practical psychology who in cooperation with skilled physicians can diagnose defective growth and development. All matters pertaining to contagious or infectious diseases are left to boards of health, but close cooperation with boards of education is aimed at. The law is permissive, not mandatory. A skilled and careful examiner is not restricted, but is left free to uncover any and all causes which interfere with the health, growth and efficiency of pupils and teachers. California is the first state in the union to give legal recognition to this function of the skilled educator. Under this law departments of health have been established at Los Angeles, Pasadena, Berkeley, Oakland, Pomona, Redlands, Hollywood, Monrovia and other cities. A special course of training for educators in the subjects indicated is now in preparation in the University of California; Stanford University is ready to give thorough training to those who wish to become examiners; and the State University of California has inaugurated an admirable course of lectures on school hygiene. The law was intentionally made permissive in order that an educational period should precede its compulsory enactment, which will undoubtedly follow.

Children Allowed to Become Tuberculous.—The Instructive Visiting Nurse Association of Baltimore, on Nov. 1, 1909, had on its visiting list 1,665 tuberculous patients, as reported by Ellen N. La Motte (*Journal of the Outdoor Life*, March, 1910). Of this number 165, or 10 per cent., were children of and under school age. They all had pulmonary tuberculosis, not bone or gland infection. Of these 165, 121, or 73 per cent., came from homes in which there was already tuberculosis, having contracted it probably either from their parents, grandparents, older brothers or sisters, or other relatives living with them, with whom they were in close daily contact. This cannot be scientifically proved, for all other possible sources of infection would have to be excluded, such as casual visitors, milk supply, street dust, etc., but that is the common-sense view of the source of the infection. The problem of prevention is a difficult one, as the disease is often transmitted through the sheer brute affection of the ignorant and selfish—through the sort of affection that feeds the child from the same spoon; that cuddles and pets it through coughing attacks; that puts it to bed to sleep with the sick person, and that is deaf and immovable before all arguments and expostulations. La Motte asks what the value is of an open-air school or of sanitarium treatment, if at the end we allow the child to return to surroundings in which it becomes reinfected. Of course in many instances a real desire to do the correct thing is handicapped by circumstances; but the results of intellectual and of physical inability to comply with the requirements of hygiene are the same. It is the infected home that is responsible for much tuberculosis.

Proposed Legislation in Holland to Restrict Criminal Abortion.—A letter from Holland in the *Wiener klinische Rundschau*, April 3, states that criminal abortion is practiced in that country to a horrifying extent and dozens of young women all over the country are losing their lives in consequence. The law hitherto in vogue requires proof that the fetus was alive at the time, which proof it is impossible to present, consequently criminal abortion has almost invariably escaped punishment. Only in a few cases in which the mother died was a conviction secured on the ground of malpractice. The proposed new bill imposes a penalty for treating a woman to induce abortion whether the intention was stated or not. The maximal penalty, 3 years in prison and a fine of 3,000 gulden (nearly $1,200), is increased by a third when the deed is done for money by a professional abortionist or a medical man. No exception is explicitly made for physicians, but the authorities are quoted as saying that no physician would ever be prosecuted for justified induction of abortion. The bill further provides penalties for advertising preventive measures, or offering them or praising them publicly or unsolicited, physicians having found that induced abortion is the next step when preventive measures have failed. The writer adds that certain misguided philanthropically inclined propagandists are sending to each newly founded household and to each new mother, addresses where preventive measures can be obtained.

Medical Economics

THE LEAGUE FOR MEDICAL FREEDOM

One of the most encouraging signs of the times is the increasing interest taken in medical and health matters by the newspapers. As an example of good common sense in a lay journal, we quote the following:

"Benjamin Orange Flower, editor of the *Arena*—a periodical which someone characterized as 'having more writers than readers' is president of the National League for Medical Freedom.

"Now this is a lovely name—just beautiful. But we read further, and discover that the object of the organization is to resist the steady encroachment on our liberties of the American Medical Association. Mr. Flower eloquently puts it: 'The real issue is * * * whether people are going to be allowed to choose their own medical creeds along with their religions and moral creeds, without interference, or whether we are going to have state medicine, as obnoxious as state religion would be.' The evidence of this dastardly conspiracy is the endeavor of the American Medical Association to help on the movement for a National Department of Health.

"Now we are not prepared to assert that it would be well to extend the already comprehensive range of federal activities to the extent which would be necessary in order to establish such a department; but we do desire to reassure Brother Flower and help him to sleep undisturbed by visions of a conspiracy on the part of the 'allopathic' doctors of the nation against his rights as an American citizen. A health department, if organized, would concern itself not with details of the practice of medicine, but with large matters of sanitation. The individual citizen would be left free, when stricken by fever, to take aconite 2nd, under the homeopathic banner, or sulph. quinin 10 gr., under the 'allopathic.' Or he might take fluidextract of calisaya with the eclectics, or a wet pack with the hydropaths, if it so pleased him to do.

"Materia medica and therapeutics vary with the schools. But there is just one pathology, just one histology, just one bacteriology, just one set of aseptic methods known to science. Homeopath and allopath yes, and osteopath, for that matter—have one technic when it comes to disinfecting a house, cutting off a finger, opening and draining an abscess, or diagnosing a case of cholera, yellow fever or smallpox. The concerns of the public health are those on which all doctors agree. The service of the eminent men of different schools of medicine on boards of health in the western states ought to reassure Mr. Flower—and will, if he will look into the facts."

It is a pleasure to commend the discrimination shown by the *Republic*. Apparently, many editorial writers are unable to distinguish between public medicine and private practice. The fact that the regulation by the state or the federal government of water-supplies and food-products or the regulation and suppression of epidemics by general sanitary measures would not in any sense affect the personal relations of the individual and his physician has not as yet been thoroughly grasped, even by all of our legislators. For obvious reasons interested parties are endeavoring to confuse the issue. Such editorials as that of the *Republic* will go far to enlighten the general public and to define the issues involved.

State Boards of Registration

COMING EXAMINATIONS

California: San Francisco, August 2. Sec., Dr Charles L. Tisdale, 929 Butler Bldg., San Francisco.
Nebraska: State House, Lincoln, August 10-11. Sec., Dr. E. Arthur Carr, 141 S. 12th St., Lincoln.

Colorado April Report

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners reports the written examination held at Denver, April 5, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Six candidates were examined, of whom 4 passed and 2 failed. Twenty-six candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

College	Year Grad	Per Cent.
PASSED		
University of Colorado	(1909)	82.2
Michigan College of Medicine and Surgery	(1905)	81.4
Woman's Medical College of Pennsylvania	(1908)	83.7
Western Pennsylvania Medical College	(1904)	76
FAILED		
University of Louisville	(1905)	6[illegible].4
Ensworth Medical College	(1908)	56.4

REGISTERED ON CREDENTIALS

College	Year Grad	State License
College of Physicians and Surgeons, Chicago	(1898)	Illinois
Rush Medical College	(1879) (1889) (1903) (1909)	Illinois; (1906) Montana; (1897) Iowa
College of Physicians and Surgeons, Keokuk	(1901)	Wisconsin
University of Iowa, College of Medicine	(1875)	Iowa
Tulane University of Louisiana (1895) Louisiana	(1905)	Texas
Detroit College of Medicine	(1903)	New York
University of Michigan, College of Medicine	(1898)	Washington
University of Maryland	(1878)	Michigan
Central Medical College, St. Joseph	(1905)	Kansas
University Medical College, Kansas City	(1908)	Missouri
St. Louis University	(1909)	Missouri
Marion Sims College of Medicine	(1898)	Iowa
Washington University, St. Louis	(1902) (1909)	Missouri
Ensworth Central Medical College	(1907)	Kansas
Homeopathic Medical College of Missouri	(1884)	Iowa
Kansas City Homeopathic Medical College	(1891)	Missouri
Cleveland Homeopathic Medical College	(1898)	Penna.
Ohio Medical University	(1905)	Penna.
Jefferson Medical College	(1909)	Penna.

The following questions were asked:

ANATOMY

1. Describe the lower end of the humerus. 2 Describe the tibia. 3. Name the muscles inserted into the tendo Achillis and give the origin of each. 4. Give the origin, insertion and nerve supply of the following muscles: Biceps flexor cruris, tibialis anticus, extensor carpi ulnaris, serratus magnus and rectus abdominis 5. Describe the knee-joint. 6. Describe the ulnar nerve and its branches and name the cervical nerves from which its fibers are derived. 7 Give a short description of the abdominal wall external to semilunar lines. 8. Name the muscles that move the eyeball and the action of each. 9. Give the relations of the right kidney. 10. Give the blood and nerve supply of the stomach.

PHYSIOLOGY

1. Define the mechanical processes of digestion 2. Name the digestive ferments, giving the origin and functions of each. 3. Give the physical description of the blood, together with causes of its circulation. 4. Give the origin and function: (a) of the red blood cells; number per c.mm.; (b) of the leucocytes; number per c.mm.; (c) of the plasma; (d) of the lymph. 5. Describe the movements of blood corpuscles in the capillaries and explain the phenomena of diapedesis. 6. Name the organs of elimination and tell what is eliminated by each. 7. Describe the process of elimination of urine by the kidney, giving the amount per diem and constituents of normal urine. 8. Define respiration, its purpose and how accomplished. 9. Define a reflex arc Give example. 10. Give the distribution and functions of the third and fifth cranial nerves.

CHEMISTRY

1. Define (a) physiologic chemistry; (b) pathologic chemistry. 2. Describe two methods of determining the specific gravity of urine. 3. State the source of (a) exotoxins; (b) endotoxins. 4 Define (a) metal; (b) acid; (c) base. 5 Give the formulas of the following: (a) Zinc oxid; (b) ferric chlorid; (c) sesquioxid of iron 6. Define amphoteric reaction 7 How would you determine the presence of free HCl? 8. (a) Define the different states of matter (b) To which does Avogadro's law apply? 9. (a) What is the significance of indican in urine? (b) Explain a method for determining its presence. 10. Give chemical names of following formulas: (a) $KClO_3$; (b) $CHCl_3$; (c) HCl.

PATHOLOGY

1. Describe the bacillus of tuberculosis 2. Discuss sarcoma of the kidney. 3. Give the pathology of the various forms of pericarditis. 4. Define: Opsonin, vaccine, opsonic index, *Spirochæta pallida* 5. Give the pathology of leukemia 6. What are the gross autopsy findings of a patient dead with mitral stenosis 7. What is the morbid anatomy of acute pancreatitis? 8. What is the pathology of pneumothorax? 9 Discuss the various forms of arthritis. 10. What is the morbid anatomy of paralysis agitans?

SURGERY

1. Give the symptoms of traumatic shock. 2 Where does senile gangrene most often occur and what is the usual cause? 3 Give the causes, symptoms and prognosis of fracture of the patella 4 Describe the method of examination of an injured hip 5 Give the symptoms of hypertrophy of the prostate gland. 6 Give the etiology and symptoms of renal calculus. 7 Give the symptoms of tuberculous disease of the elbow joint 8. Give the differential diagnosis between an inguinal and femoral hernia 9 Mention some of the connective-tissue tumors, including benign and malignant 10 Give the symptoms of a T fracture into the elbow joint

TOXICOLOGY

1. Define toxicology 2 What is an overdose of chloral hydrate? 3. Give symptoms and treatment of overdose of chloral hydrate. 4 Give symptoms and treatment of overdose of lead acetate 5 Describe postmortem appearance in death from lead acetate. 6. Give symptoms of poison by *Cocculus indicus* 7 What do you understand by ptomain and ptomain poison? 8 Give symptoms and treatment of ptomain poison. 9 Define nerve poison 10 Give symptoms and treatment of nerve poison.

SYMPTOMATOLOGY

1 Give differential diagnosis between chronic rheumatism, arthritis, deformans and gout 2 Define, give cause, symptoms, diagnosis and prognosis of acute uremia 3 Name five diagnostic symptoms by which you may differentiate between conjunctivitis and acute iritis 4 Give some of the causes which lead to fatty degeneration of the heart. 5 Describe the various forms of epilepsy, giving

cause, diagnosis, symptoms and prognosis. 6. Define, give cause and symptoms of pyelitis. 7. Give symptoms of ulcerative endocarditis. 8. Give symptoms and changes in the blood in case of chlorosis. 9. Give etiology and symptoms of atrophic cirrhosis of the liver. 10. Give etiology and symptoms of puerperal eclampsia.

OBSTETRICS

1. Describe the uterus, its parts, cavity openings and structure. 2. What is (a) allantois, (b) amnion, (c) funis, (d) meconium? 3. What are the changes in the uterus that take place during pregnancy? 4. What is meant by abortion, miscarriage and premature labor? 5. What are the signs of pregnancy and how may they be classified? 6. What hygienic measures are necessary in a case of labor? 7. Describe the methods of resuscitation when a child is apparently stillborn. 8. How would you recognize the R. O. P. position? 9. What is placenta previa and how and why does it occur? 10. What is the treatment of placenta previa, before term and at full term?

West Virginia April Report

Dr. H. A. Barbee, secretary of the State Board of Health of West Virginia, reports the written examination held at Wheeling, April 12-14, 1910. The number of subjects examined in was 20; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 22, of whom 17 passed and 5 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Louisville	(1908) 80; (1909)	88
University of Maryland	(1908)	89
Baltimore Medical College	(1906) 81; (1909)	80
College of P. & S., Baltimore	(1909) 87, 89,	91
Louisville and Hospital Medical College	(1908)	82
St. Louis College of Physicians and Surgeons	(1899)	88
University of Buffalo	(1891)	90
Woman's Medical College of Pennsylvania	(1909)	88
Western Pennsylvania Med. Coll.	(1908) 86; (1909)	86, 89
University of the South	(1909)	8[illegible]
University of Virginia	(1908)	88

FAILED

College	Year Grad.	Per Cent
Louisville and Hospital Medical College	(1908)	78
University of Louisville	(1909)	65
Eclectic Medical Institute, Cincinnati	(1909)	73
Western Pennsylvania Medical College	(1909)	78
Meharry Medical College	(1908)	80*

* Fell below 60 in one or more branches.

The following questions were asked:

OBSTETRICS AND GYNECOLOGY

1. Describe puerperal mania. Give cause and prognosis. 2. Treatment for excessive vomiting in pregnancy. 3. What would you carry in your obstetrical bag? 4. Would you rupture membrane? If so give cause, symptoms and treatment. 5. Give pathology, symptoms and etiology of septicemia. 6. Eclampsia. Treatment. 7. What would you do in case of postpartum hemorrhage? 8. Treat case of endometritis. 9. Treat case of vaginismus. 10. Treat case of fibroma of the uterus.

ANATOMY AND EMBRYOLOGY

1. Name the characteristics of mucous and serous membrane. 2. Describe Scarpa's triangle, giving contents and relations. 3. Locate the thoracic duct and indicate what portions of body are drained by it. 4. Give arterial supply of the rectum, naming the branches from which they arise. 5. Give brief outline of arrangement and plan of distribution of the sympathetic system. 6. Give superficial and deep origin, course and distribution of facial nerve. 7. Name, describe and make diagram of the bony pelvis, mentioning the peculiarity of the female. 8. How is the true chorion formed? 9. What changes occur in the vascular system at birth? 10. Describe Poupart's ligament and mention its surgical significance in the radical cure of inguinal hernia.

CHEMISTRY AND MEDICAL JURISPRUDENCE

1. Define chemical incompatibility in medicine. Give example. 2. How is [illegible] formed? What is the danger of giving acid with it? 3. How is quantitative analysis of the diabetic urine made? 4. What is the quickest and most fatal poison, and is there an antidote? 5. In burning sulphur what is given off? How much should be used in a room 10 x 10 feet? 6. How would you determine organic matter in water? 7. What are ptomains? 8. Malpractice. Define it. What does plaintiff have to prove to recover damages? 9. Blood stains. How determine whether human or not? 10. What are the legal requirements in West Virginia to practice medicine?

SURGERY

1. Treatment for rattlesnake bite? 2. What is tetanus, cause and treatment? 3. What may an aneurism be mistaken for? 4. Prepare a quart of normal salt solution. 5. Give methods of controlling hemorrhage. 6. Treat fracture of the ribs. 7. How are wounds classified? 8. What are symptoms of shock, treatment? 9. What are the symptoms of appendicitis? 10. Give classification and treatment of burns.

PHYSIOLOGY AND HISTOLOGY

1. What is the mode of production of heat in the body? 2. What do you understand by blood pressure? 3. Define the terms metabolism, anabolism and catabolism. 4. How may the amount of urine be physiologically increased or diminished? 5. Describe physiology of [illegible]. 6. Describe the functions of the kidneys and name the products excreted. 7. Describe the normal heart sounds and explain cause of same. 8. How many different kinds of blood corpuscles in the human body and what are their relative numbers in health? 9. How are [illegible] produced? 10. Describe the structure of bone.

PRACTICE OF MEDICINE AND PEDIATRICS

1. Give symptoms and treatment of chlorosis, simple anemia and pernicious anemia. 2. Give symptoms and treatment of syphilis. When would you begin the administration of drugs? 3. Give cause, symptoms and treatment of neurasthenia. 4. Give symptoms and treatment of neuritis. 5. Give cause, symptoms and treatment of pericarditis. 6. Differentiate epilepsy from hysteria and treat each. 7. Give symptoms and treatment of lobar pneumonia; differentiate from bronchial pneumonia. 8. Give your treatment of asthma. 9. State in detail how you would modify cow's milk. 10. Give cause, symptoms and treatment of membranous laryngitis.

MATERIA MEDICA AND THERAPEUTICS

1. For what purposes are diuretics employed? 2. Describe the therapeutic uses of spartein and state the dose of the sulphate for hypodermic uses. 3. Give the indications for the use of corrosive sublimate internally. 4. What remedies are employed to correct anemic conditions and how are they used? 5. State the precautions which should ordinarily be observed in administering medicines by the hypodermic method. 6. Describe asafetida and outline the physiologic effects. 7. Outline the general treatment of acute articular rheumatism. Write a prescription containing at least two ingredients for an adult to relieve pain in acute articular rheumatism. 8. Why is atropin combined with morphin when the latter is administered? What is the dose of atropin when combined with morphin? 9. Write a prescription containing a sedative and an expectorant for a bronchial cough in a three-year-old child. 10. Define a mydriatic. Give three examples, with the dose for the local application in each case.

BACTERIOLOGY AND HYGIENE

1. What do you understand by pathogenic germs? 2. Give two methods of making bacteriologic diagnosis of diphtheria. 3. Define a toxin and an antitoxin. 4. What organisms may be found in a pleuritic effusion and state the significance of each. 5. Discuss water as a transmitter of disease-producing organisms, giving sources of pollution. 6. What are some of the most approved methods for the purification of water for domestic use? 7. Suggest preventive measures during a typhoid epidemic. 8. What are the sources of danger from a sanitary view in the use of public buildings and how may these dangers be lessened? 9. Give the prophylaxis of smallpox. 10. What can you say for and against the use of tobacco?

SPECIAL PRACTICE

1. Name the important physical signs of incipient pulmonary tuberculosis. 2. Make a physical examination of heart and blood vessels. 3. Diagnose and treat hypertrophic rhinitis. 4. Describe mouth breathing. Give cause and treatment. 5. Diagnose and treat ulcer of the cornea. 6. What is choked disc? Give most important cause and treatment. 7. Describe technic of laryngeal intubation. 8. Diagnose and treat foreign bodies in larynx. 9. Diagnose and treat paralysis of the seventh cranial nerve. 10. What symptoms follow a hemorrhage into the internal capsule?

Montana April Report

Dr. William C. Riddell, secretary of the Montana State Board of Medical Examiners, reports the written and oral examination held at Helena, April 5-7, 1910. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 48, of whom 38 passed and 10 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Hahnemann Medical College and Hospital, Chicago	(1887)	75
Chicago College of Medicine and Surgery	(1908)	75.3
Chicago Homeopathic Medical College	(1897)	80.9
College of Physicians and Surgeons, Chicago (1904) 76.3; (1905) 78.9; (1906) 81.3, 81.7; (1907) 80.1; (1908) 80.5	(1909)	81.7
Rush Medical College	(1906)	78.3
Northwestern Univ. Med. School	(1906) 84.5; (1909)	81.9
Hospital College of Medicine, Louisville	(1901)	80.2
University of Louisville	(1906) 79.3; (1909)	84.4
Detroit College of Medicine	(1901)	78
University of Minnesota, College of Medicine (1902) 79.1, (1905) 76.5	(1906)	80.5
Barnes Medical College	(1898)	75.3
University Medical College, Kansas City	(1907)	75.3
Medico-Chirurgical College of Kansas City	(1903)	82.6
St. Louis University	(1909)	79.9
Creighton Medical College	(1909)	75.1
Columbia University, College of Physicians and Surgeons	(1908) 77.8; (1909)	83.1
Bellevue Hospital Medical College	(1887)	75
Medical College of Ohio	(1909)	77.1
Cleveland Homeopathic Medical College	(1908)	77.2
Woman's Medical College of Pennsylvania	(1908)	80
Jefferson Medical College	(1906)	79.3
Milwaukee Medical College	(1901)	78.4
Queen's University, Kingston, Ontario	(1905)	81.2
University of Toronto, Ontario	(1908)	83.5, 85.2
McGill University, Montreal, Quebec	(1900)	80.9
University of Glasgow, Scotland	(1899)	86.1

FAILED

College	Year Grad.	Per Cent
College of Physicians and Surgeons, Chicago	(1906)	63.8
Northwestern Univ. Med. School	(1899) 69.5; (1908)	72.7
Chicago College of Med. and Surg.	(1904) 68.5; (1908)	72.1
University of Kansas	(1909)	71.5
University of Louisville	(1894)	60.2
University of Minnesota, College of Medicine	(1902)	70.8
Kansas City Hahnemann Medical College	(1909)	72.1
Marion-Sims-Beaumont Medical College	(1903)	62.4

Book Notices

Practice of Osteopathy. Its Practical Application to the Various Diseases of the Human Body. By Charles H. Murray, A.B., Author of "Genuine Osteopathy," etc. Half Morocco. Price, $3.50. Cloth, $2.50. Pp. 338, with 107 Illustrations. Elgin, Ill., 1909.

This book, written by one who signs himself "Charles H. Murray, A.B., B.D., D.O.," has apparently aroused consternation among the followers of "osteopathy," since the publisher's circular accompanying the book states that the osteopathic publications have made "vicious attacks" on it because "this book will teach medical doctors the practice of osteopathy and all that is best in mechanotherapy and they will be able to use it to great advantage." Quotations from a number of osteopathic publications are also given, characterizing the author as "Judas" and applying to him several other epithets almost as bad, if not as ancient.

Examination of the book fails to disclose any such startling characteristics. The first part consists of about one hundred illustrations representing various manipulations, the plates being accompanied with descriptive matter. The second part, which discusses disease and its treatment, is the application of the manipulations to various diseases. The sheet-anchor of the author in all doubtful cases is what he happily characterizes as a "general treatment." This is given when all other signs fail and when nothing else seems to be in order. It is also advised as the accompaniment of most of the special manipulations recommended.

A number of interesting statements appear, such as the following in relation to typhoid fever: "Osteopathic treatment may be administered with very gratifying results. If begun early, the fever may often be aborted. (See Nos. 61, 62, 32 and 53.) The spine may be gently sprung from the lower part to between the shoulders." In addition to this remarkable treatment, however, the author advises strict attention to diet and bathing.

Regarding malarial fever, Murray says that "marked bony lesions are found oftentimes in persons suffering from the disease and great improvement follows their correction." A "general treatment" seems to be indicated, although the use of quinin is also mentioned in the last paragraph.

Scarlet fever proves somewhat of a stumbling-block, since apparently a "general treatment" would not be of much value here. Numbers 5, 10, 13, 14, 51, 47, 50 and 53 are recommended. Practically the entire category is recommended for grip, probably advisedly. When the author gets to smallpox, however, he does not even attempt to advise "general treatment," but very carefully avoids the subject of treatment. Locomotor ataxia, paralysis agitans, neurasthenia, chorea, exophthalmic goiter, jaundice, arthritis deformans, diabetes and arteriosclerosis all yield apparently to a "general treatment." Even this system, however, is evidently lacking in some particulars, as the author does not make any recommendation at all regarding treatment in a number of diseases. Several interesting statements appear, such as the following: "The outlook in most cases presenting valvular difficulties (of the heart) is not favorable, yet a number of cases have been cured by osteopathic procedure." Just how, the author does not say, but hastens to qualify his statement: "At any rate, most cases may be benefited." In a number of instances, Murray has evidently reached the end of his tether and makes no attempt to suggest osteopathic methods of treatment, but frankly advises the best medical treatment of which he is aware.

If this book comprehends all the "revelations" which this osteopathic "Judas" has to make, the sacred cause of "osteopathy" would seem to have little to "reveal."

The Religio-Medical Masquerade. A Complete Exposure of Christian Science. By Frederick W. Peabody, LL.B., of the Boston Bar. Cloth. Price, $1. Pp. 197. Hancock Press, Boston, 1910.

This little book presents concisely and forcibly the facts regarding Mrs. Eddy and her cult, which, under the name of "Christian Science," Mr. Peabody denounces as the "most shallow and sordid and wicked imposture of the ages." Mr. Peabody is a Boston attorney who represented the Arena Company in 1899 in the suit brought against that magazine for the publication of Mrs. Woodbury's article, as well as in the counter-suit of Mrs. Woodbury against Mrs. Eddy. He was also retained by Rev. Minot J. Savage and later by *McClure's Magazine* to make a legal investigation of the history of Eddyism and, finally, was one of the attorneys in the suit brought by Mrs. Eddy's two sons for the division of her estate. As the Massachusetts attorney in these various cases, he examined under oath many of Mrs. Eddy's most intimate friends as well as the highest officials of the "Christian Science" organization. His knowledge is therefore not based on hearsay or popular belief, but is the result of careful and accurate legal investigation.

Mr. Peabody explicitly states that he publishes his book with full knowledge of the responsibility which he assumes, and that he is willing to substantiate in any legal tribunal every statement which he makes. The significance of this will be realized on reading some extracts from the book: "As I understand her, Mrs. Eddy is the inventor and sole proprietor of the greatest get-rich-quick concern ever conceived. . . . Christian Science never cured any one of anything but imaginary illness; it never relieved any one of any real evil—but his money. Mrs. Eddy, boldly professing to have received a revelation from God, and to be the equal of Jesus Christ, has made upwards of a million and a half dollars out of her enterprise that she calls Christian Science, since she reached 60 years of age." "Christian Science is a 'skin game' and the powers that be in Christian Science are the inner circle of grafters." "Mrs. Eddy's miraculous cures are all frauds, every one of them. She never healed any one of any serious disease. She never in her life had any curative power whatever. . . . Her man, Alfred Farlow, the official, highly paid and carefully coached spokesman of her cult, and its leading press agent, admitted, in response to my questioning and when testifying recently under oath and subject to cross-examination, that he did not know of any cure having been made by Mrs. Eddy of any organic disease in her life, but stiff leg, and he said that in his understanding as a high practitioner of the Christian Science art of healing, a stiff leg is an organic disease."

Mr. Peabody's book is a merciless and unanswerable arraignment of the leaders of this cult.

Infectious Diseases. A Practical Text-Book. By Claude Buchanan Ker, M.D., F.R.C.P., Medical Superintendent, City Hospital, Edinburgh. Cloth. Pp. 555, with 66 illustrations. Price, $7. London: Oxford University Press, 1909.

An extensive experience at the Edinburg City Hospital has enabled the author to speak knowingly concerning all except some of the rarer infectious diseases. He has aimed to make his book practical and has omitted, therefore, much concerning the etiology, bacteriology and pathology. Bibliographic references also are seldom given. The result is a text-book that is eminently suited to the needs of the practitioner—a book in which the emphasis is laid on diagnosis, prognosis and treatment. It must not be inferred, however, that pathology and bacteriology are overlooked. On the contrary, they are clearly discussed, though in a succinct rather than an exhaustive manner and with especial reference to the practical bearings of these topics. For instance, the bacterial side of diphtheria and cerebrospinal meningitis is excellently handled, with minute directions as to the diagnostic help that comes from the early identification of the organisms in a given case of illness. Excellent plates show the appearance of the stained micro-organisms. In fact, one may say that all the numerous plates and charts in the book are unusually well executed and are especially serviceable in illustrating the rashes of the eruptive diseases or the organisms of the infections.

Dr. Ker is a believer in the old-fashioned methods of diagnosis by means of the history and by physical examination; by a study of tongue, pulse, facies, course of temperature, characteristics of the rash, etc. He does not, however, neglect the laboratory side; he discusses fully the value of blood-counts in the various diseases, for instance, leukopenia in typhoid, lymphocytosis in whooping-cough, the importance of lumbar puncture, serum reactions, a study of the urine, etc. But all this is done in such a well-balanced manner that the reader feels confidence in the author as one whose theoretical knowledge has been prevented from running into extravagant channels by the logic of a judicial mind and the curb of bedside experience. The laboratory and bedside experiences are, as they should be, closely correlated.

The title of the book is, in a sense, a misnomer, for only some of the infectious diseases are discussed. There are considered only those diseases treated at the Edinburg City Hospital. Many diseases commonly classed as infectious are omitted, for instance, those due to animal parasites as malaria, amebic dysentery, trichinosis and others. Pneumonia, tuberculosis, syphilis, yellow fever, rheumatism, tetanus, cholera, septicemia, are not included.

The book is beautifully printed, well bound, and is one that can be recommended to the general practitioner as a safe, sane and up-to-date guide.

THE OPTIC NERVE AND THE ACCESSORY SINUSES OF THE NOSE. A Contribution to the Study of Canalicular Neuritis and Atrophy of the Optic Nerve of Nasal Origin. By Prof. A. Onodi of the University of Budapest, Member of the Hungarian Academy of Sciences. Authorized Translation by J. Luckhoff, M.D. Cloth. Price, $3.50 net. Pp. 101, with 50 illustrations. New York: William Wood & Co., 1910.

The results of ten years of study by the author of the anatomy of the nasal accessory sinuses and their relations to the optic nerves are summed up in this book. The first part treats of topographic anatomy and considers the numerous variations in position and size of the ethmoidal cells and the sphenoidal sinuses in their relation to the optic canal. These variations are arranged arbitrarily in twelve groups, each of which has some distinguishing features. Each group is well described and beautifully illustrated by reproductions of photographs (natural size) of specimens hardened in formaldehyd solution and so sectioned as to be very instructive. This English edition contains nearly twice as many illustrations as appeared in the German edition of 1906.

The second part deals with clinical considerations of the subject. While it is admitted that the pathologic data to prove the production of visual disturbance by sinus disease are deficient, the author thinks that we are warranted in drawing conclusions from the clinical evidence at hand, and these he presents rather extensively. That disease of the accessory sinuses of the nose may at times cause optic neuritis either by direct extension of an inflammatory process or by some toxic influence can hardly be doubted, but that this is anything more than an infrequent occurrence can hardly be accepted. The subject is one of especial interest to the ophthalmologist and rhinologist, to whom this book will be attractive.

THE CARE OF THE CHILD. By Mrs. Burton Chance. Cloth. Price, $1. Pp. [illegible], with illustrations. Philadelphia: The Penn Publishing Co., [illegible].

The author states in the preface that this book is not intended to take the place of medical advice, but to help the inexperienced mother in the little things which are so important in the baby's daily life. This idea is carried out; the teaching is practical and the language simple. The chapter on artificial feeding is good, and the necessity for strict cleanliness of all bottles and utensils used is emphasized. The proper care of the child in the simple disturbances of childhood is described and the administration of "patent medicines" is condemned. Nursing in contagious diseases is discussed briefly. The upbringing of the child, apart from the physical development, is gone into at some length, and the necessity for absolute truthfulness on the part of the parents is emphasized. The book is to be commended and might be read with profit by all parents.

THE SEXUAL LIFE OF WOMAN IN ITS PHYSIOLOGICAL, PATHOLOGICAL AND HYGIENIC ASPECTS. By E. Heinrich Kisch, M.D., Professor in the German Medical Faculty of the University of Prague. Only Authorized Translation into the English Language from the German by M. Eden Paul, M.D. Cloth. Price, $5. Pp. 686, with 97 illustrations. New York: Rebman Company [1910].

This is another of the numerous books along this line which have appeared in the last few years. Apparently the subject has been fairly covered already and the need of further work [illegible] is not apparent. Dr. Kisch has assembled a large amount of matter, [illegible] number of references to the works of others. Those desiring a summary of authorities on the subject may find it in this volume.

Medicolegal

Learning, Skill, Judgment and Care Required of Surgeons—Limit to Responsibility in Injured Limbs—Admissibility of Skiagraph Taken Years After Accident

The Supreme Court of Colorado says that, according to the testimony in Bonnet vs. Foote (107 Pac. R. 252), a malpractice case brought by the latter party, the plaintiff fell on the sidewalk in the evening, was removed at once to her room, and had the defendant called. He arrived within a few minutes, found that she was suffering severe pain, and told her that he was afraid she had suffered a fracture, but that he would not make an examination until morning. The next morning he called, examined her hip by feeling it with his hands and concluded that the injury was a severe bruise, not a fracture. It further appeared that he called and treated her twice a day for about two weeks, then once a day for about a month, and after that occasionally for about two months, as for a bruise. He made frequent examinations of the injured limb and measurements for the purpose of ascertaining whether or not it was shortening, but at no time regarded the injury as anything more than a severe bruise. The plaintiff was confined to her bed for about four weeks. At the end of that time she was able to sit up a short time each day, gradually increasing it. In a few weeks she was able to walk with crutches, and used crutches or a crutch and a cane for about 18 months after her injury, and then a cane only. She suffered more or less pain for something like two years, at the end of which time it passed away, but occasionally would return. It also appeared from the testimony that the injured limb was shortened, that it was not as strong as before the injury, and that she could not use it with the same degree of facility she could before it was injured.

A physician and surgeon called on behalf of the plaintiff testified that about five years after her injury he made an examination of her right limb and found from such examination, aided by an *x*-ray photograph of her right hip, that she had sustained a fracture of the neck of the femur of the right limb. He also detailed the method usually adopted by surgeons for the purpose of ascertaining whether or not when the hip is injured a fracture exists, while from the testimony it appeared that the defendant did not adopt that method or do anything more in the way of examining the injured limb than already stated.

In the absence of a special contract, the law implies that a surgeon employed to treat an injury contracts with his patient, first, that he possesses that reasonable degree of learning and skill which is ordinarily possessed by others of the profession; second, that he will use reasonable and ordinary care and diligence in the exercise of his skill and the application of his knowledge to accomplish the purpose for which he is employed; and, third, that he will use his best judgment in the application of his skill in deciding on the nature of the injury and the best mode of treatment. He is not responsible for want of success unless it results from a failure to exercise ordinary care or from want of ordinary skill. And if he possesses ordinary skill and exercises ordinary care in applying it, he is not responsible for a mistake of judgment.

Applying these well-settled principles of law governing the liability of surgeons, it is at once apparent from the facts that the failure of the defendant to properly diagnose and treat the injury to the plaintiff's hip was inexcusable. That the bone was fractured cannot be doubted. The evidence of such fracture was plain from the fact that the plaintiff's foot lay over on one side, to which the attention of the defendant was directed, so that one of two conclusions is inevitable: Either the defendant did not possess that degree of learning and skill which the law requires of surgeons; or, if he did, he failed to exercise ordinary care in applying it.

It was urged that the court erred in admitting the evidence of the physician above referred to, for the reason that his examination of the plaintiff was made some five years after the injury, and that the condition of the injured limb at that time was not competent to prove that it was the result of the defendant's treatment, or failure to properly diagnose her injury. Unskillfulness cannot be established by proof of the result of treatment alone. Improper treatment must be shown by other evidence. But this rule was satisfied in this case. There was other testimony with respect to the condition of the limb shortly after the injury and during the period the defendant was treating it, which at least tended to prove that the bone had been fractured, and the testimony of the physician to the effect that from his examination he found that it had been fractured was competent as tending to corroborate the testimony on the part of the plaintiff that its condition after the injury was such as would be caused by a fracture.

Moreover, the court does not agree with the contention that it was error to admit in evidence the photograph of the injured limb, the "skiagraph" as it was termed, for the reason that it was taken several years after the accident. That it was taken long after the injury would be proper to be considered in determining the weight which should be given it; but that would not affect its competency.

Nor does the court accept the view that it was error to admit testimony of the shortness of the injured limb. A surgeon is required only to restore an injured limb to that degree of perfection which would result from the exercise of that degree of skill in treating the injury which is ordinarily possessed by members of the profession. As previously stated, a surgeon is not responsible for want of success unless it is the result of a failure to exercise ordinary care. Neither is he responsible for a mistake of judgment if he possesses ordinary skill and uses reasonable care in exercising it. The fact that an injured limb is defective after the patient has recovered is proper to be considered in an action for malpractice, although it is not prima facie evidence of negligence of the surgeon treating it, or, as some authorities state in substance, the mere fact that an injured limb is imperfectly healed does not of itself establish that the surgeon treating it was guilty of negligence. However, neither of these rules of law in the circumstances of this case rendered the evidence under consideration incompetent. The claim of the plaintiff, and as the evidence established, was that the defendant did not treat her for a fractured bone, but for a severe bruise, and that he improperly diagnosed her injury. The bone was fractured. From the evidence it appeared that the defendant should have discovered this fact. So that the result which would follow his failure to properly diagnose and treat the injury was competent for the purpose of establishing the damages sustained.

A judgment for the plaintiff for $1,500 affirmed.

Validity of Information and Admission of Evidence as to Use of "M.D.," Etc.

The Supreme Court of Washington says, in State vs. Hanover (107 Pac. R. 388), that its former decision in that case P (reported in 104 Pac. R. 624, and in the Medicolegal Department of The Journal, February 26, 1910, on page 738), was wrong. There was no appearance by the state. It was urged by the defendant that the statute under which he was informed against, namely, section 8, page 119, of the session laws of 1889-90, had been repealed between the date when the offense was charged to have been committed and the date of the trial, by an act of the Legislature regulating the practice of medicine and surgery, which, by reason of an emergency clause, took effect March 18, 1909, which was before the trial and conviction of the defendant. This court took that view of the law, and the judgment of the lower court was reversed. But chapter 6 of the session laws of 1901 was not called to the attention of the court, and was inadvertently omitted from consideration. On the occurrence of that statute to the minds of the court, on its own motion, it set the case for a rehearing and called on the attorney general to appear in behalf of the state, which he did by both brief and oral argument. The provision above referred to is that: "No offense committed and no penalty or forfeiture incurred previous to the time when any statutory provision shall be repealed, whether such repeal be express or implied, shall be affected by such repeal, unless a contrary intention is expressly declared in the repealing act, and no prosecution for any offense or for the recovery of any penalty or forfeiture, pending at the time any statutory provision shall be repealed, whether such repeal be express or implied, shall be affected by such repeal" etc. This act being constitutional, it must be seen that the former opinion of the court was wrong on the point on which it was based, and it therefore becomes the plain duty of the court to reverse its former decision so far as it was based on the proposition discussed therein.

The defendant urged, however, that his conviction should be reversed because it was alleged there were two forms of offense proven; that the testimony as to the use of the letters "M.D.," and certain other indicia of practice should have been excluded, and that the requirement of the statute that the indictment or information must charge but one crime, and in one form only, except in certain instances, had been violated. But the information showed that there was no attempt to charge more than one crime. The substantive charge was practicing medicine without a license, and these other matters that were introduced were simply evidentiary, tending to prove the commission of the substantive charge. Even if it should be conceded that they were immaterial, the testimony would be harmless, for the defendant openly confessed that he had no license, and positively declared that he would not comply with the requirements of the medical board, because he did not deem them just. It seems plain from the whole record that the judgment of conviction should be affirmed, and it is so ordered.

Society Proceedings

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Eighteenth Annual Meeting, held at New Haven, May 25-26, 1910

Officers Elected

The following officers were elected to serve for the ensuing year: President, Dr. Frank K. Hallock, Cromwell; vice-presidents, Drs. Edmund P. Douglass, Groton, and E. T. Bradstreet, Meriden; secretary, Dr. Walter R. Steiner, Hartford (reelected); treasurer, Dr. Joseph H. Townsend, New Haven.

The society will meet next year at Hartford, May 24-25, 1911.

Diagnosis of Insanity

Dr. J. M. Keniston, Middletown: To determine the existence of insanity or a psychosis, the examiner should pursue a systematic course. Hence, he should get as complete a history as possible. He should first find out just what the patient sees and hears or feels or smells, and whether things are really what they seem to him. Disturbances of memory are next to be noted. Disturbances of the train of thought may be exhibited and noted during the tests of perception, apperception and memory. Judgment is the loftiest and most complicated of the mental faculties. One can test the patient's judgment in a general way by submitting to him various problems concerning proper conduct, morality, business, etc. It is not enough to know whether he knows right from wrong, and the nature of a criminal act. We should ascertain whether he has lost, wholly or in part, the finer feelings that modern civilization has evolved and society demands. The full function of volition depends immediately on an antecedent idea. Acts performed without a definite idea are not volitional, but reflex. The above details help us to determine the general conduct and show its deviation not only from the patient's norm, but from the standard imposed to-day by society. When the general practitioner has obtained possession of all these facts and arranged his material, he will be in a position to demonstrate to the proper authorities or to his confrères or to the friends of the patient the existence of insanity. At the Connecticut Hospital for the Insane, up to Oct. 1, 1908, 12,823 patients were committed; and 97 of these, or 0.75 per cent., were diagnosed not insane. In these 97 cases, a temporary disturbance was mistaken for a more permanent derangement

DISCUSSION

Dr. M. Mailhouse, New Haven: If the physician will but bear in mind that dementia paralytica often begins with neurasthenic symptoms, and will always make his diagnosis by the process of exclusion, he cannot go wrong. In those in whom there may be a doubt as to whether the trouble is insanity or crime, it is of the highest importance to determine whether the conduct and character deviate from their own norm, as well as from the standard imposed to-day by society. To determine this point, it is necessary to question not only the patient's nearest relatives, friends and associates, but also those absolutely disinterested. The statement of the large percentage of transitory mental disturbances that have appeared in the State Hospital for the Insane seems to me to be a strong argument for the establishment of psychopathic wards in general hospitals.

Dr. W. E. Fisher, Middletown: Despite the fact that we all recognize that the question of the mental health of a community and its preservation are of vital importance, I have knowledge of only one medical college that affords instruction in psychiatry and makes it a part of the curriculum. It would hardly seem necessary to emphasize the necessity of more active cooperation between the alienist and the general practitioner, were there not abundant evidence of a lack of community of interests. It is no less possible to group symptoms of the different psychoses so as to afford typical clinical pictures than it is to group the symptoms of a respiratory or cardiac disease. Much of the difficulty formerly experienced in obtaining clinical pictures of the different psychoses was due to the inadequacy of the methods pursued in restricting the study of the disease to the minute analysis of symptoms at some given period, instead of studying the entire course of the disease. Guard against falling into the habit of seizing on certain symptoms, ignoring others and making the clinical picture fit some arbitrarily constructed frame.

Dr. George N. Lawson, Middle Haddam: I understood Dr. Keniston to say that a man is really responsible for his crimes, very often, even though insane. It seems to me that the family physician is in a position to say more readily than a stranger whether the patient is insane or not, whether he has passed from his own norm and the recognized standards of the day. He can be of great assistance to the staff physicians at the hospital, if he will write up the history and give it to these physicians, along with the certificate of insanity.

Instructions to Patients Suffering from Specific Urethritis.

Dr. P. D. Littlejohn, New Haven: In order to overcome the difficulty of not having my instructions accurately followed by patients, I have prepared some leaflets containing careful directions. I have tried to make the statements contained in them as terse and as clear as possible, and at the same time emphatic. Gonorrhea is not the slight complaint that many consider it. Alcohol must be strictly avoided. Exercise should be taken but all forms of violent exertion should be avoided. A careful cleansing of the nails and hands is imperative after the gauze dressing is handled. All infected persons should sleep alone if possible and all toilet articles must be for their own exclusive use. Particular attention should be given to the alimentary tract in order to avoid constipation. Few realize the value of drinking large quantities of water and the free urination which this causes. Patients in the acute stage must have a milk diet so far as possible, and as the disease improves the diet may be increased. The patient should be cautioned to keep reasonably quiet after the day's occupation is finished. The proper technic in the use of the hand injection should be properly explained. Though I believe that we can cure all patients with anterior infection and am optimistic regarding the chronic cases, provided the directions are fully followed for as long a time as necessary, I also believe that cases so treated will not infect other people, yet until all the gonococci can be proved to have disappeared, we are scarcely justified in making a positive statement to that effect when matrimony is contemplated.

DISCUSSION

Dr. F. H. Coops, Bridgeport: Dr. Littlejohn's plan of putting into the hands of the patient printed slips describing the [illegible] of the home treatment of gonorrhea, I have been carried out with splendid results. For some time I have been thinking of getting out such a set of printed instructions, and I shall copy the set presented, making a few changes to suit my individual fancies. The instruction: "You should drink all the water possible," I should have put in bold type, for instance. When the urethra is washed out every half hour, not enough discharge accumulates to require the use of any dressing at all. The request that the patient come to the office with a plentiful supply of urine in his bladder is of the utmost importance from a diagnostic and prognostic standpoint. I believe, too, that patients should be instructed as to the import of these various urethral shreds, etc. The disease, under the best of conditions is a difficult one to cure.

Dr. C. S. Stern, Hartford: The total elimination of red meat would in some cases retard the cure by reducing the patient's resistance. A patient is much more likely to renew a small bit of cotton than a large piece of gauze. Unnecessary handling always increases and continues the local inflammation. I should add as a conclusion to the other instructions and in heavy type: "Don't stop treatment until you are completely cured."

Dr. G. Blumer, New Haven: It is now known that the white meats have rather more extractives than the red. If meat be stopped, it should be meat of all kinds.

Dr. R. A. McDonnell, New Haven: I have been unable to satisfy myself that diet has any influence on gonorrhea after the acute part of the infection is over. I think that the drinking of water should be controlled during the latter part of the evening.

Dr. Littlejohn: I was aware that white meats have more extractives than red: but I knew that if my patients did not eat red meat, they would get very little meat of any kind. People with a recent infection, never having had any previous trouble of this kind, should be told what to avoid in the way of eating; in chronic cases it does not make nearly so much difference.

Management of Syphilis

Dr. Alfred G. Nadler, New Haven: I do not believe that syphilis is on the increase. Treatment should be commenced as soon as the diagnosis is made, which is usually at the first visit or very soon thereafter. The microscope will almost invariably make or confirm the diagnosis of chancre. The chancre should be excised, but the patient should be subsequently treated just as if this operation had not been attempted. Mercury may be given externally, internally and by injection. The internal administration should not be resorted to unless conditions prevent the use of inunctions or injections. Treatment by suppository is also inefficient. Administration by inhalation is one of the best methods. I have had no experience with intravenous injections. The advantages of intramuscular and subcutaneous injections are that there is greater regularity of treatment, the absorption is more certain, the stomach is left free for the reception of other medicines, there is less chance of stomatitis, the physical effect is more marked, and they are convenient for the patient. Pain may accompany the injections, and sometimes a deposit of mercury is left, which suddenly absorbs, producing poisonous symptoms. The intramuscular injection of insoluble salts produces a deposit which is slowly absorbed and slowly eliminated; when injected subcutaneously, the salts are absorbed and eliminated more rapidly, and should be used when a prolonged action is required; but the intramuscular injections have a more profound effect on the deeper manifestations of syphilis. The first two years of treatment is the most important period for the patient, but treatment should be actively pursued for at least five years. One should watch carefully for complications. I consider inunctions preferable to injections, and believe that it is better to treat too long than not to treat enough.

DISCUSSION

Dr. R. A. McDonnell, New Haven: I always find it inconvenient to cut the chancre out, and one cannot promise the patient that cutting it out will do any good, so I do not see any advantage in insisting on it. I do not find it so easy to discover the spirochetes with the microscope as is indicated by the paper, so I am not able to make the diagnosis by means of the microscope, although it can be done with proper technic. I am not sure that my inability to find the spirochete does not work to the advantage of the patient, as I believe that, unassisted, the system acquires a certain power of opposition to the disease as time goes on. It is well to let the patient go untreated for a time, even when the diagnosis is made. My preference is for the injection of an emulsion of metallic mercury, of which I have given over 1,000 injections, without untoward results. I have seen various late manifestations of the disease, and even total blindness, years after the infection, controlled after a few injections.

Dr. Thomas M. Bull, Naugatuck: Physicians should be more careful to diagnose syphilis. If one contagious case be left undiagnosed, an untold amount of harm may be done. Inasmuch as 99 per cent. of medicine is given by the mouth, and as this is the natural way for anything to enter the blood, I must confess to a predisposition for this method. There is little danger of irritating the digestive tract, if the patient is seen frequently and the dose graded carefully. Although the disease is capable of producing the most terrible consequences, I believe it to be the most easily treated of any of equal gravity. I should strongly advise any patient who has ever had syphilis to take a month's mixed treatment every year, whether symptoms have developed or not. The best treatment must be prophylactic.

Dr. Charles C. Beach, Hartford: In treating syphilis successfully, it is absolutely essential to make the diagnosis early. I presume that the ideal treatment is by injection or inhalation, but I never use either of these. We get sufficiently good results from the internal treatment by the mouth, and I have found no difficulty in giving the protoiodid. We are supposed to keep as professional secrets the names of those who suffer with syphilis, but I believe that cases of this disease should be reported with the same care as cases of scarlet fever or any other contagious disease.

Dr. Oliver C. Smith, Hartford: The place for such patients is in the hospital, in bed on their backs. They have no right to go about disseminating the disease. We should try to educate the communities in which we practice concerning the great importance of these two terrible infections, gonorrhea and syphilis.

Dr. Rienzi Robinson, Danielson: Does Dr. Nadler prefer mercurial treatment to the iodid for the tertiary manifestations of syphilis?

Dr. C. S. Stern, Hartford: I do not believe that at present the Wassermann reaction has the same standing among physicians that it had a year ago. Either positive or negative, it is not to be depended on.

Dr. Percy D. Littlejohn, New Haven: I thoroughly agree that gonorrheal patients are better off in the hospital, but one cannot keep syphilitic patients there.

Dr. Nadler: The Wassermann reaction is not considered so valuable now as it was formerly. I mentioned in my paper that negative reactions do not indicate a cure of the disease. I should treat the tertiary manifestations with intramuscular injections of calomel, and give potassium iodid. I did not enter into the sociologic question at all. Chancre may be located when it can be conveniently removed; and in that case, its removal will eliminate a host of infecting agents. I think that the spirochete can be readily discovered under the microscope with the so-called dark-ground illumination.

Anatomy and Clinical Importance of the Subdeltoid Bursa

Dr. P. P. Swett, Hartford: Lesions of the subdeltoid bursa are more frequent than other lesions in this region, including fracture and tuberculosis of the shoulder. The old term, periarthritis of the shoulder, is not definite, and usually refers to subdeltoid bursitis. The exposed position and peculiar function of the bursa render it especially liable to inflammation. Although the vast majority of cases are best treated by excision of the bursa, there are many instances in which limitation of motion does not exist; and treatment of this class of cases by means of rest, massage and counterirritation is usually sufficient. A diagnosis of rheumatism, tuberculosis, paralysis, ankylosis or neuritis should not be made until the possiblity of subdeltoid bursitis has been excluded.

DISCUSSION

Dr. E. W. Arnold, New Haven: The investigations regarding the subdeltoid bursa are the logical outcome of the investigations regarding the behavior of bursæ in general. The bursæ at the knee joint inflame without cause. There are a certain number of cases in which no great trauma has been received, and repeated slight trauma from kneeling cannot be held responsible for the chronic inflammation of the patellar bursa. There must, then, be accepted the possibility that these bursæ partake of the same inflammations that the joint itself is liable to have. All infections leave the bursa permanently thickened; and such a bursa must be not only useless, but a great hindrance to the function of the joint. It should be removed, if the impediment to the joint is mainly due to the bursa. We all know that a good many cases will clear up under other treatment, however, than operative interference.

Dr. A. G. Cook, Hartford: Here is a new bursa that must be reckoned with. All that is true of the other bursæ is true of this one. Fixation *per se* has never been proved to cause the inflammation of any bursa; but if the arm is fixed in such a position as to cause pressure, that pressure will be trauma. I have given prominence to this point, in order to show that we need not be afraid to fix any of these points, if necessary. There are times when an inflamed joint will do better at rest, and other times when irritation is desirable.

The Ideal Nose and Pharynx

Dr. F. W. Wilson, Bridgeport: The amount of air passing through the nose and pharynx in a year must be reckoned in millions of cubic feet. An obstruction having almost no influence in a single inspiration may have great influence in a million inspirations. This is also true of nasal cavities that are too large. Laboratory experiments give expired air a much lower percentage of micro-organisms than inspired air, most of the organisms having been deposited on the moist mucous membrane of the nose and pharynx, and being subsequently blown on to the handkerchief or expectorated. The nose and pharynx might also be called the filtration apparatus of the air. These organisms rarely breed and do harm on a plane surface; they must have some hiding-place where they can lodge and multiply. The ideal nose and pharynx contains as few of these hiding-places as possible. We as physicians are not fully alive to the importance of the existence of small, unnecessary hiding-places and of their complete obliteration by surgical means.

DISCUSSION

Dr. D. Smith, Bridgeport: Nasal surgery for the prevention of consumption is, at first thought, somewhat startling. For some years, however, I have been making careful search for small defects in the nose and pharynx and obliterating them. We are used to the correction of large defects; but the idea of making an ordinarily well person perfectly well by paying attention to small defects, is a further step in development. The acquisition of a good nose and pharynx not only gives one practical freedom from colds, catarrh, sore-throat and the air-borne diseases generally, but also gives one a higher level of health; and this may be given to almost anyone who will take the time and trouble to have done those little bits of surgery that make the nose and pharynx approach the ideal. In cases of the removal of tonsils and adenoids, I am satisfied that the certainty of permanent cure and ideal end-results is to be found, not in thoroughness in extirpating tonsil tissue, but in thoroughness in searching out crypts and pockets and recesses that will admit a probe, and in converting them into shallow saucers by trimming their edges. In small tonsils it is the pockets and adhesions, and not the smooth tonsil tissue, that make the trouble.

Dr. Wilson: We have definite and positive evidence that these small pockets are of importance in influenza, hay fever, asthma, and other minor diseases. We have not the clinical evidence, however, that they are important in pneumonia, tuberculosis, and other general diseases; and this is the point on which we need the help of the general practitioner.

(To be continued)

AMERICAN ASSOCIATION FOR CANCER RESEARCH

Meeting held at Washington, D. C., May 2, 1910

Spontaneous Cure of Carcinoma.

Dr. Guthrie McConnell, St. Louis: Carcinomatous growths without doubt do undergo regression, both spontaneously and after operations that do not completely remove the tumor. This may be due to the formation of connective tissue with necrosis and absorption of the cancer cells. Spontaneous disappearance is frequently seen in the tumors of mice. It also probably occurs more often in human beings than is realized. In the histologic examination of mouse tumors the more necrotic portions are in the immediate neighborhood of areas of hemorrhage, indicating that there may be some relationship between the two. The cells of all animals may be able to elaborate protective substances that enable them to resist infection. In mice it has been found that those which have recovered spontaneously are immune to further tumor inoculation. It is well known that many cells possess the power of forming ferments or enzymes which can bring about the destruction of proteid bodies. Many of these cells, when separated from their normal position, may undergo autolysis as a result of the action of elements set free by the degenerative changes. Petry has shown that the autolytic ferments are particularly active in carcinoma. In the mechanism of protection against the invasion of foreign cells, two factors are concerned—one, the protective ferments of the invaded body; the other, the enzymes of the tumor cells capable of exerting an autolytic action. Theoretically, cancer might be controlled either by increasing the activity of the body enzymes or by enhancing the power of the autolytic ferments of the tumor cell. The regression of tumor nodules may be due to the setting free of autolytic ferments as the tumor cells die from imperfect nutrition.

That recovery does occur, is shown by the reports of numerous observers. This is shown particularly well in the cases of Mackay and of Hodenpyl, in which the two patients, who had carcinoma of the breast with extensive metastases and were apparently on the point of death, regained their health almost completely. This occurred after marked collections of fluid had appeared in the pleural and abdominal cavities, respectively. It would seem that these fluids contained some substance that would bring about the destruction of the tumor cells. This was clearly shown by the experiments of Hodenpyl, who first injected the ascitic fluid from his case into mice that had been inoculated with cancer. As a result of this, the tumors underwent necrosis and either diminished in size or completely disappeared. He then employed the same methods in human beings with similar results, the effect being very much the same whether the fluid was injected into the tumor, into the adjacent tissue or into a vein. In no instance did any tissue in the body, other than the tumor, show the least reaction after the injections, nor were any systemic effects manifest even after large venous infusions. Hodenpyl's experiments indicate that there is some substance present in this proteid complex that exerts an active influence on the growth. The curative action of the serum in these instances of regression of malignant growths is apparently not so much of an antitoxic nature as it is that of a lysis of specific cells.

Studies on Immunity in Cancers of the White Rat

Dr. Y. Levin, New York: This research consisted in the treatment of animals by various methods in order to create a condition of immunity to cancer growth without the assistance of living cells. The first series of experiments consisted in the treatment with arsacetin. Forty rats were treated for six weeks by hypodermic injections, first every two days and then every four days of 1 c.c. of 1 per cent. solution of arsacetin. Three weeks after beginning of treatment, tumor was inoculated. The results were negative. In the next series twenty animals received an injection of sodium oleate followed by an inoculation of tumor. The tumor took in 77 per cent. of the treated animals and in 100 per cent. of the controls. While the results are not absolutely positive, they indicate that some influence of lipoid substances may be found in [illegible] [illegible].

A great deal better results were obtained by treatment with autolyzed liver tissue of the rat, before and after the inoculation of the tumor. Of the 60 treated animals, the tumor took only on 34 per cent., while it took in 85 per cent. of the controls. In the next series of experiments an abdominal incision was made in a rat, and all the vessels of the spleen were ligated. The animals were inoculated with tumor either before or after the operation. This method was used because sufficient spleen tissue cannot be obtained from a white rat for the usual method of autolysis. The results showed that the immunizing influence of such a ligated spleen is not as strong as the influence of autolyzed liver injected subcutaneously, and also that it has no effect if the operation is performed after the tumor is inoculated. Furthermore, in the course of a study of the different phases of atreptic immunity, the unexpected result was obtained that rats may be immunized, by treatment with normal mouse tissue, against subsequent inoculation of rat tumor. Of the 40 animals thus treated, the tumor took in 37 per cent. only, while it took in 90 per cent. of 40 control animals.

The most important conclusion which may be reached from this series of experiments is that this immunization cannot be due to life activities of the cell, but may also be obtained by treatment with enzyme-like constituent substances of the cell.

Dr. Richard Weil, New York: I am not certain as to the difference when you use autolyzed tissue or non-autolyzed tissue. All such tissue is immediately invaded by leucocytes, and the ferments of leucocytes break it up in the same way as do autolytic ferments. The question is whether there is any theoretic or fundamental difference in autolyzing tissues before you inject them or in permitting them to be autolyzed by injection. Another question is with regard to the normal process of absorption of tumors as regards immunity in rats. Is there autolysis in these tumors? Are they broken up by white cells, or do they simply disappear? Is there a preliminary autolysis, or is there invasion by white cells, or are they simply absorbed by some process which we are not able to explain?

Dr. Y. Levin: Tissue aseptically removed from one animal and put into the skin of another animal undergoes autolysis. Ehrlich and Bashford assert that it is the living cell that immunizes, and their proof consists in crushing and freezing the cell. In order to prove that their negative results were due to too severe an injury to the cell, I produced the autolysis outside the body, and then produced immunity. As for the influence of leucocytes on autolytic ferments, autolytic ferments and endocellular ferments are not identical. Autolytic ferments are liberated on the death of the cell or immediately after its death, while, most probably, intracellular ferments are there before the cell dies. If you will put liver in the thermostat for a week or ten days, you will find proteolytic reaction, indicating the presence of enzymes, although you will have no living leucocytes there.

Transplantation of Retrogressing Tumors

Drs. A. Strickler and Leo Loeb, Philadelphia: Having observed that a certain number of transplanted tumors retrogressed spontaneously after an initial period of growth and that the number of such retrogressing tumors can be increased considerably and at will, if the tumor material before inoculation is experimentally decreased in virulence by subjecting it in the test tube to the influences of certain chemical and physical injurious factors (heat), we examined the power of growth of such retrogressing tumors after transplantation into new hosts. In the mouse, we found that after transplantation retrogressing tumors grew on the whole less vigorously than well growing tumors, but they sometimes grew, and it was found that they may recover their full virulence, sometimes in the first generation, sometimes later. In eleven control experiments in which 47 dogs were inoculated with growing tumors, tumor growth resulted in 31 dogs (approximately 69 per cent. positive results), in four experiments in which four retrogressing tumors were inoculated in 13 dogs only two growing tumors were obtained, and one of these two tumors soon retrogressed spontaneously (approximately 15 per cent. positive results. In such retrogressing lymphosarcomata we also found that, at least in the earlier stages of retrogression, mitoses may still be present in the tumor cells, notwithstanding the retrogression.

The results obtained in transplanting such tumors prove undoubtedly that retrogressing tumors are on the whole weakened in their capacity for growth, and that the decrease in the virulence of such tumor cells varies in different cases. This does not exclude the possibility that at early stages of retrogression or under otherwise very favorable conditions, a good tumor growth may even be obtained after transplantation of retrogressing tumors. After further transplantation a recovery of virulence may take place. The weakening of the cells of retrogressing tumors suggests that certain injurious substances circulate in the body fluid of animals which are the bearers of such tumors, notwithstanding the fact that it may be impossible to prove directly the presence of such substances.

Preliminary Results Obtained by Treating Cancer with Ascitic Fluid

Dr. S. P. Beebe, New York: The fluid used in these experiments was obtained from a case of cancer primary in the breast with metastases in the liver. The progress of the disease had at all times been slow, but since the production of the ascitic fluid there has been no progress at all. The patient has been in good physical condition and has, as far as can be determined, suffered in no way from the presence of the malignant condition. The physical and chemical characteristics of this fluid have been the subject of investigation and reports will appear later in regard to them.

The cases which have been treated with this fluid number nineteen—one intestinal cancer, six of uterine cancer, five breast cancer, three cases of epithelioma of the jaw, one cancer of the prostate, three cancer of the esophagus. The reaction of the patient to the injections is an individual one. It varies with each patient, and with the same patient from time to time. In 30 per cent. of the cases considerable improvement, locally and generally, may be expected. In no instance has there been any result which would lead one to expect a cure. The favorable effects have been as follows: Relief from pain, diminution of hemorrhage, and secretion from the tumor mass when it has been located on a mucous surface, increase in weight and appetite, marked improvement in the general physical condition. In 25 per cent. of the cases there has been a cessation of growth on the part of the tumor, and in a few it has appeared that the tumor has actually diminished in size. The serum has been given by subcutaneous injection in the flank and lumbar regions in doses varying from 10 to 125 c.c. The size of the dose and frequency of administration are determined by the reaction, both local and general. The local reaction in the tumor has been present in practically all cases that have taken as much as 50 to 75 c.c. of the fluid at daily intervals. If the publicity given to these observations results in the heterogenous use of ascitic fluid in the treatment of cancer, much harm will probably result.

DISCUSSION

Dr. Richard Weil: I would like to ask Dr. Beebe whether he is able to state that the fluid used recently is fully as potent as that which was first used. Also, would it not be wise at this time to caution investigators against the use of considerable amounts of this ascitic fluid, in view of the tendency to produce softening? I would like to ask if any observations have been made with ascitic fluid from persons without cancer.

Dr. Leo Loeb: I would like to ask Dr. Beebe whether in transfusing blood of other dogs into tumor dogs, the blood of dogs in which tumors have retrogressed is more potent than the blood of normal dogs?

Dr. James Ewing: I have had an opportunity to follow some of the cases treated by ascitic serum, and may say that I have never seen the results equalled by any other method of internal medication. We have tried to test as many sera as possible, and Dr. Beebe has reported on the results of a number of these, both cancerous and non-cancerous. However, it seems to me that the estimation of therapeutic results by variations in the size of the tumor is an extremely uncertain method. We have for some years been able to reduce the size of tumors by a number of methods, and with effects which at first seemed favorable. Yet other data must be considered in estimating therapeutic effects, especially when the diminution in the size of the tumor is produced rapidly. We are not justified in concluding that reduction in size is a wholly favorable process. Improvement in the general condition of the patient, regardless of the size of the tumor, has been observed in some cases, and is a favorable feature of the serum treatment. There are a great many pitfalls to be guarded against in this treatment, and I would express the same opinion as Dr. Beebe has given as to the extent to which it may be relied on. At the same time, it may be claimed that it opens up an interesting field of study.

Dr. Harvey R. Gaylord: I recently had a pleural exudate from a case of stationary carcinoma in a woman who had resisted recurrence eight years after operation, followed by recurrence. This pleural exudate was tried on a primary mouse cancer, and it was found that when injected in large doses, 1/10 of the body weight, all of ten primary mouse cancers retrograded somewhat. The serum produced a definite reaction in these tumors after from 18 to 24 hours, evidenced by the mice biting at their tumors and their becoming distinctly warm and edematous. Two of the smaller tumors retrograded absolutely. Those removed for examination showed marked edema and hyperemia at the margins of the tumors.

Dr. Edward H. Risley: I tried the use of a number of fluids, such as hydrocele, chest-transudates and non-cancerous ascitic fluid. In several cancer mice the tumors became smaller under treatment with hydrocele fluid. Hydrocele fluid was tried also on a patient with cancer of the rectum, and for the first two or three days the patient felt better and the tumor had softened, but the improvement was only temporary. There are four fluids which are used right along. One is from a cancer of the liver and contains a little bile. I have had to use this in very small doses, 5 to 10 minims. Two fluids are from cancer of the ovary. These fluids I have used constantly three times a week, on a series of ten patients and they show very interesting results. I think it is largely psychic with a great many of these people. I have given as large a dose as 60 c.c. without any constitutional reaction. Most of the patients state that immediately after injection there is local swelling of the tumor, with some headache, and possibly chill. These fluids have all been tried on mice first. I propose to try other fluids and keep on with them as new patients present themselves. All patients as yet treated have been inoperable.

Dr. Beebe: The fluid we have used comes from various types of cases. There is no question that these fluids ought to be used with a good deal of caution. If the impression should get abroad among medical men not acquainted with the details of the subject that this is an instance where "a little does good, more would be better," and they should use large quantities, they would do a great deal of harm. For this reason I emphasize the necessity of being cautious in the use of any human fluid, and also with each patient. Susceptibility varies. In every case the treatment should be begun with a very small dose, gradually increased.

In regard to Dr. Loeb's question, it is my impression that the blood of dogs which have spontaneously recovered is better In regard to Dr. Weil's question, I cannot answer that yet with any degree of satisfaction to myself, but it is my belief, and I thing it is brought out by this series of cases, that the chylous fluid has not in any way diminished its potency, and that it gives the best results. A curious fact, as Dr. Ewing stated, is that all of these patients gained in weight. I know one has gained 20 pounds. One, a corpulent subject, has complained of the gain in weight. As to the significance of this reaction locally in the tumor, we do not know how much that means.

Cancer Among American Indians and its Bearing on the Ethnologic Distribution of the Disease

Dr. Y. Levin: The American Indians residing in the United States lend themselves peculiarly well to such an investigation, since the United States government considers this race as wards of the nation and consequently keeps practically a regard to each individual member. At each reservation or agency there resides a government physician.* Of the 130 physicians thus employed, data were obtained from 107. The practice of these physicians covers a population of 115,455, and during a time ranging from a few months to over twenty years, and only 24 cases of cancer were encountered during the investigation. Thus cancer is extremely rare among the Indians, and this rare occurrence cannot be apparent, since it is impossible to suppose that cases of death from cancer could have escaped the notice of the government physician, nor did the investigation show any difference in length of life between the American Indians and their white neighbors. The only explanation, then, that may be given of these results is that racial characteristics, which comprise not only the ethnologic differences in the structure of the body, but also the difference in the environment, the mode of life, etc., must play an important part in the causation of cancer.

A Transmissible Sarcoma of the Common Fowl

DR. PEYTON ROUS, New York: This is a report of the first avian tumor that has proven transplantable to other individuals. It is a spindle-celled sarcoma of the hen, which has thus far been propagated to its fourth tumor-generation. Success has been made possible by the use of fowls from the intimately related, pure-blood stock in which the growth was found. Market-bought fowls of similar variety and appearance, though probably not of pure blood, have shown themselves insusceptible, as have fowls of mixed breed, and pigeons and guinea-pigs. The percentage of successful transplantations has been small, but in the individuals developing a tumor its growth has been fairly rapid, and it has attained large size before seriously affecting the health of the host. Young chickens seem more susceptible than adults. The reinoculation of fowls once negative has always failed to result in a growth. Histologically the tumor is a characteristic sarcoma, and it has remained true to type throughout the transplantations. It is infiltrative and destructive. As a rule, it undergoes widespread coagulation-necrosis at its center, and the thin rim of living tissue is not unfrequently myxomatous. Metastasis (to the heart) has been once observed. Experiments to determine whether the growth may be transmitted by cell fragments have not yet been done. At best, it is difficult to propagate. Repeated bacteriologic examinations, including tests for acid-fast bacilli, have given negative results. In its general behavior, so far as tested, this avian tumor closely resembles the typical mammalian neoplasms that are transplantable.

The Chemistry of the Melanins of Tumors

DR. CARL L. ALSBERG, Washington: Some years ago I had occasion to study a melanotic sarcoma of the liver secondary to a choroid tumor of the eye. Inasmuch as melanin-like compounds may be formed by the action of enzymes, I undertook to investigate the question whether or not this melanotic tumor contained oxidizing enzymes capable of converting aromatic compounds into melanin-like bodies. I was able to find that tumor extracts formed pigment from pyrocatechin, but not appreciably from tyrosine. In view of the finding in my case, and the wide distribution of the oxidizing enzymes, it is doubtful whether this fact has much significance from a diagnostic point of view.

Influence of Heat on Tumor Cells

DRS. [illegible] F. C. WHITE AND LEO LOEB, Philadelphia: In continuation of the former experiments of one of us we studied the effect of heat on tumor cells in a quantitative manner and from various points of view. We heated the tumor material at [illegible] to 44 degrees in the test tube during variable periods. We found that the effect of heating varied approximately proportionately to the period of exposure up to a certain maximum when the influence became rapidly more intense. The curve of decrease of virulence under the influence of heating is accompanied by a similar curve indicating the number of [illegible] which increased proportionately to the length of exposure to a certain point and then increased more rapidly. [illegible] tumors the relative effect of heat was not greater than in tumors that before the heating grew more vigorously. An increase in the energy of growth directly following low degrees of heating has not been observed. A summation of the effects of heating through a series of generations does not take place. The decrease in virulence is transmitted only to a limited number of cell generations. Gradually a recovery takes place. This proves an unexpected degree of elasticity which the tumor cells possess. To an unusual extent they are able to recover from injuries which they received. This is a new argument in favor of the statement published nine years ago by one of us, namely, that many facts render probable the assumption that somatic cells, of which the majority of the tumor cells represent a modification, are potentially immortal. On the other hand, through long-continued heating through many generations the resistance of the tumor cells to moderate degrees of heating does not take place. Neither an active immunization of the tumor cells, nor a selection of the naturally more resisting cells is noticeable.

STATE MEDICAL SOCIETY OF WISCONSIN

Sixty-fourth Annual Meeting, held in Milwaukee, June 22, 1910

Under the Presidency of DR. EDWARD EVANS, La Crosse

Officers Elected

The officers elected were named in THE JOURNAL last week, in the News Department.

Medical Education and Medicine

DR. EDWARD EVANS, La Crosse: The university must educate the public to know the great value and possibilities of modern medicine. Within a few years the free medical course has developed into the school of medicine. The state hygienic laboratory is doing vastly increased work in state medicine. A thorough course for medical health officers will soon be offered. In the universities the complex problems of state medicine must be solved. The department of health should be a department of the university. The university can do much for medical education where the medical school is an integral part, by maintaining high standards of entrance, by the inspiration of productive scholarship and by the financial support of the medical department. The work done in the medical school at the University of Wisconsin the first two years is of the highest order. Here we may hope to see a great post graduate school in medicine.

Medical inspection of schools should be compulsory. Industrial colleges should be inspected by the state. Water, milk and food supplies should be supervised. The infective diseases, especially the so-called social diseases, should be, if possible, eradicated. Proper vivisection should be uncompromisingly supported.

Human Pancreatic Juice

DR. H. C. BRADLEY, Madison: Human pancreatic juice in its normal form has been rarely attainable. In the case under consideration an opportunity offered for its examination for six successive weeks, owing to a temporary fistula. The physical and chemical characteristics of the juice were determined from day to day. And contrary to general teaching the juice was found seldom to be alkaline with sodium bicarbonate. Contrary to general belief pancreatic juice is proteolytic before it reaches the intestines; and the pancreatic juice of one animal will activate the pancreatic juice of another animal that flows inactively. The enzyme trypsin was found to activate itself within 48 hours to a week.

DISCUSSION

DR. WILLIAM BECKER, Milwaukee: It is fairly well determined that it is merely atmospheric air, or the carbonic acid of the intestine, which activates the enzymes.

DR. A. S. LOEVENHART, Madison: Nothing has been thus far proved as to the nature of the activation of the pancreatic juice that comes about on standing; it is, perhaps, due to a breaking of some combination between the enzymes and some other unknown constituent of the juice.

Possibilities of Prophylaxis Against Insanity

Dr. Arthur W. Rogers, Oconomowoc: Insanity is increasing to an alarming extent. The fight against tuberculosis is world wide, but who hears of the fight against the prevalence of insanity? The disease must be fought through instruction in the public schools and on the part of parents. The liquor traffic should be regulated. The rapid increase of drug habitués must be checked. The social evil must be curbed. Venereal diseases must be as far as possible eradicated. Prejudice and ignorance must be overcome, for they have caused mental diseases to be neglected in the medical colleges and by the medical profession, giving rise to the crude schools of Eddyism and Emmanuelism. The physician has too long been only a medical man; he must also be a good citizen. A national department of health should be established. The first duty of the medical profession lies along the lines of prophylaxis. Education is the important feature. Reduce the number of medical colleges and elevate their standard, then wage a campaign through the medical and lay press, local and state boards of health, and through the schools and universities, to prevent the spread of insanity.

DISCUSSION

Dr. W. F. Becker, Milwaukee: Prophylaxis is a difficult problem. All the activities that make for human betterment lead to the solution of the problem of the prevention of insanity. Heredity and alcoholism are important factors of causation. I cannot endorse the sterilization of the criminal as practiced in Indiana. Environment and not vicious predisposition frequently produces the criminal. However, vasectomy and sterilization are advisable in cases of imbecility. Societies should be established for the care of the insane after their discharge from insane hospitals, and also for the care of those who are in danger of becoming insane. This is a most important point and should be undertaken along the lines of the antituberculosis crusade.

Results of Heredity and Their Bearing on Poverty, Crime and Disease

Dr. A. W. Wilmarth, Chippewa Falls: There is a great awakening of public interest in the increase of the dependent classes. The number of mentally and morally incompetent may be measured in the loss of hundreds of thousands of dollars. Their cost to the competent members of society is reckoned in millions of dollars. Their harmful influence is beyond computation. The laws of Nature indicate and actual observation confirms the fact that the physical conditions on which such incompetency is based are in the majority of cases transmitted, and consequently largely preventable. Among other methods of curtailment I should suggest in proper cases restriction of marriage, sequestration and surgical intervention.

DISCUSSION

Dr. W. H. Washburn, Milwaukee: Disease is a great factor in natural selection, and disease has been in great measure prevented by the advance in medical science. Under the circumstances it is surprising that the human race is as decent as it is, and we have the female portion of the community to thank that this is so. Humanity and altruism impose on us the obligation of supervising the unborn. In the case of chronic criminals, I advise vasectomy or resection of the Fallopian tubes. Education is the keynote. Let us take the first step. The people must be educated. Then in another generation the legislators can be reached and, perhaps, in a generation after that legislation secured.

Correlation Between Splanchnoptosis and Pulmonary Tuberculosis

Dr. Wilhelm Becker, Milwaukee: The phthisic habit and asthenia universalis, splanchnoptosis, are identical. Hence, the phthisical habit is not a specific phthisical inheritance. Stiller's costal stigma is a constant concomitant of the habit, indicating its presence, but not its degree. Stiller's costal stigma, being a congenital defect, and present in earliest infancy can, therefore, be considered a diagnostic feature of the habitus phthisicus (so-called) long before phthisis has developed. The early diagnosis of asthenia universalis offers great opportunities of combating congenital disposition to tuberculosis.

Practical Medicinal Therapeutics as it Appears from the Prescription File

Dr. Julius Noer, Stoughton: An examination of many thousands of prescriptions from the files in drugstores shows prescriptions by physicians of an inordinate mass of pseudotherapeutic agents. My investigation shows, first, that talismanic therapeutics did not die with Paracelsus, nor has the mother church in Boston a monopoly as a promoter of pseudoscience; and second, that the excellent work of the Council on Pharmacy and Chemistry of the American Medical Association is not without cause and justification. How can we improve existing conditions as regards the use of proprietary and semisecret nostrums? We should urge the continuance of this monumental work of the council. The new edition of the Pharmacopeia should contain the remedies in general use by practicing physicians which have been shown to possess therapeutic properties. It would be further advisable to establish a pharmacologic laboratory.

DISCUSSION

Dr. A. S. Loevenhart, Madison: The situation is not encouraging. The nostrum and proprietary evil is growing. The whole drug business is in a bad state in many ways. With some striking exceptions, the vast majority of drug houses are interested purely and simply in the making of money and are unconcerned with the question of public health. Moreover, our expectations with regard to the pharmacopeial convention have been absolutely disappointed. The convention was dominated by poor medical schools and the pharmaceutical associations in the interests of the drug trade. The convention refused to pass a resolution excluding from the Pharmacopeia drugs which are known to possess no therapeutic effect. It is impossible to use the Pharmacopeia with our students when we know that of 975 titles only 150 to 250 drugs are of any therapeutic value.

The Plaster Spica in High Fractures of the Femur

Dr. Charles H. Lemon, Milwaukee: With the plaster spica applied with the leg and thigh abducted, the thigh flexed on the trunk, seemingly impossible obstacles can many times be overcome. The plaster spica is by no means an easy dressing to apply. Its use requires a definite apprenticeship, but when one has become sufficiently skilled in its use, so that he has confidence in his ability to accomplish definite results, there is no appliance that gives greater comfort to the patient nor greater peace of mind to the surgeon.

Tincture of Iodin as a Skin Antiseptic

Dr. M. W. Dvorak, La Crosse: As a skin antiseptic iodin has not received the attention it deserves. The method commends itself for simplicity and thoroughness, and wherever it is necessary to render the skin field aseptic.

Dr. W. H. Brown, Madison: Tincture of iodin produces absolute asepsis of the skin in three minutes, and penetrates deeply, sterilizing the entire depth of the epithelium. The bactericidal power is due to the iodin *per se* and not to the alcohol. Skin changes are not of serious import.

DISCUSSION

Dr. A. S. Loevenhart, Madison: The antiseptic power of iodin is dependent on its power to precipitate proteid and on its action as an oxydizing agent.

Dr. L. A. Moore, Monroe: The use of ether to dissolve the oil of the skin before applying the iodin causes the iodin to reach the deeper layers of the skin more readily. I have used iodin in fresh wounds with good results.

Dr. Joseph F. Smith, Wausau: I have adopted the use of iodin exclusively in clean cases. The results have been very gratifying. I have found no deleterious action on the skin.

Dr. T. L. Harrington, Milwaukee: I have been using tincture of iodin for a considerable time. It is a great advance over the ordinary skin antiseptics. Suppurating wounds are avoided.

Dr. C. M. Echols, Milwaukee: I should prefer a 50 per cent. solution of alcohol as a solvent.

The Medical and Surgical Aspects of Tumors, Including Inflammatory and Neoplastic Formations

Dr. J. C. Bloodgood, Baltimore: The old treatment for cancer is still the only treatment—its radical removal. Malignant tumors are curable in proportion to the earliness of surgical intervention. There must be publicity in regard to early symptoms. Skill in differential diagnosis must be increased with a view to earlier recognition of malignancy. Contrary to general opinion, 50 per cent. of bone lesions are curable by operation without amputation. Amputation seldom effects a cure. When in doubt it is better to treat bone lesions as relatively benign. In examining bone lesions by the *x*-ray, take a number of skiagraphs, because bone lesions are often multiple. A bone cyst is a benign bone lesion and can be cured by simple incision and drainage. Curettement often cures where resection fails. Differential diagnosis must be studiously made between malignant sarcoma and benign bone cyst. Otherwise amputation may be done when contraindicated. Resection is often preferable to amputation, even in malignant bone tumors. But these operations should all be done as early as possible. Giant-cell sarcoma is frequently curable, as metastasis does not usually occur. In operating for giant cell sarcoma remember the danger of hemorrhage. There is no danger of disseminating the disease by curetting.

Glands with continuous function, such as the thyroid, are not usually the seat of malignant disease, while in the breast which has not a continuous function carcinoma is relatively frequent (67 per cent. in 1048 cases). Although restricted operation is often proper in sarcoma it is dangerous in cancer of the breast. A lump in the breast should be regarded as an acute disease and treated accordingly. Early operation insures cure in 80 per cent. of cases, while the operation at the end of the fifth year effects cure in about 40 per cent. of cases. Differentiate between benign breast cyst and cancer. Ulcer of the nipple is suspicious. Complete excision should be the watchword. Recurrence is most frequent in cases which appeared to be favorable, and the operator is influenced by the desire to secure a cosmetic effect.

The Wassermann Reaction in Syphilis

Dr. R. M. Pearce, New York: The Wassermann test shows a high percentage of positive reactions in general paralysis, tabes, aneurism, aortic insufficiency, mesarteritis, chronic bone disease, arthritis deformans and congenital affections of the nervous system, most of which diseases may be classed as largely metasyphilitic. Seldom has a new method of diagnosis or treatment promised as much as does the Wassermann reaction and if the future work tends to the fulfillment of this promise we have in the Wassermann reaction one of the greatest advances in the history of medicine ever made. The knowledge which it yields, coupled with that resulting from the study of the etiology and from experimental inoculation should eventually place syphilis in the group of subjugated diseases, diseases of which the etiology and pathology are known, for which there exists an absolute diagnostic method and a rational specific treatment.

Serum Treatment of Hemophilia

Dr. A. J. Patek, Milwaukee: The etiology of the disease is still shrouded in mystery but it is probable that in hemophilia the clotting ferment is absent, deficient or held in abeyance. Human or animal blood serum applied locally, subcutaneously or intravenously may have a styptic action during hemorrhage. But owing to the danger of anaphylaxis when alien serum is used human serum is preferable. A prophylactic injection of serum prior to operation is advisable in these cases. Subcutaneous injections are preferable in [illegible] cases. Transfusion may be employed in massive hemorrhage.

Chronic Diphtheria

Dr. G. C. Ruhland, Milwaukee: Chronic diphtheria is at present little or not at all recognized by the profession at large. It is a condition that, however, frequently is associated with definite symptoms of disease, the recognition of which is of greatest importance in the history of disease epidemics. It is fallacious to depend on symptoms for differentiating acute and chronic diseases. I desire to emphasize the great importance of local after treatment in all cases of diphtheria, both for the good of the patient and for epidemiologic considerations.

Aneurism of the Thoracic Aorta

Dr. Joseph F. Smith, Wausau: My case was one of aneurism of the descending portion of the thoracic aorta, with fatal termination by rupture into the esophagus. The chief clinical feature of the case was persistent boring pain referred to the right lumbar region, just beneath the twelfth rib, and in front just beneath the right costal arch. Diagnosis in these cases is often difficult, and the *x*-ray is frequently a valuable aid.

Traumatic Hernia

Dr. T. W. Nuzum, Janesville: In making experiments in the production of hernias 12 cats were used, 6 fasting and 6 not fasting. Hernias were more often and more easily produced in those that were fed. A rolling motion will more often produce hernia than direct pressure of equal severity. Seven hernias were produced, 3 inguinal and 4 diaphragmatic. The peritoneum was torn in 3 instances and was pushed in front of the hernial contents and formed a sac for the same in 4. In every instance there was more or less severe injury done to the vessels, viscera or both. As conclusions from these experiments it appears that hernia is not likely to be produced by a blow unless a punctured wound is produced. The rolling motion is more likely to produce hernia than mere pressure. The inguinal region and the diaphragm are points of least resistance. Hernia is more easily produced in the young than in fully developed muscular animals, and in those with a full stomach rather than in those fasting. In true traumatic hernia the peritoneum is often forced through the abdominal wall ahead of the hernial contents, forming a sac for the latter.

The Nursing Mother from the Baby's Standpoint

Dr. A. W. Myers, Milwaukee: There are three classes of errors into which nursing mothers may fall: (1) Too frequent nursing. A three hour interval is about right. Do not wake the child up to nurse it. (2) Over feeding on the part of the mother, producing milk which is too rich. (3) Lack of care on the part of the mother in choosing food, especially the too early and abundant use of fruit and vegetables. These are some of the causes which lead to the divorce of the baby from the breast on the ground of incompatibility of temperament.

RHODE ISLAND MEDICAL SOCIETY

Annual Meeting, held May 31, 1910

Under the Presidency of Dr. Eugene Kingman, Providence

Officers Elected

The following were elected to serve for the ensuing year: President, Dr. Augustine A. Mann, Central Falls; vice presidents, Drs. Frederick T. Rogers, Providence, Alexander B. Briggs, Ashaway; secretary, Dr. Stephen A. Welch, Providence; treasurer, Dr. Winthrop A. Risk, Providence.

The treasurer reported that a special fund of $5,000 had been received from the estate of the late Dr. Horace G. Miller, which is to be used to maintain the ophthalmologic library.

The annual report of the secretary showed that the society numbered 381 members.

President's Address: The Needs of the Society

Dr. Eugene Kingman: By a provision of our charter we can hold property, a body politic and corporate. Men may come and men may go, but we (can) go on forever." In part we have accomplished the purposes for which this society was created. Directly or indirectly we have taken part in the creation and administration of health boards, the founding and serving of hospitals, the improvement of food, the restraint of disease and the enactment of wise medical laws. We have done something to advance the art of medicine by our prizes and publications. Much attention is paid to-day to the conservation of our national resources, and the greatest resource of all—the national health—until recent times comparatively neglected in the rapid material development of the country, is gradually assuming a place of first importance in the public mind and conscience.

Our society has two great needs: First, a home; second, money. For 98 years we have wandered from place to place, hiring whatever hall we could get. We need a place for a library, some thirty thousand books, including several complete and valuable files of medical journals. We need a large amount of money to further the purposes for which the society was founded. We need a building with its assembly and committee rooms, a salaried librarian and a book delivery system. We should have a complete laboratory and the services of a pathologist day and night. We should be able to employ eminent counsel to draft just medical laws. We should be able to pay certain chairmen of our committees to give all their time to the committees. We should have an emergency fund. Legislators are sometimes slow, and quick relief of impending evil often seems impossible. The amount needed is too large to be raised from members of this society. Physicians, as you well know, with few exceptions, after giving of their time and money to various charities, and paying their living expenses, have too little left to contribute largely to this cause. The endowment must come chiefly from the public and when the community understands that our work is to improve the physician, advance our art and help the people, they will in time respond generously.

The Eye in the Diagnosis of General Disease

Dr. Frederick T. Rogers, Providence: The eye is not to be relegated to the oculist; the general practitioner can recognize in it an important aid to diagnosis. On the conjunctiva hemorrhage in young people may show diabetes, in the aged arterio-sclerosis. The term conjunctivitis is a sort of "catch all" for physicians. There is a simple rule which will determine whether it is the conjunctiva, the iris, the sclera or the cornea which is affected. In conjunctivitis there is a disturbance of secretion without pain or photophobia; in corneal disease there is no increase of secretion but marked photophobia and subsequent pain, while in iritis there is a predominant pain and lacrimation and photophobia, dependent on the severity. The form of conjunctivitis most infrequently recognized is the phlyctenular. This is frequently associated with disturbance of digestion. The color of the sclera as in jaundice, chlorosis and nephritis is significant. Scleritis accompanies gout, rheumatism, syphilis and intestinal intoxication.

Keratitis, phlyctenular and ulcerative, shows struma; parenchymatous keratitis in 75 per cent. of the cases means syphilis; and the dendritic form, when associated with supraorbital tenderness, means malaria.

Iritis is frequent with syphilis, gonorrhea, diabetes and rheumatism. Paralysis of the muscles is shown by a squint or diplopia. Which muscle is affected is shown by noting that it is always on the side where the doubling occurs and belongs to the eye that sees the object that appears most distant. The findings of the ophthalmoscope are often indications of organic lesions. Headache due to the eyes will show an affection of the lids and conjunctivæ, secondary to errors of refraction as well as by disturbance of vision. The practitioner should use Snellen's chart and if the patient cannot read the letters at their proper distance may assume that the disease is defective vision.

Retinoscopy should also be known. Muscular anomalies are indicated simply by a test with red glass. If there is functional paresis a strong cylindrical glass in front of either eye will throw a red image and a white bar of light. In glaucoma a disturbance of the tension of the globe is frequently not recognized.

The Tonsils

Dr. Harlan P. Abbott, Providence: The tonsillar ring of Waldeyer comprises four lymphoid structures, the faucial tonsils, the lymphoid tissue in the naso-pharynx and the lymphoid tissue at the base of the tongue. When weakened by disease the tonsils are the portals by which bacteria gain entrance, passing the epithelial lining and through the parenchyma to the lymphatics and blood vessels.

Attempts are now being made to show that the tonsils when healthy have the function of taking care of the debris from neighboring organs. Hypertrophied tonsils are to be removed when obstructive symptoms are present. Diseased faucial tonsils should be removed, capsule and all, unless the patient is a bleeder.

Exophthalmic Goiter

Dr. James G. Mumford, Boston: It is stated by Wilson that certain changes in the thyroid bear a relation to the varying symptoms of the disease. Early in acute cases the thyroid produces an excess of secretion which is rapidly absorbed into the circulation.

The more active the secretion and absorption, the more severe are the symptoms. Per contra, anything which diminishes the secretion or obstructs the flow, improves the symptoms. Some cases progress so far that permanent changes in the heart and nervous system are established even though the gland appears as a colloid goiter. All careful recent observers are convinced that the complex symptoms which we designate as exophthalmic goiter are due to overactivity of the thyroid. The various old theories, the cardiac, the compression, the sympathetic, the nervous, the parathyroid and the thymus are generally discarded. Overdosing with thyroid extract a normal person will produce in him symptoms of Graves' disease. Conversely ligation will diminish the size of the thyroid with resulting relief to the symptoms.

The treatment of Graves' disease is still a matter of wide skepticism. Although the do-nothing attitude of previous years is still seen among large numbers of general practitioners, one finds on the other hand, a keen and almost rabid activity among certain surgeons and physicians and both groups show enormous per cent. of cures. Rogers and Beebe use a serum.

In 1909 they reported 480 cases in all stages. Serum cured 15 per cent. of the patients, while 10 per cent. more had no subjective symptoms though retaining the goiter and occasionally the exophthalmos. Fifty per cent. were improved; 17 per cent. unimproved and 8 per cent. died.

Compare these statistics with the results obtained by Jackson and Mead at the Massachusetts General Hospital with the use of Forchheimer's neutral hydrobromate of quinin, 5 gr., three times a day. They report patients in two groups, those heard from by letter and those seen and examined after two years. Of 29 patients heard from by letter, 20 were practically well; 7 unimproved and 2 dead. Of 56 reexamined patients 42 were cured (75 per cent.); 7 improved, and 6 no better. None was dead.

The *x*-ray has proved of little service. The operative treatment, especially partial thyroidectomy, has this objection—the operation may kill. Ligation of the thyroid arteries was recommended by Woffler as early as 1886. Ligation seems advisable in desperate cases where thyroidectomy is impossible or where it is used as a preliminary step. Statistics of 741 cases in which thyroidectomy was performed show 70.3 per cent. cured; 22.27 per cent. improved; 3.38 per cent. unimproved; 4.03 per cent. operation deaths, and 0.66 per cent. late deaths. In my own 19 operations 14 patients (73.7 per cent.) were cured, 5 (26.3 per cent.) improved and none died. As a result of operation the pulse rate falls often inside a week, the tremor subsides, the sweating is lessened, a good color and appetite return. The patients are astonished at the rapid improvement. We may conclude, however, that statistical tables cannot accurately show the results of treatment where the symptoms are so complex and involve so many organs.

NEW HAMPSHIRE MEDICAL ASSOCIATION

(One Hundred and Nineteenth Annual Session, held at Concord, May 12, 1910)

(Concluded from page 2137, Vol. LIV)

Conservative Surgery

Dr. Alpha H. Harriman, Laconia: Well practiced surgery conserves the surgeon, and attempts to conserve the patient, though ostensibly the patient is the only consideration. It does not mean the do-nothing practice that some would have us believe, and, properly interpreted, it never did mean that. It does not mean that middle ground where the surgeon is everlastingly fearing his own reputation. In such a case the surgeon may be conservative, but he conserves his own interest and not that of the patient. Nor does conservative surgery mean the everlasting rushing into trouble. The man who has an operation for nearly every ill that flesh is heir to cannot be conservative. It is not his nature, and he brings, according to his activity, more or less a degree of disrepute on surgery. It must be concluded that that which conserves best the interests of the patient is to operate on all cases that are bound to give continued attacks of trouble. Conservatism is an anchor of hope. It is characteristic of good judgment, good reasoning, good diagnosis, good methods and capable always of giving good advice.

Anesthesia in Operations on the Aged

Dr. John H. Gleason, Manchester: Surgical procedures as ordinarily performed on very old people with the aid of general anesthetics by inhalation are usually accompanied by great risks and are followed by a very high mortality; hence we must make use of agents which will produce little or no functional change—the local anesthetics or drugs which produce local or general anesthesia when injected subcutaneously or into the spinal canal. One should hesitate before adopting the practice of making high injections into the spinal canal. Scopolamin is perfectly safe, if injected once or twice in small amounts. Scopolamin, 1/100 gr., combined with morphin, 1/6 gr., given hypodermically, every $1\frac{1}{2}$ hours, until two or three injections have been given, has been employed as a general anesthetic. About six years ago I conceived the idea of combining scopolamin anesthesia with local anesthesia, using 0.1 per cent. cocain. This technic proved so successful that about one year later I began to use partial scopolamin anesthesia, combined with local sterile water infiltration anesthesia, in operating on the aged. The operator must be familiar with the anatomy of the parts, especially as to the course and distribution of the sensory nerves. To gain control of the field, it is necessary to block the nerves by depositing sterile water around and in close proximity to them. I am convinced that by this method the management of surgical diseases in old people may be made comparatively safe, the mortality much reduced and seemingly inoperable cases made operable and curable.

The Use of Fat-Free Milk in Infant Feeding

Dr. H. H. Amsden, Concord: The objections to the so-called percentage method of feeding, which was formulated and introduced by American pediatrists, notably Rotch and Holt, are: First, it is complicated and no two authorities give the same formula for calculating the percentages. Unless a careful analysis of the modified milk is made the physician is by no means certain that he is getting the exact fractional percentages for which the method calls. Second, the amount to be given in any individual case is calculated arbitrarily according to the age of the child, rather than its weight or nutritional needs and often it is generally a waste of time to attempt to adapt it to the case by a mere rearrangement of the percentage of fat, sugar and proteid without adopting more radical measures. The principal objection to the percentage method is that it assumes that the indigestibility of the proteid as the cause of difficulty in milk modification, and that all efforts must be directed toward overcoming this one feature. Clinical experience tends to prove that the fat rather than the casein is primarily responsible for curd formation. The best proof, however, that the proteids of cow's milk are not indigestible is the clinical test—feeding fat free milk to infants. To one accustomed to the use of the percentage method it takes considerable courage to feed undiluted skim milk to a sick baby, but the results obtained have in each case justified the claims made by its advocates that a skim milk diet will result in the production of smooth salve-like stools, free from mucus and curds, inoffensive in odor, and unaccompanied by colic or constipation.

DISCUSSION

Dr. Harry W. N. Bennett, Manchester: Until recently I believed in the high fat feeding and that proteids were at fault. Fat is not the most essential element in the child's food. If you cut out fat and supply skim milk, you will find that the trouble will clear up, and where there were constipation and colic you will get a child that sleeps during the day, digests its food, gains in weight, and stools become normal.

Dr. Marion L. Bugbee, Concord: I do not believe in skim milk for babies, and see no reason why one of the important food elements should be abstracted from the baby's food at all, if the child is born with a normal digestion. After ten years of constant use of modified milk for both well and sick babies, I can see no reason for giving it up. I have rarely been able to find fat curds in the stools of the modified milk fed babies, although the stools are frequently tested for them. Doctors should give more time to the study of feeding infants.

The Treatment of Inoperable Sarcoma with the Bacterial Toxins of Erysipelas and Bacillus Prodigiosus

Dr. William B. Coley, New York: In my experience, in nearly 500 cases, there have been only three deaths. Most of the deaths in the hands of other men have been due to too large an initial dose given directly into a vascular primary growth. I rarely inject more than 1/6 mm. into the tumor in children, especially if situated in the neck or mediastinum, and never more than ¼ mm. in adults as the initial dose. I have had 56 cases of inoperable sarcoma successfully treated with the mixed toxins. Considerably more than 100 cases have been successfully treated by other surgeons. More than 10 per cent. of all cases treated have been successful.

Immunity with Special Reference to Vaccine Therapy

Dr. Timothy Leary, Boston: Vaccine treatment in surgical conditions does not do away with the necessity for intelligent surgery.

It is essential that drainage be established. In infections of the kidneys where there is a local irritant in the form of a stone or where drainage is interfered with, vaccine treatment has little value. If the colon bacillus is the infecting agent intoxication will be relieved and fever eliminated but local infection will persist. In the bladder if residual urine is constantly present vaccine therapy is only palliative since the chronic irritation of the bladder mucosa by products of the saprophytic bacteria usually present will favor the continuation of the process. Staphylococcus vaccine is now accepted as the standard method of treatment of local conditions due to this organism. In general infections results are less satisfactory because, I believe, such a general process is usually a pyemia and the organisms in a pyemia are contained in masses of clot and less accessible to the antibodies which may be formed.

No final judgment of the value of any agent used in the treatment of tuberculosis can be made unless its practice has been followed for many years. I am, therefore, only hazarding an opinion of the value of tuberculin from our limited observation. I believe that tuberculin in proper doses is a valuable addition to standard methods of treatment. Its use, however, is associated with dangers which make extreme caution necessary in its exhibition. Wright's method, which calls for an extremely small dose at weekly intervals, seems to eliminate all dangers of over dosage. Vaccine therapy is in its infancy. It is but a step in progress toward the specific therapy of infectious processes for which the medical work has been anxiously waiting.

DISCUSSION

Dr. Howard N. Kingsford, Hanover: There are only a few cases in which the serum has been absolutely established as being of value, and whenever cases come up in which the serum is indicated, the physician should be extremely careful to get the material that he sends to the laboratory from the diseased area. As Dr. Leary says, the first culture is the important one, and results from cultures in the laboratory are not as good as those from cultures which come direct from the patient. The advance made in serum therapy is great in the last few years, and we are justified in trying it in cases in which we are absolutely sure about the diagnosis, or in cases which do not do well under the ordinary treatment.

Dr. William H. Leith, Lancaster: While there is not, and cannot be expected to be, anything practical to be said from the general practitioner's standpoint, yet we have had some success in the matter of the treatment of furunculosis, papular acne, and gonorrheal arthritis, sufficient to give us hope that in a few years from now we may enter into a general and intelligent clinical discussion of this subject.

Nephritis

Dr. Frank B. Easton, Laconia: Urinary findings cannot always be depended on to discover nephritis, if present; to rule it out, if absent, or to tell what the variety of pathologic lesion may be.

The urinary findings give absolutely no clue to what the exact appearance of the kidney may be. You may find diminished excretion and a large amount of albumin and at autopsy an indeterminate kidney. You may find an increased amount of urine with a small amount of albumin and an indeterminate kidney. Furthermore, you may have advanced arteriosclerosis in the rest of the body and none in the kidney and again advanced renal disease and normal urine.

That the urinary examination is of value must be confessed, but negative findings do not justify you in telling a patient with other clinical signs of nephritis that there is nothing the matter with his kidneys. There seems to be a family predisposition and there is evidence that special strains of bacteria and their toxins have a predilection for kidney tissue. Food, its amount and quality, is a real factor, the truism that more disease is caused by eating than drinking is as applicable to kidney disease as to disease of the stomach. The classification into parenchymatous, interstitial and arterio-sclerotic has serious objections, though that is the one generally used. The close dependence of the kidney on the heart and arteries, and the heart and arteries on the kidney should never be lost sight of. Chronic kidney disease may exist when the urine is normal and albumin and casts may be found and the kidney be normal.

The treatment in this condition is dietary, hygienic, hydrotherapeutic and only medicinal as symptoms may demand drugs. The diet should be regulated so that the patient should keep his body weight and get along as far as possible without proteids. Many anuric kidneys refuse to be flushed; they should be let alone until the amount of urine begins to increase when the intake of water may be correspondingly increased. Respiratory symptoms may be relieved by tapping when dyspnea is due to fluid in any of the cavities; when due to an uncompensated heart lesion digitalis may be used.

State Board Examinations

Dr. George Cook, Concord: The members of this board are state officers, appointed by the governor to protect the interests of the people and guard them from incompetent persons practicing medicine in the state, as far as an examination will do this. We are not prosecuting officers.

All a state board can do is to guard the portal of entrance to the practice of medicine, and demand of all those who come before it an examination that will best show fitness to begin life's work, and not expert knowledge. I thoroughly believe that our examination should be confined wholly to the fundamentals, supplemented by such laboratory work as may show the ability of a man to comprehend this fundamental work. I would like to enter my feeble protest against the amount of work and the cramming process that is everywhere so prevalent in medical school teaching at the present time.

Representatives from the teaching force of a medical school or schools in the state, together with the members of the examining board, might mutually confer at an informal meeting and very much good could be accomplished; for, notwithstanding all the imperfections of our state boards, they have been a very potent factor in helping to raise the standard of medical education in this country. If the applicant can pass a reasonably good examination in the fundamentals, I will trust him in the elective he may choose. A fair and reasonable examination, both oral and written, in the fundamentals, together with such laboratory demonstration as will show the common things necessary to a more complete understanding of these same fundamentals. To my mind, the real crowning requisites to practice medicine are that the candidate shall be a Christian gentleman, or gentlewoman, and shall have common sense.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

July 7

1 *A Crusade Against Syphilis and Gonorrhea. F. H. Gerrish, Portland, Ore.
2 *Hemorrhage from the Kidney. P. M. Pilcher, Brooklyn, N. Y.
3 Individual Efficiency. F. P. Emerson, Boston.

1. **Crusade Against Syphilis and Gonorrhea.** Gerrish discusses in a most excellent manner the following topics: Facts about syphilis; facts about gonorrhea; usual treatment of prostitution; etiology of prostitution; rational treatment of prostitution; sexual continence; the sanctity of life; the best size of family; how sex education should be given, and treatment of sexual crimes. He insists that the first campaign of the crusade must be entirely educational. Already organizations have been formed for this specific purpose; but, in his judgment, they are not destined to accomplish as much as could be done through a different agency. The profession and the public are much more likely to be influenced in the desired direction if the instruction is offered by a great society, which is long established and widely known and honored, conducted by famous men, powerfully equipped in personnel, in traditions of the best methods, in a record of large achievements and in financial resources. A committee of such a society, composed of earnest, well poised, altruistic men, who are interested in the work, would first assemble the forces of the several associations committed to this service, and unify and coordinate their various activities so that no effort would be lost by a duplication of work. Then a scheme would be adopted for reaching the public through the press. The newspaper syndicates afford the most accessible paths to the desired audience. There is needed an incessant, tireless presentation of the subject, so long continued that the densest intellect will be penetrated, the dullest mind awakened, the most obstinate objector convinced. Syphilis and gonorrhea should, he says, be reported.

2. **Hemorrhage from Kidney.** Speaking of the treatment of this condition, Pilcher says that nephrotomy is the operation of choice because it allows a thorough examination of the kidney, and also for the reason that it accomplishes exactly what the operation of multiple ligation does in the treatment of varicosities in other portions of the body, in that it cuts six of the main connecting venous radicles of the kidney and in this way destroys the varicosities. The incision should be made along Broedel's line so as to avoid injury. Nephrectomy is indicated only when rapid and bloodless operation is demanded, or when nephrotomy fails to relieve the hematuria. Malignant growth requires the removal of the kidney; tuberculosis, removal of the ureter and kidney; renal stone,

removal of the calculus and sometimes nephrectomy. Nephralgia calls for renal decapsulation and the fixation of the organ.

Medical Record, New York

July 9

4 Progress in Medical Education. J. G. Schurman, Ithaca, N. Y.
5 The Hereditary and Congenital Causes of Exceptional Development. E. L. Hunt, New York.
6 The Paradox of the Tubercle Bacillus. J. Van Gieson, New York.
7 The Use of Internal Aluminum Splints in the Treatment of Fractures. W. S. Thomas, New York.
8 Tonsil Research. R. B. Faulkner, Pittsburg, Pa.
9 Anesthesia in Its Relation to the General Practitioner. H. W. Kearney, Washington, D. C.
10 The Enema—Its Place in the Treatment of Gastrointestinal Diseases. C. J. Drueck, Chicago.
11 *Statistical Analysis of Over 43,000 Cases of Diphtheria. M. Sa[illegible], Philadelphia.
12 Congenital Fusion of Toes; Note on Previous Generations. J. Griffith, New York.

11. **Analysis of Diphtheria.**—The number of cases of diphtheria which have occurred during the past 12 years in Philadelphia, as reported to the Bureau of Health, has been 43,997. Of this number 7,097 terminated fatally. With more extensive use of the diphtheria antitoxin the mortality has been reduced from 24 per cent. in 1898 to 12.1 per cent. in 1909.

New York Medical Journal

July

13 Determinable and Indeterminable Factors in the Etiology of Typhoid Fever. L. L. Lumsden, Washington, D. C.
14 François Rabelais, M.D., Reformer and Buffoon. W. B. Konkle, Montoursville, Pa.
15 State Phthisiophilia and State Phthisiophobia. A Plea for Justice to the Consumptive. S. A. Knopf, New York.
16 The Quest and Winning of a Vesical Calculus. M. W. Ware, New York.
17 Vaccine Therapy in Serious Infections of Aural and Nasal Organs. C. Graef and R. B. Wynkoop, New York.
18 Gross Duodenal Tube. M. Gross, New York.
19 Congenital Atresia Orificii Uteri Externi. M. F. Porter, Fort Wayne, Ind.
20 Abusive Use of Forceps in Primiparae. A. Isaacson, New York.

Lancet-Clinic, Cincinnati

July

[illegible] Cy[illegible] Diagnosis and Treatment. E. O. Smith, Cincinnati.
[illegible] The Work and Aims of the State Board of Health. C. O. [illegible], Columbus.
[illegible] M[illegible] Hygiene. J. H. Landis, Cincinnati.

Kentucky Medical Journal, Bowling Green

June 15

[illegible] Pathogenic Bacteria in Urine. E. S. Allen, Louisville.
[illegible] The Dermatologist. M. L. Ravitch, Louisville.
[illegible] Treatment of Acute Rhinitis. G. A. Robertson, Louisville.

Southern Medical Journal, Nashville

June

27 The Treatment of Pelvic Inflammation. O. S. McCown, Memphis.
28 Diagnosis, Pathology and Etiology of Pellagra. J. M. King, Nashville.
29 [illegible] Diarrhea. G. M. Niles, Atlanta, Ga.
30 [illegible] Treatment in Pulmonary Tuberculosis. W. L[illegible], Nashville.
31 T[illegible]. J. J. King, Freeland, Pa.
32 Double Identity. J. W. Stevens, Nashville.
33 The Treatment of Varicose Veins of the Lower Extremities. W. T. Black, Memphis.
34 [illegible] Diseases of Interest to the General Practitioner of Human Medicine. G. R. White, Nashville.
35 [illegible]. J. B. McElroy, Memphis.
36 The Use and Abuse of Atropin in Eye Diseases. E. P. [illegible], Jacksonville, Fla.
37 C[illegible] Impacted in Left Ureter Removed Through [illegible] Operative Cystoscope. B. Lewis, St. Louis.

32. **Double Identity.**—The patient, a male aged 40, related a history that suggested the occurrence during the past 6 years of [illegible] periods of secondary personality lasting from a few hours to several months, during which time he left home on business, took up new avocations and had no knowledge of his former life, and on restoration to his normal personality, these periods remained as absolute blanks in his memory, and of them to this, some years afterward, he still knows nothing, other than a few isolated facts that he has been able to discover through investigation. Sixteen years ago he had an apoplectiform attack. Left arm and leg were completely paralyzed for several days. This entirely disappeared in 5 or 6 weeks. The face was not affected. The tongue was clumsy, but there was probably no true aphasia. He has had "absent states" resembling *petit mal* and has awakened in the morning with sore tongue, but he does not believe himself that this was due to having bitten it. His first attack came in July, 1904. He was then living in Atlanta, Ga., where he was employed in newspaper work. He was doing well in business, was in good general health, was not troubled about anything, and enjoyed the most pleasant social connections. Being greatly interested in religious affairs, he did a great deal of preaching at night. One afternoon in July, 1904, he boarded the train for Louisville, where he expected to enter the Baptist Theological Seminary to do some special work. The next he knew he found himself in Battell, Ala., in the latter part of December. He found out later that he had been preaching in Gadsden, Ala., which he learned from remarks made to him by a preacher whom he met afterward. A period of five months is a complete blank to him, and he has no idea by what name he was known during that time. He now went to Birmingham, where he was successful in work, and he married a second time, in June, 1905.

In August, 1907, he left Charleston, S. C., where he was doing newspaper work, for Orangeburg, to visit over Sunday with a friend. He realized that he was not well, and had been preparing for some time to wind up his business preparatory to entering a sanitarium for treatment. After a certain point in this journey from Charleston to Orangeburg he remembers nothing of himself until he came partially to himself in Macon, Ga., in November, 1907. This awakening was not complete, however, and there was established a third personality. In this latter he came to a partial recollection of himself then, but did not know how he had gotten to Macon, and the period of three months, from August to November, was and is a complete blank to him. He did not exactly know his name, but used one somewhat similar. The patient's memory of his past gradually came back to him except for the two periods above described and for short lapses of a few hours each. This return to his normal identity was broken by brief periods of confusion and dissociation for 3 or 4 months, and for a long time he was hazy on many points of his previous history that should have been perfectly familiar to him. These matters were gradually recalled by things told him by others. Until about the middle of April, 1910, he seems to have remained personality "A." About the middle of April last, however, another transition occurred, and he suddenly left Nashville without notice to his wife or employers and has not yet been located.

Medical Fortnightly, St. Louis

June 25

38 The Nation's Duty in the Conservation of Human Life, and Its Effect on the Cost of Life Insurance. L. H. Montgomery, Chicago.
39 A Plea for a Sane Fourth of July. H. J. Scherck, St. Louis.
40 Neurasthenia, Nervous Prostration, Nervous Exhaustion. T. G. Stephens, Sidney, Iowa.

Virginia Medical Semi-Monthly, Richmond

June 24

11 *Twenty-eight Cases of Gonorrheal Rheumatism Treated with Vaccines. W. G. Young, Washington, D. C.
12 X-rays as a Factor in Prognosis in Joint Injuries. A. L. Gray, Richmond.
13 Hepatic Gumma Simulating Perigastric Abscess. E. C. Prentiss and H. W. Crouse, El Paso, Texas.
14 Uncinariasis: Its Treatment. W. A. Brumfield, Richmond.
15 Puerperal Eclampsia. F. C. Prestridge, Alvarado, Texas.
16 The Alcohol Question. G. L. Servoss, Fairview, Nev.
17 Electrotherapy for Enlarged Prostate. W. T. Jones, Crozet, Va.

11. **Gonorrheal Rheumatism.**—Since September, 1908, Young has treated 28 cases of gonorrheal rheumatism with gonococcus vaccines. The duration of the gonorrhea prior to the onset of the rheumatism was from 9 days to 2 years. The duration of the rheumatism before vaccine treatment was begun was from 4 days to 6 months. Many of the cases were mild, but some of them were very severe. In 13 of the patients only 1 joint was involved. The wrist alone was affected in 3 patients; the ankle alone in 5; the knee alone in 1; the sacrolumbar articulation in 1 and the sacro-coccygeal articulation in 1. The joints most frequently affected were the ankle, knee and wrist. The ankle was involved in 10 cases, the knee in 8 and the wrist in 7. In 1, none of the joints was affected. The trouble all seemed to be in the biceps muscle and its sheath. The number of the injections ranged from 1 to 15. The dosage varied from 5 to 50 millions. The frequency of

the injections varied from every other day to once in two weeks. The injections were made subcutaneously in all cases —sometimes near the affected joint, sometimes in the arm, sometimes in the groin. Recently most of the injections have been made in the groin. Practically no other treatment was used in any of these cases. The results were as follows: Patients cured, 20; improved, 5. Patients in whom there was no improvement, 3.

Journal Missouri State Medical Association, St. Louis

June

48 The Possibilities of the X-ray in the Diagnosis of Eye, Ear, Nose and Throat Conditions. E. H. Skinner, Kansas City.
49 Diseases of the Gall-Bladder and Gall-Ducts. R. M. Funkhouser, St. Louis.
50 What Medical Inspection of School Children Means to the Public. C. W. Tooker, St. Louis.
51 Retroperitoneal Shortening of the Round Ligaments. W. E. Dicken, Oklahoma City.
52 Hypokinesis: Atony of the Intestines: Constipation. J. W. Ousley, Kansas City.
53 Bismuth Vaselin Paste in Osteomyelitis. T. R. Frazer, Commerce.
54 Selective Management of Retrodisplacement of the Uterus. H S. Crossen, St. Louis.

California State Journal of Medicine, San Francisco

June

55 The Physician in His Relation to Public Life. J. H. Parkinson, Sacramento.
56 The Last Meeting of the Council on Medical Education of the American Medical Association with Comparisons Now Existing in California. W. J. Barlow, Los Angeles.
57 The California State Board of Medical Examiners. J H. Barbat, San Francisco.
58 Urticaria with Special Reference to the Cause in the Papular Forms in Children. E. D. Chipman, San Francisco.
59 Endemic Grippe in Children in San Francisco and Vicinity. S. Blum, San Francisco.

Gulf States Journal of Medicine and Surgery, and Journal of the Southern Medical Association, Mobile

May

60 Transfusion Methods. H. B. Gessner, New Orleans.
61 Viable Abdominal Pregnancy. S. C. Carson, Greensboro, Ala.
62 Venereal Prophylaxis. W. C. Newman, Independence, La.
63 Demonstration of Hodgin's Splint. T. F. Robinson, Bessemer, Ala.
64 Fevers as Seen in Alabama. O. V. Langley, Camp Hill, Ala.
65 Facts and Fallacies About Coffee. G. M Niles, Atlanta, Ga.
66 *Typhoid Perforation: Operation, Recovery. J. M Mason, Birmingham.

June

67 Whooping Cough and Its Complications. Z. B. Chamblee, Birmingham.
68 The Clinical Classification of Pulmonary Tuberculosis. W. J. Durel, New Orleans.
69 *End-to-End Anastomosis of the Brachial Artery. R L. Turner, Meridian, Miss.
70 The Matas Operation—Obliterative Endoaneurysmorrhaphy in Popliteal Aneurism. J. Smyth, New Orleans.
71 The Treatment of Capsular Cataract. W. S. Sims, Jackson, Miss.
72 Arthrotomy for Gunshot Wound of the Knee. F G. Dubose, Selma, Ala.
73 Chronic Gastromesenteric Ileus. A. L. Stavely, Washington, D. C.
74 Anterior Poliomyelitis. D. T. McCall, Mobile.
75 Pulmonary Consumption or Tuberculosis. C. M. Watson, Florence, Ala.
76 The Employment of the Police Power for the Promotion of Health. J. M. Foster, Montgomery.

66. Abstracted in The Journal, May 28, 1910, p. 1819.

69. **End-to-End Anastomosis.**—Turner's patient sustained an almost complete tear of the brachial artery as the result of the fracture of his humerus. After dissecting up the artery for about 1¼ inches in each direction, with a sharp pair of scissors Turner excised ¼ inch, leaving each end free from its beveled condition. Then with fine silk, and a very small conjunctival needle, he passed interrupted sutures through all the coats, bringing the ends of the vessel together carefully, tying each suture as it was placed, and holding its ends to steady the vessel until the next suture was passed. After removing constriction there was a slight leak that was controlled by another suture. There was slight oozing from the stitch holes, which soon discontinued. Turner then utilized the sac of this false traumatic aneurism, which was the expanded sheath of the vessel, by replacing it over the vessel with sutures. The incision was then closed with linen, the arm was dressed and bandaged to the side, to prevent any tension on the surface of the vessel.

The further progress of the case was uneventful. There was never at any time any indication of disturbance of the circulation in the arm.

Long Island Medical Journal, Brooklyn

June

77 Practical Hints on Joint Tuberculosis. L. W. Ely, New York.
78 The Treatment of Diphtheria, Scarlet Fever and Measles. S. R Leahy, Brooklyn.
79 Affections of the External Auditory Meatus. J. E Sheppard, Brooklyn.
80 Quinin and Urea Hydrochlorid as a Local Anesthesia. H. F. Graham, Brooklyn.
81 A Case of Ainhum. J H. Long, Brooklyn.

Medical Herald, St. Joseph, Mo.

June

82 Psychotherapy in Relation to the General Practice of Medicine and Surgery. H. S. Munro, Omaha, Neb.
83 The Errors of Mind Healing. R. Wilman, St. Joseph.
84 Hemiplegia—Acute Onset. F E. Coulter, Omaha.
85 Asexualization of the Unfit. G. H Bogart, Brookville, Ind.
86 Expert Medical Evidence at One Dollar a Day T. W Schaefer and A. M. Wilson, Kansas City, Mo.

American Journal of Medical Sciences, Philadelphia

July

87 The Value of Optimism in Medicine. E. L Trudeau, Saranac Lake, N. Y.
88 *The Treatment of Arterial Hypertension. A R. Elliott, Chicago.
89 *Hemorrhagic Disease of the Newborn: Special Reference to Blood Coagulation and Serum Treatment. H Schwarts and R. Ottenberg, New York.
90 The Radiograph Diagnosis and Classification of Early Pulmonary Tuberculosis. L. G. Cole, New York.
91 The Medical Aspects of Those Toxemias of Pregnancy Which Tend Toward Eclampsia. E. F. Wells, Chicago.
92 Disturbances of the Thyroid Secretion in Northern Mexico. W. C. Alverez, Cananea, Sonora, Mex.
93 *Typhoid Spermatocystitis and Prostatitis, and Their Relation to Chronic Typhoid Bacilluria. J. W. Marchildon, St Louis.
94 *Von Graefe's Sign in Myotonia Congenita (Thomsen's Disease). J. P. Sedgwick, Minneapolis.
95 Torsion of the Great Omentum. A. C. Griffith, Kansas City.
96 The Theoretic Consideration of the Wassermann Reaction and Its Practical Application. D. M. Kaplan, New York.
97 *Calcium Metabolism: Special Reference to Exophthalmic Goiter. C. Towles, Baltimore.
98 How Far Is Heredity a Cause of Aural Disease? B. A. Randall, Philadelphia.

88. This article will be abstracted in Department of Therapeutics.

89. **Hemorrhagic Disease of the Newborn.**—Schwartz and Ottenberg draw attention to a little recognized, clinically important fact of delayed or lost coagulation in the hemorrhagic disease of the newborn, and briefly describe two cases. The first case was one of multiple hemorrhages, total failure of blood coagulation. The injection of serum had no effect either on the coagulation time or the hemorrhages. The child's condition became worse, and a transfusion was determined on. The father was chosen as the donor. Blood obtained from the child just before the transfusion failed to clot at all. At the end of the transfusion the child's coagulation time was the same as that of the father's—three and one-half minutes. The child died 8 days after transfusion. The most important facts brought out in this case are the mother's history of miscarriages (syphilis?); the child was nursed at a suppurating breast; the late date (seven days) at which the hemorrhages began; the blood failed to coagulate; the marked temporary effect of the transfusion; reappearance of the original symptoms and progressive loss of coagulating power; and the child did not die exsanguinated.

The second case was also one of multiple hemorrhages with prolonged coagulation time; congenital syphilis; sterile blood culture. Death took place 8 hours after the child was first seen.

The authors conclude that impaired blood coagulation is the immediate cause of uncontrollable hemorrhages in the newborn, and that this is probably due to destruction of, or interference with, the production of thrombokinase. Bacterial infection is the most frequent underlying cause of the disease; but syphilis alone can cause the disease without bacterial infection. The value of serum injections is doubtful, but it is important that transfusion should be tried when ordinary measures have failed.

93. **Typhoid Spermatocystitis and Prostatitis.**—The findings in two cases at autopsy has led Marchildon to the suggestion that the seminal vesicles and the prostate may be infected in patients who have typhoid. From the location of the typhoid bacilli in the stained sections, and because of the fact that

some infections of the prostate gland and seminal vesicles have a tendency to assume a chronic character, there is reason to believe that in subjects recovering from typhoid, the prostate gland and the seminal vesicles may sometimes harbor typhoid bacilli for a long time. It can easily be assumed, he says, that the bacilli may readily pass into the urethra with the semen, and with the prostatic secretion reach the urinary bladder and produce a typhoid bacilluria. In this way we may explain the recurrence of typhoid bacilluria on the suspension of treatment, and also the fact that no clinical signs of kidney lesions are found in these patients. Clinically, therefore, in patients with typhoid bacilluria, the possibility of infection of the urine from these lesions in the prostate gland or seminal vesicles should be considered. In long-continued bacilluria, especially in patients in whom the micro-organisms disappear under treatment, and then reappear at a later period, and also in "chronic bacilli carriers," in whom the excretion of typhoid bacilli is by way of the urine, the attention of the clinician should be directed to these organs as offering a source for the distribution of the typhoid bacillus.

94. **Von Graefe's Sign in Myotonia Congenita.**—Sedgwick's study was undertaken because of the observation of a family with a history of marked von Graefe sign for five generations. The von Graefe sign is so evident that it is considered by the family the most interesting manifestation of the condition, and the underlying myotonia had gone undiagnosticated through several generations. The family is of the oldest New England stock. Of the 29 members recorded, 13 were affected with myotonia and 16 were free. All of those affected showed the von Graefe sign to a greater or less degree. Of the affected, seven are males and six are females, a fairly equal division. In the first generation, the paternal grandmother, in the second generation the father and the father's brother were affected. In the third generation one brother and one sister were affected, while one brother and one other sister were free. The myotonic brother transmitted it through two mothers to four out of five children. The unaffected brother and sister did not transmit it. None of them have complained of pain or disturbance of sensation. The patient of the third generation who gave this information had measles and pertussis as a child, and was in bed two days with influenza in 1892 without complications or sequels. He has been otherwise exceptionally well, strong and robust. His mentality is excellent. The trouble with the muscles manifests itself as a "stiffness." There is especial difficulty in relaxing them when they are once "fixed." This is more marked in moist or cool weather, or when he is warm and cools off. He describes the condition as "cramp like but not painful." He has marked von Graefe sign. He can "feel the upper lid hang back" when he looks down. He notices the condition in the tongue, eyelids, face, mouth, hands and legs. Relaxation is more difficult than contraction. He has no trouble with the glottis, breathing or sphincters. There has been little change in the condition since boyhood.

97. **Calcium Metabolism.**—Towles found that calcium given in the form of the lactate enters into the general metabolism or allows the calcium already present in the body to be utilized without loss. Given by the mouth there is no toxic effect from the administration of 20 grams of calcium lactate over a period of 15 days.

The calcium metabolism of Basedow's disease shows no special peculiarity; it runs parallel with the nitrogen, and in those periods of the disease in which there is a loss of nitrogen there is also a loss of calcium—a parallelism which is found in other pathologic conditions.

New York State Journal of Medicine, New York

June

99 *The Pathology, Diagnosis and Treatment of Joint Tuberculosis. [illegible], New York.
100 The Rheumatisms: Their Etiology and Pathology. E. Lefevre, New York.
101 *[illegible] (Paget's Disease). H. L. Elsner, Syracuse.
102 The Medical Conduct of the Otisville Sanatorium. J. S. McSweeney, Otisville.
103 [illegible] in Relation to Nurses' Training Schools. C. Stover, Amsterdam, N. Y.
104 *Relationship Between the State Board of Regents and Training Schools. J. Metzbach, Brooklyn.

99, 104. Abstracted in The Journal, Feb. 26, 1910, pp. 731, 732.

101. Abstracted in The Journal, March 5, 1910, p. 814.

Laryngoscope, St. Louis

June

105 The Deaf Child from the Viewpoint of the Physician and of the Teacher. J. K. Love, Glasgow, Scotland.
106 The Physiology of Hearing with Special Reference to Development of Speech. G. Hudson-Makuen, Philadelphia.
107 Clinical Aspects of Deaf-Mutism. E. R. Packard, Philadelphia.
108 The Physician and the Deaf Child. M. A. Goldstein, St. Louis.
109 Development of the Hearing. J. S. Anderson, Swarthmore.
110 Mental Development of the Deaf Child. E. M. Gallaudet, Washington, D. C.
111 Development of Speech in the Deaf Child. A. L. E. Crouter, Philadelphia.
112 Development of Language in the Deaf Child. J. W. Jones, Columbus.
113 Development of Speech Reading in the Deaf Child. M. McCowan, Chicago.

University of Pennsylvania Medical Bulletin, Philadelphia

June

114 *The Influence of Muscular Fatigue and of Alcohol on Certain of the Normal Defenses. A. C. Abbott and N. Gildersleeve, Philadelphia.
115 *Primary Pneumococcic Meningitis. H. D. Jump, Philadelphia.
116 Situs Inversus Viscerum. H. T. Karsner, Philadelphia.
117 Primary Carcinoma of the Vermiform Appendix. C. C. Norris, Philadelphia.
118 The Medical Side of Benjamin Franklin. W. Pepper, Philadelphia.

114. **Influence of Muscular Fatigue and Alcohol on Normal Defenses.**—It is a well-known fact that violent physical exercise after more or less prolonged periods of relative inaction is accompanied in some individuals by the development of inflammatory lesions; notably of boils, abscesses and other closely related superficial suppurations. It was with the view of elucidating this subject that the investigations forming the basis of this paper were undertaken by Abbot and Gildersleeve. They found that the opsonizing power of the blood as determined by the opsonic index may be markedly diminished by severe muscular exercise and by the ingestion of alcohol. Though the opsonic content is diminished as a result of severe muscular exercise, there is, on the other hand, a coincident temporary increase of the leucocyte content of the peripheral blood which may return to normal if exercise be continued. Prolonged muscular exercise *followed* by the injection of pyogenic bacteria may favor pyogenic infections, but violent muscular exercise *following* inoculation is more apt to result seriously than that preceding it. This is of practical moment in its bearing on the observation noted in the opening paragraph of this communication. The ingestion of alcohol is quickly accompanied by a lowered opsonic index, but the index as quickly returns to the normal with cessation of the alcohol. The amount of alcohol needed to bring about this result had no influence on the resistance of the animal to infection. In the light of these experiments the authors hold that it is manifest that factors other than those here considered are concerned in the condition of susceptibility and immunity, in so far, at least, as they relate to infection by the pyogenic organisms.

115. **Primary Pneumococcic Meningitis.**—The individual whose case Jump reports was a strong, robust white man, aged 22 years, who previous to his illness enjoyed perfect health. He was a furniture mover by occupation, and was much addicted to the use of tobacco and alcohol. The onset of the disease occurred with an attack of vomiting and moderate headache. Two days before that time he was dull and irritable. When first seen he was stuporous; lay with his mouth open, eyes half closed, groaning constantly. His lips were dry and cracked, his teeth covered with sordes; his tongue dry and heavily coated. There was an eruption of herpes on the lips and chin and a small abrasion on the chin. No other sign of traumatism was present. He replied to questions very slowly or not at all, and was hard to arouse. There was a general hyperesthesia, particularly manifested in the abdomen. The neck was stiff and painful on movement. Within a few hours his head became retracted and his back moderately arched. Kernig's sign and *tache cérébrale* were present and persisted until the end. Knee jerks were present. His pupils were equally dilated and reacted moderately

to light. Clonic convulsions beginning in the arms and extending to the whole body, occurred a little later. His unconsciousness deepened into coma, which lasted until his death. His temperature was 101; pulse, 84; respirations, 28. Before death these became, temperature, 104; pulse, 100; respirations, 36. Under physical examination the heart and lungs were normal; ears normal. His death occurred about 36 hours after he came under observation, or 5½ days after the beginning of the disorder. Just before his death a few fine crepitant râles were detected posteriorly at the base of the right lung. A lumbar puncture was made and two ounces of cloudy, opalescent fluid flowed out under moderate pressure. After the puncture all of his symptoms moderated, but the pulse became irregular. The spinal fluid showed great numbers of pneumococci.

Journal of the Medical Society of New Jersey, Orange

June

119 Infrequent Pulse. C. D. Bennett, Newark.
120 Business Methods of Practice. A. E. Ewens, Atlantic City.
121 The School Doctor. W. B. Jennings, Haddonfield.
122 Prolapsing Kidney. E. Marvel, Atlantic City.

Ophthalmic Record, Chicago

June

123 Plexiform Angiofibroma of the Eyelids. M. Myerhof, Cairo, Egypt.
124 Ring Abscess of the Cornea. J. A. Patterson, Colorado Springs.
125 Historic Sketch of Jacques Daviel and His Work, Suggested by a Visit to His Grave. D. W. Greene, Dayton, Ohio.
126 The Trachoma Bodies from the Normal Conjunctiva. S. H. McKee, Montreal.
127 Ophthalmic Surgery. G. E Dean, Scranton, Pa.

Journal of Medical Research, Boston

June

128 *Bactericidal Substances Extracted from Normal Leucocytes. H. Zinsser, New York.
129 *Typhoid Vaccines and Opsonins. S. W. Sappington, Philadelphia.
130 *A New and Improved Method of Enumerating Air Bacteria. L. F. Rettger, New Haven, Conn.
131 *Etiology of Tabardillo or Mexican Typhus: an Experimental Investigation. J. F. Anderson and J. Goldberger, U. S. P. H. and M.-H. S.
132 Effect of Dilution on Flocculation of Colloids. B. H. Buxton and A. H. Rahe, New York.
133 Calcification and Ossification. H. G. Wells and J. H. Mitchell, Chicago.
134 *The Cultivation of Tubercle Bacilli Directly from Sputum by the Use of Antiformin. L. Brown and D. Smith, Saranac Lake, N. Y.

128. **Bactericidal Substances Extracted from Leucocytes.**—Summing up his work, Zinsser says that extracts of normal rabbit leucocytes, both those obtained by aqueous extraction and those obtained by freezing in salt solution, have distinct bactericidal powers for pyogenic staphylococci and for *B. typhosus*. There is considerable uniformity in the action of various lots of such extracts on the same strain of microorganisms and it is apparent that separate strains of the same species show no decided variations in their susceptibility to the bactericidal substances contained in the extracts. In regard to thermostability, his results are uniform in confirming the researches of other workers in showing that the endocellular bactericidal substances are not destroyed by heating to 56 degrees C., but that temperatures of 75 C., at least, are necessary for their destruction. This justifies the conclusion that they are distinct from and differently constituted from the bactericidal substances of serum. It was further shown that, in the case of both organisms studied, reactivation of these substances after heating to 80 C. does not take place on the addition of fresh leucocytic extract. Quantitatively these bactericidal substances are insignificant compared with the bactericidal powers of normal serum. It is unlikely, therefore, that the bactericidal action of the leucocyte extracts has been responsible, except in a purely secondary way, for the curative results obtained in infection in animals and man. In regard to the detection of complement in leucocytic extracts, either for the activation of bactericidal antibodies in serum or for hemolytic amboceptor, Zinsser's work has been entirely negative. Immunization, furthermore, apparently did not enhance the bactericidal power of the leucocytic substances, at least in the case of *B. typhosus*, in which case alone experiments were done with this point in view. It would seem that these substances, as contained in the leucocytes may be at all times sufficient for the destruction of the limited numbers of bacteria which can be ingested by the cell, and have no quantitative relationship to the specific immunity acquired by animals or human beings during their reactions against spontaneous or experimental infection.

129. **Typhoid Vaccines and Opsonins.** In the 22 cases of typhoid treated by Sappington there were 3 deaths. One of these was regarded as hopeless when vaccines were employed, and they were used only in an experimental way to see if any reaction could be obtained in a subject practically dying. This leaves two deaths in 21, or 9.5 per cent. This is by no means a low mortality, though the percentage of fatalities under routine treatment during the same period was greater. Sappington found that the injection of a few small doses of an autogenous or stock typhoid vaccine produces decided effects in the healthy or those sick with typhoid. In the healthy after a period of about 7 days, there is demonstrable an increase of agglutinins and opsonins. In those ill with typhoid, similar inoculations produce, in the majority of cases, distinct, prompt and usually beneficial effects on the general symptomatology, temperature, course and opsonic index. As the method is dependent on active immunity, a certain amount of reaction in the patient is essential. It will not do to assume that vaccines are harmless, and a safe guide for dosage and frequency of inoculation is very desirable. It may be that this will be found in the temperature course of the opsonic index. The opsonic course in typhoid averages an index level around or above two. The index is usually high early in the disease, sinks a little toward the end of the continued temperature and rises with the decline of temperature and the advent of convalescence. It may fall to normal soon after recovery. Some patients, towards the close, exhibit low indices with improvement in all other lines, which suggests the fallacy of relying on high opsonins alone as a guide to the patient's condition. As a rule, however, the opsonic index approximates very closely the clinical course of the disease, being low when the patient is very ill and rising with improvement. The height of the opsonic index in typhoid may be of some value in diagnosis when the Widal reaction is negative.

130. **Method of Enumerating Air Bacteria.** In the method described by Rettger the entire special apparatus consists of a glass tube with a small round bulb at one end. The bulb has 8 or 10 small perforations which serve the purpose of allowing the air to pass through at a rapid rate and yet divide the gas to such an extent that every particle of it is brought into close contact with the filtering fluid. This glass tube or aëroscope is fitted into a small, thick walled test tube by means of a rubber stopper which also bears, besides the aëroscope, a short glass tube bent at right angles. The upper end of the aëroscope is bent at an angle of about 45 degrees, in order to prevent bacteria and particles of dust from falling into the open end of the tube, and still permit of the tube being drawn through the stopper without difficulty. A detailed description of the method is given.

131. **Etiology of Tabardillo.**—As the result of rather extended observation of this disease, Anderson and Goldberger came to the conclusion that Rocky Mountain spotted fever and tabardillo are distinct diseases. At least two species of monkeys, *Macacus rhesus* and *Cebus capucinus*, are susceptible to intraperitoneal inoculation with the blood from human cases of tabardillo. One attack of the disease in the monkey produced by blood inoculation directly from man induces a definite immunity to a subsequent inoculation with virulent blood. The blood from a human case of tabardillo is infective on, at least, the eighth day of the disease; it seems probable, however, that it will be found infective throughout the active febrile stage. The blood from a case in the monkey (*Macacus rhesus*) is infective by passage to a second monkey of the same species on at least the fifth and sixth days of the disease. Diluted blood serum from a human case of tabardillo, when passed through a Berkefeld filter, failed, when inoculated into a monkey, to produce the disease. The disease is not conveyed by fomites as such; nor is it contagious in the ordinary sense of this word. The epidemiologic facts of the disease,

in Anderson and Goldberger's opinion, point unmistakably to an insect intermediary, and they believe that their observations point strongly to the body louse (*Pediculus vestimenti*) as this insect. They are of the opinion that the evidence against the body louse as transmitter of tabardillo is sufficient to demand that prophylactic sanitary measures directed against this disease should take that insect into consideration.

134. **Cultivation of Tubercle Bacilli.**—Fifty specimens of sputum were studied by Brown and Smith. Of these, 35 contained on microscopic examination at time of inoculation of culture media, tubercle bacilli in varying numbers, and in 15 no tubercle bacilli were found. Positive cultures were obtained in 33 (97 per cent.) of the 35 specimens in which tubercle bacilli were found and in four (27 per cent.) of the 15 specimens in which no tubercle bacilli were found, though also, in these four cases, bacilli had at some other time been found.

In the two cases which showed tubercle bacilli on microscopic examination and with which they failed to grow cultures, the attempt was repeated. The first instance showed tubercle bacilli on microscopic examination and a culture was obtained; in the second, the microscopic examination showed no tubercle bacilli and no culture was obtained. Guinea-pig inoculations were carried out with the 37 cultures by subcutaneous injection in the groin. One animal was used for each culture. Four died in 10 to 14 days. These showed beginning disease in the regional glands. Thirty-three died later and at autopsy showed extensive tuberculous lesions.

Journal of the Oklahoma State Medical Association, Muskogee

June

135 Medicine and Medical Organization: President's Address. W. C. Bradford, Shawnee.
136 Surgery. C. Blickensderfer, Shawnee.
137 Pediatrics. H. M. Williams, Wellston.
138 Pathology. E. Melvin, Guthrie.
139 The Need of Simplicity and Conciseness in the Practice of Medicine. R. H. Harper, Afton.
140 Suprapubic Prostatectomy. F. W. Noble, Guthrie.
141 New Orleans Clinics. V. Berry, Okmulgee.

Ohio State Medical Journal, Columbus

June

142 Trivialities and Progress. J. F. Binnie, Kansas City, Mo.
143 The Nitrites and Indications for Their Use. W. J. Conklin, Dayton.
144 *Pneumonia with Severe Abdominal Symptoms Simulating Acute Diseases of the Region. H. J. Whitacre, Cincinnati.
145 The Need of Better Provision in Ohio for the Care and Treatment of Acute Mental Diseases. H. H. Drysdale, Cleveland.

144. Abstracted in THE JOURNAL, June 4, 1910, p. 1897.

American Journal of Urology, New York

June

146 Disease of the Verumontanum as a Cause of Urinary Obstruction. G. K. Swinburne, New York.
147 *Cacodylate of Mercury in the Hypodermic Treatment of Syphilis. L. Gross, San Francisco.
148 The General Principles of Treatment of Vesical Hemorrhage. C. G. Cumston, Boston.
149 The Present Status of Prostatic Surgery. F. D. Littlejohn, New Haven.

147. **Treatment of Syphilis.**—The cacodylate of mercury preparation Gross has been using contains 8 milligrams (1/8 grain) of mercury calculated as metal, in each cubic centimeter (16 minims) of the solution. He commonly injects 1 c.c. (16 minims) about 3 times per week. Where the case has been severe and requires drastic treatment he has given 2 c.c. (32 minims) at each injection to get the disease rapidly under control. Where the patient's business has prevented visits three times per week he has given 2 c.c. (32 minims) once or twice per week.

In the last 9 years' experience in the use of injections, three and one-half of which have been with mercury cacodylate, an abscess has never occurred. An advantage in cacodylate of mercury, says Gross, is the presence of arsenic. Arsenic is beneficial in many obstinate cutaneous manifestations and in cutaneous affections superimposed on the syphilitic infection. In his cases he has oftentimes been astounded at the rapidity with which the syphilides in the early secondaries have disappeared. He has had only one case where there were symptoms of intoxication. This was in a worker in lead and he became [illegible] against mercury. Inunctions and internal treatment were substituted, but the intoxication was even greater. Mercury in all forms was discontinued and he was placed on Zittmann's decoction, which caused all symptoms to disappear after the use of the second gallon.

Journal of Ophthalmology and Oto-Laryngology, Chicago

June

150 *The Possibilities of the X-ray in the Diagnosis of Eye, Ear, Nose and Throat Conditions. E. H. Skinner, Kansas City, Mo.
151 Surgery of the Nasal Septum. W. D. Black, St. Louis.

150. Published in the Journal of the Missouri State Medical Association, June, 1910.

Kansas City Medical Index-Lancet

June

152 The Medical Aspect of Mental Healing. J. Punton, Kansas City.
153 Duration of the Treatment of Syphilis. E. C. Hays, Hot Springs, Ark.
154 Unusual Gunshot Wounds: Report of Two Cases. D. A. Myers, Lawton, Okla.

Denver Medical Times and Utah Medical Journal

July

155 *Chylous Ascites and Chylothorax. C. B. Van Zant, Denver.
156 Aural Complications. F. E. Wallace, Pueblo, Colo.
157 The Etiology of Phlegmasia Alba Dolens. E. H. Smith, Ogden, Utah.
158 Degenerative Changes in the Spinal Cord in Pernicious Anemia. J. R. Morrell, Ogden, Utah.

155. **Chylous Ascites.**—In VanZant's present case, the diagnosis was readily made, after a little study of its symptoms and progress, of a blocking of the thoracic duct high up in the thorax, leading to lymph and chyle stasis, and transudation of these fluids below. The pancreas (its body) was imbedded in a large mass, 1 5/8 by 3 1/2 by 1 3/4 inches, apparently consisting of coalesced lymph nodes of a pinkish color and granular appearance.

The receptaculum chyli was somewhat dilated. In the thoracic cavity, opposite the body of the tenth dorsal vertebra, a large lymphatic gland, one inch long, was found adherent to the wall of the thoracic duct, obliterating its caliber. Here and there, higher up along the thoracic duct, up to the level of the root of the lungs, on both sides of the duct, were found greatly enlarged lymph glands, pressing on the duct, so that a probe could not be passed up its caliber more than an inch without being stopped by these glands completely blocking the way. These enlarged glands could be felt higher up the duct, even into the root of the neck near its terminus. The failure to obtain a typical enlarged gland for histologic study leaves the cause of general glandular involvement in the case undetermined. The liver, lung and spleen showed a most striking infiltration with lymphocytes. In the serous capsules of these organs there were numerous rounded masses of small round cells, giving the impression of lymph spaces distended and closely packed with lymphocytes. These cell masses formed the innumerable small nodules which resembled miliary tubercles macroscopically. In the liver the interlobular tissue was densely infiltrated with lymphocytes; and in the lung the perivascular and peribronchial lymph spaces were closely packed with similar cells. The right lung also showed marked atelectasis with overgrowth of fibrous tissue in the alveolar walls.

Frequent tappings, probably 15 in number, were done only when imperatively required by great and increasing dyspnea. Femoral phlebitis, herpes zoster and transient pyuria were interesting complications of the case.

Journal South Carolina State Medical Association, Charleston

May

159 The Nature of Neurasthenia. B. R. Tucker, Richmond, Va.
160 Gastric Atony. F. M. Durham, Columbia, S. C.
161 Placenta Praevia—Its Treatment. H. R. Black, Spartanburg.
162 First Aid in Injured Eyes. E. F. Parker, Charleston.

Detroit Medical Journal

June

163 Practical Suggestions on Mastoid Surgery of Interest to the General Practitioner. S. J. Kopetzky, New York.
164 Alcohol and Its Effects on the Nervous System. A. W. Ives, Detroit.
165 Pellagra. J. W. Trask, Washington, D. C.
166 Greek: Its Value to the Physician. J. H. Dempster, Detroit.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest

British Medical Journal, London

June 25

1 *The Bionomics of Helminths. W. Nicoll.
2. Recurrent Motor Paralysis in Migrain J. M Clarke
3 The Value of Serums and Vaccines in the Treatment of Disease. N Raw
4 *Measuring the Antitryptic Index F. C. Eve.
5 The Value of Test Meals as a Guide to Infant Feeding. R. Carter.
6 *Ovarian Grafting and Menstruation T Tuffier and E S. Chapman.
7 Sleeping Sickness Showing Regular Periodical Increase of the Parasites Disclosed. R. Ross and D Thomson.

1. The Bionomics of Helminths.—The point of special interest to physicians in Nicoll's paper is that dealing with the prophylaxis of helminthiasis. He says that the cooking of foods, the wearing of clothes, and the application of sanitation and personal cleanliness are the three chief means of defense against helminths. Food is the essential factor in the transmission of parasites in the vast majority of cases. Infection with trematodes and cestodes (which are heteroxenous) can be acquired only in this way, with the doubtful exception of schistosomiasis. This, however, applies only to a limited extent in the case of nematodes (which are monoxenous).

The most effectual remedies against the inroad of platyhelminths are proper cooking of food and filtration of drinking water. All parasites are killed by exposure to a temperature of 100 C. (or even less), but it is of importance that the whole of the food be raised to this temperature, not merely the exterior. Most natural waters contain minute crustaceans and other animals, which frequently harbor helminth larvæ. Careful filtering, however, entirely removes them. The wearing of clothes is not of the same far-reaching importance, but it appears to be essential in the case of ankylostoma, filaria, and schistosoma. Sanitation and cleanliness are of little less importance than the proper cooking of food. They are specially important from an epidemiologic point of view.

The only means of dealing with an epidemic consists in the immediate destruction or disposal of the feces from the infected cases, and in scrupulous personal cleanliness among those exposed to infection. Were these measures strictly carried out, there would be no such outbreaks of ankylostomiasis as have been notorious in Europe of recent years. It is this third factor which is most largely concerned in the spread of nematodes. There remains a fourth factor, which is not so directly connected with, or dependent on civilization, namely, the transmission of helminths through the active agency of insects. This is independent of food, sanitation and clothing. Even here, however, a means has been found to limit the occurrence of the disease—namely, by filling up the swamps and marshes and thus destroying the breeding grounds of the mosquito. This measure might well enough be included under sanitation. Could these prophylactic and preventive measures be carried out efficiently in all cases, men would cease to be afflicted with helminth parasites.

4. The Antitryptic Index.—After experimenting for four months, Eve found that by digesting for four and a half hours in the incubator instead of at room temperature, and by adding another 3 c.c. of fresh casein just before measuring the viscosity, the antitryptic power of a serum could be measured reliably with only 0.08 c.c. of serum and with quite homely apparatus. Ordinary glass tubing is washed with acid and then with water and dried. It is then drawn out at intervals of 3 in., whereby a number of cylinders with tapered ends are made. If held horizontally in the drop of blood on the patient's finger, these fill themselves without forming bubbles. The casein solution is made by weighing 6 grams of casein and stirring it into a paste with 30 c.c. of distilled water warmed to about 40 C. After adding 5 c.c. of decinormal NaOH, the mixture is stirred till the particles are all dissolved with the help of five drops of aqua ammoniæ fortior. Mix this solution with 95 c.c. of water, to which 5 drops of solution of formaldehyd have been added and filter through paper (or wool) carefully.

The piston pipette consists of a home-made capillary pipette with a little bulb holding about 0.1 c.c. up to the arrow-mark. The butt end of the pipette slides freely into a larger glass tube, and the piston point is made tight by a collar of rubber fitting snugly, and lubricated by a drop of water. A finger over the hole in the end of the large tube converts it into a syringe but the moment the finger is removed the internal air pressure is equalized, and the contained fluid (if held horizontally) remains stationary. Four grains (0.26 gram) of trypsin are stirred into a paste and mixed with 100 c.c. of water which has been freshly drawn from the tap to secure uniformity of temperature. The estimations were done in batches of 5, and hence 5 similar short test tubes were required. Into each, 5 c.c. of casein solution are measured; 0.08 c.c. of serum (approximately) is then very exactly measured into a capillary pipette. The point may be either plunged into the serum, or if scanty it is best to open both ends of the capsule and pour the serum from capsule to pipette held mouth to mouth. It is often difficult to break the blood capsules at the thick part without breaking the capillary end.

Each casein serum mixture is shaken up as soon as it is made, and every test tube is marked with a grease pencil; 1 c.c. of trypsin is now added by pipette to each test tube. All five test tubes are corked, shaken and incubated for four and a half hours at about 40 C. They are then cooled under the tap and allowed to stand until next morning, if, as usually happens, this is most convenient. Five little flat-bottomed, steep-sided glass cells are required, about 2 in. in diameter and 1 in. high, which can be covered with a watch-glass and immersed in a photographer's developing dish (to act as a water bath). They are numbered in correspondence with the five test tubes; 3 c.c. of fresh casein solution are now added to each test tube, and the mixture is shaken and poured into each dish. The fresh casein is added because the acid decreases the viscosity of casein and hence the amino acids accumulated during the four and a half hours' digestion will accentuate the differences in the reading of the viscosimeter, and thus render small differences in the antitryptic activity of the serums more measurable. Also the serum will be acting in a state of greater concentration.

The five dishes now contain 6 c.c. of fresh casein trypsin-serum digest plus 3 c.c. of fresh casein. When they have stood for an hour or two to attain a condition of temperature equilibrium with their surroundings, each solution is aspirated in turn into the viscosimeter and the number of seconds which each fluid takes to run through from the mark M. to the top of the capillary portion is measured with a stop watch. Each observation is repeated twice, or more, if not concordant.

6. Ovarian Grafting and Menstruation.—The authors suggest that the female organism is during a month under the influence of a toxin, the origin of which is at present unknown, but whose action is elective for the ovary; that the toxin produces an intense congestion of the ovary and, perhaps, a special metabolism; and that then an internal secretion derived from the ovary is formed which has a special action on the uterus, and which determines the discharge of blood. They report one case in which an ovary (removed from the same patient) was implanted into the abdominal wall on the right side. For some days following the operation there was complaint of pain on the right side of the wound, and the grafted ovary was tender on palpation. These symptoms, however, quickly subsided. Five months after the operation the patient complained that the abdominal pain had returned. There had been a slight yellowish white vaginal discharge, at times offensive, so as to require douches.

Six weeks prior to her return, ten weeks after the operation, she had acute pain in the right side of the abdomen. This pain had come on suddenly and continued six days. She noticed that there was a swelling on the right side of the abdominal wound; there was no vaginal discharge of blood. The pain gradually passed off, and her state of health again became satisfactory. Four and a half months after the operation she observed a vaginal discharge of blood accompanied by acute pain in the abdomen and she noticed that the swelling on the right side of the abdominal wound had again appeared. She suffered also from a dull pain across the sacrum, from headache and from lassitude. This discharge which was thus associated with the usual signs and symptoms of a normal menstrual period continued for 5 days. In this case for a period of four and a half months there were present certain signs, such as the swelling of the ovary, flushings, and general lassitude, which were strong evidence of the presence in the organism of a poison having an elective action for the vasomotor system. After this period the grafted ovary had become permeated by new vessels originating from the parent body newly formed blood-vessels had penetrated into the central portion of the ovary, and the menstruation, which up to that time had been in abeyance, was influenced by the grafted ovary and occurred again in the usual manner.

Lancet, London

June 25

8 The Behavior of the Leucocytes in Infection and Immunity. F. W. Andrewes.
9 *Anomalies of the Mind and the Evolution of the Mental Processes. R. Jones.
10 Administration of Public Health and Education Acts in Relation to Prevention and Cure of Diseases of the Throat and Nose. T. J. Faulder.
11 Gastrointestinal Fermentation. D. Sommerville.
12 *Hypodermic and Intramuscular Inoculation of Bacterial Vaccines as Demonstrated by Experiments with Typhoid Vaccine. D. Semple.
13 The Utility of the Antilytic Power of Horse Serum. F. C. Eve.
14 *The Treatment of Dysphagia of Laryngeal Tuberculosis by Alcohol Injections in the Superior Laryngeal Nerve. J. D. Grant.
15 Double Dermoid Cyst of Ovaries with Rupture into the Peritoneal Cavity. R. H. Lucy.

9. **Anomalies of the Mind.**—The influence of the "environment," says Jones, is an important factor in the estimation of mental unsoundness, although it is often overlooked. The organism (or the individual) and the environment constantly act and react on each other, and any defect of accommodation on the part of man is more often an indication of insanity than is the presence of any perverted instinct. Every person is sane or insane according to his own standard and in relation to his own environment, so that the environment must always be considered in estimating and realizing the presence of insanity. As the surroundings become more complex with the progress of civilization, so there must grow an increased power of adaptation of the individual, and herein lies the adaptation and connotation of insanity. The study of insanity takes notice of these relations, and the manifestations of the mind in response to both outward and inward stimuli become a prime factor. In dealing with the subject, Jones says, it is necessary to consider man in regard to his past as well as in regard to his future, and his immediate present. It is conduct, not illusions, hallucinations or delusions which constitutes insanity. Hallucinations, nevertheless, are dangerous symptoms, for they force themselves on the attention and they influence conduct. Aural hallucinations are often so relentless and so tyrannical and dominant that they not infrequently result in most dangerous acts of violence or destructive fury.

The forms of mental disorder most prevalent to-day, however, are those primarily prone to attack young people. It is a variety of mental diseases so incurable and chronic that it tends to fill asylums with hopelessly insane patients. The report of the Commissioners in Lunacy also supports the assertion that it is more common now than formerly. These cases almost invariably commence in depression, and it is justifiable to believe that the proportion has arisen from 21.5 per cent. to 30.2 per cent. of all cases of insanity in 25 years. Last year 1,156 cases (551 males and 605 females) were received into the asylums of England and Wales. Senile insanity has increased from 11 to 20 per cent. during a period of 15 years; 888 persons (380 males and 508 females) died during the year from changes accompanying senile decay. Cases of insanity commencing in neurasthenia and psychasthenia are more frequently met with now than in the past. Last year's report of the Commissioners in Lunacy gives over 200 cases admitted into asylums in which these causes were given. Overstrain, over-fatigue and over-excitement are responsible for such nervous disease. Mental stress is recorded as having caused insanity in 4,410 persons (1,902 males and 2,508 females). These cases are an indication of excesses of many kinds, and they reflect the accentuation of the struggle for existence in civilized countries, the effect of town life, the quest for pleasure, and probably also the marriage of the unfit.

Cases of insanity associated with alcohol show no diminution in their incidence, for 2,446 men and 992 women of this class were admitted into the asylums of England and Wales last year—a proportion of 23.3 per cent. males and 8.9 per cent. females on all cases admitted. Epilepsy is a frequent factor in the admissions; 7 per cent. of the men and 5 per cent. of the women admitted were the proportions recorded. It is interesting to note that insanity after surgical operations appears to be on the increase. Last year 106 (39 males and 67 females) were admitted into asylums from this cause. Cardiovascular conditions and renal disease were responsible as a factor in the causation of insanity in 837 persons (425 males and 412 females), and 459 persons (176 males and 412 females) were reported to have died in asylums from renal disease within the year. The influenza bacillus as a nerve toxin is, in Jones' opinion, next in importance to the treponema pallidum as a specific cause of insanity; 568 cases were reported as occurring after influenza. Tuberculosis figures as a proximate or a predisposing cause in 183 persons (98 males and 85 females), whereas 1,332 (617 males and 715 females) died during the year, showing the high mortality from tubercle in asylums for the insane. Twenty-five persons who were insane died from diabetes mellitus.

12. **Inoculation of Bacterial Vaccines.**—The immunizing response following the inoculation of typhoid vaccine in rabbits as measured by the presence of agglutinins and opsonins in the blood, is the same, Semple claims, whether the vaccine is given subcutaneously or intramuscularly. In both methods of inoculation the agglutination and opsonic changes when plotted on a chart take somewhat similar courses, and in both an increase of opsonins. The intramuscular method of inoculating bacterial vaccines possesses no advantages whatever over the subcutaneous method, and as the latter gives rise to less pain and inconvenience it is to be preferred.

14. **Dysphagia of Laryngeal Tuberculosis.**—Six cases of odynphagia were treated by Grant by means of this method. In each case the pain disappeared and the patient was again able to swallow in comfort. Grant uses the solution recommended by Purves Stewart, consisting of 2 grains of hydrochlorid of beta-eucain in an ounce of 80 per cent. alcohol. The method of injection practiced is the one recommended by Rudolph Hoffmann.

Medical Press and Circular, London

June 15

16 Cercomonas Intestinalis, or Flagellata. U. Guastalla.
17 The Psychogenesis of some "Reflex" Neuroses. T. A. Williams.
18 Langenschwalbach as a Health Resort. F. Hildepohl.
19 A Criticism of Some Principles in the Treatment of Chronic Nephritis. W. L. Brown.
20 What I Should Do if I had a Dog bite. M. Tussau.

Clinical Journal, London

June 15

21 Syphilis. W. H. White.
22 Treatment of Septic Conditions. E. M. Corner.
23 Hemiplegia and Its Treatment (continued). G. Holmes.

Journal of Tropical Medicine and Hygiene, London

June 1

24 Tertiary Yaws. A. A. Montague.
25 Urinary Calculus in Sierra Leone. D. Burrows.

June 15

26 Cases in Which Liver Pus was Coughed up Through the Right and Left Lung. J. Cantlie.

Indian Medical Gazette, Calcutta

May

27 Sleeping Sickness in Uganda. E. D. W. Greig.
28 The Berhampore Asylum for the Year 1909. C. J. Robertson-Milne.
29 The Purification of Native Sewage under Defined Conditions. W. W. Clemesha.
30 Nervous Breakdown as Observed in Burma. C. C. Barry.

Practitioner, London

June

31 Treatment of Tuberculous Glands. W. Bennett.
32 Differential Diagnosis in Dyspepsia. R. Hutchison.
33 Jejunostomy for Advanced Cancer of the Entire Stomach. W. G. Spencer.

34 *Five Difficult Cases of Fracture Requiring Operative Treatment. W. I. deC. Wheeler.
35 Management of the Vascular Factor in Kidney Disease. A Morison.
36 *Diagnosis and Treatment of Hemorrhage from an Unenlarged Uterus. V Bonney
37 *Chronic Appendicitis. F. J. Steward.
38 Before and After Gastroenterostomy. J. M. Whyte.
39 Recent Work on the Diseases of Children. H. Thursfield.
40 The Treatment of Acute Intestinal Obstruction. E. C Bevers.
41 Bacterial Disturbances of Digestion and Consequences Thereof. W Tibbles.
42 Skin Diseases from the Point of View of General Practice. L. F Ellis.
43 Hernia of the Bladder. W. P. Noall.
44 *Action of Alcohol on the Human System. H A. Haig.
45 *Vicious Circles Associated with Disorders of the Respiratory Organs. J Hurry.
46 The Significance of Albuminuria in Diagnosis. H Barber.

34. **Difficult Fracture.**—The cases reported by Wheeler were: (1) A compound fracture of both bones of the leg followed by a fall down the steps; (2) an ununited fracture of the tibia and fibula of 11 months' standing; the fracture in the tibia had resulted in the formation of a false joint; (3) a case of fracture of the surgical neck of the humerus, which it was found impossible to reduce after a fortnight's treatment under the guidance of a fluorescent screen; (4) a long oblique fracture of the femur; (5) an oblique fracture of the middle of the shaft of the femur. In each case repair of the fracture had been delayed for some time so that an open operation was necessary. The Lane plates were used and the results were excellent.

36. **Treatment of Hemorrhage.** In one case of severe intractable hemorrhage Bonney performed the operation of utriculoplasty devised by Howard Kelly. The patient made a satisfactory recovery, and has been menstruating once a month regularly, but the loss only endures for one day. Her general health has immensely improved.

37. **Chronic Appendicitis.** Steward maintains that appendicitis frequently is from the first a chronic condition that may persist for years without the patient ever having what may be termed an acute appendicitis at all. He describes a number of cases that have come under his notice and which illustrate the several varieties of the condition that may occur.

44. **Action of Alcohol on the Human System.**—Haig believes that in health alcohol in moderation may be useful, but that its continuous use is to be avoided, and one must bear in mind the fact that a certain idiosyncrasy may exist; in diseased conditions, alcohol is in many cases of great value as a therapeutic agent of a temporary nature, always provided that it is used with discretion; and that taken in excess, or in smaller quantities over long periods of time, alcohol is extremely deleterious to the human system, so much so in fact that in many instances it has induced physicians to discontinue its use as a drug on the grounds that its disadvantages outweigh its advantages.

45. **Disorders of Respiratory Organs.** Hurry describes four so-called vicious circles which may occur in connection with disease of the respiratory apparatus: (1) Pulmonary circle: Failure of right ventricle, tricuspid incompetence, congestion of coronary vein, impaired nutrition of myocardium, congestion of lungs. (2) Pleuritic circle: Increase of fibrinous effusion, stomata blocked by fibrinous effusion, diminished escape of fluid. (3) Bronchial circle: Increased accumulation of residue, bacterial decomposition of residues in bronchiectasis, increased dilatation of bronchial tubes. (4) Tracheal circle: Increased pressure on thyroid, stenosis of trachea, dyspnea, and increased respiratory activity.

Journal of Laryngology, Rhinology and Otology, London

June

47 Congenital Insufficiency of the Palate. A B. Kelly.
48 Dermatitis of the Vestibule of the Nose, Probably due to Menthol. D. McKenzie.

Archives des Maladies de l'App. Digestif, Paris

May, IV, No. 5, pp. 241-304

49 *External Gastric Ulcer. (De l'ulcère externe de l'estomac.) G. Hayem.
50 *Membranous Pericolitis. P. Duval.
51 *Cecal Constipation. J. C. Roux.
52 Simple Apparatus for Estimating Fermentation in Feces. R. Goiffon.

49. **External Gastric Ulcer.**—Hayem applies this term to a destructive lesion in the outside of the stomach wall, of which he has encountered 7 cases. It might also be called external mal perforant or external mixed aneurism. The lesion works through the stomach wall, reaching the mucosa last, in only 2 of his cases did the ulceration extend to the mucosa, and with perforation in only one case. His patients were men between 33 and 62 and a woman of 45, and the external ulceration was an autopsy discovery. In nearly every case there was also ulceration on the inner aspect of the stomach wall, gastritis or cancer. The original cause seems to have been some neurotrophic disturbance.

50. **Membranous Pericolitis.**—Duval reports 4 cases apparently similar in every respect to those recorded by J. N. Jackson last year. In Duval's cases there was a painful point below the costal arch too far outward and too low to be referred to the gall-bladder, and palpation of the cecum showed it distended with gas, without any special painful point. But the entire ascending colon was painful and there was transient retention of feces in the region. An inflammatory origin for the disturbances was evident in his cases instead of the malformation of the peritoneum with which Jackson explains some of the cases.

51. **Cecal Constipation.** Roux reports two cases which resemble the type described by Duval and Jackson but the obstruction in his cases was from adhesions at the right angle of the colon. Constipation from obstruction at this point is peculiarly harmful as the feces are kept in a semifluid condition by the constant arrival of intestinal juice from the small intestine. This permits absorption and consequent chronic intoxication, the results much more serious than when the feces stagnate in the rectum or descending colon. When they reach this region they are dry and bacterial life is arrested. The bowel contains here merely hard dry bodies without toxic action. In both Roux's cases no benefit was derived from medical measures but conditions rapidly improved after laparotomy with separation of adhesions and resection of superfluous omentum in one case.

Archives des Maladies du Cœur, etc., Paris

June, III, No 6, pp 337-400

53 Intravascular Hematolysis (Hématolyse in vivo Hématogenèse.—Maladies autogènes du sang.) G Froin

Annales des Maladies des Org. Génito-urinaires, Paris

May 1, XXVIII, No 9, pp 769-864

54 Cancer of the Bladder with Almost Exclusive Metastasis in the Liver. (Néoplasme de la vessie Généralisation hépatique presque exclusive.) J. Ferron and P Nadal

May 15, No 10, pp 865-960

55 *Diagnosis and Treatment of Unilateral Hematuric Nephritis. R. M. Fronnchtéine

55. **Hematuric Nephritis.** A case reported and the data in the literature seem to establish beyond question that copious hemorrhage in a kidney can occur only with some anatomic lesion in the parenchyma of the organ. Both kidneys may be involved in the acute hemorrhagic inflammation. When only one kidney is affected nephrectomy may become necessary. In the case described the patient was a healthy man of 32 and cancer was diagnosed on the basis of the periodical pain in the right kidney region, right hematuria and emission of vermiform clots, the positive antitrypsin reaction and emaciation. No tumor was found in the kidney but merely evidences of a hematuric connective tissue nephritis. The severity of the hemorrhages and the rapid recovery after removal of the focus amply justified the intervention.

Bulletins de la Société de Pédiatrie, Paris

May, VII, No 5 pp 2[illegible]-288

56 Permanent Benefit from Wedge Osteotomy in Case of Rachitic Incurving of the Tibia. V Veau
57 *"Caked" Purulent Pleurisy in Infants (La pleurésie purulente en galette chez le nourrisson.) P Armand Delille
58 *Localization of Pneumonia in Children (Topographie des localisations pulmonaires de la pneumococcie infantile E Weill and G Mouriquand.
59 *Streptococcus Scarlatinal Meningitis E Weill and J Chalier
60 *Delirium in Tuberculous Meningitis in Children G Mouriquand.

57. **"Caked" Purulent Pleurisy in Infants and Young Children.**—Delille has encountered a number of cases of a circumscribed accumulation of pus and false membranes over the

pleura, the pus in the center still fluid but very thick. The "cake" thus formed may be from 1 to 4 inches in diameter but is never over an inch thick. It develops during the course of bronchopneumonia, and an exploratory puncture may reveal the presence of pus generally containing pneumococci. The layer of pus is thin and it is difficult to siphon out even as much as 20 or 40 gm. Healing is soon complete in the favorable cases, the remaining pus being speedily absorbed. The cases of purulent pleurisy in which cure follows simple exploratory puncture probably belong in this group.

58. **Localization in the Lung of Pneumonia in Young Children.**—The pneumococcus seems to attack by preference the left base and the right apex of the lungs in children, according to Weill's experience. In 240 cases this tendency to a localized process was evident in all but 40. The cases in which pneumonia was limited to the right apex were all of a mild type while complications were observed in 30 per cent. of the cases in which the base of the lung was affected. This proportional severity of the process differs from that in adults, the apical lesions being generally more severe in adults.

59. **Streptococcus Scarlatinal Meningitis.**—Weill found only one case of meningitis in 1,369 cases of scarlet fever at the Lyons Charité Hospital, and Gouget found only 20 on record. To these Weill adds the report of another case, the meningitis developing in a boy over 7 with apparently mild scarlet fever. The seventh day meningeal symptoms developed and autopsy revealed signs of suppurative cerebrospinal meningitis.

60. **Delirium in Tuberculous Meningitis.**—Mouriquand reports a case of tuberculous meningitis in which signs of involvement of the medulla oblongata were lacking and delirium predominated. The meningitis affected mostly the convexity of the brain with slight basal lesions. The delirium was systematized and tranquil, the child a girl of 11, conversing gently with imaginary persons.

Lyon Chirurgical, Lyons

June, III, No. 6, pp. 605-734

61 Two Hundred and Eight Gastroenterostomies with the Jaboulay Button. (Statistique de gastro-entérostomies faites avec le bouton anastomotique qui tient en place sans sutures.) M. Jaboulay.
62 Pneumotomy for Abscess in the Lung in 7 Cases. (L'ouverture des abcès du poumon.) E. Delanglade and J. Piolle.
63 Isolation of the Duodenum and Pancreas. G. Cotte and L. Maurizot.

Lyon Médical, Lyons

May 29, XLII, No. 22, pp. 1109-1152

64 *Anastomosis of Mesenteric and Ovarian Veins in Treatment of Cirrhosis of the Liver. (Suture ovario-mesentérique dans un cas de cirrhose du foie.) E. Villard and L. Tavernier.

June 5, No. 23, pp. 1153-1188

65 Acute Delirium in Malignant Gonorrheal Endocarditis. S. Bonnamour and P. Gauthier.
66 *Diphtheria Antitoxin in Local Treatment and Prophylaxis of Various Infectious Processes. L. Thevenot.

64. **Venous Anastomosis in Treatment of Cirrhosis of the Liver.**—Villard and Tavernier are convinced that benefit is sure to follow an anastomosis in the lumbar region between the main inferior mesenteric vein and the left utero-ovarian in case of cirrhosis of the liver with ascites. They cut the veins and unite the stumps with an end to end suture, merely ligating the one stump of each vein left loose. This technic they say is preferable to side to side union or other methods. In the one clinical case in which they applied this principle in treatment of cirrhosis of the liver the patient was in such advanced cachexia that he was unable to rally. The technic was also faulty, as other veins were used and one was bent and a thrombus developed at the point. Subsequent work on the cadaver showed the superiority of the technic described above.

66. **Local Application of Diphtheria Antitoxin.**—Thevenot recommends local application of desiccated antitoxin as an adjuvant to treatment of diphtheria and also as a precautionary measure for a time after recovery. Tablets of the desiccated serum allowed to melt in the mouth, will aid in sterilizing the throat after recovery. It may be possible in this way to reduce the number of bacilli carriers. The local applications may also render the person less apt to contract the infection from others.

Presse Médicale, Paris

June 15, XVIII, No. 48, pp. 441-448

67 Recent Research on the Origin and Development of the Lymphatics. J. Jolly.

June 18, No. 49, pp. 449-464

68 Cycle of Evolution of the Islands of Langerhans in the Pancreas. (Importance des îlots endocrines et de leur cycle évolutif dans la physiologie normale et pathologique du pancréas et particulièrement dans le diabète.) E. Laguesse.
69 *Syphilis and Sciatica. Lortat-Jacob and Sabaréanu.
70 Resistance of the Blood Corpuscles in Jaundice. (La résistance globulaire au cours de l'ictère.) J. Chalier.
71 Pathogenesis and Treatment of Hernia of the Large Intestine. R. Leriche.
72 *Emetics in Treatment of Paroxysmal Tachycardia. E. Devic and P. Savy.

69. **Syphilis and Sciatica.**—Lortat-Jacob urges careful search for syphilis in every case of sciatica of radicular origin for which no other cause can be discovered. His experience shows that the sciatica may disclose an unsuspected syphilis in its tertiary phase.

72. **Induction of Vomiting in Treatment of Paroxysmal Tachycardia.**—A previous communication by Savy on this subject was reviewed in The Journal, April 9, 1910, page 1240. Further experience has definitely confirmed, he asserts, the therapeutic efficiency of an emetic in arresting the crisis. It has never failed in any of his cases. The emetic probably acts on the medulla, confirming the bulbar origin of these attacks.

Semaine Médicale, Paris

June 22, XXX, No. 25, pp. 289-300

73 *Heredity as an Etiologic Factor in Cancer. R. de Bovis.

73. **Influence of Heredity on Incidence of Cancer.**—The conclusions of de Bovis' review of recent research on this subject are that heredity does play some part in the incidence of cancer, but not to the extent popularly assumed. At the present time there is probably no one living, he says, without one or more ancestors who have had cancer. If the influence of heredity were more potent every one over the age of 50 would therefore expect to die of cancer barring accidents or acute disease. The fact that this is not the case and study of vital statistics render very problematic any real decided increase in the prevalence of cancer. It is possible that an immunizing process occurs in course of time which prevents the cancer taint from passing beyond one or two generations. This would explain, he remarks, why succeeding generations of Bashford's cancer mice families do not seem to display any tendency above the average proportion to develop cancer. Research by Tyzzer, Mayet, Haaland in Norway, and the collective inquiries in Germany and Holland all confirm the influence of heredity, possibly increasing the chance of cancer by about 25 per cent. A point that has not been brought out with sufficient emphasis, he adds, is that the proportion of cancerous parents or grandparents must not be compared with the prevalence of cancer in our day but with the prevalence in the generation to which they belong. It will thus be seen that the incidence of cancer in the cancer families is unmistakably though slightly above the average. The negative conclusions in a collective inquiry in Hungary are evidently due to lack of authentic family histories among the Hungarian peasants.

Berliner klinische Wochenschrift

June 6, XLVII, No. 23, pp. 1045-1092

74 Ferments and Radioferments in Therapeutics. A. Sticker and E. Falk.
75 *Pregnancy and Diabetes. (Schwangerschaft und Zuckerkrankheit.) F. Hirschfeld.
76 Action of Hemolytic Organ Extracts. (Wirkung der Organhämolysine.) K. Donath.
77 Bacteriologic Study of Tuberculous Excreta. (Die neuesten Methoden des bakteriologischen Tuberkelbacillennachweises in verschiedenen pathologischen Exkreten.) J. A. Finkelstein.
78 Determination of Stomach Ferments in the Urine and Their Diagnostic Significance. (Nachweis der Magenfermente im Urin.) E. Fuld and K. Hirayama.
79 Cooling of the Inspired Air in Ether Anesthesia. (Ueber die Abkühlung der Inspirationsluft bei der Aethertropfnarkose, ihre Bedeutung und ihre Verhütung.) M. Hoffmann.
80 Superheated Air, Weight Treatment and Vibratory Massage in Conservative Gynecology. (Zur konservativen Behandlung in der Gynäkologie.) E. Runge.
81 Bibliography on Radium. P. Eichholz.
82 *The Outlook for Medical Students. (Die Aussichten der Medizinstudierenden.)

75. **Pregnancy and Diabetes.**—Hirschfeld has encountered 4 cases of diabetes in young pregnant women and the diabetic functional disturbances became aggravated during the third and fourth months, but diabetic coma did not occur in any case during or closely following the pregnancy. This aggravation of the diabetes may subside or persist. The fact that pregnancy aggravates diabetes renders the prognosis comparatively more favorable when diabetes develops during pregnancy. Experience has shown that women have their power of carbohydrate oxidation reduced during pregnancy, even when they are otherwise normal. Glycosuria was observed in 10 per cent. of healthy pregnant women after intake of 100 gm. sugar, and when there was a nervous predisposition this pregnancy glycosuria developed on an ordinary diet. The mild form of diabetes does not seem to affect the fetus unfavorably.

82. **The Outlook for Medical Graduates.**—The Berlin Letter recently mentioned the circular which the Leipsic League is distributing, calling attention to the overcrowded condition of the medical profession in Germany. It states that only 618 places could be secured for the 898 applicants last year, 280 not finding a location, while the number of medical students enrolled at the present time is nearly a thousand more than last year. Official statistics show that the income of 34.8 per cent. of the physicians in Saxony is less than $1,075 and only 44.8 per cent. have up to $1,575, which is the very least amount on which a physician can live and bring up a family. The above figures include also all income from private property or other sources in the family. When the new legislation goes into effect making insurance against sickness compulsory on all with an income up to $500, only 8 per cent. of the total population will be exempt; that is, there will be only 62 families for the individual physician to draw on. If after years of waiting he obtains a position with the insurance company the work is tremendous, the pay far below that which was considered the minimum rate in 1815, and he is dependent on persons possibly his social inferiors, with their favor bestowed or withdrawn frequently for extraneous reasons, and the position of the medical man thus loses the prestige it had of yore. A single slight blunder may be regarded as malpractice and ruin him forever, while quacks thrive and in many places outnumber the physicians and are pardoned the grossest errors as "better cannot be expected of them on account of their lack of training." The circular adds that these are the conditions confronting the graduates of the longest and most expensive of the university courses. The medical course requires 6½ years. The expense averages at the most modest computation $2,500, the extras for practical instruction, for examination, for graduating exercises, books, instruments, etc., are large, and capital is required for opening an office and living expenses until a practice materializes. The physician is scarcely ever able to lay anything by for the future or pay much for life insurance, and if he becomes incapacitated he has no provision, no pension and there is nothing for his widow and orphans after his death. The relief funds maintained by the contributions of physicians in certain societies suffice only to keep incapacitated medical men and the numerous widows and orphans from actual starvation. This circular is being distributed in all the high schools and colleges throughout Germany.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

June 3, XIII, No 9, pp. 321-368

83 Non-Operative Measures Applied in Treatment of Carcinoma to Date. (Die medikamentöse, diätetische und Fermenttherapie des Carcinoms.) E. Venus. Commenced in No. 6.

Deutsche medizinische Wochenschrift, Berlin

June 9, XXXVI, No. 23, pp. 1065-1112

84 *Diagnosis and Treatment of Fracture of the Skull. (Diagnostik und Behandlung der Schädelbrüche.) E. Payr. Commenced in No. 22.
85 *Operative Treatment of Perforated Gastric Ulcer. (Zur Operation des perforierten Magengeschwürs.) R. Mühsam.
86 Alcohol Sterilization of the Hands without Preliminary Scrubbing. Schumburg.
87 *Treatment of Severe Anemia by Intramuscular Injection of Blood. O. Huber.
88 Ambulant Tuberculin Treatment. Beninde.
89 *Treatment of Severe Bronchopneumonia in Young Children. J. Ibrahim.
90 *Nature and Importance of Rigidity of the Muscles as Sign of Tuberculous Apical Disease. (Wesen und die Bedeutung der Rigidität der Muskeln als Zeichen der tuberkulösen Lungenspitzenerkrankung.) C. Hart.
91 Pottenger's "Light Touch Palpation." (Leichte Tastpalpation.) J. W. Runeberg.

June 16, No. 24, pp. 1113-1160

92 Treatment of the Hemorrhagic Diathesis. H. Arnsperger.
93 *Presence of Tubercle Bacilli in the Blood and its Diagnostic Importance. (Vorkommen von Tuberkelbazillen im kreisenden Blute.) F. Jessen and L. Rabinowitsch.
94 Modifications of the Wassermann Reaction no Improvement over Original Technic. (Ueber die sogenannten "Verfeinerungen" der Wassermannschen Reaktion.) C. Stern.
95 Thirty Additional Cases of Irises Not Matching in Color (Heterochromia Iridum.) A. Lutz.
96 Commercial Tablets for Spinal Anesthesia Not Always Sterile (Zur Frage der Sterilität der Novokain-Suprarenintabletten.) K. H. Kutscher.
97 Cholin Not Effectual in Experimental Sterilizing of Rabbit (Ueber die angeblich sterilisierende Wirkung des Cholins.) F. Schenk.
98 The Early Therapeutic Reaction to the Roentgen Rays. (Die röntgen-therapeutische Fruhreaktion.) H. E. Schmidt.

84. **Treatment of Fracture of the Skull.** Of course, Payr remarks, the fracture itself cannot be treated, and to date there is no certain means for prophylaxis of meningitis, but much can be done to relieve the resulting injury of the contents of the skull, by lumbar puncture and puncture of the ventricles and Cushing's method of decompression trephining. The latter especially Payr regards as extremely important, both for the present and future. Lumbar puncture alone may relieve compression and by evacuating the bloody fluid will prevent irritation of the sensitive meninges and development of adhesions later. Puncture of the ventricle may prove a life-saving measure in case of a focus resulting from a contusion near the lateral or third ventricle. Traumatic internal hydrocephalus is comparatively frequent, even after slight injury, the free circulation of fluid being hampered by some anatomic changes or valve formation. In a recent case there was hemorrhage from ears and nose and facial paralysis with signs of compression of the brain, vomiting, headache, and pulse at first 50 and gradually increasing to 150. Withdrawal by lumbar puncture of a clear and sterile spinal fluid under 200 mm. pressure was followed by great improvement. A few weeks later a granuloma had to be removed from the ear and the brain symptoms recurred; pulse 145, subfebrile temperature, vertigo, severe headache especially in the occiput and the patient, a man of 24, did not reply coherently to questions but wept quietly all the time. On suspicion of an abscess the cerebellum and temporal lobe were punctured. Above and a little behind the mastoid process the needle encountered an accumulation of a clear fluid which spurted under high pressure; about 55 c.c. of fluid was thus released and all the symptoms had subsided by the end of 24 hours.

85. **Operation for Perforated Gastric Ulcer.** Mühsam reports three cases in which perforated gastric ulcer was successfully sutured and a gastroenterostomy made. Radiographs of the cases afterward show that the gastroenterostomy is working well. In nine other cases the patients succumbed notwithstanding operative treatment. His experience confirms the importance of a prompt operation and the superior advantages of suturing in the ulcer, reenforcing the suture with a piece of omentum. Only when this is impossible should excision be considered.

87. **Treatment of Serious Anemia with Intramuscular Injections of Blood.** Huber remarks that no actual progress has been realized of late in treatment of pernicious anemia. The trouble is seldom recognized early enough for effectual treatment, but his experience with four cases seems to confirm the possible benefit from transfusion of small amounts of defibrinated blood injected into the gluteal muscles. He describes these cases in detail, tabulating the blood findings, weight, etc., the figures showing the notable improvement that followed the injections. The first patient was a woman teacher with symptoms of severe pernicious anemia for three years. After 14 injections of 10 or 20 and up to 50 c.c. of blood in the course of 11 weeks the reds increased from 1,200,000 to 4,500,000 and the hemoglobin from 18 to 92 per cent. The benefit was equally striking in the case of a man of 41, given 9 injections in less than 3 months, the reds increasing to 5,200,000. In a young girl with ordinary anemia and chlorosis the hemoglobin increased from 40 to 75 per cent

and the reds from 3,200,000 to 4,800,000. The blood injected subcutaneously does not pass directly into the circulation and is still evident four or five days later at the point, the reds still retaining largely their normal shape and staining properties, but the hemoglobin probably lakes out into the circulation and thus aids in restoring normal conditions in the general blood supply, or the injected blood may provide certain other substances lacking in pernicious anemia. The injections do not act on the cause of the anemia, and arsenic is needed for this. By-effects were rare and slight, merely occasional painfulness at the point of injection, most common when the gluteal muscles were firm and hard.

89. **Treatment of Bronchopneumonia in Young Children.**—Ibrahim urges the systematic use of inhalation of oxygen, or at least abundance of out-of-door air, and feeding through a stomach tube in the severe cases of bronchopneumonia in young children. He regards it as extremely important to keep the child well nourished and when it cannot feed naturally, he gives the food through a Nélaton catheter passed through the nose into the stomach. In one severe case he brought the infant through by feeding it in this way for several weeks with freshly drawn breast milk. Special care in the diet is necessary to prevent formation of gas in the stomach, as it pushes up the diaphragm and hampers the functioning of the diseased lung. He has not witnessed much benefit from expectorants, while they disturb the digestive apparatus. Heart tonics are useful or indispensable as anything that improves the circulation through the lungs has a beneficial influence on the pneumonic process. The latter taxes the heart more and more so that the heart needs strengthening by artificial aid, and heart tonics should not be postponed until a last resort. Even infants bear well repeated small doses of camphorated oil. Good nursing is indispensable to ensure the carrying out of the physician's orders, which should be explicit in every point in regard to the baths to reduce the temperature, the oxygen, frequent change of position, spraying and heart tonics.

90. **Rigidity of the Muscles and Apical Disease.**—Hart regards the rigidity of the muscles over the apex of the lung as a sign of a mechanical predisposition to disease, but no evidence that disease is already installed. He is prosector at the Schöneberg hospital and his findings contradict those of Pottenger in regard to the diagnostic significance of this rigidity.

93. **Tubercle Bacilli in the Blood.**—The bacilli were found in the circulating blood in 2 out of 12 patients in the early stages of tuberculosis and in only 5 in the third stage. The discovery of tubercle bacilli in the blood in incipient tuberculosis may thus prove a useful aid in early differentiation of the disease, but it does not seem to be of much importance for the prognosis.

Fortschritte der Medizin, Leipsic

June 2, XXVIII, No. 22, pp. 671-704

99 Flat Foot. (Der Plattfuss.) G. Muskat.
100 *Foreign Bodies in the Heart. (Ueber Fremdkörper im Menschenherzen.) D. G. Zesas. Commenced in No. 21.

100. **Foreign Bodies in the Heart.**—Zesas tabulates 118 cases of foreign bodies in the heart which he has found on record. In 51 cases the foreign body was a needle, in 38 a bullet, but the list includes also nails, a thorn, a gold plate, an iron peg, splinters of wood or bone and a hairpin. The astonishing tolerance of the heart for a foreign body loose in its interior is demonstrated anew by some of the cases. Pointed objects, however, generally work into the heart wall and cause such disturbances that an attempt to remove them is justified and the list shows that this has been done in many cases. In 12 cases the foreign body had evidently reached the heart from the alimentary canal, not through the blood vessels, and in 1 from the air passages. In only 40 had the projectile or other foreign body been propelled through the chest wall.

Medizinische Klinik, Berlin

June 5, VI, No. 23, pp. 889-926

101 *[illegible] Asthma in Relation to the "Exudative Diathesis." A. v. Strümpell.
102 *Electric Light Treatment of Bronchial Asthma. J. Hofbauer.
103 *Convulsions in Whooping-Cough and Their Treatment. (Ueber Krämpfe im Verlauf des Keuchhustens und deren Behandlung.) J. Ibrahim.
104 Influence of [illegible] on the Wassermann Reaction. ([illegible] der Zeit[illegible] auf den Ausfall der Wassermannschen Reaktion.) K. Stern.
105 Peculiar Form of Industrial Mercurial Poisoning. (Gewerblicher Quecksilbervergiftung.) J. Meinertz.
106 *Importance of Digestive Disturbances in Angina Pectoris. (Wirkung des Magnesiumoxyds und Hyperoxyds bei stenokardischen Anfällen.) F. v. Chlapowski.
107 Occurrence of Bacteria of Paratyphoid and Gärtner Group in Non-Specific Disease. H. Kathe.

June 12, No. 24, pp. 927-966

108 *Pathology of the Suprarenals. (Klinische Betrachtungen zur Lehre von den Erkrankungen der Nebennieren beziehungsweise des chromaffinen Systems.) E. Münzer.
109 *Operative Treatment of Puerperal Infection. (Zur chirurgischen Therapie des Puerperalprozesses.) W. Latzko.
110 Extraperitoneal Cesarean Section. (Der extraperitoneale Kaiserschnitt.) H. Fuchs.
111 Infection from Paracolon Bacilli. (Zur Kenntnis der Parakolibazillose.) A. Schutze.
112 Measurement of Volume of Air Breathed. (Ueber Atemvolummessung.) H. Gutzmann.
113 Dislocation of the Ulnar Nerve. Grunert.
114 Two Cases of Malignant Syphilis. K. Piorkowsky.
115 *Treatment of Tuberculosis with Natural Human Serum. H. Lichtenstein.
116 Paradoxical Experiences with the Wassermann Reaction. E. Meirowsky.
117 Technic for Quantitative Determination of Bromin. H. v. Wyss.

101. **Bronchial Asthma a Manifestation of the Exudative Diathesis.**—Von Strümpell makes a strong plea for the inclusion of bronchial asthma in the group of affections distinguished by a constitutional irritability of the nervous system and the tendency to exudative processes in the most various parts of the body, as in urticaria, eczema, intermittent swelling of the joints, angioneurotic edema and nasal and intestinal catarrh. He mentions also migraine as a candidate for this group and thinks that bronchial asthma is a typical instance of this constitutional tendency, as also membranous enteritis. In the latter the secretory disturbances in the mucosa of the large intestine are accompanied with spasmodic contraction of the bowel, analogous to the spasm of the bronchi with this form of asthma. Colica mucosa may thus be entitled "intestinal asthma." The causal connection between the various members of the group are often encountered in the one individual or in members of the same family. The conception of the exudative diathesis in children thus throws light on these affections in adults, which hitherto have been regarded as isolated, but now can be seen to be linked together on a constitutional basis. The nervous factors explain the benefit at times from atropin and other drugs and suprarenal preparations, although the individual reaction varies. His patients have been benefited most by the alkaline iodids and systematic application of incandescent electric light baths. Both act on the secretory processes in the body and have proved effectual in his hands, supplemented by dietetic restrictions, especially to prevent overfeeding.

102. **Electric Light Baths in Bronchial Asthma.**—Hofbauer remarks that bronchial asthma is the latest child adopted by physical therapy and even yet clinical medicine looks askance on this adoption. The incandescent light baths induce active hyperemia of the skin, reducing the congestion in the bronchi, while the heat causes a reflex prolongation of the respiration. The baths should be supplemented by breathing exercises to lengthen the phase of expiration while the patient emits a musical note. Hofbauer has cured a number of patients by these breathing exercises, the cure remaining complete for over two years. By training the patients to avoid irritating the vagus with hasty breathing, the expiratory insufficiency, and thus the distress, is combated and the cause for the attack eliminated.

103. **Convulsions in Whooping-Cough.**—Ibrahim found that a brain tumor was responsible for the convulsions in the course of whooping-cough in one case. In two others the use of packs to induce sweating aggravated the condition, and these cases warn against procedures of the kind with a tendency to convulsions. In every case of whooping-cough with convulsions the diet should be regulated to combat the spasmophilic diathesis, avoiding cow's milk and giving phosphorus in cod liver oil, with lumbar puncture in the severer cases. Eckert has recently reported 1 case in which lumbar puncture seemed to have turned the scale in favor of recovery.

106. **Dyspepsia as Factor in Angina Pectoris.**—Chlapowski has become convinced that dyspeptic disturbances are responsi-

ble for or at least aggravate angina pectoris in many cases and that great benefit can be derived from magnesium oxid and peroxid to neutralize abnormal production of gases and the gastric juice, and promote bowel functioning. Regulation of the diet between attacks is of supreme importance.

108. **Pathology of the Suprarenals.**—Münzer insists on the necessity of distinguishing between arteriosclerosis of the large vessels and of the smaller, the clinical manifestations being quite different. When the large vessels are affected with arteriosclerosis there is no obstruction to the circulation and the blood pressure is not raised. The work of the heart at each contraction is not much increased and consequently there is little, if any, enlargement of the heart. The blood wave reaches the periphery unobstructed and the pulse is full. The picture is different when the smaller vessels are affected with arteriosclerosis. Here the obstruction is so pronounced that the blood pressure rises, the second aortic sound is abnormally loud and the heart becomes hypertrophied. The higher blood pressure precedes the changes in the kidney, resulting in contracted kidney. The primary cause is some disturbance in the suprarenals, as he shows by 6 typical instances of Addison's disease in patients from 16 to 66 years old. In each case there were depression, vomiting, diarrhea, repugnance to food. Tuberculosis was evidently the cause in 2 cases but in 2 others the etiology was obscure; gonorrhea or influenza might be incriminated in the others.

109. **Surgical Treatment of Puerperal Fever.**—Latzko reviews the autopsy findings in 231 cases of fatal puerperal fever, the mortality being 33 per cent. Peritonitis was responsible for the fatality in more than half the cases. Hysterectomy is generally too serious an operation in these conditions and the best results were obtained with laparotomy and drainage. He had 17 patients recover out of 80 treated in this way. The prognosis depends more on the eventual paresis of the intestine than on the quality of the pulse; some of the patients were saved when the pulse was so weak that anesthesia was contraindicated, while only one of the patients with paralyzed bowels was saved, and in this case two fistulas had been opened into the intestine. It is possible, he remarks, that better results might be obtained if fistulas were made earlier and in sufficient numbers. In 19 of the severest cases the uterus was removed, with recovery of 8 of the patients, even with extension of the process into the veins. Puerperal parametritis, he adds, is the phlegmasia alba dolens of the broad ligament. His experience indicates that operative treatment is required not only for processes in the uterus, with fever, inflamed myoma, or retention of fetal membranes that cannot be removed otherwise, but also for cases in which the temperature persists over 39 C. (102.2 F.) for more than 24 hours; only 4 of the patients survived in 23 of his cases of this kind; that is, the mortality was 83 per cent. Operative treatment is also indicated in cases with repeated and frequent chills, and cases in which clinical observation leaves a doubt as to possibility of spontaneous recovery, his view being that we are responsible not for operating but for not operating.

115. **Treatment of Tuberculosis with Natural Human Serum.**—Lichtenstein has found that injection into the wall of the abdomen of 2 or 5 c.c. of natural human serum seems to have a stimulating and curative action, inducing a transformation comparable to that from a change to a mountain climate.

Monatsschrift für Kinderheilkunde, Berlin

April, IX, No. 1, pp. 1-64

118 *Etiology of the Spasmophilic Diathesis. R. Quest.
119 *The Cammidge Reaction in Children. P. Grosser and H. Kern.
120 *Lime Metabolism in Tetany. (Kalkstoffwechsel bei Tetanie.) J. A. Schabad.
121 Case of Typhoid in Nursing Mother and Babe. (Milchabsonderung während des Verlaufes von Typhus abdominalis.) G. Genersich.
122 *Etiology of Summer Cholera Infantum. (Zur Aetiologie des Sommerbrechdurchfalls der Säuglinge.) H. Rietschel.
123 Intrauterine Transmission of Malaria. W. Ples.
124 Use of Calcium Peroxid for Preservation of Human Milk. (Verwendung von CaO_2—Kalkodat—bei der Konservierung von Frauenmilch.) E. Mayerhofer and E. Pribram.

118. **Etiology of the Spasmophilic Diathesis.**—Quest reports the results of experimental research and clinical experience by himself and others, all of which confirms the assumption that a lack of lime is the main factor in the development of tetany. This lack of lime may result from various causes but the principal one is an unsuitable diet, an excess or imperfect digestion of milk-fat causing the latter to seize on the lime and eliminate it in the lime soap stools, regardless of the amount of the intake. An exclusive carbohydrate diet, on the other hand, may fail to supply an adequate proportion in the food. The remarkable influence of phosphorus-cod liver oil is due to its favoring retention of lime rather than to any direct antispasmodic action. His research suggests further a possible advantage from injections of lime salts as an adjuvant with a long chronic and inveterate tendency to tetany.

119. **The Cammidge Reaction in Children.**—Grosser and Kern have applied this test to 65 infants and obtained a positive reaction in 8 infants, that is, in 13 of the 130 tests. The test revealed the presence of lactose even when other tests failed, but the reaction did not seem to have any special significance for the prognosis or have anything to do with the pancreas.

120. **Lime Metabolism in the Spasmophilic Diathesis.**—Schabad reports further research in this line comparing his results with those of others, during and between the periods of pronounced tetany, and with and without administration of phosphorus and cod liver oil, and also as to the electric excitability. All confirm the beneficial action of phosphorus-cod-liver oil, both on the spasmophilic diathesis and in rachitis, both improving together when associated.

122. **Etiology of Cholera Infantum.**—One room in the Infants' Asylum at Dresden in charge of Rietschel is kept at a temperature of 27 or 28 C. (82 F.) for the use of the prematurely born, instead of individual incubators. Other infants were sometimes kept in this room until he noticed that they all developed diarrhea. This suggests that the heat alone—aside from the nature of the food—may have a direct injurious action on young children. In the homes of the poor in summer this temperature of 28 C. (82 F.) is often surpassed. The causal factor in cholera infantum may thus be the heat in the living rooms, reducing the tolerance for injurious influences from the food.

Münchener medizinische Wochenschrift

June 14, LVII, No. 24, pp. 1265-1320

125 Ligation to Exclude Limbs from Circulation as Substitute or Adjuvant for Venesection. (Ueber den Aderlass bei Kreislaufstörungen und seinen unblutigen Ersatz.) D. v. Tabora.
126 General Distribution of Streptococci. (Verbreitung der Streptokokken im Hinblick auf ihre Infektiosität und ihre hämolytische Eigenschaft.) W. Zangemeister.
127 Obstetrics in the Home and in Maternities. (Geburtshilfe im Haus und in der Klinik.) M. Nassauer.
128 Treatment of Hypertrophy of the Prostate. L. Kielleuthner.
129 Serodiagnosis of Syphilis. A. Wassermann and G. Meier.
130 Cell Inclusions in Non-Gonorrheal Urethritis. W. Siebert.
131 Three Cases of Chronic Primary Progressive Polyarthritis in Children. F. Brandenberg.
132 Optic Measurement of Systolic Blood Pressure. (Messung des systolischen Blutdrucks auf optischem Wege.) M. z Verth.
133 The Side-Chain Theory is Confirmed by Progress of Science. (Ist die Ehrlichsche Seitenkettentheorie mit den tatsächlichen Verhältnissen vereinbar?) P. Ehrlich and H. Sachs.
134 *Importance of Lavage of the Stomach in Treatment of Disease in Various Viscera. (Ueber die Magenspülung auf neuen Indikationsgebieten und in modifizierter Anwendungsform.) K. Strübe. Commenced in No. 23.

134. **Enlargement of the Therapeutic Scope of Lavage of the Stomach.**—Strübe for over a year and a half has been applying lavage of the stomach as a means to influence adjacent organs, and he reports favorable results in diabetes, liver affections, etc. His statements are so remarkable that his communication was not allowed to be presented at the recent annual meeting of the German internists but the *Wochenschrift* prints it in full. The lavage, he says, stimulates the circulation in the region and this promotes absorption, and this is particularly beneficial in the secondary diabetes due to injury of the pancreas from gastrointestinal catarrh, constipation, duodenal ulcers or pneumonia of the left lower lobe—cases of all these types being among his clinical material. The frequent coincidence of gastrointestinal disturbances with diabetes suggests that essential diabetes may often commence with mere secondary glycosuria, which could be readily cured in time by appropriate measures. The case histories of 10 cases of diabetes are given to illustrate the prompt benefit from repeated lavage. Instead of weeks and months of

dietetic restrictions, he says, lavage repeated a few times banished the sugar from the urine and the patients were able to eat carbohydrates at will even without any restrictions as to diet. Lavage of the stomach should at least be given a trial, he declares, in every case of diabetes, especially in the incipient phases. In biliary affections, siphonage through the stomach sound starts an outward flow of bile which may have a curative effect; it should be given a trial with chronic typhoid bacillus carriers. In every case of catarrhal jaundice he keeps the patient in bed for three or four days with cold water compresses to the gall bladder region and then commences the lavage. At the first application the bile flows out in a stream with the rinsing water and by the end of the week recovery is generally complete. The first acute catarrhal manifestations must be allowed time to subside before the lavage is applied, but treatment on these principles has given gratifying results constantly in the four years since he has been applying it. The relief of the liver from congestion ensured by this technic is a potent factor in the cure. In one case described the gush of bile induced by the lavage washed out an impacted gall-stone in the common bile duct, and he now applies lavage systematically in all gall-stone cases, especially after operative treatment, and in case of a bile fistula. The lavage has also proved effectual in relieving pruritus ani, and other toxic skin affections, obstinate acne accompanying chronic gastritis, etc. Psychoneuroses connected with stomach disturbances and neurasthenia also benefit by lavage of the stomach, as he illustrates by some concrete instances, insisting that psychoneuroses and neurasthenia in general will have to be placed on a broader hygienic-dietetic basis. Bronchial asthma also benefits by lavage of the stomach, possibly by the relief to the circulation in the lungs in addition to its reflex and cleansing action. He burns with a hot nail about a dozen extra holes above the usual side openings in the stomach tube; they serve as safety valves and aid in more thoroughly flushing the stomach. The teeth are held apart with a rectangular block of hard rubber with a groove in the top in which fits the stomach tube; such a block, with all plane surfaces, is more readily sterilized than the ordinary gags.

Therapie der Gegenwart, Berlin

July, LI, No. 6, pp. 241-288

135 The Tenacity of Cellular Activity and Its Relation to Pathology. (Ueber die Tenazität der Zelltätigkeit und ihre Beziehungen zur Pathologie.) W. Leube.
136 *Mechanism of Action of Artificially Induced Pneumothorax in Treatment of Pulmonary Tuberculosis. C. Forlanini. Commenced in No. 5.
137 *Practical Availability of the Desmoid Reaction. (Die Brauchbarkeit der Sahlischen Desmoidreaktion in Klinik und Praxis.) Weiland and Sandelowsky.
138 *Long Cocoa Butter Suppositories to Promote Defecation with Proctitis, etc. (Ueber Klystier-Ersatz-Therapie.) W. Unna.
139 Treatment of Amebic Dysentery. E. Axisa.
140 Treatment of Delirium Tremens with Veronal. E. von der Porten.
141 *Treatment of Erysipelas with Heat. (Ein altes in Vergessenheit geratenes hyperämisierendes Mittel.) C. Ritter.
142 *Intermittent Limp. (Ueber Gangstockung. Intermittierendes Hinken.) G. Muskat.
143 Coarse Food for Mechanical Stimulation of Gastric Secretion. (Behandlung subazider Zustände mit mechanisch reizender Kost und mit Zitronensäure.) L. Roemheld.
144 Comparative Size of Bubbles in Oxygenated and Carbonated Baths. (Grösse der Bläschen im Ozetbade und im Kohlensäurebade.) L. Sarason.
145 *Training Children to Prevent Tendency to Constipation. (Ist die Ausdrucksweise "angeborene Hartleibigkeit" eine richtige Bezeichnungsweise?) R. B. Budberg.

136. **Artificially Induced Pneumothorax in Pulmonary Tuberculosis.**—Forlanini here lays down more carefully the fundamental principles of this method of treatment and presents a number of instructive cases from his extensive experience as he has followed them through a number of years.

137. **Availability of the Desmoid Reaction in General Practice.**—This communication from the medical clinic at Kiel in charge of Lüthje relates experiences with 115 cases of various stomach affections in which the functioning of the stomach was investigated by Sahli's desmoid test, that is, ingestion of a stain wrapped in a square of fine rubber tissue, tied with catgut. With normal digestion the catgut is speedily dissolved and the stain passes into the urine or saliva. In over 70 per cent. of the cases the reaction paralleled the findings in the stomach content, removed with a tube; in only 6 per cent. were the findings contradictory and these might be explained by defective technic. The test realizes in practice, he declares, all that Sahli claims for it. It is a reliable means for determining the conditions in the stomach in regard to digestion and differentiating malignant from nonmalignant disturbances. It is important to make the desmoid bag one's self, and fresh each time, the little bags not keeping well; another point is to test their weight, as they must be heavy enough to sink to the bottom of a basin of water and not permit any of the stain to diffuse before the catgut is loosened. (It has been suggested that an ether pearl might be used in the little bag instead of a stain, the patient perceiving at once by the eructation when the ether escapes from the bag.)

138. **Suppository for Inflamed Rectum.**—Unna commends the use of large suppositories of cocoa butter, fully 8 cm. long by 1 or 2 cm. wide, medicated or not. They lubricate the feces and permit painless and non-irritating defecation in proctitis. The addition of a little cholic acid is said to stimulate peristalsis.

141. **Heat in Treatment of Erysipelas.**—Ritter's views were recently summarized in these columns, page 176. He commends a hot flat-iron as a convenient means of applying heat to erysipelatous patches, especially on the face, repeating the application for ten or fifteen minutes three times a day. He found mention of this method of treatment in a letter to Mme. de Sévigné dated 1694, it having been applied for an acute rheumatic shoulder trouble.

142. **Intermittent Limp.**—Muskat says that the disturbance known by this name is not limping—no attempt is made to walk while the attack lasts—and he adds another to the already long list of descriptive terms that have been proposed for it. In differentiating the condition it is important to exclude disturbances due to flat-foot, sciatica and articular rheumatism, and also the angiospasm liable to accompany flat-foot. Ortner has observed similar angiospasms in the intestines which he ascribed to abuse of tobacco, as excessive smoking brought on the spasms and abstention from tobacco abolished them, while they recurred on resumption of tobacco. Nicotin seems to act on the vasomotors and it may lead to pathologic changes in the arteries, especially the changes which entail intermittent limp. The Roentgen rays may reveal calcification of the arteries with the loss of the pulse in the foot, but even in these cases much benefit may be derived from light massage, the iodids, warm baths, the high frequency current and four-celled electric baths, with scrupulous avoidance of further injurious influences, nicotin, alcohol, worry, mental or physical overexertion, chilling, etc. These measures may arrest the process and ward off impending gangrene and a cure may follow unless the calcification of the arteries has progressed too far. The changes in the artery generally begin at the toes and work upward. Payr has reported a case in which gangrene was averted by implanting the femoral artery in the femoral vein.

145. **Prevention of Constipation in the Young.**—Budberg writes from China to call attention to the constant absence of constipation among the children in the Orient. He ascribes this to the regular habits in respect to defecation impressed on the children from birth. When it wakes in the morning even the new born infant is trained to defecate at once. The mother takes the rump of the infant between her hands and holds the child up, its back toward her, pressing its thighs against its abdomen while her thumbs push on its back or she presses its back against her knee or breast. This position impels the infant to strain, and the mother talks soothingly to it to facilitate its yielding to this impulse. In China and Japan consequently, he says, the infant of even two months keeps clean and dry while all the ills of constipation in infants and children are thus averted by these regular habits.

Wiener klinische Wochenschrift, Vienna

June 9, XXIII, No. 23, pp. 839-880

146 *Coagulation of the Blood from the Biochemical and Clinical Standpoint. (Die Blutgerinnung in ihren biochemischen und klinischen Beziehungen.) H. Weiss.
147 Period of Incubation. II. (Ueber Inkubationszeit.) F. Hamburger and O. Schey.

148 Putrefaction of Vegetable Albumin. (Studien über Darmfäulnis. IV.) A. Rodella.
149 Relations Between the Transformation of the Mineral and Organic Elements of the Food. (Beziehungen zwischen dem Umsatz mineralischer und organischer Nahrungsstoffe.) E. Biernacki.
150 An All-Metal Pocket Tonometer. (Ein Blutdruckapparat für die Praxis.) A. Selig.

146. **Coagulation of the Blood from the Biochemical and Clinical Standpoint.**—Weiss reports extensive and systematic study of the coagulating power of the blood in adults and children, using a Wright pipette. In 54 healthy adults the blood coagulated between 2 minutes and 15 seconds and 2 minutes and 40 seconds; in 58 healthy new-born infants, in the breast-fed it coagulated in from 2½ to 3½ minutes, while in the artificially fed children it coagulated in from 1½ to 2½ minutes—this difference he ascribes to the larger proportion of lime in the food of the artificially fed. In 28 cases of acne or furunculosis the coagulating time was unusually long, as also in scorbutus and eczema. These findings suggest that these skin diseases are the result of disturbed metabolism of mineral salts. The coagulating time was also unusually long in the spasmophilic diathesis, epilepsy, chorea, eclampsia, chlorosis, severe anemia, leukemia and tetany; also in 3 cases of acromegaly, several of goiter and 2 cretins and in acute nephritis. The coagulating time was very brief in jaundice and cancer. He discusses these findings from various points of view, especially the beneficial action of lime to promote coagulation, preferring the lactate, as this is exceptionally soluble. Its action is evident in 45 minutes and lasts for weeks, but the dose must not be too large—2 or 3 gm. (30 to 45 grains) a day in an adult for five or six days and half this amount for children. The result is much more certain than that from injection of serum or gelatin. To retard coagulation, as in thrombosis, he advises 5 or 6 gm. citric acid a day for three days, but the action is slower in manifesting itself and it persists only for a few days; but it may retard coagulation from 1 to 3 minutes.

Zentralblatt für Chirurgie, Leipsic

June 18, XXXVII, No. 25, pp. 849-880

151 *Surgical Sterilization of the Skin. (Zur Vereinfachung der Hautdesinfektion.) O. Lanz.
152 *Isolated Atrophy of Muscle as a Diagnostic Symptom for Localization of Tuberculous Foci in Bone. P. Niehans.

151. **Surgical Sterilization of the Skin.**—Lanz regards the tincture of iodin method of sterilization as valuable under certain circumstances, as in war, etc., but not for routine surgical sterilization. He is convinced that the surgeon's hand is the main source of trouble. As the French say, "Cherchez la femme" in all difficulties, so he says, "Cherchez la main."

152. **Atrophy of Muscle Above as Sign of Tuberculous Focus in Bone.**—Niehans has been studying for ten years the condition of the muscles in connection with bone foci, and has frequently found distinct atrophy of the muscle or group of muscles inserted in the diseased bone or having its origin near the focus. This may often clear up the diagnosis.

Zentralblatt für Gynäkologie, Leipsic

June 18, XXXIV, No. 25, pp. 833-864

153 *Experiences with Intravenous Ether General Anesthesia. (Versuche mit intravenöser Narkose.) H. Schlimpert.
154 Allowing Parturients to Get Up Early. (Das Frühaufstehen Wöchnerinnen.) D. von Velits.

153. **Intravenous General Anesthesia.**—Schlimpert gives the details of six cases in which was applied Burkhardt's technic for general anesthesia by injection of a 5 per cent. solution of ether into a vein. The conclusions are decidedly against this method of anesthesia, principally on account of the frequency of thrombus formation at the point of injection, the increased blood pressure, the difficulty of keeping the concentration of the ether at the desired point on account of its rapid evaporation, and the necessity for incising the vein. The anesthesia was imperfect or the procedure was interrupted on account of a thrombus in all but one of the cases.

Zentralblatt für innere Medizin, Leipsic

June 18, XXXI, No. 25, pp. 625-648

155 Digestive Leukocytosis in Laboratory Animals. (Leukocytose im Tierexperiment.) C. Klieneberger and W. Carl. Commenced in No. 24.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 14, XXXI, No. 71, pp. 753-760

156 Hernia in the Persisting Canal of Nuck. O. Ortali.

June 19, No. 73, pp. 769-784

157 Fetal Monstrosities and Vitality from the Medicolegal Standpoint. (Mostruosita fetali e vitalita.) E. Di Mattei

June 21, No 74, pp 785-792

158 Experimental Research on the Functioning of the Vagus. (Ricerche sul vago.) A. Berti.

Policlinico, Rome

June 19, XVII, No 25, pp. 771-802

159 Modern Prophylaxis of Typhoid. T. Pontano
160 *Cause and Transmission of Pellagra. L. W. Sambon.
161 Hemorrhagic Nephritis as an Inflammatory Process Secondary to Acute Infections and Subsiding with Them. E. Magni.

160. **Minute Sand-Fly Responsible for Transmission of Pellagra.**—Sambon gives the reasons which have convinced him that pellagra is of parasitic origin and that the parasite is transmitted by a minute biting midge, a *Simulium*, as mentioned in a news item in THE JOURNAL recently. His study of pellagra in Italy in 1900 established to his satisfaction that the cause must be sought elsewhere than in corn, and his research in London last winter confirmed the possibility of transmission of the disease by the *Simulium*, and his investigations now being conducted in Italy have, he declares, definitely established it as a reality. Pellagra follows water courses, and only persons much in the open are attacked. The midge in question breeds in water and does not seek to enter houses. The disease is not contagious, and its peculiar incidence in families is due to the fact that those infected elsewhere return home later and are the only ones affected. When all the members of the family are exposed to the bites of the *Simulium* they are all liable to contract the disease. He has encountered entire families in which all the members from the babe in arms upward were affected. In one family near Padua there were five children between 3 and 12 presenting the skin manifestations in the most pronounced form. The manifest connection with breeding places and habitats for the sand-flies, the exemption of inhabited centers, the season in which the disease appears and the prevalence of the *Simulium* in all the localities examined where pellagra is endemic, are only part of the evidence incriminating these midges. (Sambon has now returned to England; among his companions in the pellagra commission in Italy for part of the time were three Americans, Captain Tiler and Drs. Lavinder and Blue, of the P. H. and M.-H. S.)

Riforma Medica, Naples

May 30, XXVI, No 22, pp. 589-616

162 Oriental Sore. (Nuovi esempi clinici di bottone d'Oriente.) U. Gabbi and F. Lacava.
163 Diagnostic Significance of Isohemolysins in the Blood with Cancer. (Sul valore del repertoe di isolisine nel siero di sangue per la diagnosi dei tumori maligni.) B. Agazzi.
164 Pseudo-Pleurisy. (La sindrome pseudo pleuritica da abbondante versamento pericardico.) A. M. L. Martelli.

Norsk Magazin for Lægevidenskaben, Christiania

June, LXXI, No. 6, pp. 569-656

165 *Chronic Nicotin Poisoning. (Kronisk nikotinforgiftning. Skraatobak.) A. Tanberg.
166 Recent Achievements in Study of the History of Medicine (Hovedpunkter i den senere tids medicinsk-historiske forskning.) F. Gron.
167 *Action of Alcohol on Powers of Perception and Memory. (Om virkningen af 15-50 cm^3 koncentreret spiritus paa erindringsevnen.) R. Vogt.

165. **Chronic Nicotin Poisoning.**—The symptoms in the case described suggested beriberi, as no other cause could be found for the disturbances noted during the last six years, but the patient had never been where beriberi was endemic. There were no indications of syphilis or alcoholism and the patient smoked merely one or two cigars a day. The digestive, sensory and motor disturbances, tachycardia, arrhythmia and insomnia persisted unmodified by staying in bed, but the casual discovery of a plug of chewing tobacco gave the clue to the diagnosis. It seems that the man had been in the habit of chewing about 40 gm. of plug tobacco daily. Complete suspension of tobacco soon banished all the symptoms, but they returned promptly a few months later when he tried to resume the habit. No other treatment for the chronic nicotin poisoning was needed beyond the mere abrupt suspension of the tobacco. In a case reported by Kjellberg there

were serious psychic symptoms, and he found it necessary to taper off the tobacco instead of abruptly suspending its use.

167. **Influence of Alcohol on Powers of Perception and Memory.** Vogt tabulates the results of tests on himself through a number of months to determine the influence of a small amount of liquor on the power of concentrating the attention on and remembering 25 lines of a translation of the Odyssey, the blank verse being especially adapted for such tests. The alcohol had an unmistakable influence in reducing the powers of perception, and this effect was twice as marked on a fasting stomach.

Ugeskrift for Læger, Copenhagen

May 26, LXXII, No. 21, pp. 601-634

168 Successful Operation for Ileus in Pregnant Woman Nearly at Term. (Ileus i Svangerskabet.) L. Meyer.

169 General Principles for Treatment of Obesity. (Afmagringskure.) E. Faber. Commenced in No. 20.

June 2, No. 22, pp. 635-660.

170 "Isolation" and "Separation" in Treatment of the Insane. F. Hallarger.

Upsala Läkareförenings Förhandlingar

XV, Nos. 4-5, pp. 211-364. Last indexed May 14, p. 1660

171 *The Sensory Tracts in the Spinal Cord, Studied Especially after Stabwounds. (Ueber die Bahnen der Sensibilität im Rückenmarke, besonders nach den Fällen von Stichverletzung studiert.) K. Petren.

172 *Two Cases of Tumor in the Heart. (Bidrag till kännedomen om hjärttumorernas patologi och symtomatologi.) L. Ehrenberg.

173 *Neurasthenia in College Students and Its Prognosis. (Om studie-neurastenikens prognos.) R. Friberger.

174 Surgery of the Kidneys Among the Ancients. (En blick i njurkirurgiens äldre historia.) G. Ekehorn.

171. **Sensory Tracts in the Spinal Cord.**—Petren has been studying the paths for the conveyance of sensory impulses by their partial exclusion after stab wounds of the spinal cord. The details of 93 such cases from the literature and his own experience are tabulated. The comparative study of this material confirms his previous assertions in regard to the anatomy and physiology of sensory conduction.

172. **Two Cases of Tumor in the Heart.**—Ehrenberg's first patient was a factory hand about 49 years old with a sarcoma in the heart and contiguous veins. He has found 17 cases on record of a sarcoma in the heart. The right heart was the seat of the sarcoma in all but 3 of these cases. Compression or obliteration of the superior vena cava induced the predominant symptoms in most of them. In Ehrenberg's second case there was a large metastatic cancer in the right ventricle in a woman of 58; the compression of the conus arteriosus induced a systolic blowing sound at the pulmonary artery. The tricuspid stenosis which is generally associated with a tumor growth in the heart, may render the pulse extremely small or even inaudible. In a recent case of embolism in the pulmonary artery the pulse ceased to be palpable after development of the embolic thrombus, and persisted imperceptible for six hours till death. The condition in this case is thus comparable to that with a tumor in the heart, having induced tricuspid stenosis.

173. **Neurasthenia from Over-Study.**—Friberger has encountered 40 cases of neurasthenia in students, the nervous symptoms interfering with their further studies although with no impairment of will power. The clinical course and after history are compared. All but 3 of the patients were men and they were nearly evenly divided among the various departments of the university; 11 were medical students. The essential feature of the syndrome is the lack of power of concentrating the mind. Sometimes this lack was continuous, in other cases only for a few hours each day. Abnormal sensations in the head are common, a sensation of pressure or tension in the back of the head and neck, not painful, but diverting the attention from the studies. The sensation of pressure may merge into paresthesias of various kinds. These sensations in the head and neck were frequently accompanied by muscular exhaustion, restlessness and insomnia and a sense of dread, palpitations of the heart were observed in 16 cases. Treatment was by general hygiene, hydrotherapy and change of scene combined with regulation of mental effort, directing the patients to study only 45 minutes or an hour at a time, resting for similar intervals. In health less work is accomplished by such interruptions, but neurasthenics attack their work with fresh courage and energy after the rests. Alcohol and venereal excesses could only exceptionally be incriminated in the etiology, but an inherited taint was discovered in from 41 to 73 per cent. in the various groups. The disturbances lasted on an average 8 to 13 months, but in some cases from 4 to 9 years and in a few rare cases with marked heredity and nervous childhood the condition seems to be chronic. Friberger does not know of any similar study of the heredity and outcome of neurasthenia brought on by over-study.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Studies on Leprosy. VII. A Statistical Study of an Endemic Focus of Leprosy. By Walter R. Brinckerhoff, M.D., Assistant Director, and A. C. Reinecke, Technical Assistant, Leprosy Investigation Station, Public Health and Marine-Hospital Service. A Palliative Treatment for Leprous Rhinitis. By James T. Wayson, M.D., Member of the Board of Health of the Territory of Hawaii, and A. C. Reinecke, Technical Assistant, Leprosy Investigation Station, Public Health and Marine-Hospital Service. Public Health Bulletin No. 33, U. S. P. H. and M.-H. S. Paper. Pp. 25. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Serums, Vaccines and Toxins in Treatment and Diagnosis. By W. Cecil Bosanquet, M.D., Assistant Physician to the Charing Cross Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton, and John W. H. Eyre, M.D., Bacteriologist to Guy's Hospital and in Charge of the Vaccine Department. Second Edition. Cloth. Price, $2 net. Pp. 362, with Illustrations. New York: Funk and Wagnalls Co., 1910.

Hygiene and Public Health. By B. Arthur Whitelegge, M.D., late County Medical Officer of Health for the West Riding of Yorkshire, and George Newman, M.D., Lecturer on Public Health at St. Bartholomew's Hospital (University of London). Cloth. Price, $1.75 net. Pp. 650, with Illustrations. New York: Funk and Wagnalls Co., 1910.

A Manual of Operative Surgery. By Sir Frederick Treves, Bart., F.R.C.S., Serjeant-Surgeon to H.M. the King, and Jonathan Hutchinson, F.R.C.S., Surgeon to and Lecturer on Surgery at the London Hospital. Third Edition. In Two Volumes. Vol. II. Cloth. Price, $13. Pp. 821, with 495 Illustrations. Philadelphia: Lea & Febiger, 1910.

First Principles of Agriculture. By Emmet S. Goff, Late Professor of Horticulture, University of Wisconsin, and D. D. Mayne, Principal, School of Agriculture, St. Anthony Park, Minn. Introduction by Ex-Governor W. D. Hoard. Cloth. Price, 80 cents. Pp. 262, with Illustrations. Chicago: American Book Co., 1910.

General Observations on the Bionomics of the Rodent and Human Fleas. By Maurice B. Mitzmain, M.S., Assistant, Plague Laboratory, U. S. P. H. and M.-H. Service. Public Health Bulletin No. 38, U. S. P. H. and M.-H. S. Paper. Pp. 34. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Diseases of the Heart and Aorta. By Arthur D. Hirschfelder, M.D., Associate in Medicine, Johns Hopkins University. With an Introductory Note by Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University. Cloth. Price, $6. Pp. 632, with 329 Illustrations. Philadelphia: J. B. Lippincott Co. (1910).

Lehrbuch der Ohrenheilkunde. Von Dr. Victor Urbantschitsch, o.ö. Professor der Ohrenheilkunde an der Wiener Universität und Vorstand der K. K. Universitätsklinik für Ohrenkranke. Fifth Edition. Paper. Price, 18 marks. Pp. 623, with 156 Illustrations. Vienna: Urban & Schwarzenberg, 1910.

The Relation of Climate to the Treatment of Pulmonary Tuberculosis. By F. C. Smith, Passed Assistant Surgeon. Public Health Bulletin No. 35, U. S. P. H. and M.-H. Service. Prepared by Direction of the Surgeon General. Paper. Pp. 17. Washington: Government Printing Office, 1910.

Tuberculosis, Its Nature and Prevention. By F. C. Smith, Passed Assistant Surgeon. Public Health Bulletin No. 36, U. S. P. H. and M. H. Service. Prepared by Direction of the Surgeon General. Paper. Pp. 12, with Illustrations. Washington: Government Printing Office, 1910.

Forty-Second Annual Report of the Secretary of State on the Registration of Births and Deaths, Marriages and Divorces in Michigan. For the Year 1908. Frederick C. Martindale, Secretary of State. By Authority. Cloth. Pp. 176. 1910.

The Bleaching of Flour and the Effect of Nitrites on Certain Medicinal Substances. By Worth Hale. Hygienic Laboratory Bulletin No. 68, June, 1910. Paper. Pp. 41. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Studies on Anaphylaxis. With Special Reference to the Antibodies Concerned. By John F. Anderson and W. H. Frost. Hygienic Laboratory Bulletin No. 64, June, 1910. U. S. P. H. and M. H. S. Paper. Pp. 56. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Ergebnisse der Chirurgie und Orthopädie. Herausgegeben von Erwin Payr, Greifswald, und Hermann Küttner, Breslau. Erster Band. Paper. Price, 20 marks. Pp. 520, with 152 Illustrations. Berlin: Julius Springer, 1910.

Handbuch der Neurologie. Herausgegeben von M. Lewandowsky. Vol. I, Allgemeine Neurologie. Paper. Parts I and II. Price, 68 marks. Pp. 2015, with 331 Illustrations. Berlin: Julius Springer, 1910.

Transactions of the Florida Medical Association for the Year 1910. Held at Jacksonville, Florida, April 6, 7, 8, 1910. Paper. Pp. 201.

The Journal of the
American Medical Association

Published under the Auspices of the Board of Trustees

Vol. LV, No. 5 Chicago, Illinois July 30, 1910

TREATMENT OF LOCALIZED APPENDICULAR ABSCESS

VAN BUREN KNOTT, M.D.
SIOUX CITY, IA.

No attempt shall be made in this brief paper to consider the treatment of appendicitis in detail. The time-worn and hackneyed questions of "When should we operate?" and "When should we delay operation?" will be scrupulously avoided, as will many other phases of this familiar subject. It is my intention to confine these few remarks to a consideration of the question, "Should or should we not remove the appendix in practically every case of localized appendicular abscess?"

In perusing the literature on this question, or in attendance at the various surgical clinics throughout the country, we find as probably the most frequently employed plan, the removal of the appendix when it presents itself freely within the confines of the abscess, while in those cases in which it is adherent and buried by the intestinal coils, the operation is limited to simple incision and drainage, leaving the appendix to be removed at some future time. The reason given for the latter course is usually that it is unsafe to separate the adhesions forming the boundary of the abscess, thereby liberating, during the search for the appendix, pus and septic material into the uncontaminated areas of the peritoneum.

This was the course usually employed by me until some two years ago. During the past two years I have operated in one hundred and sixty-one cases of appendicular abscess, sharply localized. This list does not include any case where at operation the general peritoneal cavity was found to be infected. In this series of cases the appendix was removed in every instance at the first operation, whether it could be easily detected within the abscess cavity, or whether deeply buried by adhesions. In these one hundred and sixty-one cases there occurred two deaths, or a mortality of 1.4 per cent. One patient, a little girl aged 4, died thirty-six hours after operation, and the other, a man aged 49, died sixteen days after operation from cardiac thrombosis. These results are infinitely better than those secured by me under the former plan of treatment in which the appendix was allowed to remain undisturbed in a large number of cases.

Since the adoption of the Fowler position and drainage of the peritoneal cavity by means of a large rubber tube inserted to the bottom of the recto-vesical pouch, or cul-de-sac, supplemented by Murphy's saline proctoclysis, peritonitis has been shorn of its terrors.

It was noticed in those cases of diffuse septic peritonitis due to perforation of the appendix which were treated in this manner, that convalescence was almost uniformly rapid and smooth and without distressing sequelæ. In fact, it soon became a matter of common observation that those patients whose appendices had been removed and the above method of drainage employed, recovered more rapidly and more frequently than those with localized abscess, which had been merely opened and drained. If, then, we are no longer afraid of diffuse septic peritonitis, why should we hesitate to remove the appendix in all cases? Such considerations later led to the gradual adoption of the plan of systematic removal of the appendix in abscess cases.

As experience in the treatment of these cases increased and the appendix was removed with increasing frequency at the first operation, it was noticed that during the search for and removal of the same, small pus collections were frequently encountered here and there among the adherent coils of intestine and omentum whose presence had not been suspected, and which would have been overlooked had not the adhesions been separated. Drainage of the larger pus collection would not have reached these smaller hidden septic foci.

It was also noted that in many cases of peri-appendicular abscess which were tightly walled off, even at times high in the pelvis, separation of the adhesions would reveal a large amount of pus or purulent serum in the recto-vesical pouch or cul-de-sac, which would most certainly have been otherwise overlooked. Thus were exposed the reasons for many a secondary operation for so-called secondary abscess.

The free separation of adhesions during the removal of the appendix tends greatly to lessen the danger of post-operative obstruction, which does not occur with nearly the same frequency in cases so treated as in those cases which are merely subjected to incision and drainage of the abscess. The separation of adhesions and the establishing of free communication between the region of the cecum and appendix, formerly occupied by the abscess cavity, and the lowermost pelvic peritoneal fold (the recto-vesical pouch in males, the cul-de-sac in females), permits the best possible drainage to be instituted by the placing of a large split rubber tube carrying a wick or iodoform gauze in the lowermost peritoneal pouch and permitting it to emerge through the lower angle of the wound. This does away with the necessity for multiple drains either of tube or gauze and thereby lessens to no small extent the tendency to the formation of post-operative adhesions. Drainage instituted as above described removes the necessity for placing either tube or gauze in contact with the cecum at a point where its vitality has been impaired by the infectious process, and thus is lessened the occurrence of fecal fistulæ, the development of which is frequently encouraged by the ill-advised placing of such drains in contact with an already weakened and diseased cecal wall, with resulting pressure necrosis.

With the patient in Fowler's position, a large rubber tube will drain the lower peritoneal pouch much more rapidly and completely than the region immediately adjacent to the cecum can be so drained, as a tube in the latter position will be more rapidly shut in by limiting adhesions than the former; and through the influence of gravity we secure at once the collection of all septic fluids at the most dependent portion of the peritoneal sac, whence they are rapidly discharged to the surface through the tube before its capacity for drainage has been destroyed by surrounding adhesions.

Because of the rapid free drainage so secured, the tendency to post-operative sepsis manifested by hepatic abscess, pylephlebitis, subphrenic abscess, empyema, etc., is much less marked than in those cases where a leaking appendix is permitted to remain and hourly add its burden of septic and infectious material to a cavity imperfectly drained, because slowly drained, and drained for much too short a time.

The removal of the appendix at a secondary operation is frequently a very difficult operation because of the density of the surrounding adhesions and in the majority of instances it will be found much easier to remove it at the first operation and this should now be done rather than subject the patient to a prolonged and often serious second operation.

A few words as to the technic of the operation. The incision is invariably made through the right rectus muscle, splitting the fibers, and the peritoneal cavity freely opened. A small gauze pack is tucked into the upper angle of the wound and so adjusted as to prevent any extravasation of pus toward the liver or diaphragm. Another small pack is tucked in towards the median line from the upper angle of the wound to the lower pelvis to prevent any extravasation towards the left. The abscess cavity is then freely opened with the fingers, unless opened by the peritoneal incision, and the pus rapidly mopped up with gauze sponges. The appendix is then exposed and removed. All adhesions separating the abscess cavity from the lower pelvis are now freely separated and the pus or sero-pus, which is usually found in the lower peritoneal pouch, is rapidly mopped up with sponges. A large split rubber tube, from one-half inch to one inch in diameter and carrying a wick of iodoform gauze, is inserted through the lower angle of the wound to the bottom of the recto-vesical pouch or cul-de-sac, the protecting gauze removed and the wound closed down to the tube with interrupted, through and through, silkworm sutures. Attention is called to the large size of the tube, as I believe the first few hours of drainage are those which count. I had these tubes made to order in 1902 and have employed them ever since for peritoneal drainage.

The one hundred sixty-one cases mentioned above represent but a small portion of peri-appendicular abscesses which have been so treated, as I have been working up to this point for years by gradually increasing the indications for the removal of the appendix in these cases, and they are reported merely because they represent an unbroken series of cases which have been so managed. Since 1902, many cases of diffuse septic peritonitis have been treated by the same form of drainage and increasing experience with its value when so employed seemed to justify the belief that peri-appendicular adhesions may be separated not only with impunity, but under proper precautions, even with benefit.

This method is not advocated for the occasional operator, nor is the claim advanced that it should be invariably employed by men of great experience. However, it is urged that it should be much more frequently employed by competent surgeons than is now the custom and I believe that the instances in which it is contraindicated should be very rare indeed.

AMYOTONIA CONGENITA

THE REPORT OF A CASE WITH MUSCLE BIOPSY *

A. L. SKOOG, M.D.
Assistant Professor of Neurology, University of Kansas; Neurologist to St. Margaret's Hospital
KANSAS CITY, MO.

There are two excuses for presenting a paper on amyotonia congenita before this important scientific assemblage: first, the fact that this contains the earliest reported case in the United States in which a biopsy had been performed and a microscopic examination made of the excised muscle; and, second, the paucity of cases that have appeared in the American literature. There is very little material on this subject in the text-books; and the statement holds true for special works on neurology as well as pediatrics.

As yet we can not give the malady a distinctive pathologic description, one which will distinguish it from the myopathies, although I do believe that it is entitled to be classed as a distinct disease. It is a rare neurological condition, but has no doubt presented itself in the past to clinicians, to be placed in the category of one of the muscular dystrophies, polyneuritis or some other disease with palsies.

HISTORY

H. Oppenheim[1] in Berlin was the first to call attention to this group of cases in 1900. He had seen up to that time several patients whose symptoms were noticed first during the earliest few months of life up to the second year, and he could find nothing in the literature covering this complex of symptoms. The diagnostic symptoms given by Oppenheim are hypotonia or atonia, much diminution of active movements, to an almost complete palsy, especially of the extremities, more frequently involving the legs in a greater degree, with no or little apparent loss of volume, a peculiar relaxation and soft feel of the muscles on palpation, marked decrease or abolition of the tendon-reflexes, a decided quantitative reduction of electrical excitability but never a reaction of degeneration. Sphincters, sensation, special senses and intelligence never showed any disturbance. The disease is confined to the skeletal muscles. The diaphragm was not involved. It appears to be a congenital trouble though in some instances it is not observed until many months after birth.

Oppenheim[2] in 1904 again reports briefly the history of a new case designated this time as "Myatonie congenita." Since that time several cases have been reported by his pupils[3] and other German workers.

The Italian literature[4] contains some early reports of cases. Some valuable additions have been made as a result of case reports and investigative work by French neurologists and pediatrists. The contributions from the English scientists are noteworthy. Especially may be mentioned the cases reported by J. S. Collier.[5]

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Oppenheim: Ueber allgemeine und lokalisierte Atonie der Muskulatur (Myatonie) im frühen Kindesalter, Monatschr. f. Psychiat. u. Neurol., 1900, viii, 232.

[2] Oppenheim: Ueber ein Fall Myatonie congenita, Berl. klin. Wchnschr., 1904, p. 257.

[3] Vierordt: Deutsch. Ztschr. f. Nervenh., 1900, xviii; Rondt: Thesis, Leipzig, 1906; Rosenberg: Deutsch. Ztschr. f. Nervenh., 1906, p. 130; Hebern: Am. Jour. Med. Sc., March, 1910.

[4] Muggia: Pediatria, 1903, p. 179; Berti: Contribuzione alla atonia muscolare congenita di Oppenheim, read before Soc. Ital. di pediat., Bologna, 1906.

[5] Collier: Proc. Roy. Soc. Med., 1907-1908, i, Neurol. Sec., p. 60; Collier and Wilson: Brain, May, 1908; see also footnotes 9 and 10.

The earliest case reported from America was by Spiller,[6] who had the opportunity of performing the first autopsy. I have reviewed closely the case reported by Orbison[7] in 1909, which was classed by him as amyotonia congenita, but which more probably was some organic disease of the central nervous system which has not been excluded in a differential diagnosis. A diagnostic lumbar puncture and a serum test for syphilis should have been made. During the writing of this paper Griffith's[8] case seen in Philadelphia has come to my knowledge.

Collier[9] has collected, all told, forty cases from the literature. More recently Griffith finds forty-eight. I have been able to find forty-four including my own. There are a few cases reported in which there is seme doubt about the diagnosis. I am not so sure but that duplicate reports of a very few cases have gone on record.

NOMENCLATURE

The nomenclature is already overburdened with names though our knowledge of the existence of the disease covers a period of only ten years. The first description appears under the title "General and Localized Atony of the Musculature (Myatonia Congenita) in Early Childhood[1]." Oppenheim's[2] second report comes out under the title of "Myatonia Congenita." The name "amyotonia congenita" first appears in the literature in reports by Collier.[10] A few writers, especially Italians, have used the name "Oppenheim's disease." "Congenital muscular atony," "congenital hypotonia" and "congenital amyoplasia" are other titles that have been employed. Myotonia congenita, or Thomsen's disease, may be confused with myatonia or amyotonia congenita on account of a marked similarity in names, but the two are widely different neurologic diseases. A recent text-book on nervous diseases has confused the two terms in its index. I favor employing "amyotonia congenita," which is concise and a good clinical representative. More discoveries regarding the pathology and exact etiology may or may not indicate changing the name.

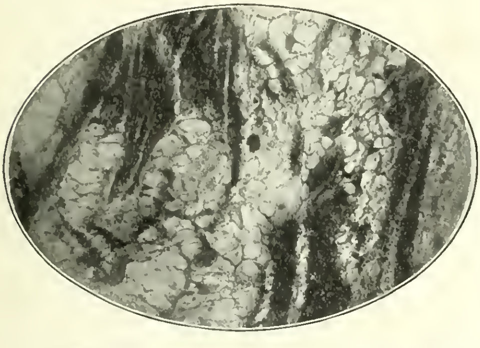


Fig. 1.—Specimen from case of amyotonia congenita. Magnification × 118. Hematoxylin-eosin stain. All remaining muscle fibers atrophic, 8 to 12 microns in diameter. Replacement with fat and connective tissue. Muscle nuclei multiplied several times the normal. The muscle fibers have completely lost their cross-striations.

CASE REPORT

The real incentive for presenting this paper to-day is a consultation case that came under my observation recently, a report of which is as follows:

Patient.—Ethel S., female, aged 22 months, was taken on Jan. 6, 1910, to my office by the parents, who reside in the interior of Kansas.

Family History.—The father, whose occupation is that of a carpenter, presents a healthy appearance. He denies any chronic illness, including syphilis. The mother is a plethoric woman and has had no protracted illness. She asserts that she had good health during the intra-uterine life of the patient. She had only one previous pregnancy, which ended in abortion at the end of the second month. Any bad heredity which might have a bearing on the case is denied. The maternal grandmother died from the third apoplectic stroke at the age of 60.

Personal History.—The patient was a nine-months baby and had a normal delivery. The child was nursed by the mother until twenty months old. The feeding of additional food was begun in the sixth month. Teething began at the tenth month. The baby never had any convulsions, could support the head and maintain a sitting posture when six months old. She has never crawled or attempted to walk; began talking at nine months by saying mamma and papa. The child has never cried very much. Control of urination and defecation was acquired at the twelfth month. She has been exceptionally free from acute illnesses, the only one recalled by the parents being an attack of diarrhea, which was mild and ceased in five days. The parents did not perceive the child's malady until the fourteenth month, its inability to use the legs and walk giving the alarm. They consulted a doctor when she was fifteen months old and learned that all the extremities and trunk were involved in the motor weakness. There has never been any tremors. She was treated with 5 gr. of potassium iodid over a period of three months before being seen by me. Electrical treatment had been furnished by a small family faradic battery.

Examination.—The child, when held by a parent or seated, gives a first picture which does not indicate any apparent illness or defect. Nutrition is good. The extremities appear to carry about the normal volume of soft tissues for one of her age. No deformities of the joints or bones are seen. The skin has a healthy, ruddy appearance. There is not the least indication of rickets. The mental development is up to the normal standard. She is attentive, observing and takes an interest in all that is going on about her. Speech and vocabulary are now well developed for her age, and enunciation quite distinct. She has little fear of strangers, is free with her smiles and does not cry readily. The child is attractive, seems unusually good-natured and would excite no suspicion of any retardation of the development of her cerebral functions. Testing each cranial nerve as well as could be done in a child so young, brought forth no evidence of disturbed function, except in the seventh, whose dependent muscles seem to have a trivial weakness, this being particularly observable in an impaired power of expression during changes of mood. All the extrinsic and intrinsic ocular muscles are normal. Hypotonia, one of the fundamental symptoms on which to base a diagnosis of amyotonia congenita, is present in a decided degree in this patient. All the articulations of the upper and lower extremities have excessive joint movements to passive manipulations. Each foot can be placed with ease behind the head and neck. The arms and legs hang flaccid. The mobility of the spinal column in all directions is exaggerated. Motor weakness is evident to a marked degree for all movements of the extremities, the difference between the upper and lower being not great, but possibly slightly greater in the latter. The trunk and neck muscles are comparatively stronger. She experiences no difficulty in holding the head erect or maintaining a straight spine when seated. The muscles for the finer movements of the toes and feet, and especially the fingers and hands, are less affected than the grosser, more proximal groups. The muscles feel soft, flaccid, and there is no appreciable difference between the active and resting states. The atrophy is not

---

6. Spiller: Univ. Pennsylvania Med. Bull., January, 1905.
7. Orbison: Jour. Nerv. and Ment. Dis., April, 1909.
8. Griffith, J. P. C.: Amyotonia Congenita, THE JOURNAL A. M. A., May 21, 1910, p. 1712.
9. Collier and Holmes: Brain, November, 1909.
10. Collier: Brain, 1907, xxx, 146.

apparent to sight on account of the fatty replacement and a generous layer of subcutaneous adipose tissue. The range for all movements remains unimpaired. The weakness of the deltoids is especially marked. Walking is impossible. When nearly all the body weight is supported by a second person, steps can be taken though with some difficulty. There is no disturbance of coördination. All the deep tendon-reflexes are abolished, including the patellars, Achilles, supinators, biceps and triceps. The epigastric and abdominals are absent. The conjunctival, corneal and pharyngeal are present. There is no plantar response, tested by the Babinski and Oppenheim methods. Many of the muscles failed to respond to a strong electrical current; others of the extremities respond feebly to a strong faradic and galvanic current. None gives the reaction of degeneration. No disturbance of the various forms of sensation is found. All the special senses seem keen. No subjective pains or discomfort to manipulations are found.

Treatment and Course of Disease.—On May 11, 1910, a report was received from Dr. Shonkwiler, the family physician of Burns, Kansas, to whom, after the consultation, the patient was returned for care and treatment. He states that she seemed to be losing ground for a while after returning home. The helplessness increased as she gained in weight. In February a light attack of pneumonia was contracted, from which a good recovery was made in three weeks. The mother noticed that following this acute illness the baby was able to handle herself much better. The present status is one of considerable improvement in motor power. The mental development continues good. The arsenical treatment, which was not well tolerated, was discontinued early. Regular massage has been given. Strychnin in small doses has been employed. There has been some dieting to prevent too much increase in adipose tissue.

Biopsy.—The patient was taken to the University of Kansas hospital and laboratory, where I removed a small piece of the gastrocnemius muscle under local anesthesia with a .7 per cent. solution of quinin and urea hydrochlorid. A layer of subcutaneous fat 12 mm. thick covered the muscle fascia. A section about 5 mm. square removed from immediately beneath the muscle sheath contained no muscle bundles, all being substituted by fatty tissue. A second deeper section, about 7 mm. square, contained some pale muscle tissue and much fat. The wound bled freely. Unfortunately the piece placed in a Zenker solution for more careful preparation proved to be entirely fat. The other was sectioned immediately with a freezing microtome. Van Gieson, hematoxylin-eosin and Bismarck brown stains were employed. Muscle bundles can be seen terminating abruptly in a replacing adipose tissue. Some muscle fibers in process of destruction are seen ending in continuity with substituted connective tissue. There is much fatty tissue between the bundles. No hypertrophied fibers can be found. All are quite uniformly atrophied, measuring 8 to 12 microns in diameter. There is a great nuclear proliferation, the sarcolemma nuclei appearing four or five times as numerous as in the normal. The blood vessels, including the capillaries, have greatly thickened walls, the adventitia showing the greatest amount of increase. The intima is not involved.

DIAGNOSIS

The diagnosis of amyotonia congenita is made in my case without any hesitancy, all the fundamental symptoms being demonstrated. The hypotonia of a severe grade, the marked general skeletal muscular weakness, with soft flaccid muscles, absent deep reflexes, diminution of electrical excitability of muscles, but no reaction of degeneration, no orthopedic deformities, normal mind, normal sensation, no subjective pains, no bad heredity and a general healthy appearance make a strong argument for an undoubted diagnosis. The history regarding a congenital onset is incomplete, but there are a few indications.

In a differential diagnosis several diseases must be eliminated. Poliomyelitis acuta can be excluded by its sudden onset, course, acute febrile period, selection of muscle groups, late trophic disturbances and occasionally musculo-tendinous contractures. Polyneuritis gives pain to pressure and movements, and has a different course and onset. The pseudoparalyses of rickets, scorbutus and Barlow's disease are readily eliminated by their outspoken symptoms, cause and course. In the pseudoparalysis of syphilis we look for other specific symptoms and malnutrition. The Wassermann reaction, or one of its reliable modifications and the diagnostic lumbar puncture should be resorted to where doubt exists. In myasthenia gravis we have a different age, course, electrical findings and bulbar symptoms. Myelitis, hematomyelia and gliosis give afferent tract symptoms. Little's disease with its spasticity is the antithesis of amyotonia congenita. In some cases of imbecility and idiocy there exist much hypotonia and retarded muscular development. The mental defects are evident early, and frequently anatomic stigmata of degeneracy may be found. In cerebellar lesions are found a marked ataxia, normal or slightly increased tendon reflexes and a hypertonia rather than a hypotonia as in amyotonia congenita. The myopathies offer the greatest difficulty in a differential diagnosis. In simple idiopathic muscular atrophy the onset occurs at a different period; there are usually hereditary manifestations, most often similar, a different distribution of the muscular weakness, evident atrophies or pseudohypertrophies, no indication of the condition being congenital and not the same hypotonia of amyotonia congenita.

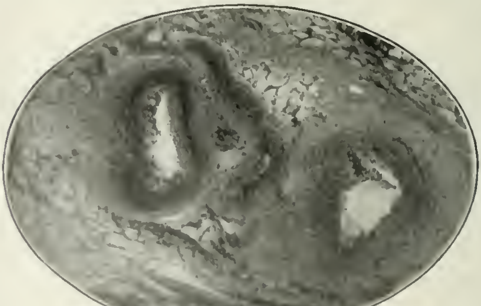


Fig. 2.—Specimen from case of amyotonia congenita. Showing intramuscular blood-vessels with much thickened adventitia and media.

PATHOLOGY

Our knowledge of the pathology is incomplete. The few autopsies and biopsies indicate that the disease is one primarily of the skeletal muscles or of their motor nerve endings. My biopsy shows a great diminution in size of the muscle fibers and marked increase in number of sarcolemma and muscle fiber nuclei. The myoplasm of many of the muscle fibers has undergone a complete degeneration and is replaced with adipose or connective tissue. The blood vessels show much thickening especially of the adventitia.

Spiller[10] has reported the first complete autopsy, in which case were found a diminution in size and a hyaloid appearance of the muscle fibers of the calf and back. The transverse striae were absent. The spinal cord was normal. Smith[11] studied the ductless glands and the hemolymph system in the same case and found the Hassal corpuscles of the thymus gland much increased in size and number. Some of the bodies presented a hyaloid appearance. Oppenheim[12] reflects a doubt about the diagnosis in this case.

---

[11] Smith: Univ. Pennsylvania Med. Bull., October, 1905.

Baudouin's[13] excellent post-mortem report shows a slightly arrested development of the anterior horn cells of the spinal cord, spinal roots and peripheral nerves not of an inflammatory nature. He found hypertrophied muscle fibers and many atrophic ones, a sclerosis and a replacement with connective tissue. The blood-vessels were a little thickened. He concluded that it was a regression similar to that found in the myopathies. The thymus gland was sclerosed with a diminished number of Hassal bodies. The thyroid was in a state of hypofunction with an intense sclerosis, little colloid substance remaining.

Collier and Holmes[9] report one autopsy and one biopsy. They found markedly atrophic and hypertrophic skeletal muscle-fibers, replacement of degenerated ones with fat, muscle nuclei multiplied several times the normal and increased connective tissue. The myelin sheaths of the peripheral nerves were poorly developed. The ventral spinal roots contained fewer fibers than are found in the normal. The anterior horn motor cells were diminished in size and number (1/3). Dorsal horns, Clarke's columns and white columns were normal.

Bing's[14] biopsy report with almost negative findings is incomplete.

ETIOLOGY

The etiology is dark. Heredity certainly plays no rôle as a causative factor. The only exception on record is that of Silvestri,[15] where the heredity was dissimilar. The mother learned to walk late, had a slight goiter and osteomalacia during pregnancy. A maternal aunt had a Landouzy-Déjerine progressive muscular atrophy. One brother had a juvenile progressive muscular atrophy with pseudo-hypertrophies. Two brothers had rickets and one myxedema. Theories of disturbance of internal metabolism or the hemopoietic glands have been advanced, but nothing conclusive has been demonstrated.

TREATMENT

For such an essentially chronic disease as amyotonia congenita too few years have lapsed since our recognition of it to lay out any closely defined plan of treatment, and this holds particularly true in view of the undetermined exact etiology. More than 50 per cent. of these cases can be improved, a few being on record where the improvement has been decided. This is one reason for not allowing them to be classed among the myopathies, most of whose forms continue to steadily decline without interruptions. Hygienic, mechanical and medicinal means of therapy may be resorted to.

All these patients are prone to attacks of acute pulmonary infections. In a large percentage of the reported cases the patients have had bronchitis or bronchopneumonia from which the mortality rate has been high. In 16 per cent. of all the known cases the patients have been registered as dying from pneumonia or bronchopneumonia. My patient had an attack of catarrhal pneumonia from which, after the recovery, there was begun a noted immediate improvement in her motor power, possibly due to the loss of some fatty weight. It is not desirous to encourage the addition of much weight dependent on adipose tissue.

Massage properly applied is valuable. It is perhaps proper to caution against kneading the muscles too vigorously or excessively. If electricity is considered, faradism should be used to those muscles which react to the current, and galvanism to those which do not respond to the interrupted form. Cold baths have been employed, but I would favor the hot should hydrotherapy be indicated. Strychnin in small doses over long periods may be beneficial. Phosphoric and arsenical preparations are worthy of a trial.

CONCLUSIONS[16]

My few concluding remarks shall be confined to a discussion concerning the question of amyotonia congenita being admitted as a distinct disease.

The most likely field for argument is that of the myopathies. In a discussion of this point before the neurological section of the Royal Society of Medicine of London in the spring of 1909, Collier made a strong plea for its entity in the list of classified nervous diseases. Batten vigorously opposed this position, maintaining that it should be considered as one of the myopathies. I see no other location for this rare neurological condition excepting among the myopathies if we refuse to allow it to stand by itself.

Bing's[14] case, in which a biopsy was performed, showed little or no muscle changes, which prohibits it from being classified as either amyotonia congenita or a myopathy. The description sounds like that of a mongolian imbecile.

Oppenheim[12] in his most recent text-book on nervous diseases has treated the malady in a curious manner, a short space being devoted to the subject under the differential diagnosis of poliomyelitis acuta.

Unfortunately as yet we cannot turn to the pathologic findings to support the contention for placing this group of cases in a class by themselves. The strong support from clinical findings gives us sufficient encouragement to allow the disease to have a real existence.

402 Argyle Building.

The Hot-Air Douche in Treatment of Skin Diseases. P. Ravaut commends this method of treatment and relates his favorable experiences with it in a number of cases of nevi, lupus (after a preliminary curetting), tuberculous lesions in the skin, epithelioma, leucoplasia of the internal surface of the cheek, hypertrophic acne of the nose, vulvar pruritus and lichenification, torpid ulcerations and to get rid of tattooing. With the latter, after giving chloroform, a mild jet of superheated air was played on the epidermis which was scraped off as it was lifted up from below; the tattooed zone was then curetted, the hot-air douche drying the oozing blood. His communication on the subject is published in the *Annales de Dermatologie*, March, 1910, page 145.

---

[12] Oppenheim: Nervenkrankheiten, Ed. 5, Vol. i, Die Poliomyelitis anterior acuta, Differential diagnose, p. 242.

[13] Baudouin: Semaine méd., 1907, p. 241.

[14] Bing: Med. klin., 1907, i, No. 6.

[15] Silvestri: Gaz. d. Osp., 1909, xxx, 577.

[16] Other literature, not referred to elsewhere, is as follows:
Schüller: Wien. klin. Wchnschr., 1904, p. 722.
Hagenbach-Burchardt: Jahrb. f. Kinderh., 1904, p. 47.
Tobler: Jahrb. f. Kinderh., 1907, xiv, 33, No. 1.
Ausset: Bull. Soc. de méd. du nord, 1908.
Gastonquay: Bull. méd. de Quebec, 1908-1909, x, 97.
Levi-Sirugue: Gaz. d. hôp., 1909, lxxxii, 173.
Coombs: Brit. Med. Jour., June 15, 1907.
Leclerc: Gaz. d. hôp., 1907, lxxx, 1683.
Variot: Bull. Soc. de pédiat. de Paris, 1907, ix, 246.
Simonini: Riv. di clin. pediat., 1907, v, 845.
Smith: Univ. Pennsylvania Med. Bull., October, 1905.
Sorgente, P.: Due casi di atonia musculare congenita di Oppenheim, Pediat., May, 1906.
Iovane: Pediat., March, 1906, xlv.
Cattaneo: Bull. della clin., 1906, viii.

ACUTE YELLOW ATROPHY OF THE LIVER

A CASE FOLLOWING TWO CHLOROFORM ANESTHESIAS IN QUICK SUCCESSION IN A PREGNANT WOMAN

O. S. McCOWN, M.D. and BRYCE W. FONTAINE, M.D.
MEMPHIS, TENN.

All of us who have ever used chloroform as an anesthetic to any extent are familiar with the immediate dangers to the life of the patient during its administration, and there have been recently some good papers dealing with its deleterious effects. There has also been some good experimental work which has given us a good working basis for clinical observation of the cases of delayed chloroform poisoning.

Leonard G. Guthrie, in 1894, was the first to call attention to cases of delayed chloroform poisoning. In that year he reported nine cases in which death occurred within from ten hours to six days after operation performed under chloroform.

The symptoms as observed by Guthrie were, after a period of twelve hours or so, profuse and repeated vomiting, the vomit eventually blood-stained and resembling the dregs of beef-tea; restlessness; excitement and delirium alternating with apathy; jaundice, occasionally, and unconsciousness deeping into coma.

The following case came under our observation in the wards of the Memphis City Hospital last winter, and is, we think, of value as an example of the profound delayed toxic effect of chloroform which may occasionally occur. We think, in the light of the experiments of Whipple and others, and of clinical experience, that many patients who are anesthetized by chloroform, and recover, suffer similar effects, but in a milder degree.

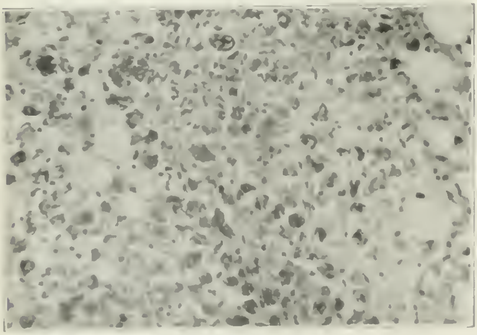


Fig. 1.—Area of necrosis and partial histolysis.

REPORT OF CASE

Patient.—A negro woman, aged 18, unmarried, chambermaid, admitted to the City Hospital Feb. 6, 1910, at 10 p. m. Family history and previous personal history negative.

Present Disease.—On February 5 the patient had abdominal cramps and headache with moderate uterine bleeding. These symptoms continued until admission into the hospital. On admission the patient was bleeding somewhat, and a physical examination showed that she had had an incomplete abortion at the third month. Temperature was 101, pulse 100. The patient denied having used artificial means to produce the abortion. She was of a very low order of mentality and would allow nothing done without an anesthetic. She was given chloroform and tamponed. The pains continued part of the night, then ceased. The next morning, Feb. 7, 1910, she was again anesthetized with chloroform, the tampon removed and a curettement done. Each anesthesia was of about twenty-five minutes' duration. The pulse and temperature immediately dropped to normal and continued so until the morning of Feb. 9, forty-eight hours after the curettement, when she complained of not feeling well, and during the day developed jaundice, nausea, vomiting, with rapid pulse and delirium; these symptoms gradually increased in severity until February 12, three days after their beginning and five days after the curettement, when the patient had convulsions, followed by coma and death in a few hours. There was a complete suppression of urine, which prevented a urinalysis being made. From these symptoms, with the previous history, the condition was diagnosed on the first day to be acute yellow atrophy of the liver, due to chloroform poisoning with the additional toxemia incident to pregnancy.

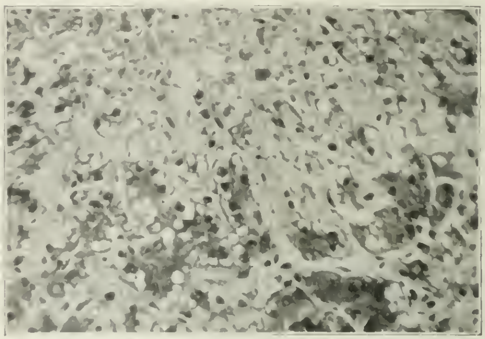


Fig. 2.—Small area adjoining portal space, showing fatty degenerated liver cells in periphery of lobule. Notice great degeneration proceeding towards center.

AUTOPSY

Made twelve hours after death. Body of a fairly well-nourished young negro woman. Rigor mortis present. Frothy exudation with a yellowish tinge seen about the nose and mouth. Sclera, palms of hands and soles of feet deeply jaundiced. Abdomen slightly distended. On section of wall of abdomen, deeper tissues were found bile-stained. Mesentery, omentum and intestines were bile-stained. Liver about two-thirds normal size. Surface smooth and presenting a uniformly yellow-brown color, spotted with areas of hemorrhage varying in size from a split pea to a 25-cent piece.

Section showed parenchyma of the same appearance as surface. Consistency almost diffluent. No resemblance at all to normal liver tissue. Appearance seemed uniform throughout both lobes.

Gall-bladder about half full of yellowish-green bile. Bile-ducts patent.

Spleen enlarged to about twice normal size. Soft in consistency. Heavier than normal. Dark red in color. Section had the appearance of an acute splenic tumor.

Kidneys increased one-third in size. Soft in consistency. Dark in color, with areas of hemorrhage beneath capsule. Capsule easily stripped. Section showed surface dripping with blood. Cortex swollen to twice normal size. Absence of striations in cortex and medulla. Venules prominent. Pelvis and ureter normal.

Pancreas and pelvic organs apparently normal, except for increase in size of uterus. Bladder empty.

MICROSCOPIC EXAMINATION

The capsule of the liver was normal, save for a moderate infiltration of lymphoid cells.

The larger bile-ducts were almost empty. Epithelial cells lining basement membranes were slightly hypertrophied, and in some places desquamating. The walls of the bile-ducts were seen to be moderately infiltrated with lymphoid cells (Figs. 1 and 2).

The blood-vessels in the portal area and those in the center of the lobules were found empty and of normal size. Most of the lobules were the seat of extensive necrosis which is apparently most pronounced in the center. In some places the protoplasm had entirely disappeared from the cells, and nothing appeared to remain but their shells. The interstitial tissue was not hypertrophied, but, on account of the autolysis of the cells, was distinct.

Away from the center of the lobules the cells still preserved their form, but contained a very indistinct nucleus, and either numerous fine granules or from one to three large fat droplets.

About the portal area there could be seen, in a few places, one or two rows of liver cells that are fairly normal (Fig. 3).

Throughout the section of the liver there could be seen absolutely no effort at regeneration.

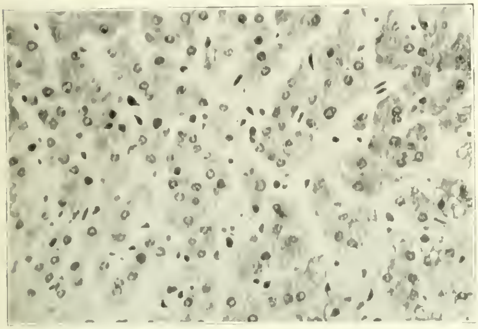


Fig. 3.—Comparatively intact liver tissue.

There is little reason to doubt that the anesthetizing with chloroform was the exciting, if not the entire cause of the extensive degeneration of the liver which presented the appearance of an acute yellow atrophy.

According to Rosenfeld, when the liver cells are poisoned by chloroform their metabolism is so altered that while they can utilize carbohydrates well, they can oxidize proteids but imperfectly, and fats even less well; consequently, as soon as the cells have used up their meager store of carbohydrates, their hungry condition causes a breaking down of tissue proteid and a transference of fat to them; or it may be, as has been suggested by Councilman, that the abnormal presence of fat in the cells represents some combination of fat with proteid.

This case corresponds closely with the majority of cases reported in the literature, and to the appearance of the lesions in the cases of experimental chloroform poisoning given in the report of Whipple. It is remarkable in its very early appearance and the extensive degeneration of the liver.

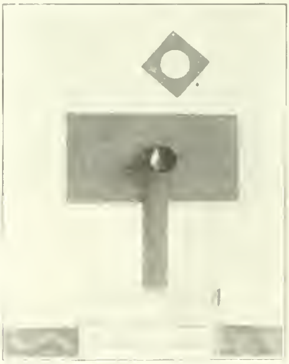
Lumbar Puncture for Convulsions in Children.—F. Schiffer believes that the convulsions may lead to disturbances in the circulation in the brain and meninges which give rise to new convulsions. This vicious circle may be broken up by lumbar puncture, and Schiffer relates two cases in which this was done with apparent success in epileptic children. The number and intensity of the seizures seemed to be materially reduced by a single lumbar puncture, but in his communication on the subject in the *Klinisch-therapeutische Wochenschrift*, 1910, xvii, 481, he does not claim that this measure will prove invariably successful. He is convinced, however, that the accumulation of seizures is not the work of the primary cause but of the convulsions themselves, and where this has occurred, lumbar puncture may give great relief.

A METHOD OF DETERMINING OCULAR DOMINANCE

A. C. DURAND, M.D., and GEORGE M. GOULD, M.D.
ITHACA, N. Y.

The question of a dominant eye does not seem to be considered of any consequence by the medical profession or even by its ophthalmologists. Probably few, indeed, realize that one eye is chosen unconsciously for the more rapid, accurate, and delicate visual perceptions, just as the dextral hand is chosen by the right-handed for the performance of all the more delicate and expert tasks, especially in learning them. The significance of ocular dominance in its relation to sport has been brought out by a newspaper reporter, and in its relation to right-handedness and left-handedness, by an oculist in a volume so entitled. The value of the determination of the dominant eye in refraction needs further outworking and rating, but a simpler method of making the test than the one to be suggested could scarcely be found.

The idea of ocular dominance is by no means a new one. Ioan Baptista Porta,[1] writing "De Refractione," in 1593, reviews the opinions of "the ancients and moderns" concerning vision with two eyes, and advances his own conclusions from observations. "Nature has bestowed on us eyes in pairs," he says, "one at the right hand and one at the left, so that if we are to see anything at the right hand we make use of the right eye.... whence we always see with one eye, although we think that both are open and that we see with both." This thesis he proved by two "arguments" or experiments: "Between the two eyes let there be placed a partition to divide the one from the other, and let us place a book before the right eye and read. If any one shows another book to the left eye it will not only not be able to read, but it cannot even see the pages unless in a moment it withdraws the visual virtue from the right eye and changes it to the left." His second argument is as follows: "If any one places a staff before him and brings it directly opposite some crack that exists in the opposite wall, and notes the place, when he closes his left eye he will not see the staff removed from the opposite crack, the reason being that every one looks with his right eye as he uses his right hand," etc.



Simple instrument for determining the dominant eye

---

[1] Porta, Ioan Baptista: De Refractione opticis parte, Neapoli, apud Io. Iacobum Carlinum et Antonium Pacem, 1593.

Until quite recently this second method has been used in this office to determine ocular dominance.[2] During the fall of 1909 there appeared in a New York paper an article on the "Master Eye," in which the author shows that in the realm of sport the master eye directs and controls the marvelously quick and accurate movements of successful players. To demonstrate beyond doubt the fact of the existence of a "master eye" he directed that a round hole be cut in a piece of cardboard, the disc thus cut out being placed on the floor in front of the person tested. The cardboard is held at arm's length and the disc observed through the hole. Inasmuch as the disc can be seen only with one eye at a time, one will select his "master eye" to see it. The method was so simple, the demonstration so convincing, that modifications and further improvements of the method were immediately devised. The modifications consisted simply in narrowing the field of vision by placing a short tube in the hole of the cardboard, and, second, in increasing the convenience of using the apparatus by adding a handle, blackening the instrument, etc. The instrument we now use is simple, light, home-made, and effective. It is constructed as follows:

In the center of a piece of black cardboard about a foot long and half as wide is cut a round hole exactly the size of a pasteboard mailing-tube. A piece of the tube about 4 inches long is thrust through the hole. The fit should be snug enough to hold the tube in place, but it is further strengthened by glue applied to the joint on both sides of the cardboard screen.

This is the essential part of the instrument, but for the sake of convenience another piece of the mailing tube about 7 or 8 inches long is used as a handle. In order to fit the handle to the above-described portion of the instrument, slits as wide as the cardboard screen is thick, are cut lengthwise of the handle at opposite ends of a diameter of the tube. Crescent-shaped segments are now cut from the upper end of the handle, with the tips at the upper ends of the slits just mentioned. The handle is slipped into position and glued at every joint. A glance at the accompanying illustration will show the method of construction, as well as the completed instrument. The illustration also shows the white "target" and the dead blackness of every other part of the apparatus.

With the patient sitting or standing squarely before the white disc opposite him on the wall at the level of the eye, the instrument is presented to him and he is instructed to hold it at arm's length so that he can, with both eyes open, see the white spot through the tube. If the patient is right-eyed and the left eye is covered with a piece of black cardboard or blotting paper the disc remains in view through the tube; if the right eye is covered he sees only the screen of the instrument. It is, of course, impossible for the patient to see through the hole with both eyes at once, and the great majority of people find that naturally they can get a clear image of the white spot with one eye only.

Whether any means of determining ocular dominance ever comes into general use remains to be seen. It seems, however, with this principle in mind, a competent oculist, with the good of his patient at heart, will not, in prescribing glasses, injure a naturally right-eyed man with left-eyedness, when the proper correction of the error of refraction would preserve right-eyedness. Furthermore, in certain cases, it should be his endeavor to change a left-eyed but right-handed man into a right-eyed man, so that, for example, he would not have to depress his head sufficiently to sight with his left eye in shooting a gun from the right shoulder. Certain it is that a naturally right-eyed and right-handed patient, recently artificially made left-eyed by glasses, will have good reason to bless you for making him right-eyed again with correctly fitted lenses.

For the oculist there arise many problems in reference to his "mixed" cases, or those with "equidominance." Occasionally he will catch one in the very process of becoming "mixed"; that is, by bad glasses, by growth of ametropia, or by switching of the axis of astigmatism in the formerly dominant eye. In such instances there will be a dangerous period of struggle for dominance between the two eyes. One eye must be chosen or the patient may suffer injuries from accident. One of our patients, for example, a physician, who had heretofore driven his own automobile expertly, found himself unexplainably and suddenly running into curbstones and telegraph poles. By reinstating his habitual dominance, which had been reversed by incorrect lenses, he at once gained his previous skill in locating objects, etc. The fact, as was pointed out six years ago, has significance also in cases of inflammatory diseases and operations on one eye.

CRYPTOPHTHALMIA

WITH REPORT OF TWO CASES

DAVID H. COOVER, M.D.
Professor of Ophthalmology, Denver and Gross Medical College of Medicine
DENVER

In cryptophthalmia we have a total congenital ankyloblepharon and symblepharon, and there is also invariably abnormality of the eyeball and often of the orbit. In addition other abnormalities are generally present, especially syndactylism (Manz, Chiari, Otto); and malformation of the genitalia (Manz, Chiari), meningo-encephalocele (van Duyse), hare-lip (Chiari), cleft palate, facial fissure, malformed concha, atresia of the larynx (Chiari), ventral hernia (Manz), aplasia of the kidneys, etc., have been observed.

The first case of cryptophthalmia was recorded by Zehender and the patient examined anatomically by Manz, 1872. Cases have since been recorded by Hocquart, Chiari, van Duyse (two cases), Fuchs, Otto, Bach and Karmann; seven patients have been examined anatomically. In six cases the abnormality was bilateral, in three unilateral. Consanguinity in the parents has been recorded once only. The cases reported in this paper were both bilateral.

In this condition the skin passes continuously from the brow over the eye to the cheek. In almost every case there is some indication of a palpebral fissure, which appears as a shallow, linear depression, or as a white line of scar tissue. Some authorities state that the eyelashes are always absent, but they were found in both of my cases. There is occasionally a small depression in the situation of the palpebral fissure; in Hocquart's case, folds of skin radiated from it, and in van Duyse's, in a pigeon, it measured 2.5 mm. Eyebrows are usually present, two cases being reported in which they were absent. The eyeball can always be felt under the skin; it shows spontaneous movements, proving the presence of extrinsic muscles. There is evidence that the eye is always responsive to bright light, as shown by wrinkling of the skin; this further proves the presence of the orbicularis. This muscle, the levator palpebrae, and the other extrinsic muscles, have also been demonstrated anatomically. Anatomic investigations show further that the lids are not always absent. Van Duyse and others found remnants of them. Bach alone found

---

[2] Gould, G. M.: Right-handedness and Left-handedness, J. B. Lippincott Co., 1908, p. [illegible]

Meibomian glands and a tarsus in the upper lid. The raphe consisted of scar tissue in Chiari's case, but showed only dense structure, and aggregation of sweat glands in van Duyse's. Traces of the conjunctival sac have been found, but it is usually completely absent. The eyeball is invariably disorganized. In fact, the condition may be so extensive as to justify Wernicke's term, "cicatricial crytophthalmia." "The cornea is converted into vascular scar tissue, often ectatic. The iris is adherent to the cornea, or more or less completely atrophied. The lens may be represented by only a few large vesicular cells behind the cornea or may have disappeared. The ciliary body and chorioid show these changes familiar after severe inflammation, or are absent."[1]

The etiology of these abnormalities offers the usual difficulties. Manz considered that the lids were not formed (ablepharon by agenesis). There can be no doubt that in some cases, as in the two here reported, the lids are partially formed and for some reason become united (ankylosymblepharon by ankylosis). Treacher Collins advances the theory that the condition of the eye is the result of a defective development of the lids and conjunctival sac and that owing to the absence of the lids, the conjunctiva develops into skin.

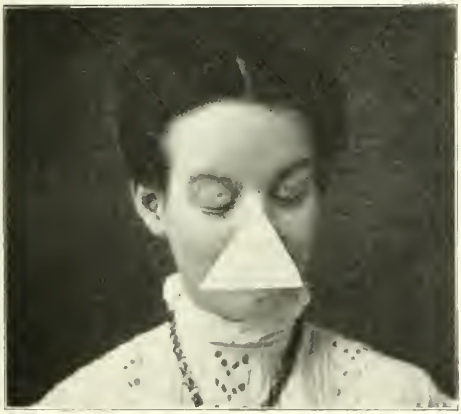


Fig. 1. First patient with cryptophthalmia.

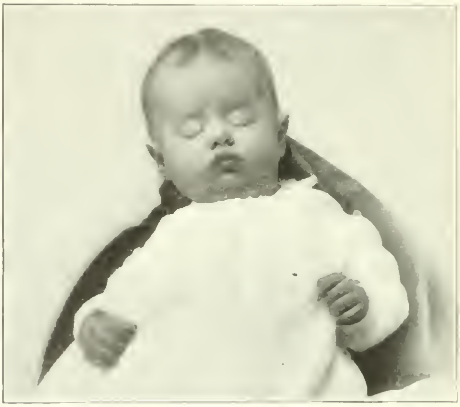


Fig. 2.—Second patient with cryptophthalmia.

Pressure by the amnion is given as a cause by Kundrat and van Duyse, and this is supported by the coincidence of syndactylism, but it is difficult to construct the exact mode of action.

Case 1.—Mrs. R., aged 24, American, born with the upper and lower lids of both eyes firmly united (ankylosymblepharon by ankylosis), in every other way is a perfectly developed woman. An indication of the palpebral fissure in the form of a shallow depression corresponding to the curvature of the lids appears in each eye. Well-formed eyebrows are present. About midway between the lower margins of the upper lids and the margins of the orbits are two rows of hairs. At these points there are slight depressions in the surface of the lids—a pitting of the skin.

The patient gives a history of light impression at an early age. She could recognize when a bright light was flashed in her face. The patient's mother states that when the patient was 2 years of age, the left eye was opened by a surgeon and an imperfectly developed eyeball was found. Four years later Dr. E. M. Marbourg of Colorado Springs and I opened the lids of the right eye. A small ball was found, which was imbedded in a mass of connective tissue and occupied the nasal side of the orbit. No corneal tissue could be determined macroscopically. Two years after the operation, light perception was lost entirely.

There was no history of consanguinity; nor as far back as could be traced was there a history of any congenital defect.

The patient was educated in a school for the blind and at 22 years of age she married an inmate of a workshop for the blind, who had lost his eyes in a mine explosion about five years ago. Their baby when born was a duplicate of the mother.

Case 2.—Hazel R., aged 7 months, at birth weighed 8¼ pounds and was in every other way a perfectly formed child. The tissue at the point of union of the lids had somewhat the appearance of scar tissue, but is probably a modified conjunctiva. A few cilia could be seen on the margins of the imperfect lids, more particularly on the lower. There was a partially formed caruncle in each eye. The orbits were slightly narrowed in their vertical diameter, there seeming to be a bulging downward of their superior margins at about the site of the supraorbital foramina. By palpation one could determine the presence in each orbit of a small eyeball, but owing to the apparent thickness of the lids, it was impossible to form any estimate of its size. The right appeared to be the larger.

When a bright light was flashed in the face, there was a reflex movement of the eyelids and a slight wrinkling of the brows. Careful probing along the sites of the palpebral fissures failed to reveal any opening at any point.

The right eye was chosen for operation and an incision was made along the palpebral depression from within outward. There was a complete symblepharon, the upper and lower lids having to be dissected away from what appeared to be a mass of connective tissue. There was considerable hemorrhage. Retracting the lids and inserting the finger, a small eyeball could be felt. Dissecting away the mass of tissue with the handle of a scalpel, an imperfect eyeball was exposed. In drawing it outward and forward with the forceps, a small point was brought into view, which had the appearance of imperfectly developed corneal tissue. The spot was about 2 by 3 mm. and was situated to the nasal side of the globe. No extrinsic eye muscles could be detected macroscopically. By passing a strabismus hook back of the eyeball, the presence of an optic nerve could be determined.

In the dissection, the sclerotic was accidentally snipped by the scissors at one point and some fluid vitreous escaped. There being no possibility of any vision, the lids were closed and the wound dressed.

California Building.

---

[1] Parsons, Pathology of the Eye, iii, 779.

A BILATERAL HERPES ZOSTER

HENRY ROCKWELL VARNEY, M.D.
AND
R. C. JAMIESON, M.D.
Senior Dermatologist to Harper Hospital
DETROIT

The unusual rarity of recorded cases of bilateral zoster makes them worth reporting; though such cases are scattered throughout the literature, they have been very infrequent when compared with the number of cases of the unilateral variety. The relative proportion will never be known, as the ordinary "shingles" is too common to be reported or recorded, in that a large percentage is seen by the general practitioner or not at all. The grandmother, as in ringworm and boils, often makes the diagnosis, and says that if the lesions do not girdle the patient he will recover; if they girdle or meet he will die. The cases of bilateral zoster reported by observers from different parts of the world are, without doubt, only a small percentage of the number that really occur, as many cases are not reported and probably are not diagnosed properly. While bilateral zoster is generally supposed by older authorities to be of syphilitic origin (yet unproved), no history of spyhilitic infection can be obtained in the present case, nor has the patient a single trace, clinically, of an old syphilis, although one might pre-suppose its existence on account of the patient's occupation, he being a sailor.

REPORT OF CASE

Patient, J. F., aged 47; occupation, sailor. There is nothing of interest or at all suggestive in his family history which would have an influence on the present condition. His mother died at 60 from carcinoma of the stomach, one brother died of alcoholism, and two sisters died in infancy, the cause of death not being known to the patient. There is no hemophilia or other hereditary disease in the family. The patient has had pneumonia, typhoid fever, malaria, and gonorrhea (twice), but syphilis is denied. When he was 8 years of age his back was injured at the site of the present eruption, but had given him no trouble for years.

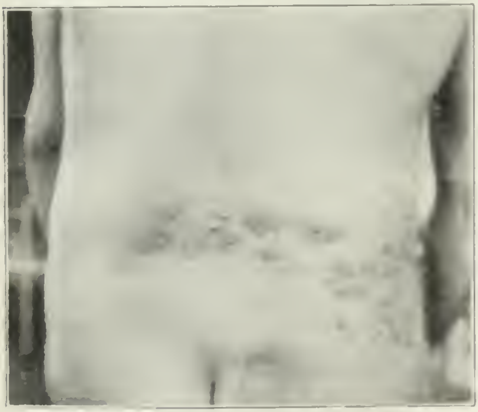


Fig. 1.—Showing bilateral lesions, dorsal aspect.

He came for treatment on account of having red lesions on the right side of the body, which appeared three days before his entrance into the hospital. At that time the lesions were only on the right side and had been preceded and accompanied by severe pain in the area affected. Two days after admission lesions began to appear on the left side at the same level as the first lesions. The eruption on the right side began at the twelfth dorsal and first lumbar vertebræ, extended across the back and abdomen to the median line, also downward and inward over the thigh and crural region. On the left side the lesions extended at the same level as far as the mid-axillary line, and a few days after the photograph was taken some lesions developed on the left anterior abdominal wall, which were too extensive to be accounted for by an anomalous distribution of a cutaneous branch.

Since this report was completed, a case has come to notice in which the patient claims to have had a bilateral zoster fourteen years ago, but there are no means of proving his assertion.

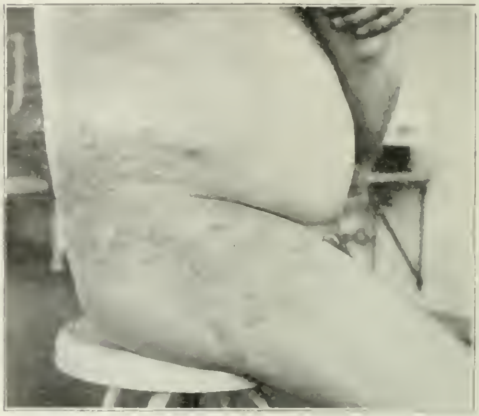


Fig. 2.—Showing lesions distributed over upper portion of thigh.

The accompanying illustrations show the areas affected.

This case was studied and reported through the courtesy of Surgeon R. M. Woodward of the Detroit Marine Hospital.

THE ACTION OF ALCOHOL ON THE NORMAL INTACT UNANESTHETIZED ANIMAL *

CLYDE BROOKS
CHICAGO

INTRODUCTION

Heretofore, on account of the objectionable methods employed, so far as I know no adequate direct observations have been recorded on the action of alcohol on the general blood pressure of the intact animal. One objectionable feature is that these methods have as a rule involved the employment of a general anesthetic, such as chloroform or ether; and it is not easy to distinguish the normal action of alcohol when administered to an animal already far under the influence of a very closely related drug of the same group. For example, how could one distinguish the normal action of alcohol on the general blood-pressure of an animal when its vasomotor reflexes were already greatly depressed by ether or chloroform? One of the means employed to avoid the use of anes-

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* From the Laboratory of Experimental Therapeutics, University of Chicago.

thetics is to remove the cerebral hemispheres.[1] But this is a poor makeshift, for an animal with its cerebral hemispheres mutilated is so profoundly altered that it is unfit for physiologic researches on the general blood-pressure.[2] Therefore, in order to obviate the necessity of decerebration, general anesthesia, or other objectionable practice, methods were devised for studying the blood-pressure in the normal (intact) animal by which tracings were obtained practically without pain to the animal and without the need of anesthetics. From a historical point of view it would seem that this should be one of the most natural and almost inevitable steps next to be taken in the development of blood-pressure methods.

HISTORICAL SKETCH

So far as we know Stephen Hales,[3] the clergyman and scientific experimenter, was the first to measure blood-pressure. He caused various domestic and wild animals to be tied down while he operated on them, of course, without anesthetizing them, as anesthetics were unknown at that time. He inserted into the artery a brass tube, and to that, by means of another brass tube which was fitly adapted to it, fixed an upright glass tube about 9 feet in length. When these parts were shoved together, making a tight joint, the blood was allowed to rise in the upright glass tube. Later he improved the apparatus by using a goose's windpipe for making a pliable joint between the two brass tubes. In order to meet the criticism that changes in the general blood-pressure were caused by occlusion of the vessel under observation, Hales devised a method of taking the pressure measurements from the side of the blood-vessel, leaving the lumen open. He took a cylindrical wooden stick with a hole bored through it from end to end and another hole bored into it at right angles tapping the lengthwise hole. The stick was then split lengthwise into halves and these halves were fitted and cemented with hot pitch around the blood-vessel. After cutting a hole into the blood-vessel where it was exposed at the bottom of the side hole, the upright glass tube was quickly fitted into the side hole and the blood allowed to rise in the tube. By these methods, before the dancing red column had time to clot, he succeeded in measuring with considerable accuracy the changes that took place in the blood-pressure. From these measurements he forecast with remarkable correctness many of the main facts now known of the physiology of the circulation.

Poisseuille[4] made the next improvements by the use of the U-shaped glass tube filled with mercury in place of the upright glass tube filled with the animal's own blood, and also by the use of saturated solutions of sodium carbonate to prevent clotting in the manometer tubes. These changes brought the apparatus into smaller compass and gave direct readings in terms of mercury pressure and allowed long-continued observations on the same animal.

Ludwig[5] saw that the mercury in the open end of the Poisseuille manometer could be made to carry a float with writing point which could be made to trace a record. This led him to the invention of the kymograph to carry the paper on which the point could write. The graphic method made possible a permanent and indisputable record which could be studied at leisure in detail.

More recently there have followed methods for special purposes, such as the more accurate determination of the maximal and minimal pressures by such devices as the maximal and minimal valved mercury manometers, or by the more mobile manometers—one devised by Fick,[6] another by Hürthle;[7] or such as the various more or less accurate methods of determining the blood-pressure in man by the use of some form of the sphygmomanometer, the principle of which was first used by Basch[8] and later modified by Riva-Rocci,[9] by Erlanger[10] and others. These mobile manometers, or maximal and minimal valved manometers, permit a more accurate determination of the maximal and the minimal blood-pressures; but they do not give a direct graphic picture of the changes in the blood-pressure in terms of mercury pressure. The sphygmomanometer has the advantage that it can be used on man or the intact animal; but it does not give a direct graphic picture of the blood-pressure.

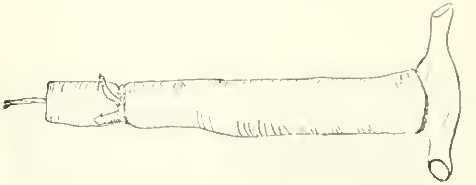


Fig. 1.—Sketch of T-shaped cannula with a piece of rubber tubing attached to side arm which is closed by a paraffined cotton plug which has a string attached for a handle by which the plug may be withdrawn. When used the cannula is interposed between the ends of a transected artery restoring the circulation through the artery, and the wound is closed leaving the side arm protruding through the skin. After the recovery of the animal from the anesthetic, the blood-pressure is studied by removing the ligature from around the distal end of the rubber tubing, then withdrawing the cotton plug by means of the string handle, and then quickly connecting the side arm with the manometer and pressure bottle.

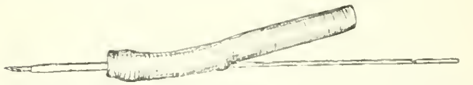


Fig. 2.—Trocar cannula for taking blood pressure tracings from an unanesthetized animal. The sketch shows the obturator in place ready for insertion into the artery. The operator can tell when the point of the trocar has been successfully thrust into the lumen of the vessel by the blood dripping from the side-hole shown near the blunt end of the obturator. When the trocar has been properly inserted the obturator is entirely withdrawn and the blood pressure taken with a mercury manometer which, with the pressure bottle, is already in connection with the rubber tube shown in the sketch.

From this sketch it would appear that, while the mercury manometer furnishes the best graphic record showing blood-pressure changes directly in terms of mercury pressure, yet it does not give a true measure of the maximal or the minimal pressures, and it also is used while the animal is under a general anesthetic. On the other hand, while the other methods may furnish a more accurate measure of the maximal or minimal pressures, and some of them may be used on man or the intact unanesthetized animal, yet they fail to give a direct graphic record of the blood-pressure changes in terms of mercury pressure.

---

[1] Dixon, W. E.: The Action of Alcohol on the Circulation, Jour. Physiol., 1907, xxxv, 346.

[2] François-Franck: Leçons sur les fonctions motrices du cerveau. Paris, 1887, p. 167.

[3] Hales, Stephen: Statical Essays: Containing Hemostatics; or an Account of Some Hydraulic and Hydrostatical Experiments Made on the Blood and Blood-Vessels of Animals, London, 1732.

[4] Poisseuille, L. L.: Recherches sur la force du cœur aortique, Thèse, Paris, 1828, p. 23.

[5] Ludwig, C. C.: Beiträge zur Kenntniss des Einflusses der Respirations-Bewegungen auf den Blutlauf im Aortensysteme, Arch. f. Anat. Physiol. u. wissensch. Med., 1847, p. 242.

[6] Fick: Arch. f. d. ges. Physiol., 1883, xxx, 597.

[7] Hürthle: Arch. f. d. ges. Physiol., 1888, xliii, 426.

[8] von Basch, S.: Centralbl. f. Physiol., 1896, x, 330.

[9] Riva Rocci: Un nuovo sfigmomanometro, Gazz. med. di Torino, 1896, No. 50, p. 51.

[10] Erlanger, Joseph: A New Instrument for Determining Systolic and Diastolic Blood Pressure in Man, Am. Jour. Physiol., 1902, VI, xxii.

METHODS

Therefore it seems that there is still great need of, first, a practical method of connecting the manometer with the blood-vessel without pain to the animal, and therefore without the need of an anesthetic; and, second, a manometer that will record faithfully and graphically in terms of mercury pressure all the quick, minute changes in the blood-pressure. My methods are designed to meet as far as possible the first need.

Three slightly different methods have been employed. As these have been described in a separate article,[11] only brief mention of them is necessary. One method was to insert a thin-walled glass T-shaped cannula (Fig. 1) between the ends of the cut carotid artery, restoring the continuity of the vessel but bringing the side arm, which was closed with a paraffined cotton plug, out to the surface of the skin of the neck. After the recovery of the animal from the anesthetic the cotton plug was withdrawn from the side arm and connection made with the pressure bottle and mercury manometer.

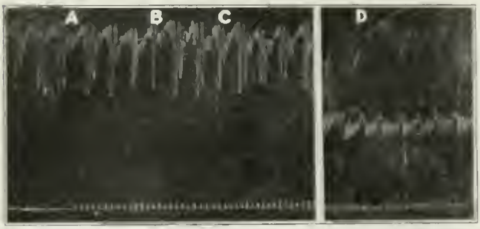


Fig. 3. Tracing showing the effect of alcohol on general blood-pressure when administered by gastric fistula to the unanesthetized animal: A, normal; B, administration; C, immediately following, and D, eighteen minutes after administration.

Another method consisted in the isolation and preparation of the artery and closing the wound, leaving about 3 inches of the artery brought up close under the skin. After recovery from the anesthetic an ordinary glass three-way cannula was inserted without any anesthetic, although cocain may be used locally if desired.

The third method involved the use of a trocar cannula. Bardier[12] has invented a trocar cannula, but his instrument is not suitable for use on the intact animal. My trocar cannula (Fig. 2) is made of steel and consists of a fine, short, hollow needle arranged with an inner needle or obturator. This obturator has a capillary lengthwise hole running from its point back to the other end. This trocar is attached by a rubber tube to the manometer and pressure bottle as in ordinary blood-pressure tracings. In taking an observation the trocar, with the obturator in place, is thrust quickly into the lumen of the artery. The operator can tell when the point of the trocar is within the vessel by the blood dripping from the capillary hole from the free end of the obturator. When all is ready the obturator is entirely withdrawn and the blood-pressure tracing taken in the usual way on a kymograph. With this cannula, if the narrowness of the needle necessary to use causes clotting to occur, one can withdraw the trocar and remove the clot.

On several successive days I succeeded in taking the manometric blood-pressure tracings. There was no clotting the next day, unless, of course, the arteries were roughly handled or stretched. Sometimes, even in that case, it was possible to remove the clot and secure a successful tracing.

RESULTS

In the application of these blood-pressure methods to the study of alcohol, three different modes of administration were adopted. The first mode was to introduce the alcohol directly into the stomach through a gastric fistula. This fistula was made (under anesthesia) by inserting a piece of small rubber tubing through the abdominal wall into the cavity of the stomach, sewing it in position, and allowing time for it to heal. In general, no distinct increase in blood-pressure or heart-rate followed the administration of alcohol in this manner, even when large doses of 50 or 60 per cent. alcohol were used; there was no apparent reflex stimulation of the heart or vasomotors. But after about fifteen minutes there began a very gradual decrease in blood-pressure, with decreased amplitude and increased rate in heart-beat (Fig. 3). This continued progressively for an hour or more, after which time the animal, when placed on the floor, staggered and rolled, being deeply intoxicated.

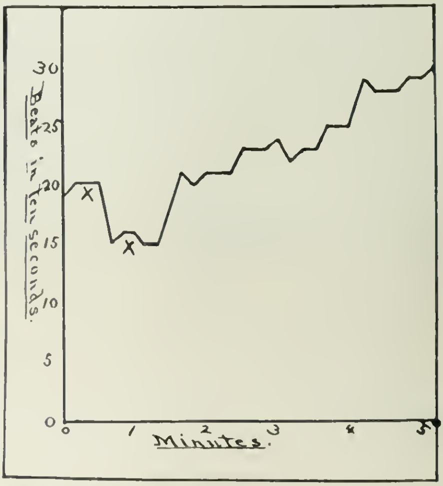


Fig. 4.—Curve showing the effect of intravenous injection of alcohol on the heart rate of an unanesthetized dog. Between the two crosses, 10 c.c. of 25 per cent. alcohol injected slowly into ear vein.

The second mode of administration was to inject the alcohol with a hypodermic syringe directly into an ear vein or into a saphenous vein. Although various doses of different dilutions of alcohol were thus administered, yet in no case was there observed any distinct rise in blood-pressure. If the dose was large enough to show a distinct action, the result was a decrease in blood-pressure followed by rapid recovery. If a still larger dose was administered there was a prompt, sharp drop in blood pressure with the heart greatly slowed or almost completely stopped, but this was promptly followed by rapid recovery, if the dose was not too large (Fig. 1). After this there ensued the same gradual, progressive decrease in blood-pressure with decreased amplitude and increased rate of heart-beat described above.

---

[11] Brooks, Clyde: Heart, July, 1910, ii.

[12] Bardier, E.: Nouveau modèle de canule à pression artérielle, Compt. rend. Soc. de biol., 1897, xlix, 1025.

The third mode of administration consisted in pouring the alcohol into the mouth of the dog through a rubber tube introduced into one buccal cavity. When alcohol was administered in this way, there followed a sharp rise in blood-pressure with greatly increased amplitude of beat, while the rate remained almost constant or sometimes was slightly slowed. This rise gradually passed off in five or ten minutes, after which there came on the same gradual, progressive changes described above following alcohol by the other two modes of administration. But, in some instances, the very first effect was a quick drop in blood-pressure showing a tracing very similar to that of a vagus stimulation; this drop appeared to occur just when the dog gulped or gagged at the sudden introduction of the alcohol. Almost at once the pressure quickly rose again and passed on up above the normal giving the rise just described, which occurred in every case when alcohol was administered by mouth (Fig. 5).

SUMMARY

This report concerns a series of manometric blood-pressure tracings showing the effect of alcohol on an animal not under the influence of any anesthetic. The alcohol was administered by three different modes, namely, by mouth, by intravenous injection, and by gastric fistula.

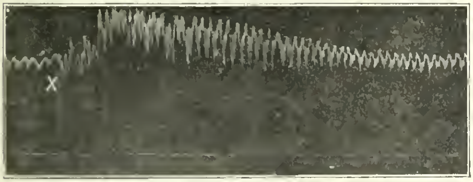


Fig. 5.—Tracing showing the primary effect of alcohol on the general blood-pressure when administered to the normal unanesthetized animal by mouth. At X 10 c.c. 50 per cent. alcohol swallowed.

The primary action of alcohol varies according to the mode of administration: By mouth it causes a marked rise in blood-pressure with increased amplitude and a constant, or slightly slowed rhythm of heart-beat. This rise gradually passes off in five or ten minutes. In some instances, at the time of pouring the alcohol into the dog's throat and just preceding the rise mentioned, there is a sudden drop and almost immediate recovery of blood-pressure. When administered intravenously, alcohol causes a sharp drop in blood-pressure during which the heart is greatly slowed or almost stopped; but very soon, unless the dose is too large, there follows a rapid recovery. By gastric fistula there is no specific primary action.

By whatever method administered, alcohol, when circulating in the blood-stream, causes a gradual, progressive lowering of blood-pressure with decrease in amplitude but increase in rate of heart-beat. This I regard as the true pharmacologic action of alcohol on the blood pressure of the intact unanesthetized animal.

It is a pleasure to express my thanks to Prof. Samuel A. Matthews for his counsel, criticism, and assistance throughout the progress of the work.

REPORT OF THE COMMITTEE ON COLLECTIVE INVESTIGATION CONCERNING THE OCULAR MUSCLES*

LUCIEN HOWE, M.D.
BUFFALO, N. Y.
HOWARD F. HANSELL, M.D.
AND
THEODORE B. SCHNEIDEMANN, M.D.
PHILADELPHIA

Last year this Committee made only a preliminary report, the substance of which was that considering the clinical importance of the subject, the confusion of our data concerning it, and the necessity of a thorough acquaintance with anatomy and physiology as a basis of clinical work, it was deemed advisable to devote at least a year or two to questions which still remain unsolved concerning the anatomy and physiology of the ocular muscles.

We agreed to call a pair of eyes normal when the vision of each was = 6/6 or better, when the manifest ametropia did not exceed 0.75, and the owners of the eyes never had suffered from any asthenopic symptoms. In asking for studies on the muscles of such eyes, we were careful to avoid theories, to ask only for demonstrations which could be seen or photographed if desired, or for results which could be expressed in figures.

The first step was to arrange these questions into groups, each one having divisions and subdivisions, for different members or groups of members, of the Section. Moreover, it seemed desirable, when possible, to have the results verified or corrected by one or two working independently.

It was easy enough to decide on this general plan, the advantages of which were self-evident; but it proved quite a different matter, as was expected, to find proper men ready to engage in what was practically laboratory experiment. At the outset, over eighty members of the Section expressed a willingness to join in the study of the muscles. In the preliminary report last year it was predicted that this number would be much reduced, when careful investigating demanded time and patience of men already deep in clinical work. That prophecy has been gradually fulfilled.

Although the number now engaged in the inquiry has been reduced to less than twenty, the central Committee is still firm in its conviction of the necessity of first settling certain moot points of anatomy and physiology of the ocular muscles in order to agree, so far as possible, on definitions and methods, before attempting to study any abnormal conditions. Besides reporting thus the number now interested in this subject, reference should be made to the fact that they were selected, as far as possible, from among the more progressive or from the younger men. There are, however, differences in their apparent qualifications. Some men have been well known as careful observers; although also busy with large private or hospital practice they have so systematized their days as to find leisure for exact investigation. Others are young, or are strangers to our Section. They are all welcome; only it should be understood that the central Committee cannot hold itself responsible for results given by individuals.

In a report of this kind the Committee can only summarize briefly the findings which have been communicated to them, adding any new evidence which may be available.

In presenting this report it seems advisable to begin with questions of anatomy, and to pass from the simpler to the more complicated problems of the physiology of the muscles.

THE CHECK LIGAMENTS

A subject of much interest to the anatomist and of importance clinically, is the extent and character of the so-called check ligaments.

Even the earlier anatomists saw, from the margins of the orbit, a sort of curtain of connective tissue (the septum orbitale extending toward the globe. Or as the globe projected partly through this curtain near its center, the connective tissue which passed from the edges of the orbit toward the globe was particularly firm and thick over the insertions of the four recti muscles. These thickened portions, as we know, have been re-described of late years under the name of "the check ligaments" (Fig. 1). The fibers of connective tissue extending over the flat surfaces of the muscles and from their edges have been called "the secondary insertions."

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Now, although each of these thickened portions of the connective tissue curtain starts from the orbital edge, it does not always have clearly defined limits when extending toward the outer sheath of the four recti muscles, especially not where it merges gradually into the thinner regions or interspaces of this septum orbitale. The different limits, or the form and function thus assigned by different anatomists to these bands, have confused our ideas and given rise to contradictory theories for operative procedure.

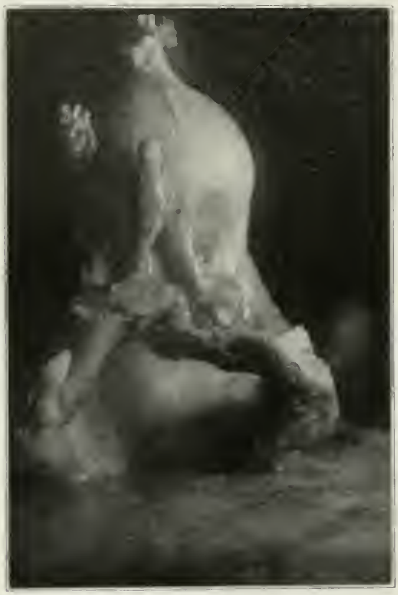


Fig. 1.—Septum orbitale stretched by drawing globe upward. Dissection by Dr. Lucien Howe.

Several dissections made by Dr. A. C. Durand, instructor in anatomy at Cornell University, Ithaca, N. Y., and by Dr. Lucien Howe of Buffalo, together with some photographs of dissections, are submitted to the Section with this report. A detailed description of these preparations might form a short monograph and may be published later.

From these dissections we may conclude:

(a) We should limit the term "check ligament" to that thickened portion of the septum orbitale which extends from the orbit to the globe, which is about as wide as the muscle which lies beneath it, and which is limited anteriorly by the conjunctiva and posteriorly by the connective tissue fibers covering the muscle and adjacent orbital tissue.

(b) The check ligaments, especially those over the lateral recti, do distinctly check abnormal action of the corresponding muscles. They do not check, however, any of the physiologic motions of the globe.

INSERTION OF RECTI MUSCLES

A second anatomic question concerning which we need more exhaustive evidence is the nature of the insertion of the recti muscles into the globe.

The earlier anatomists, and many of the text-books, still describe these muscles as attached to the globe by a single ordinary tendon. But more than thirty years ago Merkel and Kallius showed that as these muscles approach the globe their tendons give off fibrous bands at each edge, and also from the orbital and ocular surfaces of the tendon. These supporting fibers at the edges of the muscles, Merkel called the ***adminiculum tendinis***, or more recently these connective tissue fibers have been called the "secondary insertions" of the muscles into the globe. The presence and importance of these were shown in an extensive monograph on the subject by Hans Virchow, and in the first volume of a work on the muscles by the chairman of this Committee photographs and more detailed description were given of these secondary insertions. Such evidence left no doubt as to their existence, but as the number of dissections so far made was small, and as the relation of these secondary insertions to operations for tenotomy is evidently so important, it seemed desirable to obtain additional evidence as to the variations which might occur among them. The dissections presented herewith by Drs. Durand and Howe, together with stained sections of the globe and of the muscles, and also the photographs (Figs. 2, 3 and 4) show not only the existence of these secondary insertions, but indicate their evident importance in any operation for tenotomy. Their clinical importance has been tacitly recognized by every one. In making a tenotomy, for example, of the internal rectus, it happens frequently that after the tendon only has been entirely divided, if the eye is cleaned and the patient is asked to look at a distant object, the globe seems to remain in the same position as it was before the operation, being still held by the undivided secondary fibers. But if the surgeon then extends the incision only a few millimeters further, dividing thus the secondary insertions, or even separates them with a hook, a "complete" tenotomy is thus made, and the globe swings outward, perhaps even further than desired. It is evident, therefore, that we should obtain as many data as possible concerning these secondary insertions, not only in the normal condition, but later in connection with the pathologic anatomy of heterotropia.

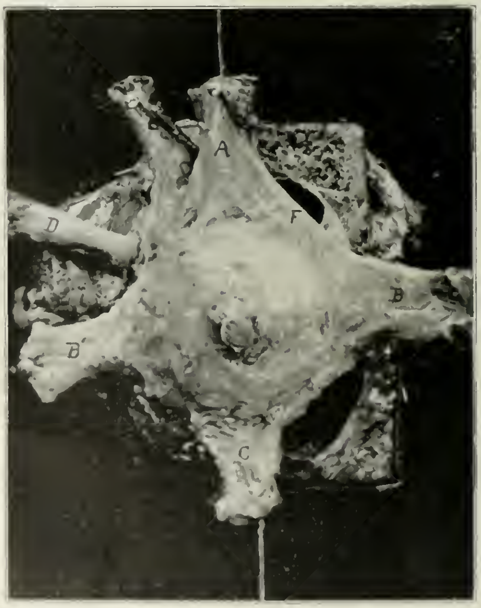


Fig. 2.—Capsule of Tenon and ocular muscles; posterior view. A, superior rectus; B, external rectus; C, inferior rectus; D', internal rectus; D, superior oblique; E, levator palpebrae; F, fold of capsule between A and B. Dissection by Dr. A. C. Durand.

THE OPHTHALMIC GANGLION

A third anatomic point to which attention has been directed was the ophthalmic ganglion. As the number of afferent and efferent branches are variously described and figured in different anatomies, and as this ganglion undoubtedly bears an important relation to accommodation, it seemed desirable to begin at least to classify our knowledge concerning it. Therefore a series of dissections of this ganglion has been made during the past year by Drs. C. E. G. Shannon and John F. Little of Philadelphia, and also one dissection by Dr. A. C. Durand of Ithaca, N. Y. These specimens are also submitted, and a photograph by the latter (Fig. 5). But it is necessary to state that as yet no definite conclusions can be reached concerning the number and arrangement of the branches which go to or from the ganglion. Much less is it possible to make a statement concerning their function.

One or two other studies of the anatomy of the muscles have been commenced, but they are not yet ready for even a preliminary demonstration.

Passing from the anatomy to the physiology of the muscles, it seemed to the central Committee that inasmuch as most functions of the extraocular muscles are dependent on the condition of the intraocular muscles—on what we may call in general the ciliary muscle—it was advisable to study that first.

POWER OF ACCOMMODATION WITH PARALLEL VISUAL AXES

One of the first questions presented related to the power of accommodation with parallel visual axes. Although Donders, Landolt, Hess and others have already described the curves or lines which represent graphically the positive and negative parts of relative accommodation, we have comparatively few data as to the strength of the accommodation when the visual axes are in the primary position. This can be ascertained, of course, by successive trials, until the strongest minus glasses are found which can be overcome, the vision still remaining equal to 6/6.

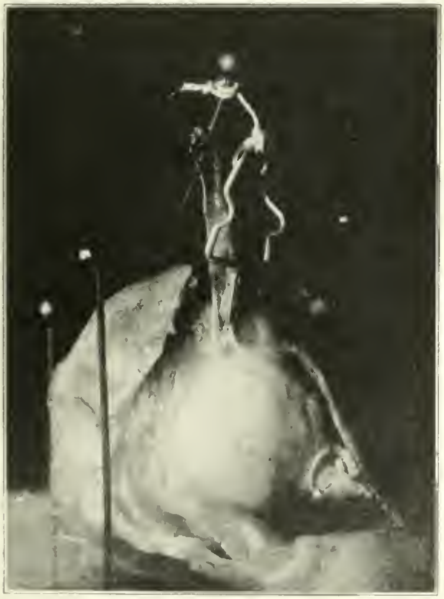


Fig. 3.—Ocular surface of the internal rectus muscle, showing the connective tissue fibers which form the ocular secondary insertion. Dissection by Dr. Lucien Howe.

We have long known, in a general way, that most emmetropes could overcome in this way a pair of −3. diopter glasses. That is to say, we have considered that the latent accommodation with parallel visual axes was equal to about three diopters.

But only during the last few years has any statement been made as to the gradual decrease which takes place in the power of accommodation in normal eyes as age advances.

In order to determine this, Dr. H. W. Cowper, now of Buffalo, N. Y., formerly assistant surgeon in the U. S. Army, made tests of the eyes of twenty-two soldiers of the Twenty-ninth Infantry then stationed at Fort Porter. These men were of rather unusually strong and athletic types. In none did the hypermetropia exceed 0.75, but the ages varied from 21 to 35.[1]

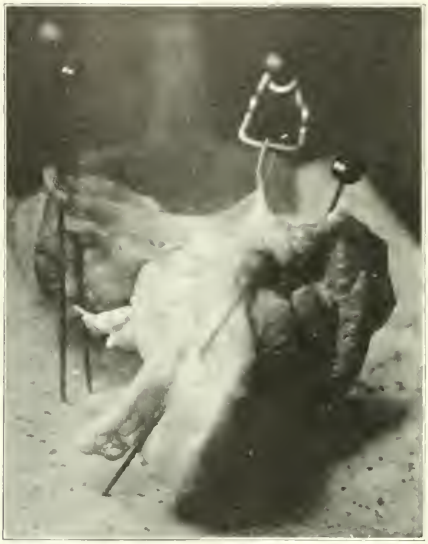


Fig. 4.—The median (nasal) surface of the internal rectus. The connective tissue fibers forming the median secondary insertions of these muscles are here lifted on the forceps. Dissection by Dr. Lucien Howe.

The results in this small number seem to show that from 21 to 25 years of age we can usually count on about 3.5 diopters of accommodation which can be exerted when the visual axes are in the primary position. But this amount of accommodation gradually decreases with the increase in years, as might naturally be expected.

This observation on even a few subjects is more far-reaching than might at first appear. Clinicians agree generally that one of the most important and also one of the most difficult questions to be solved in the treatment of ametropia is whether the power of accommodation in a given individual is normal, whether it is excessive (spasm of accommodation), or whether that power is insufficient (paresis of accommodation). It assists us greatly, therefore, to know that in early life—up to 20 or 25—an emmetrope should overcome minus glasses of about 3.50 diopters. This corroborates some statements which have been published within the past few years, and so far as it goes furnishes further physiologic basis for clinical work.

ACTION OF CYCLOPLEGICS

Another fundamental question in connection with the power of accommodation is to what extent we can agree concerning the action of cycloplegics and myotics which are in constant use clinically. This is evidently nothing more than the critical examination of some of the tools with which our work is done. Comparatively few studies have been made of the action of drugs on the ciliary muscles. Perhaps the most recent and complete are those given by Lewin and Guillary in their classic "Die Wirkungen von Arzneimitteln und Giften auf das Auge." In that we have a verification of former observations concerning the action of atropin and homatropin, and several other cycloplegics and myotics.

---

[1] Acknowledgment should here be made to Capt. W. R. Davis, assistant surgeon U. S. A., now at Fort Porter, Buffalo. Capt. Davis rendered valuable assistance to members of the subcommittee, by interesting soldiers to give time to tests of the condition of their refraction, muscle balance, power of accommodation, of torsion, and of other conditions of normal eyes.

But still there were desiderata in the form of corroborative observations on moot points. Especially it was desirable to ascertain the different effects, if any, of different doses of the same drug. In doing this, it was evident that the usual method of instilling drops into the conjunctival sac was inexact, for the reason that solutions easily deteriorate, that drops are of unequal size and the amount which remains on the conjunctiva varies greatly. Therefore for the experiments, our committee sent out previously tested discs, and a description of the method to be followed, with the test types to be used—in other words, the plan adopted was as nearly uniform as possible. In order to make sure that the discs used contained practically the amount of the drug stated by the manufacturers, analyses were first made of all except one lot of the discs distributed. For the care taken in making these analyses, or in having them made, acknowledgment and the thanks of the committee should here be expressed to Dr. H. C. Wood, Jr., of Philadelphia, and Dr. H. L. Begle of Detroit, Mich. It was gratifying to know that the discs manufactured by at least three of the largest firms do contain apparently the percentage of the different drugs as marked on the packages which were purchased by the committee in open market. It should be added that care was taken not to prejudice the mind of any observer. The name was given of the discs sent but not of the strength.

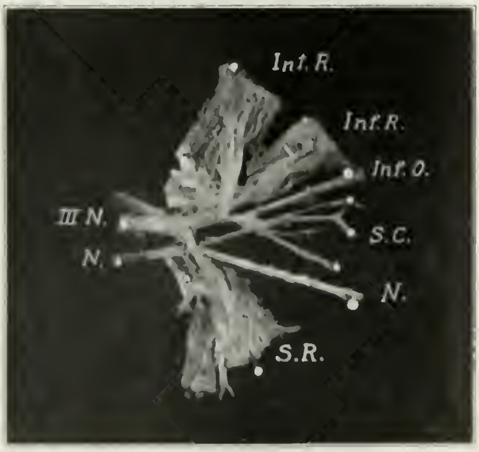


Fig. 5.—View of the ciliary ganglion. External rectus covered with black paper. Dissection by Dr. A. C. Durand.

The results of these studies of the action of different drugs can be referred to in this report only with the utmost brevity. It should be repeated, however, that each observer is at liberty to publish his own results elsewhere, if desired, and some members will undoubtedly do this. The results are arranged as follows:

Cocain.—Although we use this substance so constantly, and although it is ordinarily regarded simply as a mydriatic, exact measurements seem to show that it also produces a slight but real effect on the accommodation. This is indicated by the experiments made by Drs. F. W. Marlow of Syracuse, N. Y., C. A. Sulzer of Columbus, Ohio, and H. H. Martin of Savannah, Ga. They each used tablets containing 1/25 grain (0.0026 gram). Dr. Marlow found the following results:

(a) In a man of 26, after 10 minutes the accommodation had begun to relax. It reached 3 diopters after 30 minutes, continued so for 70 minutes, and the effects then gradually disappeared. Meanwhile, the pupil had dilated from 3 to 7 millimeters after 20 minutes. The pupil then gradually contracted, and at the end of 110 minutes had almost regained its original size.

(b) In a man of 23 the same amount of cocain produced 1 1/2 diopter of relaxation after 50 minutes. The subject was able to overcome the relaxation only in part when he made special effort, and the cycloplegic effect had disappeared after an hour. Meanwhile the pupil had enlarged from 3.5 to 6 millimeters after 50 minutes, and remained large the rest of the day.

(c) In another man of 24 there was a relaxation of accommodation of 1 1/2 diopters after 60 minutes, with a return to the original condition after 90 minutes. Meanwhile the pupil, after 25 minutes, had dilated from 3 to 7 millimeters, and remained 5.5 millimeters in diameter after 110 minutes.

(d) In a boy of 18, 20 minutes after the application the accommodation had relaxed 2 diopters. It remained at practically that point for about 90 minutes, and then gradually reached the original condition. Meanwhile, after 20 minutes the pupil had dilated from 3 to 6 millimeters, and continued at almost that point after 120 minutes.

Dr. Sulzer found:

(a) In a girl of 17, half an hour after the application the accommodation was relaxed 1 1/2 diopters. That continued for about 30 minutes. At the end of 70 minutes the accommodation had returned to the original condition.

(b) In a woman of 25, at the end of 25 minutes a relaxation of 4 diopters occurred. This gradually decreased, until it had entirely disappeared at the end of 70 minutes. In both cases the changes in the pupil accorded practically with the changes in the accommodation.

Dr. Martin found, in a subject of 18 years, that within 30 minutes the accommodation had relaxed 2 diopters, and continued at that point for 140 minutes. Meanwhile the pupil dilated from 2 to 4 millimeters, and continued that size during that time.

These experiments seem to warrant the space here devoted to them. For they indicate that in spite of the general opinion to the contrary, this drug has a real cycloplegic, as well as its well known mydriatic action. Of course, this cycloplegic action must be taken into account whenever tests of the refraction are made after its use. Moreover, attention should be called, incidentally, to the important fact that cocain is contraindicated when there is any tendency to increased tension.

Homatropin.—Although we are all accustomed to use this drug so constantly, few accurate observations have so far been made concerning its effect. Fortunately, one member of the Section, Dr. R. L. Crockett of Oneida, N. Y., has taken considerable interest in this question, and sent to the committee the curves produced by his application of 1/50 grain (0.0013 gram) of homatropin to one eye of 4 individuals, and to both eyes of 3 other individuals, making 10 observations altogether. These apparently have been worked out with much exactness. Without going into details, it may be said that this amount of homatropin produced an effect on the accommodation not unlike that of atropin. This effect was not apparent, except in one individual, within the first 10 minutes after the application, but at the end of 15 minutes the accommodation had begun to relax decidedly, and this continued in an almost constant ratio until the end of 35 minutes. In most of the cases there remained at that time only about 1 or 1 1/2 diopter of accommodation available, and by the end of from 45 to 60 minutes complete cycloplegia resulted. Unfortunately, no data were given as to the rapidity with which the effect disappeared, and it still remains for some one to establish that curve. The practical fact is that the evidence thus far at our command seems to indicate that a disc of homatropin of that strength is sufficient for all practical purposes unless some spasm of accommodation is present.

Eserin.—Through the careful observations of Donders, we have long known the effect of a moderate dose of calabar bean on the ciliary muscle. But as the pathologic conditions which we term insufficient accommodation and as excessive accommodation are determined in part by the behavior of the ciliary muscle after the application of a given quantity of eserin to the conjunctiva, it seemed desirable to ascertain whether a relatively large or a small amount of this drug produced curves which differed materially from the curves given by Donders.

For this purpose, Dr. H. H. Martin of Savannah applied eserin in varying strengths to the eyes of a young man of 18. Without giving the details of these observations it would seem that the effect of the 1/1000 of a grain was more marked than the one of 1/2000, and both of these in turn were more marked and lasted a longer time than did the 1/10000 of a grain. The bearing of this, as already stated, is probably of some importance in connection with the diagnosis of insufficient or excessive accommodation.

NORMAL POSITION OF VISUAL AXES

Passing from the ciliary muscle and the effect of drugs on it to the extraocular muscles, it seemed desirable to our Committee to obtain a few more data concerning the normal position of the visual axes when a pair of eyes is at rest and fixed on a distant object directly in front and in the horizontal plane. This is, of course, a re-examination of the measurements made by Bannister on soldiers, and later by the chairman of this committee on soldiers alone, or by him with Dr. C. H. Williams of Boston on other normal eyes. Accordingly a plan was suggested by the Committee in which the tests would be as nearly uniform as possible.

We have reports on this point from Dr. M. V. Ball of Warren, Pa., who examined 38 pairs of normal eyes; from Dr. H. W. Cowper of Buffalo, who examined 22, from Dr. H. C. Parker of Indianapolis, who examined 13, and from Dr. Oscar Wilkinson of Washington, D. C., who examined 4. The details of these examinations would furnish data for a long paper, and are well worthy of publication. It is especially interesting to observe that certain forms of heterophoria can exist in normal eyes in quite a high degree without giving rise to headaches or other symptoms. But, on the other hand, it would seem that when the muscular tone of the individual, as shown by several tests, is sufficient to overcome the heterophoria, then the complaints of the individual are apparently proportionately lessened. Here it is impossible to refer to such details; we can only state briefly that while orthophoria is found to exist in a decided majority of cases (55 per cent. of normal eyes) a well-marked esotropia is often present (32 per cent.), and occasionally exophoria (4 per cent.). The vertical phorias are by no means uncommon (7 per cent.) either alone or combined with some forms of the lateral phorias.

MINIMUM AND MAXIMUM DUCTION, ESPECIALLY OF THE LATERAL MUSCLES

This means the results obtained by use of prisms according to different methods.

It was found some time ago that in testing for diplopia, if we begin with prisms strong enough to produce the double images and pass from these strong prisms to those which are weaker, and allow a certain time to elapse between the application of one prism and the next, or if we select prisms from the case, or use prisms in series which also necessitate each time a distinct change in the muscular adjustments, we reach a certain point in the strength of the prism just sufficient to produce the double vision. The limit obtained by this method has been called "minimum duction." For adduction, it has been found by such tests to be about 6 or 8 degrees, and for abduction from about 4 to 6 degrees. These results in normal eyes seem to be fairly constant.

On the contrary, if we begin with prisms which are not strong enough to produce double vision, and pass gradually to stronger prisms, *not* allowing a certain time to elapse between the application of one prism and the next (as can be done best if we use the revolving prism of Crete or of Risley), it has been found that the results obtained by this method are quite different from those obtained by the other method. This result has been called the "maximum duction." Thus adduction can often be carried up slowly with the revolving prism to 10, 15 degrees or more, and abduction to 8, 10 degrees or more. It is by no means so constant as the minimum duction, varying considerably not only in different individuals, but in the same individual at different times.

Until recently the possibility of obtaining different results by using different methods was quite overlooked, and the consequence was that the utmost confusion prevailed in methods, and therefore in results.

But at the meeting of this Section in 1906 a resolution was adopted by which we agreed when testing to pass from stronger to weaker prisms—that is, to obtain the minimum duction, or if not thus tested, to state the method used. During the past year, several studies have been made to verify and prove the necessity of this action by the Section. These studies were made by Dr. Frank A. Morrison of Indianapolis, Ind. (25 persons), by Dr. J. W. Scales of Pine Bluff, Ark. (15 persons), and by Drs. H. C. Cowper and F. J. Barrett of Buffalo, N. Y. (together, 22 persons). The results of these examinations, like those of the preceding groups, are well worthy of special consideration. Doubtless some of the details of this group of examinations will be published separately. In this report, however, it is only possible to make a brief statement.

(*a*) When we make tests with prisms, beginning with those which are strong enough to produce diplopia and reduce the strength gradually, we find almost invariably that the resulting minimum duction is less than when we begin with weak prisms and pass gradually to those which are stronger.

(*b*) If we gradually increase the strength of the prism, thus exercising a certain group of muscles in a pair of normal eyes, it is almost always possible to educate, as it were, that group of muscles to overcome those prisms. This indicates, so far as such limited data can, that so-called "latent" convergence, divergence, etc., are not always pathologic conditions, if they are at all, but are rather the results of increased strength produced by the exercise with prisms.

The committee desires to call special attention to the fact that several other studies of the physiology of the muscles have been made, but that it is impossible to make any reference to them at present. This is because some of the communications are too incomplete, or because they deal rather with theories than with "demonstrations which can be seen and photographed if desired or with results of measurements which can be expressed in figures." Moreover, a portion of the data must be reserved for another year simply for lack of space, as this report is already much longer than the committee considers usually desirable.

SUMMARY OF THESE OBSERVATIONS

The results obtained by this study of the anatomy and physiology of the ocular muscles can be summarized briefly as follows. We have:

First.—Corroborative evidence concerning the check ligaments, sufficient to warrant a definition of their extent.

Second.—Corroborative evidence of the existence and extent of the secondary insertions of the ocular muscles. All will probably now agree as to their clinical importance.

Third.—A few more exact dissections of the ciliary ganglion.

Passing next to physiology we have:

Fourth.—Corroborative evidence as to the power of accommodation with parallel visual axes.

Fifth.—New curves of the effects of cocain showing the important fact that it has a cycloplegic action.

Sixth.—A curve for the action of homatropin, 1/50 of a grain.

Seventh.—Curves indicating that various strengths of eserin produce varying curves, showing its effect on the accommodation.

Eighth.—Corroborative evidence that orthophoria for the far point exists only in a small majority of cases.

Ninth.—There is a difference between minimum and maximum duction, the former being quite constant, the latter not ordinarily constant.

Although these data are not numerous they indicate that perhaps a little has been done to give us rather more exact definitions concerning one or two essential points. They also add a few corroborative facts as to some points about which we needed additional light.

RECOMMENDATIONS OF THE COMMITTEE

For next year the recommendations of this committee are as follows:

1. The studies of the anatomy and physiology of the muscles already begun should be continued.

2. If other members of the Section become interested in these questions of anatomy or physiology, their cooperation should be enlisted.

3. As a large number of members of our Section who originally signified their willingness to cooperate in this work temporarily withdrew from it because they could devote themselves only to questions of pathology, as we are now ready to begin with the more fundamental problems of that kind, and as anomalies of accommodation often exert an important influence on the extraocular muscles, especially those involved in convergence, this committee would also recommend that members of the Section who care to study the muscles should turn their attention during the next year to pathologic conditions of the ciliary muscle.

In doing this the principal points would be to ascertain:

1. What are the most reliable methods for measuring the degree of excessive accommodation (spasm)?

(*a*) Is there present actual excessive accommodation—that is, excessive accommodation in eyes with practically normal refraction? Or

(*b*) Relative excessive accommodation—that is, a normal accommodation with abnormal refraction, especially myopia and myopic astigmatism, or some degree of hypermetropia or hypermetropic astigmatism?

(*c*) What curve represents the range of accommodation when this range is plotted on a system of coordinates?

(*d*) How is this curve changed by a weak dose of atropin, for example, 0.00001 gram (1/5000 grain)?

(*h*) What are the subjective symptoms—especially, is the headache frontal, in the vertex, in the occiput, or does the pain extend to the shoulders?

(*i*) What other or better methods are there for measuring excessive accommodation, or what other symptoms are there to indicate its presence?

(*e*) How is this curve changed by a weak solution of eserin, for example, 0.00001 gram?

(*f*) What is the static and dynamic condition of the extraocular muscles, and especially what curve or line represents the relative convergence in each such case?

(*g*) Are there any characteristic vertical or horizontal wrinkles present in the forehead of the individual?

B. What are the most reliable methods for measuring the degree of insufficient accommodation (paresis)?

(*a*) Is there present actual insufficient accommodation—that is, insufficient accommodation in eyes with practically normal refraction? Or

(*b*) Relative insufficient accommodation—that is, normal accommodation with abnormal refraction, especially hypermetropia or hypermetropic astigmatism, or some degree of myopia or myopic astigmatism.

(Also give the remaining aspects of the condition, as above for excessive accommodation.)

C. The committee would also recommend that any member of the Section who cares to join in this part of the study give his address to the Chairman. Blanks would be sent on which the desired data could be properly entered, or, if members request it, suggestions will be made as to the bibliography of the different phases of the subject.

ABSTRACT OF DISCUSSION

Dr. G. C. Savage, Nashville: The report contains this statement in regard to duction: "For adduction it has been found by such tests to be about 6 or 8 degrees, and for abduction from about 4 to 6 degrees. These results in normal eyes seem to be fairly constant." I want to call attention to the fact that this is very much lower than the records made by any of the observers who have written on the subject, even a long time ago, and very much lower than would be justified by the results of many of us who have tested the duction power of these muscles. I understand that these figures have been reached by commencing with a very strong prism and coming down to a weaker one. If the result of that sort of investigation is to leave the understanding that adduction is so low and the difference between adduction and abduction so little, my judgment is that it would be misleading. If that plan has been resorted to for one year, why not resort to the other plan and begin with weak prisms and go up and see where we stand? My judgment is that the figures given are lower than the tests would justify if proper means are used. Of course, I can readily understand that the means used by these investigators brought this result.

Dr. Lucien Howe, Buffalo: We are very glad to have suggestions of any kind. The committee has no theories. It seeks only the facts.

THE OCULAR PALSIES ASSOCIATED WITH THE INDUCTION OF SPINAL ANESTHESIA BY VARIOUS SOLUTIONS

WITH A REPORT OF FIVE CASES *

WENDELL REBER, M.D.
PHILADELPHIA

Surgical anesthesia produced by lumbar puncture and injection of various local anesthetics (so-called spinal or lumbar anesthesia) is now not only a well-accredited procedure, but one of daily performance in many of the hospitals in the United States. Bier,[1] O. Förster,[2] and Jonnesco,[3] in Europe, and Wayne Babcock,[4] in this country, as well as many other writers, have pointed out the advantages and contraindications for the procedure. All these authors have alluded to some form of ocular palsy as one of the rare complications of this method of surgical anesthesia. I have, therefore, thought it wise to place on record five instances of such complications and to assemble such other recorded instances as have appeared in the literature.

There have been 2,000 lumbar anesthesias induced at the Samaritan Hospital in Philadelphia. Of this number, about 1,100 patients were anesthetized in the service of Dr. W. Wayne Babcock, surgeon to the hospital. About 400 were anesthetized in the service of Dr. William A. Steel, genito-urinary surgeon to the hospital, and 100 more in the service of Dr. Collier Martin, proctologist to the hospital, and Dr. J. C. Applegate, obstetrician to the hospital. Four of the reported cases of resulting palsy occurred in the department of general surgery and one in the department of proctology. This would make a proportion of one in 100 cases. Ach[5] observed four instances of ocular palsy in 400 instances of lumbar anesthesia, a proportion of exactly 1 in 100.

The five cases to be reported follow. They all occurred in the wards of the Samaritan Hospital:

Case 1.—B. A., male, aged 42, admitted to the surgical ward of the Samaritan Hospital, May 15, 1908, for an operation for hemorrhoids, was a Russian Jew in good general health. The anesthesia and operation were without incident. Twelve days after the operation the patient was referred to the ophthalmic out-patient department because of double vision. On examination it was found that the two external recti were involved about equally. Rotation 15 degrees from the median line either to the right or left produced homonymous diplopia. The eyes were otherwise normal anteriorly and the eyegrounds presented no anomalies whatever. The history was negative as to syphilis or any dyscrasia that might give rise to the palsy. Blood-pressure was found normal. The patient was treated with pilocarpin sweats and biniodid of mercury but there was only slight amelioration in the symptoms. He finally recovered so that he could carry either eye 25 degrees from the median line without seeing double. At this juncture he went to his home and has been entirely lost sight of. The palsy, which appeared twelve days after the spinal anesthesia, lasted at least four weeks and in all probability from six to eight weeks longer, judging from the slow progress made during the four weeks the patient remained under observation.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Bier: Ueber den jetzigen Stand der Rückenmarks Anesthesie, Verhandl. d. deutsch. Gesellsch. f. Chir., 1905.

[2] Förster, O.: Erfahrungen über Spinalanalgesie, Beitr. zur klinische Chir., [illegible]

[3] Jonnesco: Am. Jour. Surg., 1910.

[4] Babcock, W. Wayne: [illegible] 1910.

[5] Ach: München. med. Wchnschr., 1907, No. 13.

CASE 2.—J. E., a girl, aged 16, had received spinal anesthesia (6.5 cgm. of stovain solution), for appendectomy, July 26, 1909. October 28 she was referred to the out-patient department of the Samaritan Hospital because of headache, vertigo, and double vision. The latter symptoms she claimed to have suffered from for only four weeks, so that, according to her statement, the palsy did not appear until eight weeks after the operation, which is at least four weeks longer than any other case which I have found in the literature. She was found to have vision of 5/7 in the right eye and 5/9 in the left eye; the eyegrounds were normal in every way. There were no stigmata of hysteria that could be elicited. Both external recti were involved as in the previous case, the diplopia beginning about 10° temporalward from the median line. In view of the fact that the palsy seemed undoubtedly due to the spinal anesthetization alone, it was decided in this case to allow Nature to take its course. The object was, of course, to observe whether spontaneous resolution would occur and how long it would take. One month later the diplopia was not in evidence except at the extreme temporal periphery of both motor fields, but this condition still obtained 6 months after the operation.

CASE 3.—X. Y., male, aged 24, had received spinal anesthesia (6.5 cgm. of stovain in solution) for appendectomy. On the seventh day the patient began to complain of blurred vision and it was found that diplopia was present, the left externus being involved. The patient attributed his disturbance of vision to the fact that he had been reading almost all day during his convalescence. The palsy lasted about one week, but the patient states that for two weeks after the double vision had practically disappeared, he could bring on temporary diplopia by reading steadily for from two to three hours. The refractive status was low myopia and myopic astigmatism being:

R. — 1.00^{s} — 50 cyl. 45° = 5/5
L. — 1.00^{s} — 50 cyl. 135° = 5/5

There was no abnormality in either eyeground. Four weeks after the operation the patient was in very good health, the ocular rotations were smooth and complete in all merdians and the muscle balance absolutely normal.

CASE 4.—A private case in the practice of Dr. W. Wayne Babcock, occurred in an apparently healthy man, 40 years of age, in whom 6.5 cgm. of a 4 per cent. solution of tropacocain dissolved in 10 per cent. alcohol was used. Again it was the externus that was involved, this time only one being affected. The palsy appeared about ten days after the spinal anesthetization, and was of two weeks' duration.

CASE 5.—Miss M. D., aged 19, operated on Feb. 19, 1910, for appendicitis, had received 7 cgm. of stovain intraspinally. The patient did very well and recovery was interrupted by no untoward incident, but on the seventh day after operation she began to complain of double vision and it was found that she had concomitant squint. The left external rectus is palsied at the present writing (five days after the first observation) and that eye cannot be carried beyond the median line. The vision equals 5/7 in the right eye and 5/9 in the left eye. The patient's refraction status is: + 1.50 sph. 1.25 cylinder, axis 90° in both eyes. The accommodative near point is 7 inches in each eye; that is to say, that there are 5.5 diopters of accommodation present as against the normal 10 diopters the patient should have at 19 years of age. This completes the picture of cycloplegia and weakening of the externi as it is so often observed during post-diphtheritic palsies.

The cases recorded in the literature may be arranged in three groups, according as they show involvement of one abducens, both abducens, or the trochlearis and oculomotor in addition to the abducens.

GROUP 1: ONE ABDUCENS

Hermes[6] notes a case in which the abducens was involved.

In Deetz's case[7] one abducens became palsied thirteen days after stovainization.

Both of Rausscher's cases[8] showed but one abducens at fault after the use of scopolamin 0.06, morphin 0.08 (presumably generally) and stovain, intraspinally (dose not noted). In the one case the palsy ensued on the eighth day, in the other one on the thirteenth day. Both patients eventually recovered.

In one of the instances recorded by Loeser,[9] left abducens palsy made itself manifest twelve days after lumbar anesthesia for an operation for ovarian abscess in a 35-year-old married woman. The duration of the palsy was twelve days.

Blanluet and Caron's report,[10] concerns a 51-year-old man in whom the spinal anesthesia was induced for an operation for hemorrhoids. Seven minims of a 10 per cent. solution of stovain were used. Diplopia was first noted ten days after the operation, and there was still paresis of the left externus six weeks later at the time of the report.

One of Schmidt-Rimpler's[11] cases is peculiarly interesting in that a permanent concomitant convergent strabismus remained in the eye with the palsied muscle. The transition into concomitant squint was no doubt fostered by the presence of a very considerable hypermetropia with full visual acuity in both eyes. He puts on record another unilateral case[11] in which recovery occurred.

No such fortunate result is recorded in Adam's case[12] of a 33-year-old man on whom stovain was used for a hernia operation. Twenty days later left abducens palsy was in evidence and was quite as pronounced three months later when Adam reported the case. The final outcome is not known. He also records[13] unilateral palsies, one following the use of stovain in a 26-year-old man, the other following the use of novocain in a 27-year-old woman. Recovery ensued in both cases.

Schöler[14] has seen one case after stovain in which chloroform was later necessary to complete the operation, the right externus being involved.

Feilchenfeld,[15] too, has seen two cases of unilateral abducens palsy after stovain, one presenting palsy after four months.

In Vossius'[16] case, a 60-year-old woman (stovain), the palsy persisted after six months.

In Lang's case,[17] on the other hand, that of a 41-year-old man (novocain), recovery was prompt.

---

6. Hermes: Med. Klin., 1906.
7. Deetz: München. med. Wchnschr., 1906, No. 28.
8. Rausscher: München. med. Wchnschr., 1906.
9. Loeser: Med. Klin., 1906, No. 10.
10. Blanluet and Caron: Rec. d'ophth., December, 1906.
11. Schmidt-Rimpler: Klin. Monatsh. f. Augenh., July, 1907.
12. Adam: München. med. Wchnschr., 1906.
13. Adam: Deutsch. med. Wchnschr., 1906.
14. Schöler: Soc. d'ophth. de Berlin, 1906.
15. Feilchenfeld: Centralbl. f. prakt. Augenh., 1906.
16. Vossius: Med. Gesellsch. Giessen, 1906.
17. Lang: Deutsch. med. Wchnschr., 1906.

Scheppens[18] observed paralysis of the left abducens after intraspinal injection of cocain. It is asserted by this author that the left abducens is the one most frequently affected.

Muhsam[19] records two cases, one in a 26-year-old man in whom 15 cgm. of novocain had been used. Palsy of the right externus ensued and disappeared twenty-one days later. The other was a 27-year-old woman in whom novocain and adrenalin were used, but chloroform had to be added, as the anesthesia was imperfect. This patient also exhibited palsy of the right externus (four days after operation), which lasted twenty-two days.

To this list should be added Cases 3, 4 and 5 reported at the beginning of this paper.

GROUP II. BILATERAL CASES

Lang[20] puts on record an instance of bilateral abducens palsy as seen in a 61-year-old man in whom lumbar anesthesia was induced with novocain and adrenalin. The palsy appeared on the right side eleven days, on the left side thirty days after operation, and persisted at the time of the report of the case some months later.

Baisch[21] also has seen a bilateral case following the intraspinal use of alypin. The diplopia was of but five days' duration.

In Goetermann's case[22] tropacocain and adrenalin were used. Eight days later palsy of both abducens was noted, and is ascribed by the reporter to some toxic influence exerted on the nucleus.

Novocain and suprarenin were used in Landow's case.[23] Chloroform also had to be added to secure complete anesthesia. The ocular condition developed seven days after operation, and was accompanied by severe cephalalgia and pain in the cervical region. Recovery eventually ensued.

Ach's four cases[24] were encountered in 400 cases of spinal anesthesia.

To these cases should be added Cases 1 and 2, reported at the beginning of this paper.

GROUP III: CASES SHOWING INVOLVEMENT OF OTHER MUSCLES THAN THE ABDUCENS

Mingazzini[25] observed almost complete bilateral ophthalmoplegia externa in a youth of 16 thirteen days after spinal anesthesia for varicocele. To the oculomuscular condition was added paralysis of the velum palati, of the constrictor of the eyelids, of the muscles of mastication and finally sensitivo-sensorial hypesthesia on the left side. The muscles of the extremities were also weakened. This complexus of symptoms corresponds to pseudoparalytic myasthenia gravis, but it is also to be noted that the youth showed pronounced hereditary neurotic tendencies for more than a year before the spinal anesthesia was induced.

In Becker's case[26] there was palsy of the third nerve as well as of the abducens (incomplete unilateral ophthalmoplegia externa) eleven days after intraspinal use of 6 cgm. of stovain, the palsy being of four weeks' duration.

Loeser reports the only case so far on record of palsy of the superior oblique. It occurred twelve days after novocain had been used. Six months later recovery was complete.

Analysis of the table which brings together all the cases that could be found in the literature indicates the following points to be considered:

I. The alkaloid used.

II. The dose.

III. The muscle affected.

IV. The interval between the spinal anesthesia and the appearance of the palsy.

V. The duration of the palsy and the frequency of recovery.

VI. The pathogenesis of the condition.

VII. The frequency with which the surgeon may expect it to occur as a complication.

I. THE ALKALOID USED

A glance at the table will show that nearly every local anesthetic has been employed, stovain leading the list. In the order of frequency of use in this series they are as follows: stovain twenty-one times, novocain six times, tropacocain three times and cocain and alypin each once. In four cases it is not known what anesthetic was used. W. Wayne Babcock, in a private communication, informs me that he has also used eucain and cocain lactate. While some of the continental surgeons have claimed a certain selective affinity of some one of the agents named for certain of the nuclei governing the ocular muscles, there is nothing in the facts to support the contention.

II. THE DOSE EMPLOYED

Unfortunately this factor has not been sufficiently often set down in the literature to make it as yet of much value. Judging from the few instances in which the dose is stated, it would seem that continental surgeons are rather given to doses ranging from 10 to 15 cgm., while American surgeons lean toward smaller dosage, 5 to 7 cgm. being the amount usually introduced into the spinal canal. This may have something to do with the seemingly slighter frequency of ocular palsies as a complication of spinal analgesia as seen in this country; but this point will be alluded to later on.

III. THE MUSCLE OR MUSCLES INVOLVED

It is a noteworthy fact that of the thirty-six cases that have been brought together thirty-three showed involvement of the external recti alone. Two exhibited incomplete ophthalmoplegia externa and one presented fourth-nerve palsy.

IV. THE INTERVAL BETWEEN THE PRODUCTION OF THE SPINAL ANALGESIA AND THE ONSET OF THE PALSY

In the twenty-seven cases in which the time of onset of the palsy is noted, the average time of onset was ten days after the spinal analgesia was induced. In two cases the interval was but four days (Muhsam, novocain-analgesia, and Ach, stovain-analgesia) and in another five days (Loeser, novocain-analgesia) and in another six days (Vossius—no note as to which analgesia was used). Inasmuch as the great majority of the remaining operations reported were done under stovain, it would rather appear that novocain predisposes to earlier onset of the ocular palsies, when they do occur, than the other analgesic agents employed for this purpose. Over against this seeming argument stands the contradictory findings in Lang's case[20] in which 15 cgm. of novocain were used intraspinally and the palsy did not appear in the right eye until the eleventh day and in the left eye until the

---

18. Scheppens: Clin. Opht., Nov. 25, 1908.
19. Muhsam: Deutsch. med. Wchnschr., 1906.
20. Lang: Deutsch. med. Wchnschr., 1906.
21. Baisch: München. med. Wchnschr., 1906.
22. Goetermann: Berl. klin. Wchnschr., 1908, No. 28.
23. Landow: München. med. Wchnschr., July 24, 1908.
24. Ach: München. med. Wchnschr., [illegible]
25. Mingazzini: [illegible], March 15, 1908.
26. Becker: München. med. Wchnschr., 1906, No. 28.

thirtieth day! Whereas in Vossius' case, above referred to, but 8 cgm. of novocain were used with but four days' interval between the use of the anesthetic and the onset of the palsy. Plainly, some other factors must be at work. With these I shall deal when discussing the pathogenesis of these palsies.

V. THE DURATION OF THE PALSY AND FREQUENCY OF RECOVERY

There is much uncertainty about this phase of the matter. In twenty-six cases in which this datum is alluded to, five seem to have been transitory, as the duration was but from five to six days and the patient was very little if at all inconvenienced thereby. In one case eight days elapsed before single vision ensued, in another twelve and in three others twenty-one, twenty-two and twenty-three days, respectively. In one case recovery is noted after six months and in another after eight months; but in five at least the palsy seemed as fixed at the time of report of the case as it was at first.

In all, sixteen positive recoveries are recorded in twenty-six cases that were watched, although one of them, as stated, was eight months in achieving single vision. It would, therefore, appear that a certain small percentage (as yet unfixed) will exhibit some form of permanent ocular palsy as one of serious complications of spinal analgesia.

OCULAR PALSIES RESULTING FROM SPINAL ANESTHESIA

Reporter.	Reference.	Age.	Sex.	Alkaloid Used.	Dose. Cgm.	Muscles Affected.	Time After Operation Palsy Appeared. Days.	Duration of Palsy.	Result.
Loeser	Med. Klin., 1906, No. 10	45	M.	Novocain	?	L. sup. oblique	5	6 mos	Recovery.
Loeser	Med. Klin., 1906, No. 10	25	F.	Stovain	?	L. ext. rect.	8	8 mos	Recovery.
Schoeler	Soc. d'Opht. de Berlin, 1906	?	?	Stovain	?	R. ext. rect.	8	?	?
Feilchenfeld	Centralb. f. prakt. Augenh., 1906	?	?	Stovain	?	L. ext. rect.	12	?	?
Feilchenfeld	Centralb. f. prakt. Augenh., 1906	?	?	Stovain	?	L. ext. rect.	?	?	?
C. Adam	München. Med. Wchnschr., 1906	33	M.	Stovain	?	L. ext. rect.	20	3 mos	Still palsied at time of report.
Mühsam	Deutsch Med. Wchnschr., 1906	26	M.	Stovain	15	R. ext. rect.	10	21 days.	Recovery.
Mühsam	Deutsch Med. Wchnschr., 1906	27	F.	Novocain	8	R. ext. rect	4	22 days.	Recovery.
Lang	Deutsch Med. Wchnschr., 1906	61	M.	Novocain	15	Both ext. rect	R. 11 L. 30	?	Persisted at time of report.
Lang	Deutsch Med. Wchnschr., 1906	41	M.	Novocain.	?	L. ext. rect.	11	5 days.	Recovery.
Vossius	Med. Gesellsch. Giesen, 1906	60	F.	?	?	L. ext. rect.	6	?	Persisted after 6 months.
Blanluet and Caron.	Soc. d'Opht. de Paris, 1906	51	M.	Stovain	5	L. ext. rect.	9	?	Persisted after 6 months.
Hermes	Med. Klin., 1906	?	?	?	?	One ext. rect.	?	?	?
Deetz	München. Med. Wchnschr., 1906, No. 28.	?	?	Stovain	?	One ext. rect.	12	?	?
Rausscher	München. Med. Wchnschr., 1906	?	?	Stovain	?	One ext. rect.	8	?	Recovery.
Rausscher	München. Med. Wchnschr., 1906	?	?	Stovain	?	One ext. rect.	13	?	Recovery.
Loeser	Med. Klin., 1906, No. 10	25	F.	Stovain	?	L. ext. rect.	12	12 days.	Recovery.
Schmidt-Rimpler.	Klin. Monatsbl. f. Augenh., July, 1907.	?	?	?	?	One ext. rect.	?	?	Recovery.
Schmidt-Rimpler.	Klin. Monatsbl. f. Augenh., July, 1907.	?	?	?	?	One ext. rect.	?	?	Palsy persisted.
Adam	Deutsch Med. Wchnschr., 1906	26	M	Stovain	?	One ext. rect.	?	?	Recovery.
Adam	Deutsch Med. Wchnschr., 1906	26	F.	Novocain.	?	One ext. rect.	?	?	Recovery.
Scheppens	Clin. Opht., Nov. 25, 1908	?	?	Cocain.	?	L. ext. rect.	?	?	?
Baisch	München. Med. Wchnschr., 1906.	?	?	Alypin	?	Both ext. rect	?	5 days.	Recovery.
Goetermann	Berl. Klin. Wchnschr., 1908. No. 28.	?	?	Tropacocain.	?	Both ext. rect.	8	?	?
Landow	München. Med. Wchnschr., 1906	?	?	Novocain	?	Both ext. rect.	7	?	Recovery.
Mingazini	Rev. Neurol., March 15, 1906	16	M.	Stovain	?	Almost complete ophthalmoplegia externa.	13	?	?
Becker	München. Med. Wchnschr., 1906	?	?	Stovain	6	Third nerve and sixth nerve.	11	?	?
Ach	München. Med. Wchnschr., 1907	?	?	Stovain	?	One ext. rect.	8	21 days.	Recovery.
Ach	München. Med. Wchnschr., 1907	?	?	Stovain	?	One ext. rect.	4	43 days.	Recovery.
Ach	München. Med. Wchnschr., 1907	?	?	Stovain	?	One ext. rect.	11	6 days.	Recovery.
Ach	München. Med. Wchnschr., 1907	?	?	Tropacocain.	?	One ext. rect.	7	8 days.	Recovery.
Reber	Present report	40	M.	Stovain	6½	Both ext. rect.	12	?	Persisted at the time he left hospital.
Reber	Present report	16	F.	Stovain	6½	Both ext. rect	8 weeks.	6 mos.	Palsy persisted.
Reber	Present report	24	M.	Stovain	6½	L. ext. rect.	7	7 days.	Recovery.
Reber	Present report	35	M.	Tropacocain.	6½	One ext. rect.	10	14 days	Recovery.
Reber	Present report	19	F.	Stovain	6½	L. ext. rect.	7	?	Under observation only 3 days at time of report.

VI. THE PATHOGENESIS OF SUCH PALSIES

The pathogenesis of these palsies is not clear. Adam[12] quotes Oppenheim in his opinion that tiny nuclear hemorrhages are the cause of such palsies, and Kalt,[27] in the discussion of Blanluet and Caron's case, asked whether the symptoms might not have been due to an ordinary hemorrhage which took place at the time of injection. The argument, however, does not explain the usual interval of eight to ten days between the spinal anesthetization and the onset of the palsy. To meet this particular objection Müller[28] suggests that these palsies may be due to inflammation in consequence of overstretching or crushing suffered by the nucleus or nerve during or after the sudden outflow of the cerebrospinal fluid. Blanluet and Caron[10] are seemingly much of the same mind, for they feel that we cannot lightly put aside the idea of an infectious meningitis in such cases. They further urge that a subsequent lumbar puncture done with the idea of examination of the cerebrospinal fluid be performed at the same time such palsies occur. The facts that these palsies are frequently one-sided seems to them to exclude the possibility of toxemia which generally produces bilateral phenomena (see Babcock's remarks following).

The superficial position of the abducens nucleus in the fourth ventricle is advanced by Schmidt-Rimpler[11] as the most probable reason for the frequent involvement of the muscles supplied by the sixth nerve. The fourth ventricle communicates through the foramen of Majendie and the lateral apertures with the arachnoid space of the cord which contains the anesthetizing fluid. Involment of the roots of the vagus and glossopharyn-

---

27. Kalt: Ophthalmic Year-Book, 1907, p. 95.
28. Müller: Ztschr. f. Augenh., April, 1908.

geus which have likewise a superficial position are not rare in lumbar anesthesia. The fact that these particular palsies do not occur until about eight to ten days after the spinal anesthesia has been advanced, says Schmidt-Rimpler, is an objection to the above hypothesis, but (he goes on to say) "we observe an analogy in the delayed effect of the diphtheria toxins on the ocular nerves which also do not generally occur until several weeks after the recovery from the primary disease." Ach[24] evidently had just some such idea in mind when he made his experiments on eighteen rabbits to learn whether colored fluids injected into the spinal canal do really reach the base of the brain. He quotes Quincke, Jacob, and Crile, all of whom assert that colored fluids do rapidly reach the basis cerebri; but Ach could get no such results himself. Braun (quoted by Ach) contends that animal experimentation has only lent confusion to our ideas on this subject. Ach feels that stovain is the offending substance and should be avoided. He also counsels that patients should remain in a semirecumbent position with the shoulders raised for some time after the injections. Feilchenfeld[15] goes further than Ach in his belief that stovain is the chief offending substance and holds that there is an elective affinity of the various anesthetic substances for the various tissues and nuclei in the fourth ventricle. He even goes so far as to assert that stovain is most likely to produce abducens palsy, while novocain selects the trochlearis for its special action! A glance at the accompanying table will show that of the six times novocain was used for spinal analgesia it produced trochlearis palsy once and abducens palsy five times; so that his theory meets with no support from the facts.

Pechin,[29] in discussing Blanleut and Caron's case, remarked that it was possible for the liquid injected to have reached the higher centers by diffusion and thus come in contact with the sixth nerve nuclei. In the case reported, he was inclined to view the oculomuscular disturbance as of labyrinthine origin, from the presence of the drug in the cerebrospinal liquid bathing the ampulla. Bonnier,[30] too, urges that the intimate relation which exists between irritation of the labyrinth and oculomuscular disturbances has not been sufficiently recognized. He points out that it is only recently that the association between otitis and palsy of the sixth nerve has become well known (Gradenigo's syndrome), although many authors have called attention to the association. Bonnier thinks that the connection between oculomuscular disturbance and labyrinthine disease is as frequent as such association between the former and affections of the globe is rare. He believes that this gives the clue to the explanation of the occurrence of oculomuscular disturbance after spinal anesthetization. The fluid injected reaches the cavity of the labyrinth and there comes into the closest contact with the nervous mechanism of the ear, which involves a motor nerve of the eye, the sixth being most frequently affected.

W. Wayne Babcock has still another theory to account for these palsies; and, as he has personally induced nearly 1,500 spinal analgesias, I wrote him in reference to the matter. His reply follows:

> There have now been given by Dr. Steele, Dr. Martin (and his assistants), Dr. Applegate and myself, about 2,000 injections for the production of spinal analgesia. Personally, I have given about 1,400 injections having used stovain, tropacocain, cocain, cocain lactate, novocain and alypin. Most of the injections have been given with stovain or tropacocain. These analgesics have been given dissolved in water, with or without the addition of sodium chlorid, adrenalin, 10 per cent. alcohol or strychnin. I have had great difficulty in securing uniform solutions, although ampoules of the solution have been prepared for us by German, French and several American chemists, and we have also prepared the solutions extemporaneously. All these local anesthetics seem to share with cocain, though perhaps to a lesser degree, instability in the presence of heat, so that boiling may set free certain undesirable and even toxic substances. I have noticed the clinical evidence of this with cocain in decreased anesthetic action and severe pain after the injections of boiled solutions of this alkaloid for purposes of ordinary local anesthesia. I have seen local necrosis follow the injection of stovain in strong solution in the prepuce. When used for spinal analgesia, boiled stovain solutions give more frequent and more severe secondary headaches (and, at times even stiffness and rigidity of the muscles of the back of the neck) than solutions which have not been exposed to high degrees of heat. Moreover, the solutions which show the greatest untoward after-effects seem to show a deficiency in analgesic power. Similar observations have been made in reference to tropacocain.
>
> Despite considerable correspondence, we have not been able to secure uniform solutions from some of the chemists we have appealed to. One lot of 100 ampoules (Tyndalized) gave excellent anesthesia and were practically free from all secondary effects; the use of another lot would be found deficient in analgesia, with marked secondary headaches and occasional rigidity of the muscles of the back of the neck. Jonnesco, who apparently has recently come to the same conclusion, prepares the solution at the time of each injection, and never subjects the stovain or other substance employed to heat.
>
> Influenced by our investigations showing the marked antiseptic properties of stovain, we have recently been led to dispense with the sterilization of stovain, and a limited use of such extemporized solutions has given us much satisfaction. It has been our custom to discontinue the use of certain lots of ampoules as soon as we determined that they gave rise to frequent secondary headaches or other undesirable phenomena. Occasionally it has happened, however, that others connected with the Samaritan Hospital staff, not knowing that a certain solution had been discarded by us, have once or twice used such solutions. It was after the use of such a solution (that I had practically condemned) that the first case of ocular palsy in the service of Dr. Martin occurred. A recent case occurred after the receipt of a new lot of ampoules, which we assumed were identical with the satisfactory lot previously used, but which evidently had been more or less decomposed by heat. In the last case, 4 per cent. tropacocain was used, dissolved in 10 per cent. alcohol. It is my belief that in all cases the amount varied between 5 and 8 cgm. In a number of instances, we have given high injections of tropacocain or stovain, including injections through the seventh cervical or the first dorsal interspace; also we have secured high anesthesia by injecting into the lower dorsal region, solutions of a low specific gravity, with the patient so arranged that the solutions would ascend and affect the upper cord. After none of these injections have we observed ocular or other palsy.
>
> The interesting fact is that all of the four cases in which ocular palsies have been noticed have occurred after injections for analgesia of the lower abdominal segments.
>
> At the present time, I would draw the following conclusions:
>
> 1. We have no positive final proof that pure stovain or tropacocain, when used for spinal analgesia will be followed by paralysis of the ocular muscles.
>
> 2. The use of solutions of both stovain and tropacocain may be followed by such palsies and by other symptoms suggesting the presence of associated by-products.
>
> 3. The palsy may occur irrespective of the use of adrenalin, alcohol, glucose or other admixture, although it is possible that some of these substances may accentuate or favor the undesirable effect.
>
> 4. The antiseptic properties of stovain and tropacocain and the fact that in quite a number of instances I have withdrawn cerebrospinal fluid from one to many days after the spinal analgesia, and have never found the slightest turbidity of cel-

---

[29] Pechin: Ophthalmic Year Book, 1907, p. 96.

[30] Bonnier: Ann. d'Ocul., July, 1907, p. 67.

lular exudate, or other indication of inflammatory action, inclines me to the belief that sepsis or a bacterial irritation is not responsible for the ocular palsy.

5. An incidence of ocular palsy in one to 400 or 500 spinal analgesias and the occurrence of frequent headaches should make surgeons very careful to avoid heated or decomposed solutions for spinal analgesias.

6. Spinal analgesia should not be discredited by the untoward effects resulting from decomposition or contaminating by-products. Unfortunately, no Squibb has yet arisen to do for spinal analgesics what has been done for ether and chloroform.

It may be interesting to add that I have seen a much greater incidence of brachial and musculospiral palsy after etherization than muscular palsy after spinal analgesia.

The ideas advanced by Babcock seem to me plausible, and it is possible that if this phase of the subject is followed out it may help much to clarify the present confusion concerning the pathogenesis of these palsies. Further investigation of this subject would imply at least two lines of action. First, the most careful polariscopic studies should be made of both boiled and unboiled solutions of the local anesthetics used for spinal analgesia, this to be supplemented by animal experimentation as to toxicity or non-toxicity of heated or boiled solutions as compared with non-heated solutions. At the same time I am deeply impressed with the findings in Case 5, which occurred on the day this paper was to be forwarded to the Secretary of the Section. In this case we have combined the cycloplegia and weakness of the externi so characteristic of the post-diphtheritic toxemias, and it is difficult to put aside the conviction that some form of low-grade toxemia is operative in these cases.

Finally, if, as herein shown, two cases in 2,000 spinal analgesias exhibit, as by-products, ocular palsies of more than three months' duration, it must be admitted by all conservative surgeons that there exists a remote complication of spinal analgesia thus induced that should be taken into account. Whether it be due to the presence of the by-product referred to or to actual anatomic lesions following the use of the analgesic agent, or to some obscure toxemia, remains to be settled.

1212 Spruce Street.

ABSTRACT OF DISCUSSION

Dr. John Green, Jr., St. Louis: Spinal anesthesia, or analgesia, as its exponents prefer to call it, has received fresh impetus through the energetic advocacy of Dr. Jonnesco, who has made pilgrimages to foreign countries and personally demonstrated before large bodies of medical men the technic of this procedure, and it is safe to say that ten spinal anesthesias are being induced to-day where one was induced two years ago. For this reason it is entirely proper that the results of this method, whether favorable or unfavorable, should be carefully scrutinized and the dangers, if any, definitely determined. Dr. Reber is to be commended for bringing to our attention perhaps the most serious effect of spinal anesthesia, namely, ocular muscle palsy.

The most fascinating problem connected with this subject is that of the pathogenesis of these palsies. Oppenheim ascribes them to tiny nuclear hemorrhages and Kalt to ordinary hemorrhages at the time of injection. Dr. Reber believes that the late appearance of these palsies, averaging ten days after the injection, speaks against these hypotheses. Let us recall, however, that hemorrhage into a nerve sheath of traumatic origin may not evoke an immediate palsy and it is quite impossible that a palsy incident to hemorrhage from spinal anesthesia may likewise be delayed.

Müller's suggestion of an inflammation of the nuclei and nerve trunks as the result of mechanical stretching or crushing incident to the outflow of cerebrospinal fluid seems at least plausible. It should not be forgotten that the withdrawal of cerebrospinal fluid, even in small quantities, brings about a change in the relation of the skull box to the brain mass; so that we may have a slight shifting of the brain. The delicate brain does not adjust itself after disturbance, as, for instance, do the organs of the abdominal cavity. A slight alteration in pressure, the impinging of a bony prominence on a portion of brain which before was free from such contact, may have unsuspected consequences.

It hardly seems possible to accept the theory of a meningitis, as advanced by Blanluet and Caron, in the absence of more definite signs pointing to this disorder. The case cited by Dr. Reber, in which there was weakness of the externi and diminution of power of accommodation, would lend support to Schmidt-Rimpler's conception of a toxic process analogous to the effect of diphtheria toxin. Dr. Babcock's experience has led him to somewhat similar conclusions. In this connection it may be well to inquire what untoward effects have been observed as the result of simple lumbar puncture. I am informed by Dr. W. W. Graves of St. Louis, who in the past two years has performed about 350 lumbar punctures, that unpleasant or alarming symptoms, such as headache, prostration, a fall of arterial pressure accompanied by coldness of the extremities and feeble cardiac action are frequent. Individuals with angiosclerosis and low blood pressure, from whom a relatively large quantity of cerebrospinal fluid has been withdrawn, are especially liable to exhibit such symptoms. Another factor in the development of these after effects has been the failure to maintain a recumbent posture for from twenty-four to forty-eight hours. No cases of ocular palsy have occurred in this series.

But ocular palsies, after simple lumbar puncture, do occasionally occur. H. Wolff (*Berl. Klin. Wchnschr.*, Oct. 14, 1907), relates the following case: A trocar was introduced into the subarachnoid space of a thirty-six year old man preparatory to the injection of stovain solution. As a few drops of blood appeared, it was deemed unwise to inject the anesthetic solution, and the patient was operated in general narcosis. A few hours after the operation, the patient complained of severe backache radiating to the shoulders and chest. The following day there was intense pain in the head and neck, and on the fifth day a well marked right abducens palsy appeared. The latter gradually diminished but did not clear up entirely until eleven weeks after the injection. Wolff points out the similarity, as to onset and course, with the palsy following spinal anesthesia. In his opinion, the formation of an intradural hematoma gave rise to toxic products which acted on the abducens nucleus or intradural course of the nerve.

If ocular palsy may occur after simple lumbar puncture, is it not probable that the lumbar puncture preliminary to the introduction of an anesthetic solution may, more frequently than has been supposed, offer the true explanation for the paralysis?

Dr. W. W. Graves, St. Louis: As you have just heard from Dr. John Green, Jr., I have made about 350 lumbar punctures during the last two years, and I have not seen any ocular palsies, but I have seen some untoward effects. These untoward effects have occurred in individuals who have had rather marked arterial changes, associated with a relatively low arterial tension, and in cases in which it has been impossible to keep the patient in a recumbent position for forty-eight hours after the puncture. In those cases of decided arteriosclerosis with high tension I have not found, even where my 48-hour rule has not been followed, any untoward effects. So I take it from this experience that the physiological relation between arterial tension on the one hand and the vascular condition on the other was disturbed by withdrawing fluid and thus was brought about the untoward effects mentioned by Dr. Green; but so far, never ocular palsies. The fact that most of these palsies, as I understood Dr. Reber to say, do clear up in time, would almost exclude nuclear lesion. Definite nuclear lesions do not as a rule proceed to complete recovery in any length of time.

In talking this matter over with Dr. Green I expressed the view that it was the sudden disturbance of that normal, physiologic process which maintains a balance between the secretion of cerebrospinal fluid and its absorption. The sudden lowering or sudden increase of pressure by the withdrawal of fluid or by the introduction of foreign matter, as the stovain solution, may disturb this balance, and if this is true, it is quite thinkable that we may have a disturbance in function of any part of the nervous system. Nervous tissue, unlike other tissues of the body, will not stand sudden interference with its equilibrium, sudden pressures or sudden pulls and stretchings. Having previously a defective arterial system, as an arteriosclerosis, thrombosis of minute vessels incident to the lowering of arterial tension from the withdrawing of spinal fluid seems possible, and in this way ocular muscle palsies might occur. Furthermore, anything that will suddenly interfere with that normal equilibrium maintained in the central nervous system is capable in a mechanical way, it seems to me, of bringing about certain palsies. The fact that the abducens is particularly vulnerable may be accounted for by its course and its exposure to pressure and torsion, different from that of the other cranial nerves. Another factor that has occurred to me is this: Those patients operated on surgically are not, as a rule, examined previously neurologically or ophthalmologically, and may it not be that in some cases there has been a preexisting lesion, and the sudden disturbance of intracranial pressure by the withdrawal of fluid or the introduction of more fluid may be but one factor in the production of these palsies; in other words, may it not be that an unrecognized condition was present before the lumbar puncture was made or before fluid was introduced into the spinal canal?

Dr. Alfred Saenger, Hamburg: I am not prepared to discuss this paper, but I will tell you my experience in Hamburg at the Hospital of St. Georg. In our hospital we have seen paralysis of the abducens nerve in, I think, only five cases; but in one case it was a paralysis, not only of the abducens nerve; and it was an especially deplorable case because the patient was also a doctor of medicine. He had arteriosclerosis, and, in consequence, gangrene of the left foot. The surgeon told him that it was not necessary to use chloroform anesthesia, but that lumbar anesthesia with stovain would be used. He was pleased that the lumbar anesthesia could be used because he had a fear of chloroform. But after the anesthesia he had paresis of the right abducens, and, curiously, paralysis of the median and a neuritis of the right crural nerve, and was compelled to remain in bed. The paralysis of the abducens lasted about four months and the paralysis of the median for about the same period. The neuritis of the crural nerve is better but there remains an atrophy of the median nerve which will last permanently. I am of the opinion that the drug caused this affection and we have to admit that stovain may cause paresis of the abducens.

Dr. James Bordley, Baltimore: Dr. Cushing in his work on brain tumor has had several cases of paralysis of the external rectus and it has occurred to me that the same cause which produced this change in the patients with brain tumor might have produced it in those in whom irritating solutions were injected into the spinal canal. Normally, the nerve at its exit at the base of the brain lies external to the artery, but in some cases—in every case of Dr. Cushing's with brain tumor resulting in paralysis of the external muscle—the nerve was next to the brain and the artery external. As the edema of the brain from pressure increases it puts the artery on the stretch and the more the artery stretches the deeper it tunnels the brain and under the artery lies the paralyzed nerve. It is the stretching of the artery as the result of the edema of the brain and secondarily, the pressure of the artery on that nerve which produces the paralysis.

Dr. G. C. Savage, Nashville, Tenn.: I learn from Dr. Reber's paper that there are two points through which the needle may be passed in making these injections. To pass a needle connected with an empty syringe at one of these places and insert the needle with the filled syringe at the other place, and then simultaneously withdraw fluid with the empty syringe and inject the anesthetic with the other, that would enable one to put in just as much fluid as was taken out and certainly would not increase or decrease the amount of pressure within.

Dr. W. Reber, Philadelphia: Dr. Savage has suggested what Dr. Babcock has done repeatedly, and also, I believe, Dr. Morton of San Francisco, and one or two others. It is a comforting thing that the duration of these palsies, as a rule, is self-limited; approximately two to four weeks. But I regret to say to you that recently I saw a young woman who had been under observation for eleven months and she still had absolutely the same degree of bilateral external rectus palsy. Strangely enough, the temporal rotation in each eye (individually) was 45°! I can see the possibility of ground for legal action in these cases, and feel that it is necessary to bring out that point. Dr. Babcock himself has done about 2,100 spinal anesthesias and recognizes the gravity of this complication. At the Samaritan Hospital in Philadelphia the amount of cerebrospinal fluid withdrawn is a minimal amount; only a few drops are allowed to escape. For a long while they estimated it at a few drops and then they measured and found the average amount was about 10 c.c. They usually introduce about 6 c.c. of the anesthetic agent, no matter which one it may be. Those foreign authors who think the anesthetic agent has a selective action on any one muscle have absolutely no basis for their conclusion, for with stovain one may observe a palsy in any one of the muscles supplied by the third, fourth and sixth nerve. There is no selective action in evidence in the cases submitted by me. Dr. Graves' remarks are pertinent, for no neurologic or ophthalmologic examination was made. I was also gratified at Dr. Saenger's discussion in calling attention to the fact that his patient had very bad arteries. This may be a deciding factor in a goodly percentage of cases. I am also tremendously interested in Dr. Bordley's remark. My understanding is that all the cases to which he referred were autopsied. That is the kind of work that is going to lead us closer to the solution of this question.

THE DANGER OF SYMPATHETIC OPHTHALMIA FROM THE USE OF THE CAUTERY IN TREATING IRIS-PROLAPSE

OTHER METHODS OF TREATMENT *

H. GIFFORD, M.D.
OMAHA

In 1897 Trousseau[1] reported three cases of sympathetic ophthalmia (two of his own and one of Kalt's) following the use of the galvanocautery in treating prolapse of the iris; and in the same year[2] I felt impelled by my own experience to second the warning given by Trousseau. Since then I have happened to notice the histories of seven cases of sympathetic ophthalmia in which the authors mentioned incidentally that a wound or an iris prolapse had been cauterized a suitable length of time before the outbreak of the disease in the second eye. These cases were reported by the following authors: Alexander,[3] Darier,[4] Alberti,[5] Dimmer,[6] and Fuchs,[7] who each report a case occurring after cauterization of an iris prolapse or a cystoid scar; and Cohn[8] mentions two cases from the clinic of Silex in which a wound was cauterized before the sympathetic ophthalmia broke out. Finally, Trousseau[9] again returns to the subject with the report of two additional cases of the sort and a renewal of his warning against the use of the cautery.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Trousseau: Recueil d'Ophth., 1897, p. 219.
[2] Gifford: Ophth. Rec., 1897, p. 673.
[3] Alexander: Ophth. Klin., April 5, 1900.
[4] Darier: Ophth. Klin., Aug. 5, 1900.
[5] Alberti: Beitr. z. Augenh., v, 743.
[6] Dimmer: Ztschr. f. Augenh., August, 1901.
[7] Fuchs: Arch. f. Ophth., lxx, 165.
[8] Cohn: Ztschr. f. Augenh., January, 1905.
[9] Trousseau: Arch. d'opht., November, 1909.

Trousseau does not attempt to explain how the cautery favors the occurrence of sympathetic ophthalmia, but in following the subject for a number of years I have noted two communications which throw some light on the subject. Franz[10] has found as the result of experimentation that the sloughs produced by the use of the actual cautery in the abdominal cavity decidedly favor the occurrence of infection; and La Garde[11] discovered that, when the tissues are burned, tetanus can be produced by quantities of the tetanus bacillus which are quite harmless when introduced into incised wounds.

In the early days of my practice I used to regard the charred and dead tissue left by the cautery as an efficient protection against infection or reinfection, but for many years I have taken the opposite view, and when I have found it desirable to use the cautery, as in some cases of trachoma, I have carefully scraped away all the dead tissue and I am sure that this has been followed by less irritation than when the sloughs have been allowed to remain; and in some corneal ulcers after using the cautery I scrape away the slough and apply trichloracetic acid to prevent reinfection. Whether the influence of the cautery slough in favoring infection is due to its forming a favorable culture medium or whether it depends on the nature of the surface left when the slough separates, I cannot at present say; but that such an influence exists and that it should make us cautious in the use of the cautery for iris prolapse is, I think, undoubted. For certain prolapses, however, when they are so small and old that they cannot be seized and cleanly excised, the cautery is so convenient an agent of destruction that if it could be used safely it would be highly desirable to retain it in favor; and I believe that if the burnt and dead tissue be scraped away and the raw surface covered at once with a conjunctival flap all danger from its use can be avoided.

USE OF TRICHLORACETIC ACID

The use of a conjunctival flap, however, necessitates an operation which, slight as it is, we like to avoid if possible; and with this in view I have experimented for a year or so with the treatment of prolapses by trichloracetic acid.

This agent, the introduction of which into ophthalmology we owe to Bulsom, produces a slight eschar which apparently offers a very unfavorable culture medium for germs. The reaction following its use, whether in the eye or the nose, is practically *nil;* and a few applications to an iris prolapse cause the latter to disappear or to be covered with a thin layer of connective tissue which, it would seem, must prevent the penetration of germs into the eye. I have used this agent with the best of results in cases in which after a large destructive corneal ulcer a considerable area of iris tissue has been left exposed. In cases of this kind I have never been able to get a conjunctival flap to adhere to the iris tissue, but by the use of the trichloracetic acid I have produced smooth white non-irritable scars; and in one case in particular, in which a large prolapse in the upper quadrant of the cornea was already infected and the eye apparently in a desperate condition, I am sure that the acid was the only thing that saved it from destruction.

Incidentally I may remark that in all cases of infected wounds of the eye I apply the trichloracetic acid vigorously for several days in succession, and in this way have in some cases saved the eye when at first the outlook seemed hopeless. I regret to report, however, that my confidence in the absolute security which I believed this acid conferred on eyes with iris prolapse has been shaken by the following case:

History.—In the fall of 1908 I extracted, with a hook, a tough membraneous cataract from the left eye of a woman, aged about 50. A moderate amount of vitreous came with it; enough to interfere with a perfect reposition of the iris. The healing was smooth but an iris prolapse rather more than 1/16 inch in diameter developed at the inner angle of the wound. To this I applied trichloracetic acid four or five times, at intervals of three or four days, with the result that it disappeared entirely, leaving a smooth flat white surface almost indistinguishable from the other end of the scar. The patient left the city several weeks later with the eye free from irritation and possessing V. = 20/50 plus. The other eye was perfect, the extraction having been done largely for cosmetic purposes.

Subsequent History.—In the following September the woman returned, stating that some weeks after I had last seen her, that is, two months or more after the operation, the operated eye had become inflamed and a few weeks later the right eye followed suit; and in spite of treatment by a very competent oculist the vision of both eyes had been so much reduced that she could barely find her way about. I found the pupil of the left eye drawn high up and closed, V. = light, while in the right eye the pupil was secluded and nearly occluded, V. = fingers at four feet. Both eyes were practically free from irritation and there was no sign of the former prolapse in the operated eye. An iridotomy has restored useful vision to the left eye, but when in January, 1910, after a prophylactic course of moderate doses of salicylate, I performed an iridectomy on the apparently quiet right eye, the pupil promptly closed up with exudate.

This case is such an unusual one that I am not sure that I ought to place any blame on the trichloracetic acid; but I feel that I ought to mention it as part of the evidence before the jury, and the next iris prolapse which I treat I shall, after the use of the cautery or trichloracetic acid and scraping, protect with a conjunctival flap if it is possible; but if it is one of the large prolapses within the corneal area I shall treat it with trichloracetic acid.

In view of the large number of prolapses which we see that never seem to cause any irritation nor do any harm the question may well be asked why bother any of them. The case is parallel to the problem of prophylactic enucleation. We know that the majority of injured sightless eyes do not cause sympathetic ophthalmia, but some of them do; and so do some iris prolapses. I have seen sympathetic ophthalmia in at least six cases of untreated iris prolapse from comparatively slight wounds.

With regard to fresh traumatic prolapses that cannot be replaced we can all agree that there is no treatment like a clean incision, but in deciding whether or not a prolapse can be replaced one should not forget the method of indirect reposition advocated by Dunn[12] of Richmond, Va., and after him by Jameson.[13] The principle of Dunn's method is that, instead of trying to push the prolapse back through the original wound, it is better to make another opening at a distant point of the corneal margin and, with a spatula introduced through this, draw back the iris from the original wound. I can recommend this method heartily in fresh cases, having used it in one case with perfect success.

CONCLUSIONS

My own conclusions on this subject may be summed up as follows:

1. Fresh non-infected prolapses should be replaced, if possible; preferably by Dunn's method.

---

[10] Franz: Abst. in Centralbl. f. Chir., 31, 1902.

[11] La Garde: THE JOURNAL A. M. A., April 18, 1903.

[12] Dunn: Arch. Ophth., September, 1907.

[13] Jameson: Arch. Ophth., January, 1909.

2. Prolapses which cannot be cleanly excised should, if possible, be cauterized and the area scraped and protected at once by a conjunctival flap.

3. On account of the danger of sympathetic ophthalmia no prolapse should be treated by a hot metal cautery, unless a protecting conjunctival flap can be made to adhere to the area cauterized; it is probably safer to let the prolapse alone.

4. In some cases of large corneal prolapses to which conjunctival flaps can be made to adhere with difficulty or not at all, the use of trichloracetic acid (and probably of various other chemicals) produces a firm nonirritable scar. Whether this method is entirely devoid of danger remains to be seen.

Brandeis Building.

ABSTRACT OF DISCUSSION

Dr. R. H. T. Mann, Texarkana, Tex.: I wish to emphasize the fact that I do not believe we yet realize sufficiently the use of the conjunctival flap in many of these cases. I think it is a method which should be used whenever it can be. It will grow in some of these cases in which you think it will not grow, and even a staphyloma may subside after the use of this flap. I have seen it very successfully used in many of these cases.

Dr. John A. Donovan, Butte, Mont.: After the experience of Dr. Gifford it is hard to say that the cautery is absolutely safe. I am still a firm believer in the cautery. Most of my cases are traumatic. Where the field of prolapse is large enough I have abandoned the method of simple cauterization. If it is large or protrudes I cut it off with the scissors or knife and then cauterize. There is one mistake in using the cautery. Most operators use too much heat and a too prolonged application. In a treatment by the cautery use little heat, quickly searing it, or dry or scorch it. I think it is a very important addition to the treatment and I use it to prevent infection. One point I make is to touch the edge of the cornea where it joins with the iris so as to try to get union between the cornea and the iris.

Dr. Edward Jackson, Denver: I should like to ask Dr. Gifford if he feels that the dangers of infection attend the use of the cautery in instances in which the iris is not involved. With reference to iris prolapse, while it requires a good deal of nerve in some cases, I feel that the best results, or at least as good a result as is attained in any other way, is attained by letting the prolapse alone. If the prolapse is large—and I have seen some large ones following simple extraction, from one end of the incision to the other—the scar swells out and it is six or eight weeks sometimes before it fairly begins to flatten down; and yet these scars in the end have been just as pretty and smooth scars and the pigmented iris tissue is better covered in than in some cases in which I had incised a part of the prolapse or touched it with the cautery or treated it in other ways. With an infected prolapse something must be done. I prefer to use nitric acid, which I find perfectly manageable. But where there is not some distinct infection of the prolapse the process of what might be called normal healing is just as much to be respected as the normal exudates in a wound are to be respected, and not disturbed with strong antiseptics. We have learned that strong antiseptic solutions do not promote normal and satisfactory healing; and I am inclined to look at prolapse of the iris in the same way. Unless there is distinct indication of infection I would not touch it with the cautery or with nitric acid, or anything else.

Dr. H. Gifford, Omaha: I did not enter into the details of the conjunctival flap because that has been done a great many times, although there is one feature of it which I pointed out in the article in Dr. Posey's book years ago, that is, you do not need to have two stitches. Simply dissect the flap up widely, pull the flap across and a single stitch some distance away from the prolapse will hold it. With regard to the question of danger of touching the cornea with the cautery, of course I do not consider there is any danger of touching the cornea alone, for we all have to do it in corneal ulceration and will have to continue it, I suppose. The danger is in cauterizing the tissues connected with the uveal tract in which the germs of sympathetic ophthalmia vegetate. With reference to the question of leaving the prolapse alone, I sympathize with Dr. Jackson. I have seen lots of these prolapses persist for years without doing any harm, but every now and then an eye is lost from an uncovered prolapse, either from panophthalmitis of the injured eye or from infection and sympathetic ophthalmia. So I believe the greatest good can be achieved only by destroying all prolapses that cannot be excised, and if the cautery is used the spot should at once be protected by a flap.

With regard to Dr. Donovan's remarks, I agree with him that the cautery is the quickest and most efficacious means of destroying a prolapse, but if he continues to use it as freely as he does without covering the burned spots with conjunctiva I am afraid he will have a disagreeable surprise such as Trousseau and I have had.

THE INFLUENCE OF DIET ON THE CHYLE *

WINFIELD S. HALL, Ph.D., M.D.†
CHICAGO

HISTORY OF THE SUBJECT

Opportunities to get pure human chyle in quantities sufficient for extensive chemical analysis have been exceedingly rare. In fact, a study of the literature back to the middle of the seventeenth century shows only 126 cases of the appearance of a milky fluid in pleural or peritoneal cavity.

These 126 cases fall naturally into two classes: (1) those in which the fluid was chyle, pure or modified, distinguished by the presence of free fat globules, minute in size and tending to rise to the top of the collected fluid as cream rises on milk; (2) those in which the fluid was milky in appearance, and contained fat, not in emulsion, but within fattily degenerated leucocytes and other cellular elements.

Senator[1] differentiated these two classes and designated them as ascites chylosus and chyliformis respectively. Osler[2] in 1900 differentiated a third variety of milky ascites which he called ascites lactescens, and whose milky appearance is due, not to fat at all, but to the presence of a large amount of globulin. It should be noted that the liquid in this case, while milky in general appearance, is rather opalescent and not difficult to differentiate from either of the two forms described above.

The study of these cases makes a chapter hardly less interesting to the physiologist than to the pathologist or the internist. In short, some of the cases, those of traumatic chylorrhagia, are of great interest to the surgeon, as well.

The literature has been collected by Bargebuhr,[3] by Shaw,[4] by Comey,[5] and by Boston.[6] The last author added the cases which have been described since Comey's bibliography, and corrected certain errors in the earlier bibliographies.

Of the 126 cases of ascites chylosus and chyliformis collected by Boston, something over half, or about 75 cases, have been found to be true chylous ascites, according to the definition of Senator;[1] i. e., "cases in which from any cause, the presence of chyle is demonstrated in the peritoneal cavity."

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

† Of the Department of Physiology, Northwestern University Medical School.

[1] Senator: Charité Ann., 1883, x, 305.

[2] Osler: Modern Medicine, v, 502.

[3] Bargebuhr: Deutsch. Arch. f. klin. Med., li, 502.

[4] Shaw: Jour. Path. and Bacteriol., 1900, vi, 339.

[5] Comey: Boston Med. and Surg. Jour., Jan. 29, 1903, p. 113.

[6] Boston, L. A.: Chylous Ascites with Eosinophilia, The Journal A. M. A., Feb. 18, 1905, p. 513.

In a vast majority of the cases of chylous ascites the cause of the escape of chyle is found to be a pressure of tumors on the thoracic duct or on the abdominal chyle duct, interfering with the free flow of the chyle along the vessel. If the obstruction is sufficiently great the vessel ruptures and the chyle pours out directly into the pleural or peritoneal cavity.

The thoracic duct may be occluded by blood-clots in the subclavian vein or by lymph-clots in its own lumen, or it may be gradually occluded by pathologic changes in its own walls, as in the case reported by Comey[5] of chronic lymphangitis.

Cases of complete stoppage of flow of chyle through pressure on the vessel or through disease of its wall may be followed by rupture of the thoracic duct, the receptaculum chyli, or of some of the lacteals.

Of such cases nine are reported prior to 1902, namely those of Morton,[7] Percival,[8] Lossius,[9] Winiwarter,[10] Cayley,[11] Kein,[12] Hoppe-Seyler,[13] Whitla[14] and Comey.[5]

Of special interest are the cases of traumatic chylous ascites, of which only seven are reported prior to my case. Two of these seven cases, those of Merklen[15] and of Bell,[16] while traumatic are clearly only secondarily so, as in the case reported by Merklen the chyle began to collect in the peritoneal cavity ten months after the accident, while in the case reported by Bell the chyle did not make its appearance till seven months had elapsed after the accident. In both cases, however, the chylous character of the fluid was amply demonstrated by the presence of free fat. In neither of these cases is it certain that the chyle vessels were ruptured; in fact, the evidence is strongly against it.

I have been able to find only five reported cases of primary traumatic chylorrhagia prior to 1908, when the preliminary report was made on the case from Dr. W. E. Morgan's Wesley Hospital service.

Chomel[17] reported, in 1728, the case of a woman aged 21, who suffered an umbilical hernia during parturition. That there was also a rupture of chyle vessels was evidenced by the "spontaneous opening and emptying of five pints of milky fluid." Spontaneous recovery is also reported.

Quincke,[18] about the middle of the nineteenth century, reported the case of a 50-year-old man who was run over by a wagon, suffering a fracture of a rib on the right side, evidently rupturing a lymphatic, as the right pleural cavity filled with bloody chyle. Puncture was resorted to on three occasions and 1,800 c.c., 3,000 c.c., and 1,000 c.c. of chyle withdrawn. On the twenty-first day after the accident the man died. At the post-mortem there were 7,000 c.c. of chyle removed.

Munson[19] reports the sudden death of an 18-year-old youth after a violent struggle in asphyxia. The post-mortem examination revealed extensive firm clots of blood in the left ventricle, vena cava and subclavian vein. The lung was lacerated and the receptaculum chyli was ruptured and a few ounces of chyle were found in the peritoneal cavity.

Wilhelms[20] found the abdomen of a 6 months-old child who had suffered a paroxysm of *Stich-Husten*, filling with liquid. Puncture brought chyle. Subsequently ten punctures yielded several liters of chyle. The child died.

Eyer[21] reported the case of a man who suffered a fracture of several ribs in a railway accident. There were evidences of abdominal injuries. Finally a groin tumor, on being opened, poured forth a fetid substance that led to the diagnosis of fecal fistula. On the thirty-eighth day after the accident the man died. Post-mortem examination revealed a postpleural rupture of the thoracic duct. The contents of the duct burrowed between peritoneum and body wall as far downward as the groin, where it was opened. The bloody chyle had become infected and decomposed, which accounts for the mistake in diagnosis.

TABLE 1.—CHEMICAL COMPOSITION OF CHYLE

Determinations 1000 parts.

Determinations 1,000 parts	Winiwarter[10]	Quincke[18]	Hoppe-Seyler[13]	Whitla[14]	Merklen[15]	Osler[2] [cited]	Beebe[6]	Hall [Fat free]	Hall [Fat rich]
Reaction	Alk.	......	Alk.	Alk.	.....	Alk.	Alk.	Alk.	Alk.
Specific Gravity	1.012	1.016+	......	1.020	.....	1.007 ±	1.007+	1.007	1.006
Water	910.49	......	940.7	940.85	975.0	940. ±	975.0	970.80	961.70
Solids	89.56	......	59.3	59.15	25.0	60. ±	25.0	29.20	38.30
Proteins	45.01	......	36.7	28.78	12.5	30 ±	2.75	12.37	12.40
Fats	36.80	11.11	7.2	10.30	3.5	10 ±	2.0	6.77	16.86
Sugar	0.20	......	......	2.10	.....	*	......	1.00	1.00(?)
Salts	7.55	......	7.2	9.95	9.0	7. ±	......	9.06	8.04
Miscellaneous	......	......	4.5	8.02	.....	......	1.0	......	..
Amount collected	Liters	12.8	......	72	11	......	......	9.7	7.7

* Present.

Before entering on the description of Morgan's case I wish to call attention to the chemical analysis of the chyle withdrawn in cases of chylous ascites and of traumatic chylorrhagia. Table 1 shows a few of the more complete analyses. The specific gravity varies between 1.006 and 1.010. The chyle is quite uniformly alkaline in reaction. The solids amount to from 2.5 per cent. to 6 per cent. Principal among the solids are coagulable proteins 1 to 3 per cent. and fat, 1 per cent. to 3 per cent. The fats show the widest range of variation. Sugar is usually present in small and fairly uniform quantities.

CLINICAL AND EXPERIMENTAL OBSERVATIONS

History of the Case.—Early in December 1907, Dr W. E. Morgan was called in consultation in the case of Anton S., a lad aged 13, who had been run over by a wagon on which he was attempting to get a "hitch." The hind wheel of the wagon had crossed the body at about the line of the diaphragm, the boy lying on his back on the pavement. The surgical aspects of the case present many points of interest which have been discussed by Dr. Morgan.[22] Of interest here is the fact that within a few hours after the accident the abdominal cavity began to fill with liquid. After the liquid had accumulated to an extent which caused a considerable distention, a needle trochar was inserted and several quarts of milk-white chyle wholly free from blood was withdrawn. Arrangements were made to bring the boy to Wesley Hospital as a charity patient and he was admitted Dec. 13, 1907. The physiologic importance of the case was recognized, and Dr. Morgan invited me to institute such experiments as I desired in the period during which the surgeons were deferring operation, awaiting positive indications.

---

[7] Morton: 1705, cited in Van Swieten Commentaries, iv, 189.
[8] Percival: Essays, Medical, Physiological and Experimental, p. 177.
[9] Lossius: Historia Anatomica Medica, i, 257.
[10] Winiwarter: Jahrb. f. Kinderh., xi-xii, 196.
[11] Cayley: Tr. Path. Soc., London, 1866, xvii, 163.
[12] Kein: Mém. Soc. de méd. de Strasbourg, 1881, xix, 2-52-57.
[13] Hoppe-Seyler: Physiol. Chem. (Hirschwald), 1881, p. 597.
[14] Whitla: Brit. Med. Jour., 1885, i, 1089.
[15] Merklen: Semaine méd., 1897, p. 181.
[16] Bell: Am. Med., 1905, p. 1861.
[17] Chomel: Mém. de l'Acad. de sc., 1728 [cited by Bargebohr].
[18] Quincke: Deutsch. Arch. f. klin. Med., xvi, 12.
[19] Munson: Med. Rec., New York, 1873, vii, 202.
[20] Wilhelms: Cor Bl. d. aerztl. Verein d. Rheinl., 1875, No. 14, p. 13.
[21] Eyer: Med. Rec., New York, 1891, xl, 122.
[22] Morgan, W. E.: Bull. Northwestern Univ. Med. School, June, 1909.

METHODS OF PROCEDURE

The fact that the patient seemed in a fairly normal condition, except for the leakage of chyle into the peritoneal cavity, and the natural consequences of such leakage, led me to institute a series of dietetic changes with a view to determining the influence of these changes on the chemical composition of the chyle poured out into the peritoneal cavity. The uncertainty of the time which would be at our disposal made it necessary that the observations be started immediately. The following plan was at once outlined: The observation periods were to be four days in length. It was planned to cut out all fat from the diet of the first period, so far as this was possible, leaving the carbohydrates and proteins undisturbed and in average amounts. The second period differed from the first in having a diet rich in fats; carbohydrates and proteins remaining the same. In Period 3 we returned to a fat-meager diet, rich in carbohydrates; proteins remaining average. In Period 4 we returned to a diet rich in fats, meager in carbohydrates; protein remaining average. Period 5 had a diet meager in fats, average in carbohydrates, rich in proteins.

In order to devise a fat meager diet for the first period, we resorted to separated milk, cereals, bread without butter, rice without butter or cream, steak from which every visible vestige of fat had been cut away, and baked potatoes. Analysis of this diet showed that it still contained fat in the following amounts: 1,200 gm. of milk contained 18 gm. of fat; 500 gm. of bread contained 9.5 gm. of fat; 200 gm. of lean steak contained 7 gm. of fat; one egg contained 6 gm. of fat. Removing as much fat as possible from the diet, there still remained, according to the above figures, 40.5 gm., plus the amount in the oatmeal and rice, which was not determined.

All fat analyses of diet and chyle were made by desiccation at about 80° C., followed by extraction with ether, and evaporation of the latter, leaving the fats which were determined by weight.

The chyle was withdrawn at the end of the period in the first four periods. In the subsequent periods it was withdrawn at more frequent intervals. Every precaution was taken to prevent infection of the peritoneum, and throughout the whole series of observations there was no evidence that infection occurred. It was in order to avoid infection that the chyle was withdrawn by means of a needle trochar rather than through an open fistula. Had we adopted the open fistula plan, we could have collected the chyle for each day. As it was we did not feel justified in using the trochar more frequently than the four-day periods. The chyle was caught in sterile liter flasks. Two cubic centimeters of formaldehyd were added to each flask, the flask sealed with a plug of cotton and placed in the ice-box. Two or three hundred cubic centimeters from each lot was kept out and subjected to an immediate analysis without addition of formaldehyd. The fresh chyle was subjected to both chemical and microscopical analysis, its specific gravity determined, its fat, protein and sugar determined. Fatty acids were also isolated, but as they appeared only in traces, the results have not been tabulated. The microscopic tests at no time showed more than normal proportion of leucocytes. We interpreted this, together with other facts, as indicating that no inflammation existed in the peritoneum. The chyle showed at all times an exceedingly minute division of the fat. On standing, the chyle separated into three layers—an upper fat emulsion, a middle opalescent layer and a flocculent sediment.

The feces were collected during each period and preserved in a ground-glass-top museum jar. The fecal collection for each period was stirred and mixed until it seemed to be a perfectly homogeneous mass. Double samples of each lot were taken for analysis and analyzed especially as to fats, the ash also being determined, however.

In the general hospital routine the house physician made a careful analysis of urine and blood at least once during each four-day period. During some periods, however, several analyses and counts were made, particularly of the blood during periods when that seemed to be becoming depleted. Several differential blood-counts were made, but only one showed anything of apparent interest. The neutrophils only were greatly increased in number during the last period. The weight was also determined. There was no medication during the periods reported here until January 8, when evident anemia seemed to demand attention, and the patient was given Blaud's mass, 5 grains three times a day, with the results indicated under the appropriate period.

Data of the Periods I-VII

Period I.—December 14 to 17 (Four Days Inclusive)

Diet.—Meager in fat with average carbohydrates and protein: In order to remove as much of the fat as possible from the diet, the boy was put on separated milk, oatmeal and rice, bread, lean steak, baked potatoes, eggs; the latter, however, were removed from the list when it was found that the boy had an idiosyncrasy against them. One egg had been introduced into his first evening meal, but was kept down under protest and seemed to disturb him seriously for several hours. As stated above, this diet of the first period contained something over 40 gm. of fat.

Chyle.—This, withdrawn at the end of the period, weighed 3,021 gm., specific gravity being 1.007. We found it to contain 22.537 gm. of fat, which was 0.746 per cent. The protein estimated by determination of nitrogen through the Kjeldahl process was found to be 1.336 per cent., or 40.35 gm.; the sugar, a little more than a trace and not determined quantitatively.

Feces and Urine.—The former for the period amounted to 1,294 gm., whose fat content was 7.596 gm. The latter for the period was tested twice and found to be normal in both tests.

Blood. Examined twice, and both examinations showed unexpectedly low red blood-corpuscle count, averaging 3,700,000; hemoglobin, 80 per cent.; white blood corpuscles, 14,000.

Weight.—73.5 pounds.

Period II.—December 17 to 21

Diet.—Rich in fat, carbohydrates and proteins remaining unchanged. The menu for this period consisted of lean steak of the same cut as the previous period, to which was added weighed amounts of beef fat, samples being kept for analysis; cream and full milk in equal parts, samples being kept for analysis. To these fat rich foods the usual cereals, bread and vegetables were added; butter, cream and beef fat being used freely with all of these foods. Analysis of the samples showed that the boy received during the four-day period 364.7 gm. of fat plus an undetermined amount of fat in the cereals and vegetables, which would approximately equal the undetermined amount in the diet of the first period.

Chyle.—The amount was 3,690 gm.; specific gravity, 1.005. This was found to contain fats to the extent of 1.858 per cent., making a total of 68.56 gm. Protein determined as above showed 1.215 per cent., or 44.84 gm. for the period. Carbohydrates, a trace only.

Feces and Urine.—The feces were 791 gm. for the period, containing a total of 23.762 gm. of fat. Two tests during the period showed that the urine remained normal.

Blood. The count showed 3,875,000 reds, hemoglobin 80 per cent., and 16,000 whites.

Weight.—After withdrawal of the chyle on December 21 was 70 pounds. All weights were taken as nude weights, the clothing being weighed separately and the weight deducted.

PERIOD III.—DECEMBER 21 TO 25

Diet.—Meager in fat, rich in carbohydrates, proteins remaining unchanged. The 800 gm. of bread contained 15 gm. of fat; the 200 gm. of lean beef contained 7 gm. of fat; 1,000 gm. of chicken-broth contained 3 gm. of fat; 1,200 gm. of separated milk contained 18 gm. of fat; 100 gm. of soda-crackers contained 9 gm. of fat. The fat was undetermined in the following articles of diet: Prunes, tapioca, sugar, gelatin, baked apple, sliced oranges, grapes, canned corn, potatoes, bananas. The total estimated fat was 52 gm.

Chyle.—The amount withdrawn was 5,180 gm. It showed a specific gravity of 1.007 and a fat content of 0.608 per cent., or 31.49 gm. for the period; protein, 1.1375 per cent., or 58.92 gm. for the period; sugar, a little over 0.1 per cent.

Feces and Urine.—The amount of the former was 1,100 gm. for the period, containing a total of 12.89 gm. of fat. Two examinations during the period showed that the urine remained normal.

Blood.—Daily examination of the blood showed that it had come back practically to its original condition, the average red count for the period being 3,650,000; hemoglobin, 80 per cent.; white blood corpuscles, 12,600. The differential count showed no appreciable departure from the normal condition.

Weight.—Sixty-three and one-half pounds.

PERIOD IV.—DECEMBER 25 TO 29

Diet.—Rich in fats, meager in carbohydrates, proteins remaining unchanged: In order to add the maximum possible amounts of fats to the diet, we resorted again to butter, cream, beef fat; cream and full milk were mixed in equal quantities. Bacon appealed strongly to the boy's appetite and that was added to the menu. All of these fat foods, together with peanuts, were carefully weighed, representative samples kept for analysis, and the fat ingestion for the period footed up 534.44 gm. Other foods in which fat remained undetermined were chicken soup, "diabetic" bread, lean steak, celery, parsnips, cauliflower, baked apple. Note that the above diet contains a minimum of carbohydrates. Potatoes were also given, but they were sliced thin and soaked two hours in water to remove a portion of the starch.

Chyle.—At the end of the period 4,061 gm. were removed. Specific gravity was 1.006. The fat was found to represent 1.511 per cent., or 60.932 gm. of fat for the period. Protein determined as before was present to the extent of 1.2761 per cent., or 51.82 gm. for the period. Sugar dropped to a meager trace.

Feces and Urine.—The former amounted to 1,275 gm. for the period, which contained a total of 41.17 gm. of fat. Two determinations showed the urine to be maintained at normal.

Blood.—The count on the twenty-ninth showed red blood-corpuscles, 2,700,000; white blood-corpuscles, 8,400. The differential count showed no appreciable departure from that of the previous period in the proportion of the different kinds of white blood corpuscles.

Weight.—Seventy pounds.

PERIOD V.—DECEMBER 30 TO JANUARY 2

Diet.—Meager in fat, carbohydrates average, rich in protein. In order to reduce the fat to the lowest point possible and yet to increase the proteins to the highest point possible the following diet was chosen: Separated milk, 4,000 gm.; fat content, 60 gm.; lean beef, 760 gm.; fat, 26.6; beans (dry weight), 336 gm.; fat, 6.7; bread, 300 gm.; fat, 5.7; soda crackers, 110 gm.; fat, 9.9. The total fat content, so far as determined, was 108.9 gm. Besides these staple articles of diet there were baked apples, bouillon, potato, rice and tomatoes.

Chyle.—The chyle in this period was taken in two portions. At the end of the first day 1,006 gm. were drawn. At the end of the period only 501 gm. could be obtained. The analysis of this chyle demonstrated a fact which had been suspected for a number of days, namely, that in drawing the chyle at the end of the period and only once during the period we were not dividing the chyle to correspond with the diet period, but that allowance should have been made for a lag of twelve hours in the chyle period; i. e., the chyle of Period IV, when the patient was on a fat-rich diet, would not contain all of the fat of that period. The period ending at noon and the chyle drawn from 3 to 4 o'clock in the afternoon would not represent all of the fat given in the last meal, but the fat taken at the last meal of the fat-rich period would continue to appear in the chyle for a number of hours. This thing was noted, however, in Period V that the fat represented 1.5 per cent. in the first lot of chyle drawn at the end of the first day of the period or 15.23 gm. for the first day, which is just about one-fourth of the amount of the previous four days on a fat-rich diet. The last three days of Period V yielded not only a smaller volume of chyle, but an opalescent lymph-like chyle with less than 0.1 per cent. fat, the actual percentage being 0.094, or 4.29 gm. of fat in three days. A mixture of a few cubic centimeters of Portion 1 with a proportional amount of Portion 2 yielded a mixture strikingly similar in appearance to the mixtures drawn off in Periods I and III on a similar diet. From these observations it would seem certain that more distinctive modifications of the chyle would be noted in the different periods if the chyle period had been set twelve hours later than the diet period. This could have been easily arranged by ending the diet period with the evening meal and drawing the chyle next morning before breakfast.

Feces and Urine.—During this period 2,688 gm. of feces were collected which contained 50.105 gm. of fat. The urine remained normal throughout the period.

Blood.—Red blood-corpuscles had risen in number to 2,845,060; white blood corpuscles numbered 8,600.

Weight.—Seventy-two and one-half pounds.

PERIOD VI.—JANUARY 3 TO 10

Diet.—Conference with the surgeon at this point in our experiments led to a complete change in the régime. It was suggested by Dr. Morgan that we try nutrient enemata for a period of one week. An enema consisted of one peptonized egg plus peptonized milk, quantity sufficient to make 4 ounces. These enemata were alternated with normal saline solution in 6 to 8 ounce quantities every two hours. No liquid was permitted to pass into the stomach. The mouth was rinsed out with cool water whenever the patient desired, but no water was swallowed. Under this treatment the lad suffered a good deal of discomfort through lack of nourishment, apparently, and what surprised the surgeons and others as well was the fact that apparently no liquid was collecting in the abdomen. At no time during the week did there appear to be any collection of fluid in the abdomen and at the end of that period the peritoneal cavity seemed so completely free from liquid that it was decided not to insert the trochar needle. Analysis of the food fats showed that the patient had received 96.606 gm. while only 2.970 reappeared in the rectal flushings, so that 95.637 must have been absorbed from the rectum and no portion of this was ever regained from the chyle.

Blood.—The blood during Period VI seemed progressively to become depleted until on January 9 we found the red blood corpuscles, 2,150,000; white blood-corpuscles, 12,400. At this point the pallor of the patient became so intense that it was decided to begin the administration of Blaud's mass, which was given in 5-grain doses three times a day. Further data regarding the blood will be given in the next period.

Weight.—This had fallen to 62 pounds.

PERIOD VII.—JANUARY 10 TO 15

Diet.—The complete cessation of the flow of chyle into the peritoneal cavity during the period of nutrient enemata led us to return to a general diet, especial richness in butter fat being the only distinction from the common diet. The patient was allowed to have bread and butter, coffee with [illegible], creamed potatoes, buttered toast, cream toast, rice with butter and sugar, whole milk, cream tomato soup, fruits. He was taken out of bed and allowed to exercise in a wheel chair, sitting up and wheeling himself.

Chyle.—Careful daily examination revealed no appearance of chyle in the peritoneal cavity.

Urine.—This was examined daily and continued normal.

Blood.—Under the influence of the changed conditions the blood began a gradual regeneration and on January 13 showed red blood-corpuscles, 2,245,000; white blood-corpuscles, 13,600. By the 16th there were reds, 2,825,000; whites, 13,400. On the 18th, while the general appearance of the patient had remarkably improved, there was a very marked change in the blood—the red corpuscles had risen to 3,216,000, accompanied by a marked improvement in the patient's color; however, the white corpuscles showed a sudden rise to 22,500. On the following day there were 24,000 whites, which seemed to be the maximum, and from which they progressively went back to the normal on January 25, on which date the boy left the hospital apparently well.

RESULTS TABULATED AND DISCUSSED

TABLE 2.—SHOWING AMOUNT OF FAT IN DIET AND CHYLE

Periods	I.	II.	III.	IV.	V.
December, 1907	14-17	18-21	22-25	26-29	30-2
	Gm.	Gm.	Gm.	Gm.	Gm.
Diet fat	40.50	364.73	52.20	534.44	108.92
Chyle fat	22.54	68.56	31.49	60.93	a 15.23 b 4.29
Feces, fat	7.59	23.76	12.89	44.17	50.11
Excess	10.37	272.41	7.82	429.34	49.29

TABLE 3.—SHOWING PER CENT. FAT IN DIET AND CHYLE

Periods	I.	II.	III.	IV.	V.
December, 1907	14-17	18-21	22-25	26-29	30-2
Diet, fat	Meager	Rich	Meager	Rich	Meager
	%	%	%	%	%
Chyle, fat	0.746	1.858	0.608	1.514	a.1.50 b.0.094
Feces, fat	0.587	3.004	1.171	2.154	1.868

Tables 2 and 3 show the principal facts derived from the study. That increased food-fat should lead to increased fat in the chyle is a result to be expected. This result is much more clearly marked in the percentages as shown in Table 3 than in the actual quantities as shown in Table 2. It is noticeable from these tables that a considerable portion of the ingested fat was lost by way of the feces.

More important, perhaps, than either of these facts is the discovery (Table 2) that there is a considerable portion of the ingested fat unaccounted for in that recovered from chyle and feces. During the period of observation there was no opportunity to strike a balance between income and outgo of fat, as the analyses for Period I were hardly completed before we were collecting material from Period V. Therefore it was not discovered until weeks later that there was a large balance unaccounted for in chyle and feces.

The first question that occurs to one in looking over these results is: What became of this excess of fat? The answer seems obvious, namely, it must have been absorbed. In Period II, the boy must have absorbed 272 gm. of fat and in Period IV he must have absorbed 429 gm. An amount of absorption not to be ignored went on even during the periods when the patient was receiving a diet meager in fat. The next question which arises is: Was the fat absorbed by way of the portal system or by way of the lacteal system? We have been taught that all of the fat is absorbed by way of the lacteal system. If all of the fat went through this system in the case in question, what were the mechanical conditions that controlled the case? Was the receptaculum chyli ruptured? Was some smaller chyle vessel ruptured? If the receptaculum chyli was ruptured, was the leakage at the point of rupture modified by intra-abdominal pressure? One can easily conceive a condition in which the accumulating chyle would bring intra-abdominal pressure up to a point where it balanced the intralacteal pressure. When this point is reached one can conceive that newly absorbed chyle would as easily pass on through the thoracic duct as out into the peritoneal cavity. I believe that this is what actually took place.

In the procedure described above as little change as possible was made in the ingested proteins during the first four periods. During these periods the percentage of protein in the chyle varied through very narrow limits, as follows: Period I, protein 1.335 per cent.; Period II, protein 1.215 per cent.; Period III, protein 1.137 per cent.; Period IV, protein 1.276 per cent.; Period V, protein 1.866 per cent. According to the original plan of procedure Period V was to have a menu rich in proteins, while Period VI was to have a menu meager in proteins. Glancing at the protocols of the periods given above, the reader will note that at the beginning of Period VI the original plan was radically departed from and the nutrient enemata were introduced; it is interesting to note, however, that during the four periods when the proteins remained as little changed as possible, the percentage of proteins present in the chyle varied within 0.1 per cent. of the average, while the percentage of proteins present in the chyle during Period V made a sudden increase amounting to over 0.6 per cent. This cannot be a simple coincidence; the increased protein of the chyle must have been caused by increased protein in the diet.

One would seem to be justified in concluding that proteins are in part absorbed through the lacteals.

Turning now to Period VI and glancing through the protocol of that period, one will note a marked change, no less surprising than gratifying, in the condition of the patient, especially with respect to his principal symptom, the leaking of chyle into the peritoneal cavity. From the hour that the patient ceased to take food and drink by way of the mouth and received all nourishment through nutrient enemata, the appearance of chyle in the peritoneal cavity ceased. If any further proof than those already given above were necessary to demonstrate that the appearance of chyle in the peritonal cavity was due to leakage from the lacteals, this sudden cessation of its appearance would furnish that proof. The internal pressure in the lacteals being removed, the edges of the ruptured vessel could fall together, come into apposition and the healing process could proceed rapidly. At the end of a week this process had proceeded so far as to hinder any subsequent leaking when the general diet by way of the mouth was resumed.

The most noticeable physical change in the patient during the sixth and seventh periods was the deterioration of the blood, the red blood-corpuscles being noticeably decreased. Note that the decrease in the red blood-corpuscles, however, preceded by about ten days the increase in the white corpuscles. These two changes in the blood were probably altogether independent of each other and due to entirely distinct causes. The depletion of the red blood-corpuscles in the latter part of the sixth period was unquestionably due to the small amount of nourishment absorbed from the rectal feedings. The introduction of the egg into these feedings was with the definite purpose of introducing a requisite amount of iron. While the egg seemed to be absorbed, the red blood-corpuscles and hemoglobin, nevertheless, were greatly decreased. From the day on which we began to administer the Bland's mass the red blood-corpuscles and the hemoglobin began to pick up until they reached the normal within about ten days.

I account for the improvement of the patient during the time of rectal feeding on purely physiologic grounds. I believe that, inasmuch as the flow of chyle progressively decreased in amount from the third period, Nature was probably throwing out a mass of adhesions across the ruptured chyle-vessel. As soon as the receptaculum chyli was relieved of pressure there was a rapid closure of the wound. As soon as we put the patient on hospital diet, his recovery was "by leaps and bounds."

The sudden increase of white blood-corpuscles led those in attendance to suspect a possible infection and the patient was very carefully looked over and watched for several days, but no rise of temperature or other symptoms suggesting infection appeared and the white blood-corpuscles returned progressively to the normal, which they reached before the patient left the hospital.

CONCLUSIONS

1. It is suggested that we recognize a special subclass of ascites chylosus which might properly be called "traumatic chylorrhagia," whose diagnostic characteristics would be, rapid collection of chyle, pure or tinged with blood, immediately following the injury.

2. The fat content of the chyle varies greatly with the diet; the protein varies moderately, while the sugar varies only slightly. From these facts I believe that we are justified in assuming that not only are the fats absorbed by way of the lacteals, but the proteins also are in part absorbed by way of the lacteals. With equal force it may be said that the sugar is not absorbed by the lacteals, but the trace uniformly found is that which is incident to tissue fluids generally and gets into the thoracic duct from tissue lymph-vessels.

3. I would suggest the following physiologic method of determining whether or not, in cases of traumatic chylorrhagia, all, or only a part, of the chyle is escaping:

After a fast-day give by mouth a one-day diet rich in fat; determine fat in diet, in chyle, and in feces. If that found in chyle and feces falls appreciably short of that exhibited in the diet, one may conclude that not all of the chyle is escaping. The smaller the proportion of escape, the better the prognosis.

4. In cases of traumatic chylorrhagia experience in the case of Dr. Morgan suggests nutrient enemata, and a waiting for positive indications before surgical interference is undertaken.

2431 Dearborn Street.

THE DEPENDENCE OF NEUROLOGY ON INTERNAL MEDICINE

A PLEA FOR THE ESTABLISHMENT OF NEUROLOGIC HOSPITALS, AND OF NEUROLOGIC WARDS IN GENERAL HOSPITALS*

JOSEPH COLLINS, M.D.
AND
PEARCE BAILEY, M.D.
Physicians to the Neurological Institute of New York
NEW YORK

The practice of establishing institutions for special research, with endowments sufficient to secure them from the motives which influence the conduct of establishments on a commercial foundation, is rapidly gaining substantial recognition in America. We have had no war indemnities applicable to scientific purposes, but fortunately we have scores of wealthy men and women who are showing themselves disposed to lay those financial foundations which must henceforth underly the upbuilding of the natural sciences. They have initiated a movement which has already done more for us than herald a coming greatness. They have stimulated interest in medical progress, both in the profession and out of it, and already practical results are at hand.

NEUROLOGY NEGLECTED

Our achievements in surgery, in medicine, in public hygiene, in the widening scope of medical education, are all products of the spirit of inquiry which is fostered in the endowed laboratory; and such laboratories are springing up everywhere. But while the land, throughout its length and breadth, is preparing, as it were, for the responsibilities of leadership, one branch of medicine has been accorded no opportunity of sharing in the general progress. This branch is neurology. There seems to have been no thought of providing for its future, and its place in America is about what it was twenty-five years ago. Neither laboratories nor hospitals are being endowed in its favor. In all America there is scarcely a general hospital with neurologic wards worthy of the name, with the exception of a few hospitals and inaccessible city almshouses in which cripples and dotards are crowded together under the care of untrained housestaffs without laboratory facilities. Magnificent endowments almost yearly further the advances in surgery, medicine, and psychiatry, but neurology is left to take care of itself. Few nurses receive special training in nervous diseases; the objective teaching of students is limited chiefly to ambulatory cases. The profession who teach them, having no hospital patients of their own, can demonstrate only such patients as are able to walk to the clinic. In the recognition of brain abscess, meningitis, acute intoxications and injuries of the nervous system, the student either goes uninstructed, or else gets his instruction from men neither particularly interested nor particularly versed in these subjects. Hospital section-teaching, the most valuable of all modern teaching methods, is practically unknown in nervous diseases. The clinical facilities of the professors of neurology are not much better than those of the students. Without wards, without laboratories, without means for the continuous daily observations of patients, the holders of these chairs cannot obtain the intimate knowledge of disease, and the stimulus to investigate it, which is necessary to keep them abreast of modern progress.

In most large cities the general hospitals appoint what is known as a consulting neurologist. This incumbent may or may not be a member of the medical board. He is admitted to the wards by invitation and on sufferance; and such advice as he gives may be acted upon or not, in accordance with the whim or acumen of the attending physician or surgeon. No house officer is accredited to him, and he can follow a case only by extreme effort, and, when all is over, he is permitted to utilize it for scientific purposes only in the event of the attending physician or surgeon not wishing to make use of it himself. He is excluded from the consecutive observation and the scientific study of the metabolic diseases which underlie so many functional nervous affections.

NEUROLOGY AS A SPECIALTY

One cannot soberly consider these facts without being confronted with two important questions: Is neurology a legitimate specialty? If it is, what must be done, not only to advance it, but to enable it to hold its place? The answer to the first question is certainly affirmative. Ever since the publication of Erichsen's book on spinal injuries, it has become every year more obvious that nervous diseases require men of special equipment, judgment and inclination to interpret them correctly. It is more special in study and practice than any of the recognized subdivisions of surgery; just as special and far more extended than opthalmology or otology. So thoroughly has it been recognized as a field of activity *sui generis* that no argument on the subject seems necessary. Its individuality being granted, the next question is, Where shall we turn for successors to Duchenne, Lockhart Clarke, Romberg and hosts of other pioneers? Not to surgery surely. For though men like Horsley and Cushing have advanced neurology enormously in certain directions, their work has been and must be too circumscribed to advance neurology as a whole. Neither can we hope, in America at least, for help from internists. Our internists seem to shun these important problems, and often enough boast of their ignorance of them. The American Neurological Association has numbered not more than half a dozen internists in the past ten years. Dr. Charles L. Dana is the one man familiar to us who, in charge of a large general hospital service, has cut his name deep into neurologic history.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

NEUROLOGY IN EUROPE AND IN AMERICA

In Europe the position of the neurologist is quite different from his position with us. There neurology is looked on as an integral department of internal medicine; and those who aim to gain entrance into the ranks have had not only prolonged training in internal medicine, but they evidence their continued interest by working at it in the hospitals, and teaching it in the universities. The medical clinics of Germany have been presided over by men whose greatest fame has come from their neurological contributions. Friedreich and Erb, of Heidelberg; Nothnagel and Strümpell, of Vienna; Schultze, of Bonn; von Leyden, of Berlin; Lichtheim, of Königsberg, leaders in neurology, all were, or are, directors of the medical clinics in their respective cities. And what is true of Germany is also true in a large measure for France, Great Britain and other European countries. Witness, for instance, the contributions to internal medicine and pathology of Trousseau, Charcot, Marie, Byrom Bramwell, and of Gowers, to name only a few; or if it is necessary to enumerate other writers, the contributions that have been made by Hasse, Kussmaul, Leube, Sahli, Rumpf, Brissaud, Grasset, Head, Wyllie, and other teachers of internal medicine. Not only do their systematic treatises of medicine reveal their mastery of the intricacies of neurology, but their individual discoveries must be mentioned in headlines when the history of neurology is written.

But what is to become of neuropathology in America, where neurology and internal medicine are distinct, and where practically all the laboratories and wards are controlled by men who do not investigate nervous cases and are closed to those willing and capable to work in this field?

The answer is not far to seek. Neurology must fall behind and cannot take its place in the coming American revival. The writing is already on the wall. We can claim no great achievement in the past ten years. American neurologists do not obtain the intimate experience with acute nervous diseases which belongs by right to the house physician in the Queen's Square Hospital in London and we cannot hope, under present conditions, to produce men of accurate knowledge such as have made many a small German town famous.

American neurology is not only at a standstill, but its sphere is constantly being curtailed. The American Neurological Association this year refused to take part in the discussion of serum therapy at the Congress of American Physicians, on the ground that "it was not germane to neurology." Why not be frank about it and admit that neurologists have never had the opportunity of judging the effects of serum therapy on the nervous system? Instead of neurology having its share in the progress of the sciences concerned with bacteriology and with nutrition, the diseases it once claimed are one by one being taken from it. Exopthalmic goiter, a nervous disease if there ever was one, is more and more rare in neurologic clinics. As the neurologist has neither beds nor laboratories, the psycheses and neuroses with gastric symptoms have entirely passed from his hands and have lost their names. Under the mask of gastroptosis, mucous enteritis, and achylia, the patients are subjected for years at a time to the pernicious suggestions connected with local treatment.

A WIDER HORIZON IN NEUROLOGY

It is partly our own fault. During the formative period of our specialty a few years ago, the American neurologist prided himself on being a neuro-anatomist *par excellence*. To make cerebral localizations, to designate diseased tracts, to distinguish between organic and functional diseases constituted his chief occupation. The anatomic period has reached its zenith. To-day there is a wider horizon.

Nervous disorders and nervous phenomena are so directly dependent on and so intimately associated with derangement of metabolism, diseases of the viscera and ductless glands, to syphilis and other infections, that it is foolish to attempt to make an approximation of the pathogenesis of these symptoms unless the physician is competent to investigate and detect such pathologic states or intelligently to criticize the reports of trained men working with him. And then that great wilderness of pathology, the psychoneuroses—what opportunity is furnished us to study them intelligently and thoroughly in this country? A hurried interview in the out-patient department, where neither the environment nor the facilities favor the slightest revelation of the soul, then the patients disappear into the maelstrom of Eddyism, quackery, and the commercial sanatorium.

We are not urging a wider field for the neurologist than that of neuro-anatomist without taking into account human limitations. We recognize the time-consuming requirements of physiology, of anatomy and of special clinical investigations of the modern neurologist. We do not expect to see the neurologist, except perhaps when working at some special problem, an expert in fevers or in abdominal tumors. But we know that we are right in protesting against the narrow specialism into which he has been crowded. Unless the physician who professes to interpret nervous disorders is skilled by daily practice in making physical examinations, unless he is permitted to become familiar with the personalities of his patient through daily contact, he cannot attain that which he should attain, namely, the highest type of physician. The only way he can hope to develop such skill is in the wards of a hospital. In these wards he shall have the same facilities for investigating disease as his colleague whose inclination leads him to concentrate his clinical acumen on disorders of less noble viscera than the brain and spinal cord. There he shall have the opportunity of calling to his aid pathologist, cytologist and chemist, who shall work under his direction, and he shall avail himself of the opportunities which such service gives to study the personality or soul of his patient, without a knowledge of which therapy will always remain a barren field.

NEUROLOGIC HOSPITALS DEMANDED

Until general hospitals have neurologic wards with independent staffs, or until neurologic hospitals shall be established in every metropolitan city, we cannot hope that neurology will take the place in medical science that it deserves. We appeal to the profession to establish such services.

In New York we have organized and put into operation such a hospital, and with the hope that a brief description of its scope and organization will stimulate and encourage others, we venture to describe it briefly.

ORGANIZATION OF THE NEUROLOGICAL INSTITUTE

We arbitrarily chose three men who were responsible for the medical organization, development and direction. We readily secured a board of directors made up of men well known in business and in philanthropy—New York's first citizens. We were fortunate in finding a building adequate for our purposes, which had been constructed as a training-school for nurses and used later as a private hospital. The sum of twenty-five thousand dollars sufficed to make the necessary changes and to install the equipment for hydrotherapy, electrotherapy, Zander apparatus, electric superheated air apparatus, occupation rooms, roof-garden, clinical and chemical laboratory and autopsy room. Complete operating, sterilizing and anesthetizing rooms were already in existence. The building was subdivided into three parts—wards—with accommodations for forty patients; semi-wards, with accommodations for twenty patients, and twenty private rooms. The first floor of the building is devoted to the out-patient department and the therapeutic department. Here patients applying for relief are examined by the attending physicians and by salaried assistants working under them, and those whose symptoms require further study and interpretation are sent into the hospital, while those whose disorders can be satisfactorily treated in the various therapeutic departments are referred thither. Each of these therapeutic departments is under the immediate direction of physicians, and the treatment is administered by salaried assistants. In addition to diseases of the mind and nervous system, metabolic and nutritional disorders such as gout, rheumatism, arthritis, diabetes, etc., are received and treated. Other diseases are referred to the services elsewhere of the medical staff and the consultants.

The second and third floor of the hospital are devoted to the wards and semi-wards. The price of the beds in these wards, inclusive of everything, is $15 a week. Any member of the medical board may remit any part, or all, of this amount in individual cases, and about one-half the patients pay nothing. In the semiprivate wards, patients pay from $15 to $25 a week. The private rooms are reserved for patients of the physicians connected with the hospital. The revenue obtained from these rooms materially helps in meeting the expenses of maintenance. The sixth floor is devoted to the chemical and pathologic laboratory, the operating-room, the clinical and psychologic laboratory, and to quarters for the house staff. The laboratory is in charge of an expert chemist and microscopist who is paid a salary of $2,500 a year. The house staff consists of six physicians, three interns and three externs, all of whom are salaried. In addition to this staff, we have the assistance of special consultants in neurology, internal medicine and the various specialties, and an attending surgeon and an opthalmologist, both well known for their achievements in neurology.

At the end of the first six months of the Neurological Institute's existence nearly two thousand new patients had been examined in the out patient department and upward of three hundred patients had been admitted into the hospital. It has been no uncommon thing to give from sixty to seventy hydriatic treatments in a day; and four massage operators, two electro-therapists and two teachers of exercise and educational movements are constantly employed. The present building, which, it was at first thought, would long be adequate to meet the demands put on it, has already been shown to be entirely inadequate. The best evidence that such a hospital was needed, and that it meets a want that was urgent, is furnished by the reception it has received.

We propose soon to establish a country branch, conducted on the sanatorium principle, to which patients can be transferred from the hospital as soon as their diseases have been adequately interpreted. In the country only is it possible to carry out all of the disciplinary measures that make for the restoration of the diseased personality, the disordered functions, and the perverted metabolism, which these patients always have.

The establishment of the hospital on a working basis has necessitated attention to so many practical details that as yet we have been unable to plan the scope and equipment of the experimental and pathologic departments. These will by no means be forgotten, as we have from the outset regarded them as the important features of the institute.

THE STATE CARE OF THE INEBRIATE *

IRWIN H. NEFF, M.D.

Superintendent, Foxborough State Hospital

FOXBOROUGH, MASS.

Although drunkenness is generally considered a misdemeanor, its association with criminality and criminal procedure has given the public the impression that the drunkard, if not a criminal in a legal sense, is so closely allied to these delinquents that the measures applicable for the control of the criminal can be consistently used in the management of the inebriate. The impracticability of such methods is recognized by those familiar with the varied types of inebriety.

Credit must be given to the judiciary and particularly to the various probation commissions for the heroic efforts which they have made to formulate some satisfactory method for dealing with the drunkard. They have recognized that the drunkard has an individuality, but owing to the diversities of the types and lack of facilities for studying these cases they frankly acknowledge their helplessness and are ready and willing to cooperate with the medical profession in any reasonable way. Massachusetts with its 90,000 arrests for drunkenness in 1909 is certainly a strong appeal for the inauguration of some plan which will individualize, differentiate and care for the habitual or pathologic inebriate.

INEBRIETY PATHOLOGIC—CLASSES

The term pathologic as applied to inebriety is expressive and eminently practical. For clinical purposes pathologic inebriates can be conveniently divided into three classes. The first group comprises men or women originally of normal health but who, through overwork, emotional stress and business reverses, have lowered

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

their power of resistance. With frequent indulgence in stimulants the patient becomes powerless to discontinue his habit. This is considered to be the most curable class of pathologic inebriates. A second group considers the periodical drunkard or dipsomaniac, people ordinarily temperate, or even abstinent, who at certain periods yield to an obsession of stimulation. The third group comprises the defectives and degenerates among drunkards. Alcoholism of the patient or of his parents may in some of these cases have brought on directly or indirectly the impaired mental and physical condition, but it is equally true in other cases that imbecility, insanity and other forms of degeneracy have preceded and have been responsible for the excessive use of alcohol. The physicians in charge of the Massachusetts correctional institutions are inclined to assert that the large majority of habitual drunkards in their care, are men of less than normal mentality.

SUMMARY OF EIGHT HUNDRED CASES

Institutional statistics have proved that a predisposing cause can be almost invariably found in the pathologic inebriate. The clinical study of approximately eight hundred cases of inebriety at the Foxborough State Hospital during the past two years is my justification for the following summary. These conclusions may be considered as an attempt to establish a clinical entity for inebriety.

1. Inebriety is an expression of nervous weakness or nervous instability; used in its simplest sense it could be called a psycho-neurosis, many cases showing symptoms which are found in neuresthenic states and allied conditions. Addiction to alcohol is a symptom of an unstable nervous system and the contrary view expressed by the laity is not justified by clinical observation or experience.

2. The exciting causes of inebriety are of a physical and psychic origin. Given a neurotic subject crises may be precipitated by any marked departure from the ordinary routine (psychic) or by any disturbance of organic nature (physical).

3. Inebriety is prone to develop as a frank case at the critical epochs of life, namely, during pubescence, adolescence or involution. Developing during involution it is generally the effort of an individual to maintain his productive power by recourse to artificial stimulation. The frequent inception of inebriety at these periods suggests an analogy to the psychoneuroses.

4. Inebriety being an expression of neuropathy or psychopathy, may be preceded or accompanied by a multiform nervous syndrome; thus each case is essentially different.

5. The heredity element in inebriety is considerable and is undoubtedly a powerful predisposing cause. A history of decided intemperance in the parents existed in over 40 per cent. of our cases, while 15 per cent. gave a history of defective ancestory, insanity, neuropathy, drug addiction or tuberculosis being present on the maternal or paternal side.

6. Approximately 5 per cent. of our cases showed pre-existent mental symptoms which could be differentiated. Some of these were distinct cases of psychasthenia, others were of the milder forms of manic depressive insanity.

We feel warranted in corroborating the statement made by others that an inherited neurotic or psychic tendency is present in a considerable number of inebriates. Many of these cases admit vagaries of conduct and peculiarities during pubescence and adolescence, showing clearly neurotic or psychopathic conditions which have antedated the alcoholic manifestation. We venture to say that our future study will support these conclusions.

INDIVIDUALIZATION IN TREATMENT

The necessity for individualization and differentiation in cases of drunkenness is made more evident if we inaugurate any method of treatment. It seems unnecessary to say that such differentiation should be controlled and directed by the medical profession. The successful treatment of inebriety depends on the accurate discrimination and individual consideration of cases. These conditions can be more satisfactorily brought about in institutions under state supervision and control.

The defects in existing methods of care of the drunkard, which methods are in great part criminal, are recognized in Massachusetts. Her experience may be justly considered to be similar to that of other states. While release, suspended sentence, probation and payment of fine while on probation, is an ideal method in some cases, it can be said without fear of contradiction that imprisonment for drunkenness and non-payment of fine are futile as a method of reform and useless as a means of protecting the public. The large number of recidivists in alcoholism bears testimony to this assertion.

The habitual drunkard is omnipresent and resistive to the ordinary methods of treatment of reformatories. R. W. Brenthwaite, in the report of the inspector, under the inebriate's acts, 1910, expresses this clearly when he says that owing to educational measures and popular agitation, there has been a considerable and progressive improvement in the general drinking habit of the nation. The drunkenness that has been rendered less common in England is the occasional vicious excess of the man who can remain sober if he will. The large majority of the population, owing to educational measures, are now moderate drinkers who rarely get drunk, a case which is apt to engender a feeling of satisfaction until we look below the surface and observe the army of habitual drunkards which may be properly termed pathologic inebriates. This also emphasizes what I believe every medical man can verify, that it is by no means clear that any real advance has been made toward the suppression of habitual drunkenness.

The increasing prevalency of drunkenness is responsible for the concerted movement for the care and treatment of inebriates in England some thirty years ago. They have devoted time and money to the elucidation of this problem. At the present time there is under consideration progressive legislation which will increase the usefulness of their methods. Australia, Germany, Switzerland, Hungary and Denmark have laws which provide for the care and treatment of the inebriate. Recent correspondence with these countries shows that they are making steady progress and that the authorities are keenly alive to the fact that state and municipal care of the inebriate is not only a reform measure but is of decided economic value.

The need of state care of the inebriate was almost simultaneously recognized in the United States. Massachusetts in 1893 established a hospital exclusively for the treatment of the inebriate. Iowa and Minnesota have established similar institutions and in many states provision has been made for the compulsory commitment of inebriates to state institutions. During the past year many states have appointed committees for the investigation of drunkenness and with power to advise on conditions and remedies. Maryland, Michigan, Connecticut, Ohio, Indiana, New Jersey and New York are actively concerned in such investigation. Pennsylvania is engaged in this reform and undoubtedly will eventually succeed in carrying out the purposes of the bill so actively championed by her medical profession. New York City has recently passed a bill which provides for the care and treatment of the inebriate; the proposed scheme is perhaps the most elaborate which has thus far been advanced and its inauguration will be looked for with interest. New Jersey, although meeting with reverses in her attempt to secure state care, is hopeful of success and has been conducting a good publicity campaign.

CONSIDERATIONS OF CURE

When we consider the permanency of benefit from institutional treatment we must remember that inebriety is a chronic disease, and bearing in mind our conception of inebriety, namely, that it is a state of nervous weakness plus a habit in which the patient has a graded responsibility, we can readily appreciate that the word "cure" must be used relatively and that the condition which we call inebriety is subject to the same inconsistencies which we find in many cases of functional nervous disorder. When considering the benefit which may result from institutional treatment it is necessary to consider the type of inebriety, the time of abstinence, and to compare the man's present mode of living with his daily habits prior to his admission to the hospital. This plan has been carried out when studying those discharged from the Foxborough State Hospital. I am not prepared to give statistics on"cure" but I can conscientiously say that a large percentage of cases have been permanently benefited by treatment.

STATE HOSPITAL TREATMENT

A state hospital should care exclusively for the hopeful cases and these should be carefully differentiated from cases not likely to be benefited by hospital treatment. The following conditions regarding state hospital treatment of inebriety are based on our experience during the past two years.

1. Individual consideration of each case is the only rational and effective mode of treatment.

2. Abstention from alcohol is not sufficient for cure; it is required that the patient cooperate in normal measures instituted for his betterment and the ultimate success of hospital treatment depends on this sustained interest.

Medical after-care is necessary to obtain the maximum degree of success. This medical after-care to be of any benefit must be practiced with the consent and cooperation of the patient.

A state hospital for the treatment of inebriety should be considered an educational center; it should have adequate equipment for treatment of such cases, and should have facilities for segregation and individual treatment of the diverse types.

The word "hospital" when used in connection with inebriety is considered to be synonymous with "cure" or "improvement." Used in this sense it can be emphatically said that, with modern methods, hospital treatment of inebriety by the state is of economic value.

IMPROVEMENTS IN THE LAWS

The experience of Massachusetts during the past five years has revealed failures in the existing conditions which has served as a basis for pending legislation.

The trustees of the Foxborough State Hospital have presented a report to the general court, now sitting, which was submitted in accordance with legislative resolve approved during 1909. This legislative document has been presented with accompanying recommendations and a bill asking for an appropriation for the purchase of a site for the establishment of a new institution has been introduced. The report involved the careful study of the treatment of inebriety in this country and abroad; it considers in detail drunkenness in Massachusetts, its conditions and remedies. The following is a summary of the recommendations:

The Board of Trustees of the Foxborough State Hospital in their forthcoming special report, prepared in accordance with Chapter 11 of the Acts and Resolves of 1909, offer a statistical study of drunkenness in Massachusetts with reference to the cost of inebriety to the commonwealth. In place of the present system of fine or sentence to prison for the frequent offender, is substituted a plan whereby the non-criminal drunkard may be completely segregated from the other offenders of our penal system and the curable cases among them given every opportunity for cure. The plan further includes provision for the segregation and cure of female drunkards who have hitherto been subjected to custodial treatment only.

To this end the trustees of the Foxborough State Hospital have recommended to the Legislature of the Commonwealth the following:

1. The establishment of a new state hospital colony for inebriates to receive:

A—patients who come voluntarily (Acts of 1906, Chap. 316).
B cases committed under Sec. 59 of R. L., Chap. 87.
C—young habitual drunkards placed on probation by the court on condition that they spend their probation period at the hospital.
D—suitable cases transferred on parole from the detention colony.

2. The establishment of a detention colony for incurable non-criminal inebriates, to be situated in a town neighboring to the hospital. To receive:

A—Incurable cases committed as under R. L., Chap. 87.
B—confirmed drunkards on indeterminate sentence.

3. The establishment of a hospital colony for non-criminal female inebriates to receive:

A—voluntary cases.
B—cases committed under R. L., Chap. 87,
C—cases sentenced from the courts.

A part of the institution might be devoted to the incurables of Class C until the state had sufficient experience with provision for female inebriates to ascertain the need of a separate colony.

These three institutions for purposes of facilitation of transfer and for uniform management should be under the same board of trustees and the same medical direction.

This system as above outlined provides for all types of drunkards beyond the release and probation stages, except for the drunkard with criminal taint, who, together with refractory cases of the detention colony, should be sent to the state farm.

The present Foxborough Hospital is inadequate for this extended purpose, because of general lack of equipment and facilities. Some of the' most obvious lacks in view of constructive treatment are:

1. Insufficient land for agricultural development.
2. Insufficient plant for industrial training, etc.
3. No opportunity for segregation of diverse cases.

The advantages of proposed system are:

1. A large per cent. of the 20,777 persons sentenced in Massachusetts in 1909 for drunkenness are curable. By this system such cases could be ascertained and the patients cured

2. The utter waste of state resources involved in the sending of 9,958 cases in 1908 to prison for a month or less on account of non-payment of fine could be obviated. Some of

these men could be cured permanently. The others could be kept apart from criminals and put to work that would largely pay the cost of their maintenance—a cost which today, including expense several times per year per individual drunkard for arrest, trial, transportation and detention, is very serious.

3. The woman drunkard, who is now forced into houses of correction or state reformatories with thieves and prostitutes, could have treatment for cure whenever curable, and in any case could be kept from the street, on the one hand, and from association with criminals on the other.

The adoption of this plan will eventually lessen materially the cost to the state for the care of the inebriate. The experience of Massachusetts in caring for drunkenness is undoubtedly paralleled in the majority of states. The direct cost to the Commonwealth of Massachusetts in 1908 for maintenance in prison of such inebriates as were sentenced on the charge of drunkenness was over $500,000. When we include the cost of arrest and trial, and particularly the cost to the public and private charities for maintenance of families, it is safe to assume that these additional expenditures place the direct annual cost of drunkenness to the city and state at a point far beyond $1,000,000. This vast sum of money expended for arrests, arraignment and imprisonment is certainly an appeal for better discrimination and a more rational mode of procedure in taking care of these people.

ABSTRACT OF DISCUSSION

Dr. Alfred Saenger, Hamburg: I am glad to hear that in New York there is now a neurologic institute. Erb was the man who said that it was necessary to found such neurologic institutions. In Germany we do not have them, but in Hamburg we have neurologic wards in the two large general hospitals. In the one hospital at Eppendorf there is my colleague, Dr. Nonne, and in the other, the Hospital of St. George, I have a number of beds, and a so-called polyclinic for outside patients.

Dr. Collins states that the internists have the lead in neurology in Germany. That was so formerly, but later on we have had neurologic specialists such as Oppenheim and others, who are not internists; and it seems to be true that neurology is really a department by itself; and Erb said, at the last association meeting held at Vienna, that the time would soon come when there would be founded in Germany chairs of neurology, where formerly chairs were instituted for the internal physician exclusively. Three years ago Oppenheim, Bruns, v. Frankl-Hochwart, Edinger, v. Monakow, the late Moebius and myself established the Association of German Neurologists, and we had the pleasure at our meeting last October at Vienna of seeing several American neurologists.

Dr. Charles L. Dana, New York: The work accomplished in the establishment of a neurologic institute has been most praiseworthy and satisfactory and the importance of such an institution cannot be exaggerated. We have just had enacted a law which enables New York City to undertake a certain experiment in the care of inebriates, and on the statements of Dr. Neff and the success of such work as he has done depends largely the question of whether we are going to succeed or not. The New York law is not mandatory, and we have to go before the board of estimate and apportionment and ask them to give us money to carry it out, and if Dr. Neff's results and the experience of others in this work show that it is of economic advantage we can get the money. It is just a question of economics. In New York we have a bad history in so far as practical care of the inebriate by state institutions is concerned. This failure of the state institutions several years ago, however, was due to politics and defective laws and administration; it is a *sine qua non* in the care of the inebriates that the institution be taken away from politics and that it be under the control of an intelligent board of managers. If any city or state cannot begin that way it might as well not begin at all. In New York we are trying to inaugurate the farm colony plan as applied to the inebriate, and instead of having the drunken man punished as a criminal we propose for the first and second offenses to let him go on probation, and then on the third offense to send him to the hospital, and then to a farm, where he is committed on a somewhat indeterminate sentence.

The whole question is one which should appeal to neurologists and interest them.

Dr. T. D. Crothers, Hartford, Conn.: It is a source of great satisfaction to have this subject come into prominence again. When the asylum at Binghamton, N. Y., the first ever organized in the world for the treatment of inebriates, opened in 1863, it excited intense opposition. Medical men and laymen called it a quack effort, denounced the theory of the disease of inebriety and its defenders as unworthy of notice. Its early presidents, the late Dr. Valentine Mott and the late Dr. Willard Potter, were condemned for having anything to do with the work. Boss Tweed was a trustee at one time, and the institution went into the hands of politicians, who after sixteen years of troubled experience turned it over to an insane asylum. The questions which Dr. Neff has brought out were discussed at that time, with equal clearness, but they were too far ahead of public opinion to attract any attention. My early experience began as an assistant physician in that institution in 1875. I assisted in making the first statistical study of the history of 1,100 patients who had been under treatment at the institution nine years before. The returns showed that 60 per cent. had continued sober and temperate up to that time. These statistics were condemned as fictions, and yet after the long lapse of time they have been confirmed, and were really the first scientific studies ever made. The curability of such patients was established, but there are people to-day who doubt it and interpose obstacles and criticism. Massachusetts is facing the same problem that came up in New York fifty years ago. I have for over a quarter of a century discussed these very questions in this Section in many papers. Now a new generation is coming on and their practical recognition is assured. The best statistics show that from 20 to 40 per cent. of 5,000 new cases of insanity registered last year in New York City are due directly and indirectly to alcohol, and this cause of all others must come into the field of medical study and critical examination.

It will be of interest that the government has published the transactions of our Society for the Study of Alcohol and other Drug Narcotics, as Senate Document 48, a book of 135 pages, containing thirty-two articles on the economic, scientific, hygienic and medical sides of the great alcoholic problem, which is the best collection of modern literature published on this subject. This is the first time the government has ever published the transactions of any medical society and indicates the profound interest in the subject. The document is sent free to all who ask their senators at Washington for it.

Dr. F. P. Norbury, Kankakee, Ill.: The organization of the Psychopathic Service of Illinois follows the line suggested by Dr. Collins. The institutions of Illinois, including the Psychopathic Institute, located on the grounds of the Kankakee State Hospital, are on a civil service basis. The organization of the service is educational; the young men are encouraged to enter the service as interns, then after a year's experience, to take the promotional examination for the grade of assistant physician; then after a service of a few years, they are eligible for promotional examination to the grade of physician; then later to the grade of assistant superintendent.

The Psychopathic Institute has a staff as follows: Director, psychologist, clinical pathologist and chemist. The work of instruction embraces the methods of clinical psychiatry and neurology approached not only from the standpoint of psychology, but of internal medicine as well (a training in diagnostic methods of internal medicine), and consideration of advanced methods of treatment, including bedside studies suggested by Dr. Collins. To insure recognition of the educational values of such a training and its appreciation by the people whom we serve, we must have the cooperation of the medical profession. We of the west are hopeful of the con tinued advancement of clinical psychiatry, inaugurated by Michigan, encouraged by Indiana, Illinois has enlisted for the full values which may accrue to our profession and those whom we serve, in this education work.

Here in Missouri, under the leadership of Bliss, a similar campaign has been inaugurated, which we all hope will come to fruition, thus adding to the promising future of clinical psychiatry in the west, based wholly on a strictly professional and educational basis.

Dr. Frank R. Fry, St. Louis: We should show all the enthusiasm over this matter of legislation concerning inebriates that it is practically entitled to, but not more. Dr. Dana sounded the right note when he said that we should watch closely the practical workings of legislative attempts, and that future attempts should be based on statistics, if they will help us, or on other considerations of what has been attempted in this line.

We ought to be careful of our statements, action and recommendations, because they will be accepted as somewhat authoritative. For instance, one of the speakers on the floor just now said that certain statistics showed that a certain proportion of insanity was due to alcohol—20, 30 or 40 per cent. of cases. Now, I do not believe that there is any statistical way of proving that thing; and therefore, we ought not to say so.

As Dr. Crothers and Dr. Dana have said, attempts at legislation in this direction began many years ago, and they were failures; it is very demoralizing to attempt to do something of this kind and fail.

Dr. Hugh T. Patrick, Chicago: I am sure we are all enormously indebted to Dr. Collins and his colleagues for making this dream of a neurologic institute come true, because a dream which has come true is an enormous lever with which to pry loose the necessary funds to make more dreams come true. A demonstration beats a theory all to pieces. And I wish to say just a word of encouragement to this pessimistic Dr. Collins, for there are even now schools in which the ward walks and bedside section work are not unknown. We have them out where we live. I am bound to say that our material is not always adequate, but we have made a start.

We would have more neurologic services, pure and simple, if the neurologists were a little more aggressive. The truth is, we are too considerate of the feelings of the internists. I think that every neurologist ought to be willing to say right out in meeting that he can diagnosticate and treat a case of apoplexy or tabes or any other nervous disease better than an internist can; that he can better demonstrate it to a class; that he can talk about it better; that he can instruct the student more effectively than any internist on the faculty. If the neurologist cannot do this he ought not to be on the faculty at all. In Cook County Hospital, our largest city hospital, we now have a real neurologic service with neurologists on the staff who have their own patients and the entire control of them, also the control of the post-mortem material and can use it fully and without restrictions. They have their allotted interns as well. We have not yet our patients segregated in separate wards, as they should be; but after all, segregation is not an unmixed benefit. When the cases are mixed in the wards, the internists are apt to see them and the neurologist is apt now and then to see a case of the internist. If we neurologists did better and more fundamental work, according to our opportunities, then we would soon have more. In my experience the internists have always shown themselves not only ready for but anxious to have the assistance of any neurologists who were willing to sit down and spend the necessary time with them; and there's the rub. One of the great advantages that Dr. Collins has in his new institute is the paid assistant. Our work is such a time-devourer that unless the best men, the thinkers, the men with ideas, can have assistants who shall not be asked to spend thousands of hours for nothing, we cannot make the sort of advancement which we should make and we shall be a long time in arriving at such a wonderful organization as Dr. Saenger and Dr. Nonne have in Hamburg.

Dr. Haldor Sneve, St. Paul: I have to take issue with Dr. Neff and Dr. Crothers about inebriety being a disease. I think that as long as we maintain that inebriety is a disease we are keeping back the hands of the clock that marks progress in the treatment of this condition.

I would make three classes of inebriates, and I would put the vast majority, say three-fifths of all inebriates, in the class of inebriates from social habit. Inebriety is a habit seldom acquired in middle or old age, but most frequently in youth, from bad associations. To see where inebriates are trained, all one has to do is to go into the slums and saloons and clubs and see there the young men.

The second class of inebriety is the neurotic type. I do not believe that the neurasthenic or neurotic inebriate, or the neurotic of any kind is a born neurotic; I think he has acquired the neuroses. I do not believe that we are born with neurasthenia, hysteria, or any of these things; we acquire every one of them. We have an immense number of neurotics in our society; every family has neurotics, and no statistics on heredity will help us very much on this point. But the neurotic will become a morphino-maniac, a cocain fiend, or "slop-over" in some way.

The third class is that of periodic drinker. If there is anything in the mental condition or disposition which makes an inebriate it must be in the dipsomaniac so-called, who goes on sprees at intervals, and the rest of the time is a good, upright citizen. If heredity played a preponderating rôle in inebriety, most people would be inebriates, women as well as men, because our grandfathers and great grandfathers, and great-great-grandfathers before them were all drunkards practically—at any rate nearly all heavy drinkers. The statistics that have been piled up, especially in France, about the influence of alcohol on the production of the inebriate, and the criminal, and pauper, and other departures from the normal, I think are absolutely misleading. Why, in the rural districts in Europe, at the weddings and other feasts everybody got drunk, and especially the groom, and the first child might frequently be conceived while its parents were in a drunken state. We believed for years and years that if the parents were drunk at the time of conception the child would be born a drunkard, or a hysterical lunatic or defective of some kind. I do not believe it. Does anybody contend that a taste for tobacco is hereditary?

In Minnesota we are building an Inebriate Farm, believing that drunkenness is a bad habit. Somebody wished to know how to get money from the state to build an institution of this kind. We drew up a bill and went to the Board of Control of Minnesota with it; and we inserted a provision that the hospital was to be built and maintained by a 2 per cent. tax on all saloon licenses. A legislative appropriation will be delayed for years and years; all one has to do is to propose to take a tax from the liquor traffic which produces these inebriates.

Dr. Herman H. Hoppe, Cincinnati: Every neurologist should go home with the firm determination to try to establish in his native city some neurologic service in the city hospitals. We have had in Cincinnati neurologic service for ten years in city hospitals, a separate ward for the males and part of a ward for the female neurologic patients. I do not believe that the standing of neurologists will ever be on a firm basis until they maintain that they are, as Dr. Patrick says, more capable of making neurologic diagnoses and taking care of neurologic cases than the internist who calls them in for consultation. When Dr. Collins was in Cincinnati a few days ago, I showed him two cases of obscure family paralysis which no neurologist could diagnose by going into a hospital on neurologic service and giving fifteen minutes to this case. They would require continued study for hours and perhaps days and weeks before a definite opinion could be had which would be worth anything. Being merely a consultant will not give one the standing in the hospital or perhaps the opportunity or the desire to go back and study these cases as they should be studied.

Our system is as follows: If a man on another service wishes a neurologic consultation, he makes a written application for it, and then the case is either transferred to the neurologic service, or it remains a joint case until disposed of either by diagnosis or by some operative treatment, if it should happen to be an operative case, and I believe that this is the only satisfactory method by means of which neurology can be practiced in cities where there are general hospitals, and the only satisfactory practice which will give the neurologic specialist the standing to which his past and present work entitles him.

Dr. Joseph Collins, New York: My contentions briefly are that neurology is an integral part of internal medicine, and that the only way to be a neurologist is to have it a specialty, founded on internal medicine. It would be impossible for me to practice neurology without being an internist; and therefore, I have had for fifteen years, and hope to have until I retire, a service in a large general medical hospital. I appreciate that in certain parts of the country that does not exist, and that a neurologist in certain parts of the country is a man who treats neurasthenia only, and in other parts is a man who treats neurasthenia and mental disorders.

I am familiar with city hospitals, such as the Cook County Hospital and the Cincinnati General Hospital, because I have been for eighteen years an attending physician to the New York City Hospital, which is very similar. Such hospitals do not get the class of cases in neurology with which we are taken up in private practice. It is no longer a large part of our work to diagnosticate tabes or syringomyelia; our work is centered chiefly on the consideration of and the effort to effect cures in the so-called borderland cases of neuropsychosis, and cases in which it cannot be determined whether there is an organic disease or a metabolic condition. They come only to such hospitals as the Presbyterian Hospital and St. Luke's in New York, and other hospitals similar to those in your own cities that receive acute cases. In those hospitals in New York, Philadelphia and Boston, the cities with which I am familiar, there is no neurologist who has any welcome or right save as a consultant. There is no neurologist connected with any such institution who has the privilege of going into these hospitals except on special invitation, and there he is expected to deliver an *ex cathedra* opinion, not based on an adequate history, but merely on a short examination. In reality he is not competent to deliver such an opinion within a month or within two or three months; and he should be permitted to have the opportunity to study the case in order that discredit should not come to his diagnostic acumen.

I am not pleading that neurology be given up as a specialty. I am maintaining that its progress has ceased, because the internist has not looked on it as a part of medicine with which he should make himself familiar; and on the other hand, he has attempted to overlook neurologists by keeping them out of hospitals to which they are entitled to go. The only way left is to insist on the establishment and development of hospitals for nervous diseases, and on having neurologic wards in general hospitals for the treatment of acute diseases.

Dr. L. Vernon Briggs, Boston: In regard to the physiologic work in the hospitals in Boston I have felt for a long time that the work of neurologists and alienists should be separate. I have been in charge of a mental clinic twelve years in Boston alongside of a nervous clinic; we are entirely separate, and the nervous and mental clinics in the London hospital are separated. They treat 1,000 patients a day. It is not so in most of the hospitals, the nervous and mental cases are treated together or by the same physicians.

In regard to what has been said of the Boston hospitals by Dr. Collins I take exception, in that Dr. James J. Putnam has this last year among his friends secured a fund for the establishment of certain beds for neurologic patients in the Massachusetts General Hospital. These were placed entirely under his control. Patients to be sent by the neurologic department to those beds can remain there as long as the physicians want them to. Following the Massachusetts General Hospital the neurologists of the Boston City Hospital through Dr. Prince mainly, have persuaded the trustees to set aside twenty beds for their clinic. These are entirely devoted to nervous and mildly insane patients.

Dr. Irwin H. Neff, Foxborough, Mass.: I think that the discussion on inebriety has proved that there is a lack of uniformity of opinion in the medical profession on this subject. But it makes little difference whether we consider it a disease in a special or general sense, or whether we consider it purely a habit. My opinion is that it is a habit engrafted on a nervous condition, but, be that as it may, I cannot help but emphasize that the need of state care for the inebriate is as great as that of caring for the insane. It is only within the past twenty years that the medical profession has taken up the question of modern psychiatry; any advance made in psychiatry during the twenty years has been wholly due to the interest taken in it by the medical profession, and I want to appeal to each member of the Section to work for state care of the inebriate. I think this should be considered by each member of the Section from a clinical, sentimental and economic point of view.

SERUM TREATMENT OF HEMORRHAGIC DISEASE OF THE NEW-BORN

WITH REPORT OF THREE CASES

EDWARD B. BIGELOW, M.D.
WORCESTER, MASS.

The internal method of the treatment of hemorrhage has received its most successful presentation from P. E. Weil's report of his results with serum in 1905,[1] and from his subsequent articles. He demonstrated that in hemophilia oftentimes the slow coagulation of blood does not result from an anticoagulating ferment, but is due to a lack of, or at least a modification of, certain substances in the blood, as the fibrin ferment. This was shown by him *in vitro;* first, on the addition to freshly-drawn blood of a small amount of hemophilic serum, the serum did not in the least retard the clotting of the blood, as proved by controls; and secondly, on the addition to freshly drawn hemophilic blood of a small amount of fresh serum from normal blood, the serum caused the hemophilic blood to clot as rapidly as and in a similar manner to normal blood, thus proving that its non-coagulability is due to a lack of some substance which normal serum supplies. Weil[2] writes that the injection of fresh blood-serum directly into the circulation or subcutaneously introduces the necessary coagulating ferments and in all probability helps the system as well to produce such ferments on its own account. The serum of man, the rabbit, horse and cattle has been found efficacious, although *in vitro* the action of human serum is more evident in correcting the disorder.

Labbé[3] and Wirth,[4] after reviewing the literature on the various methods of internal hemostasis, are of the same opinion as to the disappointing results obtained after using calcium, gelatin, ovarian and other organ therapy, and are agreed that far more success has been attained with the subcutaneous and intravenous injection of fresh serum. The indications for this form of treatment are especially marked in all cases of hemorrhage due to a lowered coagulating power of the blood, though useful and well worthy of trial in all other forms of hemorrhage.

The hemorrhagic disease of the new-born is a condition in which this method of hemostasis is especially applicable. This condition is practically confined to the first ten days of life and is self-limited. It occurred in Shukowsky's[5] experience twenty-nine times in 30,000 cases, approximately once in a thousand births. The most common sources of severe hemorrhage are the gastro-intestinal tract, umbilicus, mouth and nose, ecchymoses of the skin and combinations of these.

---

[1] Presse méd., October, 1905, No. 84.
[2] Weil: Internat. Clin., 1907, Series 17, iv, 28.
[3] Rev. de méd., 1908, No. 2, xxviii.
[4] Centralbl. f. Grenzgeb. d. Med. u. Chir., 1909, xii, No. 7.
[5] Arch. f. Kinderh., 1907, xlv, Nos. 5-6.

Townsend[6] in 609 cases collected from different writers on the subject reports a mortality of 79 per cent., and in his own particular report of 32 cases a mortality of 78 per cent., although some three years later his own reported cases[7] amounted to 50, with a mortality reduced to 62 per cent. Hemorrhagic disease of the new-born can be differentiated from true hereditary hemophilia, in that the infants affected are nearly as often females as males; that those that bleed in the first few days of life, if they recover, rarely manifest any such tendency later, and, in addition, true hemophilia usually does not manifest itself before the end of the first year. True hereditary hemophilia is a rare cause of uncontrollable hemorrhage in the new-born, Larrabee[8] finding but thirty-seven cases in the literature. Therefore it is important that hemorrhagic disease of the new-born should be carefully differentiated from hemophilia. Both Townsend and Larrabee particularly emphasize the fact that hemorrhages in the early days of life are due to a cause that is but temporary, so that no effort should be spared to save the infant, since if it survives a few days there is every probability of continued health.

The etiologic factor has been variously attributed by different writers to a weak condition of the child, difficult labor with trauma to the child, deficient capillary walls, difficulty in establishing pulmonary circulation at birth, infection and syphilis. The disease is present so often in the absence of any of these factors that some other general underlying cause must be sought. The lack or modification in some manner of the fibrin ferment, as in Weil's explanation of hemophilia, apparently is more often a common factor and the possible cause of the disease.

CASE REPORTS

CASE 1.—M. M., a female infant, born at full term, of healthy parents, seen in company with Dr. L. C. Miller. No history of hemophilia in either family. Mother's first pregnancy; normal labor; head presentation; position, left occipito anterior; second stage, two hours. At birth the child breathed immediately; weighed 7 pounds 4 ounces; healthy appearing. Cord ligated early. Baby nursed when thirty-six hours old. At the forty-eighth hour, slight amount of blood in stool, then vomited blood-tinged mucus. At the fifty-fifth hour, a large tarry stool. At the sixtieth hour, vomited partially digested blood. Then every hour the infant began to vomit considerable bright blood, and also to pass it with the stools, which came nearly as frequently. The child now began to look exsanguinated, to refuse nourishment and to cry weakly. At the sixty-fifth hour, slight hemorrhage was noticed at base of the cord, which grew in size, so that the gauze pads became saturated. When seen about the seventy-fourth hour, the child was apparently moribund. Calcium lactate internally and epinephrin locally to umbilicus had been of no avail. The hemorrhage continuing unabated, fresh rabbit-serum (5 c.c.) was administered subcutaneously. The hemorrhage from the base of the cord ceased almost immediately. The child vomited only once thereafter, and that nine hours later; this was only a slight amount of pinkish tinged mucus. Quantity of blood in stools diminished almost at once, but not until the fifth day were they free from meconium or tarry appearing material. Injection of five c.c. of the serum was repeated twelve hours after the first dose, although there was no fresh hemorrhage to indicate it. Cord dropped off on the fifth day; no hemorrhage from base; no jaundice; no after-effects from the serum were manifested. The baby made a rapid recovery; at fourteen weeks, breast-fed, was strong, healthy and weighed 13 pounds and 4 ounces, a gain over birth weight of 6 pounds.

CASE 2.—B. D., a male infant, born at full term, seen in company with Dr. J. M. W. Farnham. Family history on both sides negative, good; no hemophilia. Mother's second pregnancy, and normal; the first child healthy, 3 years of age. Head presentation; position, left occipito-anterior. Labor of five and one half hours' duration. Birth weight was 8 pounds, 12 ounces. Strong cry at once. Cord ligated early. Baby seemed normal in every respect. At the thirty-eighth hour, slight bright red blood tinge on the napkin at the margin of a large stool of meconium. Then about every hour for the next nine the bowels moved with more and more blood in each stool, the blood amounting in aggregate apparently to several ounces. When seen at this time, the forty-seventh hour after birth, the baby's general condition was still fair, but the mucous membranes were markedly pale, and the infant said to be much weaker than at birth. Fresh rabbit serum (5 c.c.) injected subcutaneously. The next two stools, one hour apart, contained only a small trace of bright red blood, and after that only tarry meconium. On the sixth day the weight was but 7 pounds, a loss from birth weight of 28 ounces; in good condition otherwise. Cord did not separate until the twelfth day; no hemorrhage; no jaundice; no after-effects from serum noted. Baby was fed on modified milk; six weeks after birth the weight was 8 pounds and 12 ounces, a gain of 28 ounces in thirty-six days.

CASE 3.—B. L. This case is reported through the kindness of Dr. F. W. Cary, from his service at the Worcester City Hospital, coming under the direct charge of Dr. C. G. Lane, house obstetrician. B. L., a male infant, born at full term. Family history negative; good as far as obtained. Mother 35 years of age; second pregnancy; first labor had been three years previously, and difficult. Head presentation; position, left occipito-anterior. After a long first stage, head still unengaged, because of its large size and the mother's slightly justo minor pelvis; under ether an internal podalic version was performed, arms became extended and brought down with difficulty; head delivered after much traction. Baby was resuscitated with difficulty; general condition rather poor. Weight, 8 pounds and 4 ounces. Double brachial paralysis. On the second day a small amount of fresh blood was noticed in the stool. On the third day a swelling appeared on the right cheek, which increased in size, becoming dark purple in color and tense, causing the mouth to be held open and closing the right eye. There was marked difficulty in breathing through the nose, because of hemorrhage within. Blood trickled from the nose almost constantly for the fourth and fifth days; also a smaller quantity flowed from the mouth, but it was a question whether or not any was really vomited. There were two or three stools with fresh bright blood and a number with dark blood, as if from a source higher up in the alimentary canal. Calcium lactate had no effect on the hemorrhage. By the end of the fifth day the baby was moribund. Fresh rabbit serum (5 c.c.) was then administered subcutaneously. The hemorrhages ceased almost at once; only twice in the next few hours was the crib even stained with a small show of blood from the nose. The stools were dark, tarry for three more days, gradually then changing to yellow. The hematoma of the face decreased slowly in size for two days; later rapidly. The baby had a temperature of 101 F. at the onset of the hemorrhage, but it was not elevated again thereafter; no jaundice; no after-effects from the serum. The baby throve, and at four months was large for its age, and the paralysis had cleared up.

SUMMARY

Two of these patients, the first and third, were apparently moribund when the serum was administered. The second case had not progressed so far as the other two, but is to be considered serious also, for previous to the injection the bowels had moved each hour for nine hours with large results of dark, tarry, meconium-like material and bright red blood, and on the sixth day the baby weighed 24 ounces less than at birth, a portion of which large loss certainly can be attributed to the hemorrhage.

---

[6] Boston Med. and Surg. Jour., 1891, cxxv, No. 9.
[7] Arch. Pediat., 1894, xi, No. 8.
[8] Am. Jour. Med. Sc., March, 1906, cxxxi.

Although in general it is recognized that this hemorrhagic condition is self-limited in 25 per cent. of the cases, and possibly any one of these patients might have recovered without the serum, the sequence of recoveries in three serious cases should be ascribed to the action of the serum. The most impressive fact to the observer in each case was the almost immediate control of the hemorrhage after the administration of the serum. This was shown directly from observation of the umbilicus in the first case, and the nose in the third, while indirectly in all three by the absence or marked diminution of normal blood in the stools, although for the following two or three days each baby did have a tar-like material in the stool, suggestive of old blood; but no tests were made at the time to prove this.

The amount administered in each case was 5 c.c. of clear rabbit-serum, injected immediately after procuring it from the animal. In the first case this dose was repeated in twelve hours, although there was no sign of a fresh hemorrhage at that time, and it seems to have been uncalled for on present consideration of the case. The serum in these cases gave absolutely no untoward symptoms. No lesion of the skin, swelling of the lymph-glands or edema was noted. The serum treatment of this disease has been extremely successful in a series of Dr. John E. Welch's cases, which as yet have been remarked on only editorially.[9] Dr. Welch used human instead of animal serum, and in that manner avoided the sensitization of the patients to a foreign serum and the possible danger later of anaphylaxis, if the same serum was ever administered at any future time.

OTHER METHODS

This condition has also been successfully treated along this same line in two other different ways. Wirth reports a case in which hemorrhage from the nose and mouth was rapidly controlled by the local application of some sponges saturated with horse serum.

Three other remarkable cases have been reported, in each of which the baby was moribund, and in whom complete recovery ensued immediately after direct transfusion. These recoveries probably took place for the same reason as previously noted, namely, the accession of fibrin ferment from the donor, with the additional factor also of simultaneously abolishing the extreme anemia. Direct transfusion, therefore, has this gain over the less technical serum treatment. The serum treatment, however, has a distinct place in the therapy of this condition, because of its simplicity and lack of operative shock to the delicate patients. It is of course to be followed by transfusion if necessary, as was done in the case in which Murphy[10] was called on to perform the operation. In that case the subcutaneous injection of rabbit serum is reported as 75 c.c., administered without effect in checking the hemorrhage. The size of the dose possibly in itself may account for the failure, as Weil warns that too large a dose produces the opposite effect. In two of these cases, one of which is reported by Lambert[11] and the other by Mosenthal,[12] transfusion was performed by Carrel by an end-to-end anastomosis, and in the third by Murphy by the use of a cannula. In all of these three cases the success is to be attributed to the special skill of the operator, and few communities as yet possess such especially skilled men.

61 Pearl Street.

Therapeutics

RECTAL AND PHARYNGEAL ANESTHESIA

The last word has not yet been said as to the best method of producing general anesthesia, therefore any demonstration or proof of a method that will be satisfactory in cases in which the ordinary methods are troublesome or even dangerous is welcomed. While spinal analgesia under the administration of an expert (and of necessity there will be but few who will ever become expert, by study and frequent practice, in this particular branch of surgery) is apparently safe, it is and always will be a dangerous and serious operation in the hands of one of inexperience. The proofs of this assertion are so many that it is hardly worth while to cite the reasons. A demonstration recently given in Washington, at the annual meeting of the American Therapeutic Society, by Dr. W. Wayne Babcock, of Philadelphia, positively showed the reasons for lack of anesthesia and the reasons for dangerous anesthesia by spinal injections of local anesthetics in solutions of varying density. Dr. Babcock based his knowledge of spinal anesthesia on his laboratory study and on 2,000 spinal injections. With such an experienced spinal anesthetist the surgeon and the patient might feel safe, but it seems demonstrated that spinal anesthesia will not ordinarily be the method of choice.

Rectal anesthesia was first practiced and recommended by Pirogoff, of St. Petersburg, in 1847, but little more was heard of this method until 1884, when several French surgeons and some American surgeons took up the method. The method of administering the ether was to surround the ether bottle with hot water to cause the ether to vaporize rapidly, and this vapor was directed through a tube into the rectum and up into the colon. The advantage of this method of causing anesthesia was that there was less nausea and vomiting, less coughing, and less disagreeable after effects, and the amount of ether used was much less than when administered by the lungs. Also, in operations on the head the anesthesia could be continued and no contamination or interference with the field of operation occurred. The disadvantages were that the primary anesthesia was rather slow, that sometimes profound anesthesia occurred which could not be prevented, and frequently bloody, or at least troublesome diarrheas from irritation of the colon developed subsequently.

On the presumption that rectal anesthesia would be, in many cases, a valuable procedure and that a proper apparatus could be devised so to regulate the ether and diluting gas administered as to overcome all the disadvantages of the method, Dr. Herbert K. Thoms, working in the surgical laboratory (Yale Medical School) of Prof. J. M. Flint and in the New Haven Hospital under Professor Flint and Dr. William Verdi, has perfected an apparatus which seems to work successfully, both laboratorically and clinically in producing safely and satisfactorily anesthesia by way of the rectum. A complete description of the apparatus and the method of using it appears in the *Yale Medical Journal*, May, 1910. This apparatus is on a standard easily movable to any part of the operating room, can have the electric heating apparatus so modified by a rheostat as to cause rapid or slow evaporation of the ether, by combining tubes allows any desired mixture with oxygen or air, so as to prevent too irritant or too great concentration of ether vapor. Also, without dislodgment of the rectal tubes pure oxygen or air may be substituted for the ether-loaded gas in the colon, if anesthesia is too profound.

---

[9] New York Med. Jour., 1910, xci, No. 17.
[10] Boston Med. and Surg. Jour., 1909, clxi, No. 12.
[11] Med. Rec., New York, 1908, lxxiii, No. 22.
[12] Mosenthal, H. O.: Transfusion as a Cure for Melena Neonatorum, The Journal A. M. A., May 14, 1910, p. 1613.

To overcome the primary slow anesthesia from the rectal method, in Thoms' cases primary anesthesia was generally caused by the administration of chloroform or ether by the lungs; then immediately the rectal method was substituted. This left the operative field of the head, face and neck entirely free for the surgeon.

As the anesthetist, in such operations on the head, can sit with his apparatus at the patient's wrist with the arm extended, he has the character of the pulse under observation.

One essential to the success of ether anesthesia by the rectum and colon is that the lower bowel shall be thoroughly emptied of feces by rectal injections and colon washing prior to the administration of the anesthetic.

This same apparatus, Thoms demonstrated, was perfectly serviceable for administering ether by way of a catheter put through the nostril into the pharynx. This method obviates much of the profuse salivation often caused by administering ether in the usual way. This is a valuable method when the back of the head must be operated on and the patient must lie with the abdomen and face downward.

PEPSIN

A number of years ago pepsin was freely given for all kinds of stomach indigestion, in fact, large amounts of pepsin in various more or less useful forms were administered. During the last ten years the amount of pepsin used has gradually, continually, and almost rapidly, diminished on account of the assertions that pepsin was rarely diminished in quantity in the stomach secretions in ordinary diseased conditions; that the main trouble was always with the hydrochloric acid, it being readily diminished, or, often in nervous temperaments, increased in amount. It is now generally known that a diagnosis cannot be made by the presence or absence of hydrochloric acid in the stomach test meal. Free hydrochloric acid may be present in carcinoma of the stomach, and it is often absent in disease of the stomach adnexa and in many, if not all, cachectic conditions.

Mr. William C. Rose (*Archives of Internal Medicine*, May, 1910, vol. v, p. 459) has, by new methods of testing for pepsin in patients after the Ewald test meal, shown that the peptic activity may be greatly diminished or even become absent, not only in gastric cancer, but in cancer of the intestine, esophagus, and even breast. Such patients, then, should receive not only dilute hydrochloric acid after their meals, but also pepsin if the nutriment administered is to be of any value. It is interesting to note that in a patient who had gall-stones the pepsin was found diminished to one-third of normal.

It is possible that, after prolonged illnesses such as typhoid fever or other serious sickness, not only should dilute hydrochloric acid, in small amount, be administered, but also pepsin to aid in the proper digestion and assimilation of food.

DIABETES MELLITUS

Ever since the danger of acidosis has been recognized and the likelihood of acidosis being caused by a sugar and carbohydrate-free diet in this disease, physicians have been constantly on the alert to recognize this condition by a study of the urine. The indicator of danger has been considered to be the finding of diacetic acid in the urine. This is of ready determination by a ferric chlorid solution added to the urine causing the development of a red or crimson color. It has been found, however, that this reaction could be present and still not be a positive indication of the amount of beta-oxybutyric acid that is in the urine or the nearness of an actual toxic acidosis. The determination of the betaoxybutyric acid is tedious. The same is true, more or less, of acetone and of ammonia that may be present in the urine. Therefore the tests must be made in the laboratory and should be made frequently when a diabetic patient's diet is being gradually reduced to pure proteid and fats. By such careful examination it has been lately learned that the presence of these acids in the urine is not necessarily an indication that the diet must become more liberal or that starch should be immediately given. Of course if symptoms of diabetic coma are present very large amounts of alkalies must be administered and starch in liberal quantities must be immediately allowed.

Lately a simple indicator of the actual condition of the system as to acidosis has been suggested by L. Blum (*Therapie der Gegenwart*, 1910, li, No. 3, p. 97). He finds by repeated experimentation both with diabetics and with controls that from 5 to 10 grams (75 to 150 grains) are sufficient to render the urine of the normal patient alkaline in reaction, while with mild acidosis 20 grams (5 drams) are necessary. With an acidosis of moderate intensity from 20 to 30 grams (5 drams to 1 ounce) are required, while in severe cases of acidosis it takes 50 grams (12½ drams), and in actual diabetic coma 150 grams (5 ounces) or more are necessary before the urine will become alkaline. Bicarbonate of sodium, therefore, seems to be a very simple indicator of the acid condition of the system, and every few days, when the starches and sugars are being gradually diminished, the bicarbonate test should be tried.

CONSTIPATION

We have become used to the recommendation of soured milk or some soured milk preparation for various kinds of intestinal indigestion, but Dr. Thomas D. Luke (*Practitioner*, May 1910, vol. lxxxiv, p. 653) recommends these preparations in the treatment of constipation. As a matter of fact, with certain kinds of diarrhea soured milk will stop the abnormal fermentation and may actually produce constipation. Dr. Luke finds that constipated patients who will take from 2 to 4 glasses a day of a curdled or soured milk will have normal movements of the bowels. Of course this must be continued for a long number of weeks, and then the amount gradually reduced. He admits that the addition of agar agar to the diet is an improvement. It is perfectly true that constipation is very frequently due to gastric and intestinal indigestion, the latter not serious enough to cause diarrhea. In such cases soured milk, correcting fermentation, might well be of benefit. It is certainly of value when there are colon putrefactive processes.

A valuable simple treatment for constipation is yeast, taken once or twice a day, depending on the number of movements of the bowels that it causes. The ordinary tin foil yeast cake works almost as well. The amount administered should be about five-eighths to three-quarters of a cubic inch dissolved in half a glass of water. This dose should be taken twice a day.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, JULY 30, 1910

THE INTELLECTUAL LIFE AND THE PHYSICIAN

Like most lives that are worth while, the life of the physician is weighted with heavy responsibilities. The problems, both of disease and of health, which it presents, demand a keen appreciation of values and refined judgment; and how, one asks, can these be acquired except by the closest, the most unremitting, the most single-minded concentration of interest, of purpose, and of activity? With "the life so short, the craft so long to learn"—with accident and occasion perpetually conspiring to snare away the golden fleeting minutes—with human powers so often failing before the great tasks set them—the conscientious man is often led to feel that to "take the time" for intellectual activities which do not contribute directly to professional knowledge is an indulgence little short of a crime. For the overworked physician to steal an hour for the perusal of Carlyle or Coleridge when he ought to be "reading up" an obscure case seems a sort of professional suicide.

So we allow ourselves to be driven from task to task by the sense of duty still unfulfilled. Yet, if we can but detach ourselves from our own problems long enough to view them with impersonal eyes, no one knows better than we do the fallacy in the argument put forward by an overwrought sense of duty and overburdened nerves. All too well do we know the scientific truth underlying the ancient saws about "all work and no play" and "the bow that is never unstrung." Both brain and will are often found in thraldom to depletion of physiologic force. No great work of any kind was ever wrought out of exhausted cell protoplasm.

For the physician who is driven by unremitting toil nothing is more justifiable than the occasional pursuit of some hobby or avocation, for mere change of mental atmosphere is often more restful than doing nothing. Provided that the given form of recreation is capable of absorbing one's mind and interest for the time being, it matters little from this point of view what it is—golfing, fishing, or the study of minor matters or genealogy. It is said that the venerable philosopher, Dr. James McCosh of Princeton, after spending hours of intense intellectual effort in his library, used to take up with avidity the most trifling yellow-bound novel he could lay his hands on. This, while it might better be called the escape from than the pursuit of the intellectual life, acted as a preventive of brain-fag and neurasthenia by calling into play a different set of faculties. Most of those who care for what may justly be termed literature, however, find an increasing delight in it because its great variety brings to their minds something that stimulates or soothes according to their demands.

It may be said, and with much justice, that the physician's life is necessarily an intellectual one in greater or less degree. He needs recreation like all other workers; but is intellectual exercise the recreation he needs? Certainly there is no profit to the spent and jaded mind in reading Kant or Schopenhauer when fit for nothing more strenuous than a light novel. When one is reading for recreation, the best thing to read is what most thoroughly refreshes the mind, whether that happens to be Scott or George Meredith or Diamond Dick.

After all, however, there is something out of order either in the mind or the life of the man who feels no spontaneous impulse toward mental effort in other fields than those which it is his life-work to till; and the man who forever represses that impulse will find that his life-work, as well as himself, is narrowed thereby, for he will have the less mentality to bring to it. There is a sort of mental movement suggestive of that peculiar unicellular organism, the ameba, in which the mind wraps itself about a thought, digests it into what seems best suited for its upbuilding and stores it away in the intellectual body. The business of mind-building continues indefinitely and constantly just so long as disease does not step in to destroy the power of concentration. Perhaps one never learns any subject thoroughly which may not prove useful at some time in one's career. The physician should be not only a man of learning but a man of culture.

The day has long since gone by, to be sure, when any man, however great his powers and gifts, could take all knowledge for his province; but the physician, whose province lies, so to speak, at the center of the realm of human knowledge, and lays all the others under tribute, has the least justification for intellectual provincialism. If physicians as a class were to allow themselves to become narrow specialists or professionalists, so absorbed in their own science and craft as to lose the sense of relation to the life and mental movement about them, they would soon come to be regarded as mere tinkers and in no sense engineers—called in when the machine absolutely refused to go, but disregarded on all other occasions, because tinkers do not know or care how or for what purpose the machine is to be used.

Every good reason exists for a fondness and cultivation of the broadest intellectual life by the physician. As an individual, he needs the change of mental atmosphere; as a professional man, he needs the new light on his own problems often supplied by excursions out of bounds; and the profession needs men of broad intellectual outlook.

RECENT ADVANCES IN STUDY OF ANAPHYLAXIS

In the first periods of investigation of the anaphylaxis reaction the objects mainly sought were, appropriately, the establishment of the general characters of the reaction, its limitations as to animals, materials and dosage, and similar matters that could be learned by purely objective methods. These facts having now been satisfactorily established and a safe basis for more speculative excursions provided, investigators have recently been considering more closely the real essential nature of the phenomenon and its relation to the other biologic reactions. From their studies many valuable contributions have come within the last two years, and our understanding of the real significance of the reaction of anaphylaxis has been much helped; therefore a review of some of the most striking of these advances may be profitably made at this time.[1]

By the earlier investigations it was shown that the anaphylaxis reaction could be induced in certain warm-blooded animals by injection of almost any soluble protein at suitable intervals, the first injection rendering the animal sensitive to the second injection of the same protein. By no means all animals react, however, to such injections, and the guinea-pig shows by far the most marked and constant reactions, being about four hundred times as reactive as rabbits. Dogs and rabbits react quite differently from guinea-pigs, while mice, rats and some other animals seem not to react at all. In the blood of animals that have received a single dose of protein there appears a substance which renders the animal sensitive to the protein, so that if the blood of such a sensitized animal is injected into a normal animal this second animal is rendered sensitive to the protein, a process of "passive sensitization." After an animal has survived a second or intoxicating dose of the protein it is commonly found to be no longer sensitive to the protein, this stage of "antianaphylaxis" being characteristic especially of reactions in guinea-pigs. With these fundamental facts well established by the earlier studies, their explanation has been the chief object of experimenters now in the field.

It is now believed by most investigators that the protein which intoxicates the animal at the second injection is identical with the protein which sensitized it after the first injection, this being the view originally maintained by Rosenau and Anderson. So far no satisfactory evidence has been brought forward that anything except proteins can produce the anaphylactic condition, and these proteins must be in a soluble form and not much altered by chemical or other means from the natural state. The first introduction of the abnormal protein into the circulation of the animal causes a reaction with the formation of some substance, the "reaction body," which unites with the protein injected later, to form a poisonous substance, the "anaphylatoxin." Since the symptoms produced in reacting animals are quite the same with the most varied of proteins, it would seem probable that the poison produced by this reaction is the same with all proteins. This formation of anaphylatoxin ocurs not only when the protein is injected into a sensitized animal, but also when the serum of a sensitized animal is mixed with suitable quantities of the specific protein in the test-tube, the resulting mixture causing immediately the typical symptoms of anaphylaxis when injected into a normal animal.

This observation brings the anaphylaxis reaction into close relationship with the other known serologic reactions of immunity, and there is rapidly growing evidence in support of the contention of Friedberger that the anaphylaxis reaction and the precipitin reaction are inseparably related. He maintains that the reaction of the specific protein with the serum of the sensitized animal causes the formation of a body entirely analogous to the precipitate produced by the action of a precipitin on the specific protein, which, in the presence of the serum complement, is made soluble and toxic. Since recovery from this anaphylatoxin is so rapid and complete, it evidently is in the same class with such poisons as atropin, morphin and strychnin, rather than with the poisons that cause marked tissue injury, such as phosphorus, arsenic, ricin, etc. It seems probable that the fundamental reactions are the same in the formation of precipitins, agglutinins, hemolysins, bacteriolysins, complement fixation bodies, and the anaphylactic reaction body or sensibilin. In all cases alike, a foreign protein is introduced into the body of an animal, which reacts by the production of immune bodies; these immune bodies may be demonstrated by observing their precipitating, agglutinating, lytic, complement-binding, or anaphylactic reactions, the substances involved being the same and only the means of exhibiting their presence and action differing in each case. This is essentially the conclusion reached by Doerr as to the place of anaphylaxis among the immediate reactions, and there is much evidence for this view which we have not the space to repeat.

Much work has been done to determine the limits and degree of specificity of the anaphylaxis reaction, with the general conclusion that these are quite the same in nearly if not all respects as the precipitin and complement-fixation reactions; the chief difference lies in the fact that the only available means for observing the anaphylaxis reaction is the production of acute symptoms in experimental animals, which is far less accurate and delicate than the objective test-tube methods used in the precipitin and complement fixation reactions. On the other hand, the extremely minute quantity of protein required to sensitize an animal gives the anaphylaxis reaction an advantage in certain medicolegal investigations, especially when cooked or putrefying flesh must be identified. An important addition to the symptomatology of the anaphylaxis reaction is the marked fall of temperature which accompanies positive reactions; this objective measure promises to be of assistance in doubtful cases, but it falls far short of making our determination of the presence or absence of reaction as well defined as is necessary for exact studies.

---

[1] An excellent review, covering most of the recent literature has recently been published by Doerr, R.; Ztschr. f. Immunitätsforsch., 1910 (ii Ref.), p. 49

Some attempts have been made to apply the passive sensitization phenomenon to clinical diagnosis, on the principle that if an individual suffering from an infection is sensitized to the infectious agent his blood, when injected into an animal, should render the animal passively sensitive to the proteins of the infectious agent. So far, however, no very satisfactory results have been obtained with bacterial injections, or with the serum of persons with echinococcus cysts, although the severe symptoms which occur when such cysts rupture have been ascribed to an anaphylactic reaction to the protein of the cyst contents. Pfeiffer, however, asserts that the serum of cancer patients, when injected into guinea-pigs, renders them passively sensitive to cancer proteins, so that they react typically if extracts of cancer tissue are injected forty-eight hours later. This reaction is based on the assumption that cancers contain proteins which are specifically different from the normal proteins of the host, an idea for and against which much has been written; it can be stated only that there is much dispute concerning Pfeiffer's claims, and it cannot yet be considered as established. Another suggestive observation, first made by Rosenau and Anderson, that eclampsia may be in some way related to anaphylaxis, since guinea-pigs can be sensitized to extracts of guinea-pig placenta, has received some support by the finding that serum from eclamptic women will render guinea-pigs passively sensitive to human amniotic fluid, which indicates that the blood in eclampsia contains specific reaction bodies against the proteins of the fetal fluids.

THE ENDLESS CHAIN

Some one has used the expressive phrase "endless chain" to describe the passage of pathogenic bacteria through the body of a patient—where they tarry for a time and multiply—then out into the external world, and then onward by a variety of routes, often circuitous, into the body of a fresh victim. It is the self-imposed task of preventive medicine to interrupt this chain at some point.

As is well known, not all parasites are alike in the capacity which they possess to survive outside the body of their host. In the case of most pathogenic bacteria, we know that ordinarily no multiplication takes place outside of the body of the host and that the bacteria discharged from the body of the patient perish more or less rapidly. For each disease, there is some one link of the chain that experience has shown can be most readily broken by the application of preventive measures. Attempt is made in some cases to prevent the distribution of pathogenic microbes from patient or convalescent, and to this end elaborate measures of isolation and disinfection are instituted. In others, the chief aim is to prevent microbes present in large numbers or unavoidably in the environment from getting a lodgment in the uninfected human body. In many instances both kinds of measures must be carried out in order to attain even a moderate degree of preventive success. With typhoid fever, to use one of the most striking illustrations, a more general disinfection of the urine and feces of typhoid fever patients would unquestionably diminish the prevalence of this disease; and yet the existence of unrecognized "carriers" would still leave a wide opportunity for the application of measures designed to prevent the swallowing of typhoid bacilli. Owing to the high vitality of the typhoid bacillus outside the body, the endless chain of bacilli passing from patient to patient and again out to fresh patients is somewhat more in evidence than in some other infectious diseases.

To continue with this example, it is a matter of national surprise that, when these facts are so well known, the response of the American business man is not more prompt and effective. Quick to detect sources of leakage and loss in many matters of a financial nature, the average American has seemed slow to grasp the depreciation of national resources involved in the steady oozing away of valuable human life. It might be supposed that in this day it would not be necessary to dwell insistently on the relation between water-supply and sewage disposal, but the public memory seems short. Nowhere is the endless chain more conspicuously before our eyes than in those instances in which one can see thousands or even millions of gallons of sewage flowing into a lake, and not far away the intake from which the water-supply of a great city is derived.

The situation in Milwaukee, as described two weeks ago, is one of these cases. The lesson that up to 1895, when the water tunnel was extended more than a mile into the lake, much of the typhoid fever in Milwaukee was water-borne, appears to have been thrown away; indeed, it does not seem to have attracted the attention of professional sanitarians that it deserved. Increase of the city's population by more than 100,000, together with increased facilities—save the mark[1]—for pouring sewage into the lake, has now led, after about fifteen years, to a recurrence of the disease to a degree that has drawn general notice. And yet one would suppose that the situation had been sufficiently plain for several decades. An observer standing by the river mouth (or sewage outfall) in Milwaukee can without much imagination visualize the endless chain of typhoid bacilli from the sewer direct to the water intake. All the known facts pointed to water pollution: the frequent occurrence of winter and spring epidemics, the general distribution of cases throughout the city, the high typhoid rate prior to the extension of the water tunnel, the finding of *Bacil-*

lus coli in the tap water. There was the endless chain for all to see. The situation demanded action by an intelligent community years ago. Are there any other cities nursing the delusion that they can get rid of the firecracker before it explodes in their hands?

ALIMENTARY FEVER

During the season of acute gastrointestinal disturbances it will not be amiss to call attention to one special feature of this group of cases, which has only recently been investigated and rightly interpreted. Fever is an almost constant symptom of these cases, and has long been thought to be due to the absorption of bacterial toxins from the intestinal canal. No experimental proof of this toxicity has been brought forward; it has merely been assumed that such was the case, on the ground that when there is fever there must have been bacterial products absorbed.

The predominance of the bacterial factor in the etiology of the acute gastrointestinal disturbances of infancy is well brought out in the research of the Rockefeller Institute on the *Bacillus dysenteriæ*. It is to Finkelstein[1] that we are indebted for showing us that in a large percentage of cases this fever is due primarily, not to bacterial products, but to the food itself. His work on the etiology of intoxication (cholera infantum) seems to bring out clearly the fact that the two elements in the milk which produce fever are the sugar and the salts. He was able to show that by increasing the amount of sugar in the diet of a slightly deranged infant all of the symptoms of cholera infantum—the fever, the coma, the frequent stools, the marked drop in weight, and the lactosuria—could be produced. In like manner he showed that the reduction of the sugar, or in the severer cases, the withdrawal of all food for from twenty-four to forty-eight hours would make the fever disappear. He noticed also that when broth was given to these sick infants instead of boiled water, they often reacted with a marked rise in temperature. It remained for Meyer[2] to show experimentally that salt solutions given by mouth could produce fever in infants with slight gastrointestinal disturbances. Sodium chlorid has the most marked pyrogenic effect. Sodium bromid and iodid also have this property; the other sodium salts have little if any pyrogenic action, and the same is true of the potassium salts. Calcium salts on the other hand have a depressing effect on the temperature, according to Schloss.

The value of this contribution outside of its scientific interest in the study of aseptic fever, lies in its great clinical importance. Normally the temperature of an infant varies between 98.2 and 98.9. A rise above 99 must always be considered with suspicion when associated with other gastrointestinal symptoms. Thus, when by careful physical examination infections can be excluded as the cause of fever, its presence is one of the earliest and surest indications of an impending intoxication. A fever that does not disappear in from twenty-four to forty-eight hours on a water diet cannot be considered an alimentary fever, although one frequently has the combination of alimentary and infectious fever.

Current Comment

UNIFORM STATE LAWS

The National Civic Federation is establishing an organization in each state in order to secure uniform state legislation. This is one of the results of the national conference held in Washington last January for the promotion of uniform legislation. Mr. Ralph M. Easley, chairman of the executive council of the federation, says: "When one considers the chaotic condition of the laws in the forty-six states on so many important and vital questions of the day it is a matter of wonder that business has been able to proceed at all. To promote and facilitate the business of the country, and better understanding between states concerning legislation, if not a complete uniform legislation, is regarded by serious-minded business men as one of our urgent problems to be solved." This effort in the direction of uniformity of state legislation on matters essential to the successful conduct of business is a most gratifying evidence of progress. In such a consideration the laws regulating health should by no means be overlooked. A progressive and uniform system of state laws on the public health with a national bureau or department organized in harmony with such a system will go far toward solving many of our sanitary and economic problems.

PUBLICITY AND PUBLIC HEALTH

The theory has been advanced that one potent cause of civic corruption now in the United States is the attitude of public opinion toward the subject of unpleasant truths. Publicity, particularly of statements of undesirable health conditions in our cities are met with the sneer that the critic is a "knocker" and that no good citizen can be anything but a "booster." The [illegible] of this state of mind is that those who would call attention to evils that are crying for remedy, [illegible] keep silent. Such a policy of [illegible] leads [illegible] to [illegible] in a [illegible] to which [illegible] frequently a reputation is the only object in view, but [illegible] conservative, large [illegible] cities such a position is [illegible]. Nevertheless it is too [illegible] of civic [illegible]. It is refreshing, therefore, to see the report of a health officer come out boldly and announce that he intends to give the fullest publicity regarding the health conditions of the city of which he is [illegible] officer. This is what Mr. [illegible] MacRae of Wilmington, N. C., has recently done. It seems that the death-rate in Wilmington has been high and that typhoid fever is very prevalent. In a three-column article the mayor tells some unpleasant but necessary truths about sanitary conditions in his city and he makes suggestions for bettering them. No sugar coating is added to the rather bitter pill unless it be the comparison which shows that the death-rate in a sister city is even higher. The mayor has received the support and assistance of one of the local newspapers, the *Evening Dispatch*, which states the naked truth in an unsensational but vivid way. This paper has also enlisted the services of a number of local physicians, who through its pages are discussing health matters with a freedom that augurs well for the city. The thought that exposure of evils that exist may "hurt" the reputation of the town is put aside as an unworthy one and the broader view is taken that by making Wilmington one of the healthiest cities in that section of the country a far more enduring monument will have been raised to the city's well-being. Wilmington is to be congratulated on having a far-sighted mayor, a progressive newspaper and an enlightened public—which makes the other factors of value. There are no doubt hundreds of cities whose health conditions are as bad as those in Wilmington and which will continue to be sanitary plague-spots long after this North Carolina town has become a model of sanitation. Would that there were more city executives like MacRae and more newspapers like the Wilmington *Evening Dispatch*.

---

[1] Finkelstein: Deutsch. med. Wchnschr., 1909, xxxv, 101.
[2] Meyer: Deutsch. med. Wchnschr., 1909, xxxv, 191.

CRIPPEN—QUACK AND FUGITIVE

The press of two continents is wrought up over the disappearance of a Dr. H. H. Crippen who is now wanted by the London police on the charge of having murdered his wife. Crippen, who has been quacking it for a few years past in London, appears, according to the medical directories, to be a graduate (1884) of the Homeopathic Hospital College of Cleveland, Ohio. In 1886 his address was given in the directory as 8 Madison Avenue, Detroit. In the 1890 edition of the directory we find him at 955 Fifth Street, San Diego, Cal., while in 1893 Crippen had crossed the continent and was living at 78 Maiden Lane, New York City. In 1896 we find his address 1501 Arch Street, Philadelphia, while subsequent editions of medical directories of the United States do not contain his name. It was at that time, apparently, that he went to London, where he became the "physician" for a quack concern known as the Drouet Institute for the Deaf. This "institute" was originally established in Paris by a Britisher named Derry. To keep within the French law it became necessary to secure the services of a renegade qualified practitioner whom Derry found in a broken-down physician named Drouet, who died soon thereafter. The concern started in a small way, advertising to cure deafness with a mixture that Derry and his wife concocted and put on the market. Drouet furnished the medical nomenclature to catch the dupes and Derry furnished everything else. In five years Derry was making $200,000 a year and advertising heavily. A branch office was opened in London and "H. H. Crippen, M.D. (U. S. A. 1884)" was put in charge. The British branch never did as much business as its Parisian prototype, and *Truth*, which exposed this fake, unkindly suggested that the reason for the lesser success of the London branch was that possibly the English people keep their ears cleaner! Whatever the reason, Crippen's part of the organization did not prove as successful as Derry's. The decline of the Drouet Institute dated from the death of Derry, who passed away by the delirium tremens route, after having dissipated his fortune in gambling and drinking. His widow was left penniless. After the fall of the "institute," Crippen seems to have conceived the idea of running a similar fake under another name and he opened what he was pleased to call the Aural Remedies Company in London, with his "special absorbent treatment" as a leader. His methods, it seems, were practically those of the defunct Drouet Institute, which a noted British judge—Justice Matthew—designated as "a disgraceful institution carried on for unworthy objects by discreditable means." Now, it seems, the Aural Remedies Company has gone the way of the Drouet concern, while its originator bids fair to meet an end even more notorious than that of the founder of the French fake.

THE LEAGUE GETS ANOTHER DEFENDER

That the "National League for Medical Freedom" is fulfilling its "manifest destiny" is evident. One of its latest champions is Leach of Indianapolis, the "cancer curer," whose profitable and conscienceless business was interfered with by the postal authorities and by exposures in The Journal. In a leaflet which Leach sends out to prospective victims he quotes some of the unedifying slush which the *New York Herald* had to say about the "doctors' trust" when it took up the cudgels for the "league." He complains, too, that he loses a number of victims nowadays because "family physicians, who belong to the doctors' trust," persist in confronting possible patients of Dr. Leach with the articles that have appeared in The Journal. And then he wails, "many of them, without further evidence, immediately drop correspondence with me and surrender their cases to the doctors' trust." Probably this "cancer curer" hopes to find in the "National League for Medical Freedom" that appreciation for his talents which he has not been accorded by those who see nothing to admire in humbugging and defrauding the hopelessly ill.

OFFICIAL WARNING AGAINST QUACKS

A paragraph in the Chicago papers of recent date called attention to the fact that the bureau of food inspection was issuing an official warning against quacks. Such a flagrant case of paternalistic interference with the personal liberty of the individual seemed to call for further investigation. The latter part of the paragraph in question, however, set at rest any misgivings that might have arisen, for it was there stated that the "quacks" referred to were "posing as qualified to test cows for tuberculosis." That, of course, put a different complexion on the matter. There can naturally be no objection to protecting cows against the machinations of the quack—because cows cost money.

Medical News

ALABAMA

Degrees Conferred.—The University of Alabama has conferred the degree of LL.D. on Dr. William C. Gorgas, chief sanitary officer at Panama. Dr. Gorgas is a native of Alabama. At the meeting of the Jefferson County Medical Society Dr. Gorgas delivered an illustrated lecture on "Sanitation and Work of the Health Department in Panama."—Dr. Luther L. Hill, Montgomery, also had the degree of LL.D. conferred on him by the university in recognition of achievements in heart surgery.

ARKANSAS

State Board Examination.—At the meeting of the State Board of Examiners in June, 74 physicians were granted license to practice in Arkansas.

Board Organization.—Among the members of the new Hot Springs Medical Board recently organized are Drs. Charles Dake, Edward H. Martin and William E. Parker. The government representative on the board is Maj. George D. Deshon, commanding officer of the Army and Navy Hospital at Hot Springs.

New Medical Director.—Major Harry M. Hallock, Surgeon U. S. A., retired, has been appointed medical director of the Hot Springs reservation. The position is a new one, having just been created by the Secretary of the Interior on the recommendation of a government official who investigated conditions at Hot Springs. Dr. Hallock will have supervision of hygiene and sanitation of the baths and of the resort and will instruct bath-house operators and attendants in these matters.

Power to Revoke License.—In the case of the state board against Dr. A. S. McCrary, Little Rock, the Supreme Court, in a decision handed down June 27, has decided that the State Board of Medical Examiners have authority to revoke a license to practice medicine in Arkansas in any case where they find that the practitioner has publicly advertised special ability to treat or cure chronic or incurable diseases, thus upholding the law enacted by the last legislature. The state board will now inaugurate a crusade against physicians in the state who have been thus advertising.

For Prevention of Blindness.—The Arkansas Association for the Prevention of Blindness was organized at Little Rock, July 1. W. B. Fletcher, of Lonoke, was elected president. Among the physicians and others interested are Drs. John R. Dibrell, Morgan Smith, Ida J. Brooks, Anderson Watkins and Joseph T. Clegg, the attorney general of the state and many other prominent citizens. Dr. Charles F. Campbell, director of the work of the Pittsburg Association for the Prevention of Blindness, was the principal speaker. He congratulated Arkansas on having such an admirable school for the blind.

COLORADO

Personal.—Dr. and Mrs. F. N. Cochems, Salida, have gone to Europe for the summer.

Hospital News.—The Children's Hospital, Denver, has rented the property adjoining the hospital grounds, and will occupy it as a home for their nurses.——The Florence Crittenden Home has opened a hospital annex for treatment of women and children. The hospital is in charge of Dr. Agnes Ditson, obstetrician to Crittenden Home.——The National Jewish Hospital for Consumptives has purchased a site for the erection of a trade school building. The hospital now maintains a grammar school and teaches certain handicrafts.

CONNECTICUT

For Better Dispensary Work at Yale.—Dr. George Blumer, dean of Yale Medical School, writes that $25,000 has been received from an anonymous donor for the purpose of increasing the efficiency of the dispensary service. He states also that a movement is on foot to raise an endowment fund for the medical school.

ILLINOIS

Chicago

Campaign Against Typhoid.—In the campaign against typhoid being conducted by Dr. L. L. Lumsden, of the U. S. Public Health and Marine-Hospital Service, in connection with the city health department, Dr. Lumsden has issued a pamphlet detailing what may be done by the mayor and city council of cities in eradicating typhoid fever. He says that the health department of a city has not heretofore been regarded by politicians as a political asset of value, but at the present time a candidate for reelection to a city office can point unhesitatingly to his achievements in protecting the health of the people and advance this as an excellent reason for his continuance in office. He urges that in the mapping out of health policies of the city, funds for sanitary improvements should be appropriated as liberally as the tax rate will permit, and states that a good sewerage system and good water supply are certainly among the most vital important things to be provided for. The health department is now prepared to make blood cultures in all suspected cases of typhoid fever. The work is being done by Bacteriologist William A. Starin under the supervision of Professor Jordan of the University of Chicago. On receipt of a request by the typhoid fever bureau, a bacteriologist will be sent to the patient's bedside within twenty-four hours to take the specimen. This method gives the maximum information in the earliest stages of the disease. Among the healthgrams of the last *Bulletin* of the health department is this: "The three (dis) graces—filth, flies and fever."

IOWA

Higher Entrance Standard.—Official word from the State University of Iowa says that this fall and hereafter in addition to a four year high school education, two years of collegiate work, including courses in physics, inorganic chemistry and biology will be required for admission to the College of Medicine and to the College of Homeopathic Medicine.

Personal.—Dr. John H. Peck has been appointed to the chair of physical diagnosis and clinical microscopy at Drake University. Dr. Ira N. Crow, of the staff of the department of anatomy, has resigned.——Dr. Lawrence Patterson, Des Moines, has secured an appointment as physician for a large plantation in the Hawaiian Islands.

MARYLAND

Personal.—Dr. Jesse C. Coggins, medical director of the Laurel Sanatorium, has gone to the Pacific coast.——Dr. J. H. Spicer, Cumberland, has been appointed resident physician at Grace Hospital, Detroit.——Dr. Thomas K. Conrad, Chevy Chase, was on July 12 appointed health officer of that place.——Dr. Francis E. Harrington, of Washington, D. C., has been selected as city bacteriologist and health officer of Cumberland.——Dr. G. L. Broadrup, Cumberland, was severely injured by being run over by his automobile. He cranked the machine on a hill while it was in gear.

Baltimore

To Aid in Poison Cases.—Dr. C. Hampson Jones, Assistant Health Commissioner, urges that the city employ an expert chemist who can be called on by the coroners in cases of suspected poison. In Maryland no provision is made for analysis of the stomach contents unless there is positive evidence of poisoning.

Personal.—Dr. E. H. Richardson, resident gynecologist of the Johns Hopkins Hospital for the past four years, was entertained at dinner by his colleagues of the hospital staff on the occasion of his retirement. He will practice here. His successor is Dr. E. K. Cullen.——Dr. Christian Deetjen has sailed for Europe to attend the International Congress of Medical Electricity.——Dr. W. Milton Lewis, who was operated on some weeks ago at Union Protestant Infirmary, has gone to Cape May to convalesce.——Drs. A. Samuels and G. Halsted Boyland have sailed for Europe.——Dr. Arthur L. Traveira, after a visit north, will visit Spain and Portugal.

State Lunacy Commission.—The After Care Committee met at the rooms of the State Lunacy Commission, July 19, when plans were formed for the after-care of persons discharged as cured from hospitals for mental diseases. The plan was put into effect in this state July 22. Patients are paroled from the asylums, but kept under observation by physicians working with the commission. The plan will not only benefit the patients themselves, but will make room for others in the state hospitals. At present every bed is occupied and there is no other way of providing new accommodations except this until the new buildings are ready for occupation. This will be about a year and a half. The patients liberated will be provided with cards stating what days they shall report at the office of the commission. The staff of the hospitals will cooperate. If the patients improve under parole, they will finally be discharged. If they improve sufficiently to work, they will be assisted in getting it and will be held under supervision until cured entirely. Any who retrograde will be sent back to the institutions. The $600,000 appropriated for new buildings by the late legislature does not become available until next January and building operations cannot be begun till then.

NEBRASKA

Personal.—Dr. R. S. Horton, Omaha, has been appointed city physician.——Dr. C. Frederick Stockert, Nebraska City, has gone to Europe.——Dr. William H. Johnson, convicted of criminal practice at Lincoln, has been sentenced to the penitentiary for two years.

Society Organization.—Physicians of Red Willow County have completed a county organization with the following officers: President, Dr. William E. McDivitt; vice-president, Dr. Emma M. Easterday; secretary-treasurer, Dr. Charles L. Fahnestock, and chairman of the board of censors, Dr. Julius A. Toren, all of McCook.

NEW HAMPSHIRE

Gift of a Nurses' Home.—The Exeter Hospital has recently received from Hon. Edward J. Tuck of Paris, France, an additional bequest in form of a nurses' home.

Personal.—Dr. P. Challis Bartlett, superintendent of the State Sanatorium at Glencliffe, has resigned to take charge of a Massachusetts sanatorium. Dr. John E. Runnells has been appointed to succeed him.——Dr. Charles S. Little, for several years superintendent of the School for Feeble-Minded Children at Laconia, has resigned to assume the superintendency of a similar institution in New York state. He is succeeded at Laconia by Dr. Benjamin W. Baker of Manchester.

NEW YORK

New York City

Brooklyn Charities Profit.—The will of Charles H. Armstrong, of Greenwich, Conn., leaves the Seney Hospital, of Brooklyn, $50,000 and the Methodist Home for Aged People $5,000.

Ice-Cream Cones Analyzed.—Following the recent announcement of the seizure of two consignments of ice-cream cones by the government the board of health has taken up the matter and subjected a number of specimens to analysis. The action of the board will depend on the laboratory findings.

A New Polyclinic.—Plans have been filed for the new building of the Polyclinic Hospital to be erected on Fiftieth Street between Eighth and Ninth Avenues. The building will be eleven stories with basement and subbasement, and will be about 96 feet square. This building will cost $50,000, will be modern, and will be so constructed that three stories can be added later.

Off for Europe.—Among those who have recently sailed for Europe are the following: Dr. and Mrs. Philip Embury, Dr. George M. Dillow, Dr. and Mrs. H. H. Tinker, Dr. and Mrs. Clifton Edgar, Dr. Carlos F. MacDonald, Dr. and Mrs. Robert J. Bell, and William I. Spiegelberg, president of the Sydenham Hospital, who will study public and private hospitals and ambulance services.

Mortality Increases.—The death rate for the week ending July 16 shows an increase of 2.91 per 1,000 population, or 308 more deaths than during the same week of last year. Two thirds of the increase was due to deaths from children's diseases, the number jumping from 251 last year to 445 this year. Of this increase 191 were children under five years of age. The total number of children who died was 785, or 46 per cent. of the total deaths at all ages.

Infant Mortality in Brooklyn.—A committee consisting of Drs. Louis C. Ager, John W. Parrish, LeGrand Kerr and Archibald Smith, appointed by Dr. Lederle to investigate the reasons for the higher mortality among infants in Brooklyn, report that it is their belief that differences in the character of the soil and sewage provisions between Brooklyn and Manhattan account for the higher death rate in the former borough. Manhattan is comparatively all rock and the disposal of sewage is comparatively easy. According to this committee another reason why fewer babies die in New York is because of the efficient work of the numerous relief agencies interested in this cause.

OHIO

Systematic War on White Plague.—The board of health of Cleveland has formally endorsed a bond issue of $250,000 for a tuberculosis hospital. District dispensaries will also be opened following the plan which has been successful in Boston

Preliminary Requirements in Ohio.—At a meeting of the Ohio State Medical Board, July 5, it was decided to withdraw recognition from any Ohio medical college which did not require of every matriculant a certificate of admission issued by the entrance examiner of the board. It was further decided that all colleges should file with the secretary of the board a complete list of matriculants on or before November 15 of each year. Dr. G. H. Matson, the secretary, says that the above ruling is to insure that a proper preliminary education has been secured before the medical course is begun, since the latter is now too exacting to permit of secondary studies being taken at the same time.

Personal.—Dr. Henry McElderry Knower has been appointed professor of anatomy in the Ohio-Miami Medical College, medical department of the University of Cincinnati. Dr. Knower was associate in anatomy in Johns Hopkins Medical School and then assistant professor of human anatomy at the University of Toronto.——Dr. Edwin W. Mitchell has gone abroad and will return with Dr. Frank B. Cross, who left early in May.——Dr. Charles E. Howard, Cincinnati, has been appointed receiving physician at the city hospital, in place of Dr. Robert D. Mussey, resigned.——Dr. Addison D. Hobart has been named to succeed Dr. Dale Wilson as one of the city poor physicians of Toledo.——Drs. Edward F. Cushing and James E. Cogan have been named on the health board of Cleveland.——Dr. John D. Westrick has been appointed on the board of health of Defiance.——Dr. Arthur Vos was operated on for appendicitis, July 14.——The Board of Health of St. Bernard elected Dr. H. C. Krumpelbeck health officer for one year.——The trustees of Cincinnati Hospital appointed Dr. Albert J. Bell physician in charge of the new group of contagious disease buildings. It is expected that these buildings will be ready for occupancy by the first of October.

OKLAHOMA

Oklahoma in Registration Area.—Dr. John C. Mahr, president of the State Board of Health, has made application to Dr. Cressy L. Wilbur, chief statistician, Washington, D. C., to have Oklahoma included in the registration area of vital statistics of the United States.

Personal.—Dr. Horace Reed, of the University Medical School, has just returned from a year's stay in the hospitals abroad.——Dr. Archa K. West has been chosen president of the Oklahoma City Good Government League.——Dr. Lewis J. Moorman, Oklahoma City, has returned after a year in the hospitals of Vienna.

Commencement Exercises.—At the commencement exercises of Epworth College of Medicine, Oklahoma City, seven physicians were graduated. This will be the last graduation, on account of the consolidation with the State University School of Medicine, which latter school has established a third and fourth year in medicine, hitherto having only two years in medicine.

OREGON

Tuberculosis Hospital.—In connection with the proposition of Dr. George W. Turner to establish a tuberculosis sanatorium at Mount Tabor, Sister Mary Theresa, manager of the St. Theresa Open Air Sanatorium, Oak Grove, has offered a free site for the erection of a hospital for this purpose.

Work of the State Health Board.—The Oregon State Board of Health has begun a systematic campaign of education of the public in health matters, including the use of newspapers, special bulletins and lectures. A health car will be attached to the trains used to teach the farmers in agricultural matters.

Society Meetings.—The nineteenth annual session of the Southern Oregon Medical Association met at Medford recently and elected the following officers: President, Dr. Francis G. Swedenburg, Ashland; vice-president, Dr. Cora B. Lemon, Grants Pass; and secretary-treasurer, Dr. Alvane Seely, Ashland.——The Eastern Oregon District Medical Association met in Pendleton July 6 and 7. Dr. S. W. McClure, chief of the bureau of animal industry in the northwest, spoke on the transformation of bovine tubercle bacilli into the human form, and in regard to the prevalence of tuberculosis among fowls in Oregon. He stated that tuberculosis is intercommunicable between different kinds of animals and birds. The following officers were elected: President, Dr. Edward O. Parker, Pendleton; vice-presidents, Drs. L. M. Madden, Weston, and Jacob Prinzing, Ontario; secretary-treasurer, Dr. Thomas M. Henderson, Pendleton, and member of the board of censors, Dr. Frederick R. Dorn, Echo.

PENNSYLVANIA

Personal.—The managers of the Pennsylvania Epileptic Hospital at Oakburne elected Dr. Samuel W. Morton to succeed the late Dr. Wharton Sinkler as secretary.

Women's Medical College to Build.—A building to be erected in the rear of the college hospital, will contain a clinical amphitheater for 125 students, with a waiting room for patients, sterilizing, etherizing and recovering rooms, a doctor's room and a room for students. The structure will be two stories high and will cost approximately $22,000.

New Reportable Diseases. The State Board of Health has issued notices to the physicians of the state, requesting them to report uncinariasis (hookworm), pellagra and infantile paralysis as communicable diseases and called their attention to the laws of the state regulating such reports. An endeavor will be made to isolate and to study these diseases which have attracted such wide attention in the past few years.

Rabies Prevalent in Cattle.—Nine cows have been killed recently as the result of an epidemic of rabies which seems to be spreading over East Nottingham Township, a short distance from Oxford. The entire township is greatly excited over the prevalence of the disease. A large number of cows and horses, and nearly every dog in the township, are under a strict quarantine. State Veterinarian S. H. Gilliland is conducting an investigation.

Department of Abnormal Psychology.—Announcement has been made that the University of Pittsburg will establish in connection with its medical department a laboratory and school for the study of backward children. The scope of the work will include psychologic studies of mental defectives and delinquents, both children and adults, epileptics and the nervous unfit of all kinds. It will also include work in the university laboratories and the training of nurses and prospective teachers in work of this kind. The work will be under the direction of Prof. J. H. White of the department of psychology, Dr. Edward E. Mayer of the department of neurology, and Dr. E. Bosworth McCready will be the medical director. The school is to be called the Hospital School for Backward Children.

Infantile Paralysis at Bethlehem. Until a few days ago there were twenty-one well-developed cases of anterior poliomyelitis reported at Bethlehem and vicinity. The epidemic has caused widespread interest and renewed efforts are being made to discover the cause of the disease. Commissioner Samuel G. Dixon and Drs. Royer and Fox, of the State Board of Health, are pursuing a thorough investigation of every case reported. In only one instance has there been any circumstances indicating that the disease may be of an infectious character. A child 2½ years old was stricken with paralysis shortly after using milk from a herd in which one of the cows had lain in pasture for several days with paralysis of the hind-quarters. A week later the child was taken sick and developed a paralysis of the right leg and left arm. There has been but one death from the disease in the past few weeks. Dr. Charles K. Mills of Philadelphia and Dr. Paul Lewis of Phipps Institute are conducting personal observations of the outbreak. Dr. Simon Flexner of the Rockefeller Institute, New York, will study the cases.

Philadelphia

Personal.—Dr. George Bachmann, demonstrator of physiology at Jefferson Medical College and physiologist to the Jefferson Hospital, resigned to accept the professorship of physiology at the Atlanta College of Physicians and Surgeons.—Dr. Victor Baker, resident physician at Frankford Hospital, was operated on for appendicitis July 17.—Dr. Charles K Mills addressed the Lehigh Valley Medical Association at Delaware Water Gap, July 21.

Mortality Increases.—Statistics show an increase in the general mortality from 13,264 to 14,425 for the first six months of the present year, an increase of about 9 per cent. as compared with 1909. This increase is made up largely of deaths from diseases of the lungs, particularly pneumonia, and of intestinal diseases in children under 1 year of age. Of the more important diseases the difference in percentage over 1909 for the six months ending June 30, was as follows: Typhoid fever, decrease, 28; measles, decrease, 68; scarlet fever, increase, 27; whooping cough, increase, 81; diphtheria, decrease, 15; influenza, decrease, 4; cerebrospinal meningitis, decrease, 80; rabies, increase, 200; tetanus, decrease, 70; tuberculosis of the lungs was practically the same. Other forms of tuberculosis increased 3 per cent.; apoplexy increased 28 per cent.; heart disease increased 15 per cent.; pneumonia increased 30 per cent.; Bright's disease decreased 2 per cent.; Bright's and enteritis increased 67 per cent.; suicide increased 2 per cent.; cancer increased 3 per cent.

TENNESSEE

College Suspended.—By action of the trustees of the University of Chattanooga, so it is reported, the relationship between that university and the affiliated Chattanooga Medical College has been cancelled, and the medical college has been suspended. There is talk of a new college being organized in its stead.

Personal. Dr. William N Lynn has been appointed superintendent of the Lincoln Memorial Hospital at Knoxville, vice Miss E. L. Westover.—Dr May F. Jones, Columbus, Miss., has assumed the duties of superintendent of the recently formed Civic League Hospital at Memphis.—Dr Gelsey Saunders has been appointed health officer at Jackson.—Dr. Walter R. Wallace has become associated with Dr. George E. Pettey in the sanitarium at Memphis. A forty-room addition has been built.—Dr. John S. B. Woolford, Chattanooga, sailed for Europe July 16.

Society Meetings.—The thirty second annual session of the Middle Tennessee Medical Association convened at Nashville recently. The following officers were elected: President, Dr Ernest M. Holmes, Readyville; vice president, Dr. John W Stevens, Nashville; and secretary treasurer, Dr. R. Logan Jones, Nashville (reelected).—The West Tennessee Medical Association met at Nashville recently and elected the following officers: President, Dr. David A. Walker, Trenton; vice-presidents, Drs. Alexander H. Moody, Dyersburg, and William T. Black, Memphis, and secretary, Dr. Isaac A. McSwain, Paris (reelected).—The fifth annual meeting of the State Colored Physicians' Medical Association occurred at Knoxville, June 22 and 23. Nearly one hundred physicians were in attendance Chattanooga was chosen as the place of next meeting. The following officers were elected: President, Dr. Henry M. Green, Knoxville; vice-presidents, Drs. J. D. Frierson, Chattanooga; Joshua S. Williams, Franklin, and W. T. Prater, Memphis; recording secretary, Dr. I. H. Hampton, Fayetteville; assistant secretary, Dr. W. H. Astrapp, South Pittsburg; corresponding secretary, Dr. A. M. Townsend, Nashville; treasurer, Dr. J. B. Singleton, Nashville, and statistician, Dr. J A. Gregory.

UTAH

Salt Lake City

Cancer. While the increasing prevalence of cancer is generally admitted it is not often reported as a leading cause of death in any community. Such was reported to be the case, however, in Salt Lake City in May. According to the health officer, the deaths from cancer outnumbered those from any other single cause, exceeding those from tuberculosis.

Personal. Dr. John M. Spaulding has been appointed police surgeon, under the direction of Dr. Samuel G. Paul, city health commissioner.—Dr. John Sundwald, professor of anatomy in the University Medical School, is in Europe.—Dr. J. W Calkins was seriously injured in an automobile accident recently.—Dr. T. H. Glenn has been made bacteriologist in Northwestern University Medical School, Chicago.—Dr Frederick Stauffer is in Vienna.—Dr. Augustus C Behle has gone to Germany for a long stay.

VIRGINIA

Addition to Hospital. A $26,000 addition to the Protestant Hospital at Norfolk was opened recently.

Personal. Dr. Robert L. Payne, Norfolk, has been appointed chief surgeon of the Norfolk Southern Railway.—Dr. Robert G. Heiner has been assigned as physician to the Navy Hospital at Norfolk.—Dr. J Edward Brumbach, who was a resident at the Maryland General Hospital, Baltimore has been appointed an assistant resident of the Eastern State Hospital, Williamsburg.

Health Officers Organize.—The health officers of eastern Virginia met at Norfolk and organized the Association of Health Officers of Tidewater. Dr. Henry B Dupuy, health commissioner of Norfolk was elected president. Dr Thomas J. Pretlow, Newport News, vice president, and Dr. Herbert R. Drewry, Norfolk, secretary. The association will hold monthly meetings.

Work of State Board of Health. The State Board of Health met at Richmond July 15 and reorganized under the new health law passed by the recent session of the legislature. Dr. William M. Smith, Alexandria, was elected secretary to succeed the late Dr. Samuel Peachy Latane, Winchester. The board formulated regulations concerning the reporting and quarantine of infectious diseases, disinfection and sanitation of public school buildings, railway coaches, stations, theaters, etc., in accordance with the new law.

University Medical College to Rebuild.—It is reported that the University College of Medicine has determined to erect a new medical building in place of the one destroyed by fire last January. The estimated cost of the new building is $100,000. Thus Richmond is still to have two medical colleges.——At the meeting of the faculty and trustees, July 16, all the members of the faculty resigned in order to leave the board of trustees free to readjust the professorships so as to meet the needs of the curriculum. Only a few changes were made in the personnel but some transfers were made. Dr. Stuart McGuire continues to be the president of the faculty.

Society Meetings.—The Medical Society of Northern Virginia and the District of Columbia met at Manassas recently and elected the following officers: President, Dr. A. Barnes Hooe, Washington, D. C.; vice-presidents, Drs. Edwin L. Detweiler, Herndon, and Powhatan Moncure, Bealeton; recording secretary, Dr. Arthur G. Coumbe, Vienna, and corresponding secretary, Dr. Charles S. White, Washington, D. C.——Shenandoah County Medical Society, at its last meeting, was addressed by Dr. Harvey W. Wiley, Washington, D. C. The following officers were elected: President, Dr. Durus D. Carter, Woodstock; vice-presidents, Drs. Mackall R. Bruin, Strasburg, and David L. Shaver, Maurertown; secretary-treasurer, Dr. William F. Driver, Newmarket.

Dr. Stiles Addresses Conference.—At the meeting of the Rural Life Conference, held in Charlotte July 16, Dr. Charles Wardell Stiles, Washington, D. C., addressed the conference on hookworm. The newspaper account says: "Dr. Stiles stated that his work in the hookworm investigations for a number of years past had obliged him to live among the poorest of the poor in the poorest districts of the South, in fact, to become essentially one of them. In these homes of abject poverty, with many children inadequately clothed and fed, it was a common sight to see expensive patent medicines occupying a prominent place on the shelf. One family in South Carolina, whose bread-winner earned $15 a month, spent $6 of it in a patent medicine advertised under a tissue of lies. These poor people, suffering from insufficient food, malaria, hookworm and in thousands of cases from tuberculosis, were preyed on by a lot of liars who distribute a concoction of alcohol at an enormous profit to a people too ignorant and too sick to protect themselves."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, July 16, 1910.

Death of a Victim to the X-Rays

The sad case of Mr. Harry W. Cox, an electrician and instrument maker, who worked with the *x*-rays and devised many instruments for their use in medicine, has been reported from time to time in previous letters to THE JOURNAL. Eight years ago *x*-ray dermatitis began on the left hand. At that time the dangerous nature of the affection was not understood and little notice was taken of it. Slowly the disease advanced and five years ago a finger had to be amputated. Gradually the left hand was also attacked and eighteen months ago the greater part of it, including three fingers, had to be removed. Still the disease progressed and last September amputation of the right arm was performed. In the meantime, Mr. Cox, undaunted, continued work and perfected many of his inventions. Finally the neck and face were involved and he died at his residence in London, July 14. While lying on his death bed he said: "I would gladly go through it all again to accomplish what I have been permitted for the benefit of my fellow men." So much sympathy did his case arouse that a fund of $14,000 was raised by public subscription for his benefit and the government made a grant of $1,000. His case is the most striking example of the dangers run by the earlier workers with the *x*-rays and shows the necessity of the precautions which are now adopted.

Medical Education for Hindus

The National Medical College of India has been founded for the medical instruction of natives who cannot afford the heavy fees of the recognized colleges which are state-aided. A very respectable list of examiners and professors is published which includes a number of lieutenant colonels retired from the Indian Medical Service. The period of study is five years. The following diplomas will be awarded: 1. The F.C.P.S. (Fellow of the National College of Physicians and Surgeons), an honorary title to be conferred on scientists of distinction. 2. The M.C.P.S. (Member of the National College of Physicians and Surgeons). 3. The L.M.S. (Licentiate in Medicine and Surgery). 4. The D.P.H. (Diploma in Public Health), for health officers. The most remarkable feature about the college is the fact that professors give their services gratuitously. As the prospectus says: "We train our boys under the best masters with European and local qualifications, who labor for the college at a great sacrifice, the welfare of the scholars being their only reward." The fees constitute a record and are probably the lowest under the sun. They are as follows: Admission fee, Rs. 3 (about $1); for the L.M.S. class the same fee per month; for practical classes and dissections the fee for the session is Rs. 5.

A Steamer With Special Mosquito Screens

The Booth Steamship Company of Liverpool has despatched a boat on her maiden trip to the Amazon specially designed to cope with the mosquitoes which often fly aboard and cause malaria on that river and its tributaries. The steamer is designed purely for cargo which she carries to Port Velho, a town 600 miles up the Rio Madeiro, a tributary of the Amazon, on which the mosquito evil is so great that nearly the whole crew of steamers is sometimes laid up with malaria. The steamer is so screened that the living quarters of the crew are protected from mosquitoes. Each port-hole is provided with a movable screened frame so adapted that the port-hole can be closed and screwed down without withdrawing the screen. The entrances to the main deck are protected by wire gauze spring doors, and at each side of the ash-shoot, which is necessarily open to the ingress of mosquitoes, extra sets of screened doors are placed. The doors and port-holes of the outside bridge deck cabins are also screened. The doctor's quarters and hospital are situated further aft and are thoroughly screened. No old-fashioned water reservoir over the wash-basin is permitted in the cabins; running water is supplied. The slops from the basins run into pipes emptying directly over the side. The ventilator pipes in the cabins and along the alleyways are protected by a wire gauze screened frame. The steamer has been inspected by the medical advisory board of the African Committee of the Colonial Office and by Prof. Ronald Ross and is considered by them a great advance in the construction of ships plying in tropical waters.

Coroner's Law and Death Certification

A bill has been introduced into parliament, backed by several medical members, including Sir William Collins, to amend the antiquated law of coroner's inquests and death certification. As long ago as 1893 a committee of the House of Commons reported that reform was urgently necessary. The law relating to coroners is not adapted to modern necessities, its administration is costly, without being efficient. The law of death certification offers every opportunity for premature burial and every facility for the concealment of crime. Among the more important provisions of the bill are the following: No person shall be appointed a coroner unless he be a practicing barrister or solicitor of not less than five years' standing, or a registered medical practitioner who is also a barrister or a graduate in law. Medical investigators or pathologists are to be appointed to assist the coroner in his inquiries and to make postmortem examinations. It shall not be necessary for the jury to view the body, unless the coroner or a majority of the jury shall deem it necessary. At present the viewing of the body is obligatory and is to many jurymen very objectionable. Before giving a certificate of death a doctor must personally inspect the body and identify it as the person named in the certificate whom he has attended in his last illness and shall certify as to the fact of death as well as to its cause. At present the doctor is required to certify only as to the cause of death and can accept the fact of death from the friends of the deceased. He is not bound to view the body. The coroner is given power to hold an inquiry and have a postmorten examination made without holding an inquest, which he cannot do at present. A valuable reform is that instead of, as at present, giving the death certificate to the friends of the deceased for the purpose of registration the doctor is to mail it direct to the registrar. The present system leads to inaccurate certification. Thus to spare the feelings of the relatives such causes of death as syphilis and alcoholism are sometimes suppressed and only the name of the lesion, such as cirrhosis of the liver or apoplexy is given.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 15, 1910.

Preservation of Vaccine by Refrigeration

Dr. Kelsch, director of the school of military medicine and pharmacy at Val-de-Grâce, read before the Académie de Médecine on July 12 a paper in regard to the influence of cold on the preservation of the activity of vaccine pulp. In collaboration with MM. Camus and Tanon, Dr. Kelsch made the following experiments: Two samples of vaccine pulp were deposited in May, 1909, one in a refrigerator maintaining a constant temperature of —12 to —15 C., and the other in an ordinary refrigerator kept at an average of + 5 to + 7 C. Then at the end of six months and a year, respectively, the samples were submitted to a comparative cytologic, bacteriologic, biologic and clinical analysis. The one which had been kept at + 5 had lost most of its activity at the end of six months and all of it at the end of a year. On the other hand, the other sample was still entirely active at the end of six months and a year. Excellent results were obtained in each of nine children who were vaccinated with this pulp. These results not only indicate the resistance which bacteria oppose to very low temperatures, but also point out a practicable means of providing vaccine against such occurrences as that in Paris in 1907, when the public was literally terror-stricken before the menacing epidemic.

Sale of Morphin without a Prescription

A pharmacist was recently prosecuted for having sold morphin without a prescription to a student in Nancy, through whom a companion obtained it and thereby became addicted to the use of the drug. The father of the victim brought suit for damages against the pharmacist who made the plea that he was responsible for his own act only, and not for that of the student who had procured the morphin for his companion. The court refused to sustain his plea and condemned the pharmacist to pay $20 (100 francs) as a fine, and $800 damages on the ground that a pharmacist who sells a poisonous substance without a prescription knowingly incurs the risk of whatever bad use may be made of it, whether by the person who buys it or by a third person.

Personal

Dr. A. Gilbert, professor of therapeutics at the Paris college of medicine, has been appointed at his own request, beginning Nov. 1, 1910, professor of clinical medicine, to replace Professor Dieulafoy.

Society of Abstaining Physicians

In connection with the first Congrès des abstinents français, which will meet on August 13 at Grenoble, some physicians have just formed the Société des médecins abstinents des pays latins.

A New Sign of Hydatid Cysts of the Convexity of the Liver

On July 5 at the Academy of Medicine Professor Chauffard drew attention to a new clinical sign that he has recently observed in a patient with an enormous hydatid cyst of the liver which came up to the third rib. The left hand being placed transversely in front at the level of the second and third right intercostal spaces, and the fingers of the right hand grasping the border of the right hepatic lobe, the cystic liver mass is agitated from top to bottom with a series of little oscillations. At each oscillation the left hand perceives a light concussion (*ballotement*), at the level of the tense and enlarged intercostal space. This sign can be obtained only in front and with the patient in a horizontal position. This superhepatic concussion supplements the sign described last year by M. Chauffard for hydatid cysts of the convexity of the liver under the name of transthoracic wave (*flot transthoracique*, The Journal, July 24, 1909, p. 308).

The combination of the two modes of exploration permits, so to speak, the measurement of the cystic mass of the liver, the sign of the wave giving the antero-posterior diameter and that of the concussion the vertical diameter. The solid hypertrophies of the liver, even if they are very voluminous, do not appear to give the superhepatic concussion.

The Color of the Hair from a Judicial Point of View

M. Bertillon, head of the anthropometric service, has just established a table in which he has displayed at the Brussels exposition the scale of the colors of the hair so that they may be clearly distinguished. The expressions "light blond," "true blond," "dark blond," "light chestnut," "true chestnut," "dark chestnut," "chestnut black" and "black" have been assigned to fixed shades in regard to which there will be agreement everywhere hereafter. M. Bertillon has expressed this notation of colors by means of samples which have been furnished him by a large dealer in hair goods. He has collected a quantity of hair of all shades so as to be able to make a number of tables illustrating colors. These tables, which are in demand everywhere, will be sent to all the judicial services of Europe; thus it will hereafter be impossible to make an error in regard to the shades of hair since these will be the same in all judicial services.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, June 7, 1910.

Plan Suggested by Koch, Hitherto Unpublished, for Research on the Infectious Character of Bovine Tubercle Bacilli

The question which was raised anew by the address of Robert Koch at the London International Congress of Hygiene, as to how far bovine tubercle bacilli are present and produce tuberculosis in man, is not yet solved, but is still the subject of numerous investigations in the laboratories of different civilized countries. Koch himself was continuously occupied with this question, from the study of which he was prematurely removed by death. He had developed a plan for the investigation of pulmonary tuberculosis which has been presented to various investigators for their consideration. The precautions outlined, which have not hitherto been published, are as follows:

1. The consumptives whose sputum is to be examined must not eat any butter during the period of investigation for at least three days before each collection of sputum and must take only thoroughly boiled milk. The circumstances should be such that the examination can be repeated three times. The sputum should be deposited in sterilized receptacles in the morning before eating.

2. The examination of sputum should be repeated at least twice, at intervals of from 5 to 15 days, so that altogether three examinations are made.

3. The sputum is to be injected subcutaneously into four guinea pigs in the neighborhood of the groin.

4. As soon as the inguinal glands of the inoculated guinea-pigs are so much enlarged that tuberculous processes are to be suspected in them, two of the guinea-pigs are to be killed and from each a piece the size of a hemp seed from the suspected tuberculous glands or from the substance of the spleen is implanted subcutaneously on a rabbit's abdomen. At the same time, cultures on glycerin serum are to be made from the same material.

5. The tubercle bacillus is to be cultivated in guinea pigs until the type is determined.

6. Cultures on glycerin serum and inoculation of rabbits are to be made from the lungs and kidneys of such rabbits as die of generalized tuberculosis, or in which, on killing three months after the inoculation, progressive tuberculous processes are found. At the autopsy of the rabbit, special attention is to be paid to the regional lymph glands to determine whether they are tuberculous.

7. Two rabbits are to be injected subcutaneously with 0.01 gm. of a culture derived from the inoculated guinea-pig, suspended in 1 c.c. of physiologic salt solution.

8. If by the behavior of the cultures and the appearance of generalized tuberculosis in rabbits, the presence of bovine tubercle bacilli seems to be demonstrated, a further injection of 0.01 gm. of the culture should be made in the neck of a calf in order to exhaust all means of evidence. If exceptionally it shall have been impossible to obtain a pure culture, the tuberculous material from the rabbit must be applied to the inoculation of the calf.

9. In case bovine tubercle bacilli have been found in a consumptive, it is necessary to repeat the examination as often as possible. As soon as an opportunity for autopsy is furnished, various parts of the lung, the bronchial glands, the cervical glands, and the abdominal organs should be examined for bovine tubercle bacilli. In all such cases especial care should be taken to recognize a mixed infection with human tubercle bacilli.

In the same way the question is to be answered to what extent lupus owes its origin to infection with tubercle bacilli of the human or the bovine type. In this respect also Koch has worked out directions for obtaining and injecting the material. In this case the propagation of the particular race of tubercle bacilli in pure culture is necessary.

As a direct culture of tubercle bacilli from lupus tissues is not possible on account of their extremely small number, a multiplication of the tubercle bacilli in the bodies of guinea-pigs must precede the pure culture. The injection of the material into guinea-pigs should be made at the place where the material is obtained and as soon as possible, because the result of the inoculation becomes uncertain in case of a long delay between the removal and the inoculation.

As material for investigation, only such places of the lupus tumor are suitable as show clinically a progress of the disease in the form of fresh nodules; untreated cases furnish the best assurance of the success of the propagation. In old lupus cases which have been treated for a long time, it should be noted whether in addition to the lupus foci on the visible parts of the body which have been subjected to medical treatment there are not also lupus foci on other parts (back and extremity) which often are unnoticed by the patients and for that reason untreated.

In every case the pieces should be taken from the most recent and untreated parts of the lupus tissue at the border of the lesion. The size and number of the excised pieces of the skin must be determined according to the clinical picture of the case. The larger the piece of skin excised, or the greater the number of excised pieces, the more surely can a positive result be expected from the injection of the material in guinea-pigs. Sufficient material must in every case be taken for the inoculation of at least 2 guinea-pigs, so that for every guinea-pig a piece of about the size of a hemp seed is available; if possible 3 or 4 guinea-pigs should be inoculated. In patients with lupus foci in different parts of the body, material for examination should be separately removed from each focus of the disease and injected separately into at least 2 guinea-pigs each.

In the case of simultaneous injection of material from several patients or from several foci in the same patient, the inoculated guinea-pigs should be distinguished by permanent marks (for instance, by distinguishing staining with carbol-fuchsin on the head, neck, back or extremities).

The inoculation of the guinea-pig is done in the following manner: In the middle of the flat portion of the abdomen, the hairs are cut short in a place as large as a mark piece (silver quarter); here after rubbing with alcohol, a cut is made in the skin through which the point of the shears or a pair of forceps are pushed and into the little pocket thus made in the skin, the material under investigation is introduced by means of forceps. The wound in the skin is closed with collodion. Observation of the most careful asepsis is strictly essential; especial care must be taken to see that the instruments are changed with the injection of each new sample of material. Inoculated guinea-pigs are to be sent immediately after the injection to the Berlin institute for infectious diseases (Berlin N. 39 Föhrerstr. 2.), accompanied by a report containing a brief record of the name, age, sex, and occupation of the patient, situation, age, and clinical picture of the lupus, as well as of the previous treatment, source of infection, and other forms of tuberculous foci, and a protocol of the animal inoculation.

Personal

Professor v. Strümpell, director of the third medical clinic at Vienna, has accepted a call as the successor of Curschmann. Among the factors influencing his decision to exchange Vienna for Leipsic were the uninspiring conditions of his Vienna clinic and the wish to return to his paternal city and to work in the place of his teacher Ernst Wagner. Strümpell was called from Leipsic to Erlangen as professor, and for many years conducted the medical clinic there. From there he went about six years ago to Breslau and from there two years ago to Vienna. When von Leyden's chair became vacant three years ago many expected in vain that the Berlin faculty would place Strümpell's name on the list of candidates to succeed Leyden. I believe that to-day our faculty has reason to regret that it did not secure this distinguished clinician and highly honored man as one of its members.

General Medical Officer Dr. Vollbrecht has received a call to Constantinople to reorganize the very imperfect sanitary conditions of the Turkish army.

July 1 Professors Langgaard and Rabow resigned the editorship of the *Therapeutische Monatshefte*. In conjunction with Professor Liebreich they founded this journal about thirty years ago. Now they have been compelled to yield to younger talent.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 12, 1910.

Strümpell Leaves Vienna

The half hearted way in which the requests of Professor Strümpell for modern outfit for his clinic were met by the authorities has had an unexpected result. The professor has "given notice;" he will leave his post at once to accept the appointment of clinical professor in Leipsic, as successor of Curschmann. To understand the sensational effect of this decision, one must understand that Strümpell had been won for Vienna only with great difficulty, and that promises had been made to him, which if fulfilled, would have enabled him to develop the third Vienna medical clinic according to his ideas. When he took over this present office a year and a half ago, as successor of Schrötter, he was received with the greatest pleasure by the students, who wanted to obtain a first-class teacher. Numerous bureaucrats and professors who thought it unnecessary to call another man from Germany, were less pleased with his appointment. And von Strümpell always found that he was regarded as an outsider by many men. Among the students, however, he was much beloved and respected, and his patients always praised his kind and benevolent manners. Strümpell's idea was to make Vienna a Mecca of first-class clinical teaching. Instead of being assisted in every possible way by the authorities, he has been hampered all along. Naturally, he lost all pleasure and seized the first opportunity to leave a place where his abilities were not regarded as sufficient to warrant a little disregard of routine and red tape in monetary questions. His loss is another sign that science cannot hope to progress if bureaucracy is prevalent.

The Question of the Successor of Zuckerkandl

The anatomic institute has been left without director by the death of Professor Zuckerkandl, but his successor will be soon appointed. Out of all the men able to fill the post, only three are actually eligible at present. They are Rabl, in Leipsic, Grosser, in Prague, and Tandler, in Vienna. It is the custom in this country, whenever a new medical teaching appointment has to be made, for the senate of the university to call the attention of the ministry of education to at least three men, named in order of preference. Very seldom is one man recommended as the first and only candidate. This has been the case just now, when Professor Tandler has been presented by the senate. He has been for the last four years *locum tenens* for Zuckerkandl, who was obliged by illness to abstain from all but very slight work. Tandler has gained the esteem and the attention of students and scientists alike during the time he has been active in the anatomic department. It is not impossible, however, that some outsider will be appointed, for it has happened sometimes that influences more powerful than scientific requirements have been able to outweigh the recommendation by the senate.

Scarcity of Hospital Beds in Vienna

Owing to the lack of private charitable institutes and the well known parsimony of the government, it is always difficult in this city to obtain hospital accommodation even in urgent cases. It is true that when the new clinics and the jubilee hospital are completed, 3,300 beds will be added to the present number, but altogether there will be, even then, only some 8,000 hospital beds (not including asylums) available for a population of 2,000,000. A very instructive paper by an official describing these impossible conditions and demanding immediate help, has appeared in a medical and a lay paper. The author, who is in a position to know, states that out of every fifty demands for a bed only fourteen can be complied with. In many wards two or three children have to sleep in one bed, or mattresses and blankets are placed on the ground to enable more patients to be accommodated; convalescents have to be dismissed at the very earliest opportunity. Furthermore, it is the custom to clean the wards thoroughly in turn every summer when the number of applications is smaller, owing to the absence of diseases of the respiratory organs, the better weather conditions and similar reasons. Therefore, between June and September many wards are partially or totally out of use, and between 20 and 25 per cent. of the beds are thus out of the reckoning. The very unusual weather conditions of this summer in Europe, with the high percentage of total rainfall and moisture, the low average temperature and the strong winds have caused an excessive demand for hospital beds, doubly felt because of these facts. These conditions, abominable as they are, have been apathetically regarded as inevitable, until it became known that a few days ago a mother, applying for admission with a baby in her arms, could not find a bed in the hospital and was found dead next morning in the street with her dying baby still in her arms. Public comment soon took hold of the gruesome incident, and the fact that even tuberculous patients have to wait for weeks and months for admission was severely criticized. In the presence of such scarcity of beds, while the patients die in the streets, state and municipality quarrel as to who has to find the necessary funds.

Miscellany

THE WORK OF NEW YORK'S TUBERCULOSIS CLINICS

A Critical Study of Its Own Work Made for the Association of Tuberculosis Clinics

Prior to 1908, New York City had a number of tuberculosis clinics, either separate or connected with other dispensaries and clinics supported by the city, each of which had a different equipment and a different plan of handling and treating patients. In January of that year the Association of Tuberculosis Clinics was formed to coordinate the work of the nine tuberculosis clinics then existing, to increase the number of clinics, and to limit the overlapping and duplication in work which had previously been common, and also to establish uniformity as nearly as possible in methods of examination, records, clinic rules, etc. The result of the study of this association of the New York clinics is embodied in a 90-page pamphlet* by Miss F. Elizabeth Crowell, the executive secretary, setting forth in some detail the work of the clinics, and making recommendations for improvement and uniformity in the service. The information gathered was included under eight heads: General information, hygiene of clinic, clinic facilities, general policy of administration, routine method of treatment, nurses, children's clinic and day camps.

The oldest clinic was established in 1894, a second in 1895 and the third in 1902, and one or more yearly since that date. Some treat certain nationalities almost exclusively. Five clinics are connected with city institutions and these and two private clinics are free. In some others a nominal charge of 10 cents is made for registration, medicine being furnished free. Three are independently organized. All the others are operated as departments of existing hospitals or dispensaries. Four clinics have day camps connected with them, and three have regularly organized children's classes. Four clinics have women's auxiliaries which contribute toward the relief of destitute clinic patients, and in various ways supplement the work of the clinics in the homes.

In respect to hygiene, the clinics were found to differ widely in their routine methods, in the matter of the care of sputum, cuspidors, disinfecting solutions, furnishing of gauze or paper handkerchiefs and their disposition; methods of providing drinking water, by sanitary fountains, sanitary cups, etc., periodical fumigation of the clinic rooms, etc. In some clinics neither gowns nor aprons are worn by the physicians, while in others washable gowns are used. The same applies to the nurses. At only two clinics was any attempt made to protect the physician while he was examining the patient. The clinics differed most widely in the amount of room space used for the tuberculous patients. The Department of Health clinic, the largest, having one month 1,264 patients under treatment, has ten rooms, twelve physicians, exclusive of the chief, and seven nurses. The clinic is open six days a week, with two sessions a day and one evening a week. The average amount of time available for each patient was seventeen minutes. For its 626 patients Bellevue has two rooms, nine physicians and four nurses. The amount of time of the physicians available for each patient is about twelve minutes. Some of the clinics have enough space, but many are overcrowded.

As to general administration, at five clinics the initial examination is made in the general medical clinic of the dispensary; at others it is made in the tuberculosis clinics. At only four clinics are records kept of patients on discharge, and it is in respect to the keeping of the records that there is the greatest lack of uniformity, although this has been repeatedly urged. A uniform system of records has been employed in Brooklyn, greatly facilitating the transfer of cases. Some use cards, others sheets or books.

At all clinics the temperature, pulse and weight of patients are taken at each visit, and some record information from visiting nurses. All but three use the tuberculin test. The average time patients are kept under observation pending diagnosis is one month. A negative sputum diagnosis is disregarded. There is no uniformity as to reexaminations of sputum. The usual time of making an examination is about five minutes. At some clinics throats are examined and treated regularly.

The number of nurses varies from one to seven, and their time is divided between actual clinic work, clerical work and visiting work. The educational value of the visits of the nurses on patients and family is considerable, and the nurses should be trained in social work. Children attend the general clinics at dispensaries which do not have separate clinics for children. Day camps for use of patients needing sanatorium treatment, but unable to leave the city, in some instances are provided on ferry boats in the river, or on roofs, etc., and connected with each is a day school under the charge of a graduate nurse and a teacher assigned by the Department of Education. It has been suggested that each clinic arrange for a visiting physician to bed cases on the recommendation of the visiting nurses.

The statements of the physicians and nurses connected with the various clinics and the testimony of those investigating conditions are that the most pressing needs are more space, more physicians, more nurses and a more satisfactory organization of relief work for destitute clinic patients. Vast improvement, however, has been effected in recent years. Formerly tuberculosis patients were rushed through overcrowded general medical clinics, no special consideration being given them. Only four clinics kept a record of the condition of patients on discharge, but as an indication of the benefits resulting from clinic treatment, the following figures are of interest: Bellevue reports for 1909 that of 1,369 patients discharged, 3 per cent. were apparently cured, 4 per cent. arrested, 24 per cent. improved; 66 per cent. were progressive and 3 per cent. died. Gouverneur reports that of 301 patients discharged, 1.6 per cent. were apparently cured, 4.3 per cent. arrested, 33.8 per cent. improved; 41.5 per cent. unimproved, 15.6 were progressive and 2.6 per cent. died.

As a result of the whole investigation, the Board of Directors formulated, among others, the following recommendations concerning the tuberculosis cases and their handling: That patients while waiting admission to the clinic rooms should be separated from the other dispensary patients; that in all rooms large signs in several languages be displayed giving detailed information as to caring for the sputum; that sputum cups be furnished to take home; that paper or gauze handkerchiefs be furnished for use at the clinic, with receptacles for their disposal; that no cuspidors be used; that sanitary drinking fountains or paper drinking cups be furnished; that furniture as well as walls be washed daily; that gowns with sleeves be worn by physicians and nurses; that capes of washable material be furnished patients while disrobed awaiting examination. It is also recommended that each clinic shall have one room for interviewing patients, one for examining women and one for men. There are other recommendations concerning the use of the rooms by the social workers for private conferences with patients, for the care of the physicians' and nurses' coats and gowns, and details as to the equipment of each dispensary, and that the number of physicians in attendance shall be sufficient to allow at least fifteen minutes for examination of new cases exclusive of history taking, and at least six minutes for every old case with a nurse for every 100 patients on the clinic register. The general policy of administration should seek to arrange for a physician to visit and treat in their homes patients too ill to attend, for the establishment of separate children's clinics wherever possible, and that patients be classified and treated in groups; also that a uniform procedure be adopted regarding time of transfer from one clinic to another, frequency of reexamination of sputum and of patients; as to the use of the nurses' reports of home conditions as a basis for advising patients, as to the transfer of cases living out of the district, as to record-keeping and record filing in clinics and day camps, record of condition on discharge, and that the classification of the National Association be employed for recording the stage of the disease and condition on discharge. As to nurses the recommendations are that all supervising nurses shall be affiliated with some local relief organization, and that nurses in the clinics shall have training in social work, and that the home of every patient should be visited at least once a month.

---

* Copies of this report may be obtained by writing to the Association of Tuberculosis Clinics, 105 E. 22nd St., New York City.

This careful and critical study of the clinics, their material conditions, shortcomings and needs is a valuable one, and the recommendations if carried out would vastly improve the efficiency of the antituberculosis work in New York. It will also serve as a practical guide in tuberculosis work in other communities, revealing the shortcomings of lack of thorough system and emphasizing the importance of cooperation and uniformity of methods, records, etc. System, thoroughness and uniformity of method are especially essential to any considerable degree of efficiency in this work.

Post-Mortem Findings in a Case of Pellagra.—Aldred S. Warthin (*Physician and Surgeon*, xxxii, No. 1) reports the post-mortem findings in a case of pellagra. The patient was a German woman who had lived in Wisconsin in early life and later in the South. She had always eaten corn-meal mush until the appearance of the symptoms of pellagra, when she developed an aversion to it. Two years before death she developed gastro-intestinal diarrhea and skin lesions over the abdomen, face, back of the hands and other parts, in general resembling erythema, with little vesicles developing into pustules. The palms and soles were the only portions free from lesions. The general symptoms were increasing weakness, anemia, a dragging walk, somewhat spastic in character, and an increasing mental confusion, which was recognized and commented on by the patient. She was emaciated and the blood showed a moderate secondary anemia. The reflexes were all exaggerated. Just before death she had a few convulsive attacks and died rather suddenly. The autopsy material received from this case consisted of the dorsal portion of the spinal cord, portions of the internal organs, and skin taken from pieces of discoloration. Microscopic examination of the skin showed practically the changes observed and reported by Lombroso. There was a very marked atrophy of the dermis and all its structures. One of the most striking features was the scarcity of cells. The horny layer of the epidermis was thickened, while the stratum granulosum and the rete showed extreme atrophy. In some places the heavy layer seemed to be directly on the rete. At intervals there were small minute fissures or ulcers extending into the dermis. The blood vessels were sclerotic, and the nerve trunks appeared to be atrophied. Examination of the spinal cord was disappointing in that it showed but little change. The marked changes reported by Lombroso were not found in this case. There was no marked sclerosis and very slight degeneration. The meninges, however, were thickened and sclerotic and some of the vessels of the cord showed sclerosis. The kidney showed a very striking atrophy of the renal epithelium with thickening of the capsules of some of the glomeruli. There was chronic passive congestion and some sclerosis. The liver showed chronic passive congestion, atrophy and sclerosis of some of the vessels. The spleen showed the most striking changes. The follicles showed marked degeneration and necrosis of the germ cells followed by a hyaline change, many of the glomeruli being replaced by hyaline lump masses. The vessels also showed marked sclerosis. The degeneration of the follicles was very similar to that seen in diphtheria, burns of the skin, pulmonary gangrene, and of ulcerating carcinoma of the intestine, and must be interpreted as the result of some intoxication. Lombroso speaks of fibrinous exudates in the spleen but staining for fibrin did not reveal the presence of any in this case. In general the examination of the material showed a picture of general chronic intoxication, with special bearing on the skin and spleen.

The Transmission of Trypanosoma Lewisi by the Rat-Flea.—The experiments of E. A. Minchin and J. D. Thomson (*Proc. Roy. Soc.*, London, Feb. 3, 1910; *Nature*, Feb. 10, 1910, p. 447) would indicate that trypanosomiasis may be transmitted by the flea. In these experiments the *Trypanosoma lewisi* and the rat-flea were used and the methods of transmission were closely studied. The fact of transmission was confirmed. When preliminary experiments showed that infection, not "direct" had taken place, further experiments were arranged to determine if fleas, once infective, retain infection so as to be capable of infecting a series of healthy clean rats without themselves being again exposed to infection, and at the same time to determine by direct observation and within narrow limits (1) the length of the incubation period in the flea, and (2) the length of the multiplication period in the rat. The following conclusions are drawn from the results of the experiments; The rat flea transmits *Trypanosoma lewisi* from infected to non infected rats. Transmission takes place by the "cyclical" method. Transmission by the "direct" method did not take place. The incubation period in the flea has a minimum length of about six days, but may be longer. The length of the multiplication period in the rat is about twelve days. In the developmental cycle the establishment of the trypanosome in the flea begins with the multiplication of Crithidia-like forms in the rectum. No flagellates have been found by the authors in any fleas which had not fed on infected rats.

Decrease in the Death-Rate from Tuberculosis.—At the meeting of the Conference of State Charities Aid Associations at Albany in March, at which the watchword was "No uncared-for tuberculosis in 1915," Dr. Simon Flexner of the Rockefeller Institute had this to say (*Journal of the Outdoor Life*, April, 1910): "Since it has been possible in a period of a little more than ten years to reduce the death rate from tuberculosis in New York City by more than 40 per cent., and this in spite of its congested tenements, its foreign and ever-shifting population, and its lack of suburban outlets, it requires no gift of prophesy to foretell that once the state of New York is aroused to its responsibility and opportunity in this field of human endeavor, its record will surpass that of New York City and become the equal of the best to be found in the world. Merely to reduce the death rate in the state, outside of New York City, by 50 per cent, for which the method lies clearly exposed, would mean the saving of 3,000 valuable lives annually, and the sparing of an immeasurable amount of suffering, a vast deal of poverty and much treasure. And I hope and expect to see this result surpassed in the next decade. . . . It is significant that the falling in the death rate from tuberculosis is found to be going on precisely in those countries and exactly in proportion to the extent in which hospital and sanatorium care of the tuberculous has been provided, while in countries in which this provision has been neglected, the death rate has remained high."

Marriages

Edwin W. Enz, M.D., to Miss Anita Perry, both of Cincinnati, Ohio, June 29.

James Clinton Russell, M.D., to Mrs. Ella Thomas, both of Oakford, Ill., July 4.

Alvaro C. Durkee, M.D., to Miss Lydia Helen Maloney, both of Pontiac, Ill., July 20.

Paul H. Rupp, M.D., to Miss Grace C. Rooney, both of Milwaukee, Wis., July 7.

Harry P. Dawson, M.D., Mobile, Ala., to Miss Jennie T. Barrow, at New Orleans, June 2.

Ward MacMillan, M.D., Cincinnati, to Miss Marion Thayer Ashton, of Oxford, Ohio, July 15.

Randolph W. Hill, M.D., Los Angeles, Cal., to Miss Edith Thatcher, of San Francisco, June 28.

Carl S. Montgomery, M.D., Stockland, Ill., to Miss Leona B. Garrett, of Momence, Ill., June 30.

David Alderman Herron, M.D., Platte, S. Dak., to Miss Jessie Edna Lee, of Pesotum, Ill., July 12.

Charles Loftus Grant Anderson, M.D., Washington, D. C., to Miss Ruby Scruggs, of Atlanta, Ga., July 7.

James McBryde Knox, M.D., to Miss Charlotte Rebecca Poyneer, both of Cedar Rapids, Iowa, June 29.

Daniel Aloysius McAteer, M.D., Brooklyn, N. Y., to Miss Alice Theresa Bee, of Bridgeport, Conn., June 22.

Alton LeRoy Flanders, M.D., Boston, to Miss Katherine McKane, of Ashevile, N. C., at Rockland, Maine, July 14.

Deaths

Alexander Johnson Stone, M.D. Berkshire Medical College, Pittsfield, Mass., 1867; second vice-president of the American Medical Association in 1902; former president of the Minnesota State Medical Association; a member and former president of the Association of Military Surgeons of the United States; ex-president of the American Association of Medical Editors; Surgeon-General of Minnesota, which position he held for ten years; health commissioner of St. Paul from 1895 to 1899; professor and chief of the department of gynecology in the University of Minnesota College of Medicine and Surgery; died at his home in St. Paul, July 16, from bronchitis and hepatitis, aged 64.

Paul Allen Adams, M.D. College of Physicians and Surgeons, New York City, 1903; a member of the American Medical Association; who was appointed first lieutenant, Medical Reserve Corps, U. S. Army, Sept. 25, 1909; died at Schofield Barracks, Honolulu, H. I., July 3, from acute appendicitis, aged 34.

Henry Clay Early, M.D. Barnes Medical College, St. Louis, Mo., 1898; a member of the Illinois State Medical Society; died at his office in Granite City, Ill., July 13, from the effects of a gunshot wound of the heart, fired it is believed, with suicidal intent, aged 44.

William Orlando Shepard, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1900; a member of the Medical Association of the State of Alabama; died at his home in Tohepeka, near Dadeville, Ala., June 27, from ulceration of the bowel, aged 37.

Edwin Hawes, M.D. Louisville (Ky.) Medical College, 1873; for many years connected with charitable work in Louisville, being agent for the Western District Charity Organization since 1885; died at his home in that city, July 12, from cystitis, aged 59.

John Nelson Byers, M.D. Medical Department of Victoria College, Toronto, Ont., 1869; a member of the Nebraska State Medical Association; of Fontalle, Neb.; died at the Clarkson Hospital in Omaha, July 6, from carcinoma of the stomach, aged 67.

Edward G. W. Crist, M.D. Medico-Chirurgical College of Philadelphia, 1907; a member of the American Medical Association; of Lisburn, Pa.; died at the home of his father-in-law in Pleasantville, N. J., July 2, from tuberculosis, aged 33.

Martin Jellette Taylor, M.D. University of Michigan, Department of Medicine and Surgery, 1881; a member of the Minnesota State Medical Association; died at his home in Janesville, Minn., July 5, from cerebral hemorrhage, aged 56.

Thomas Henry Howard, M.D. Jefferson Medical College, Philadelphia, 1861; a member of the Medical Society of Virginia; a surgeon in the Confederate Army during the Civil War; died at Floyd, Va., July 16, from uremia, aged 75.

John L. Higbee, M.D. Homeopathic Medical College of Missouri, St. Louis, 1870; said to have been the oldest physician in southern Indiana; died at his home in Sullivan, Ind., July 9, from senile debility, aged 93.

Claudius William Powell, M.D. University of Alabama, Medical Department, Mobile, 1888; a member of the Medical Association of the State of Alabama; died at his home near Hope Hull, Ala., July 12.

George Seabury DeWitt, M.D. Harvard Medical School, Boston, 1846; assistant surgeon in the Union Army during the Civil War; died at his home near Elliott, Iowa, July 6, from senile debility, aged 92.

Luther B. Terrill, M.D. Medical College of Ohio, Cincinnati, 1880; a member of the American Medical Association; surgeon to the Big Four Railway; died at Indianapolis, July 7, from pneumonia, aged 54.

Emery C. Thorn, M.D. Hospital College of Medicine, Louisville, Ky., 1901; a member of the American Medical Association; died at his home in Hagerman, N. M., July 11, from tuberculosis, aged 33.

George Frederick Kaufhold, M.D. Minneapolis College of Physicians and Surgeons, 1909; died at Duluth, Minn., as the result of injuries received in an automobile accident, July 17, aged 25.

Robert S. Powell, M.D. University of Virginia, Department of Medicine and Surgery, 1857; a member of the Medical Society of Virginia; died at his home in Woolview, Va., July 11, aged 75.

Rudolph Woldemar Baum, M.D. University of Freiberg, Germany, 1883; a member of the Medical Society of the State of California; died at San Francisco, June 10, aged 53.

Michael Frank McCabe, M.D. Rush Medical College, Chicago, 1885; city physician and health officer of Ironwood, Mich., died at his home in that place, June 8, aged 50.

Nathan Henry Richards, M.D. University Medical College of Kansas City, Mo., 1901; of Kansas City, Kan.; died at Alamosa, Colo., June 6, from tuberculosis, aged 56.

Charles Edward Moore, M.D. Rush Medical College, Chicago, 1895; formerly of Rolling Prairie, Ind.; died at Kokomo, Ind., June 27, from hematemesis, aged 39.

Henry Ernest Packer, M.D. New York Homeopathic Medical College and Hospital, New York City, 1881; of Greenfield, Mass.; died in Boston, July 15, aged 62.

Oscar F. Edwards, M.D. Eclectic Medical Institute, Cincinnati, 1864; died at his home in New Lebanon, Ohio, July 8, from dropsy and heart disease, aged 74.

Ernest Clayton Blake, M.D. Dartmouth Medical School, Hanover, N. H., 1893; died suddenly at his home in Boothbay Harbor, Maine, July 8, aged 41.

Eli Forest Denson, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1879; died at his home in Pelham, Ala., July 9, aged 55.

William Dunham Cole, M.D. Eclectic Medical Institute, Cincinnati, 1879; died at his home in Ansonia, Ohio, July 8, from paralysis, aged 63.

Charles H. Dyer, M.D. Eclectic Medical Institute, Cincinnati, 1896; died at Winchester, Ill., July 13, from heart disease, aged 37.

Frank Lyon Wood, M.D. Harvard Medical School, Boston, 1900; died at his home in Long Beach, Cal., June 29, aged 35

Pharmacology

ENTERONOL—CHOLEROL

A Nostrum That Has Been Going to Physicians Under One Name and That Now Goes to the Public Under Another

Our readers no doubt remember the therapeutic humbug, yclept Enteronol, emanating from Oswego, N. Y.; it has been pretty thoroughly exposed in two articles in The Journal.[1] It was first shown to be advertised under a fake formula with the claim that its marvellous virtues as "the greatest enteric antispetic and germicide ever known to medical science" were due to a mysterious Himalayan plant. Analyses showed its chief constituent to be common alum while investigation indicated that the mysterious plant was a figment of the imagination. Later the enterprising manufacturers added opium.

In the second article The Journal showed that advertising contracts for this nostrum were being offered to medical journals on condition that payment should be either in the "preferred stock" of the Enteronol Company or in Enteronol itself.[1] A number of medical journals, apparently, were willing to accept the advertisements on this basis.

Now comes the third and final stage—its exploitation to the laity. Not as Enteronol, however, for that would doubtless interfere with the sale of the stuff to physicians, but under the more expressive name "Cholerol," it goes to the public. As Enteronol the nostrum is still being advertised to physicians, both through medical journals and by means of circular letters, and medical men are being importuned to buy stock in the company. Naturally the testimonials which the concern has on hand regarding Enteronol are too valuable an asset to waste, so they are made to do duty—after being slightly "worked over" to suit the lay audience—for the "great diarrhea specific," Cholerol.

---

[1] March 21, 1908, and Nov. 20, 1909; reprinted in The Propaganda for Reform.

Cholerol sells at 25 cents a box and the statement is made on the package:

CURES DIARRHEA, DYSENTERY, CHOLERA, ETC

This brings the nostrum clearly in conflict with the federal food and drugs act and we trust we may find the enterprising exploiters of alum, opium and physicians given due prominence in the "notices of judgment" which an overworked government department has to issue for the warning of the public against frauds in drugs and foods.

The above are two names for a mixture of alum and opium exploited respectively to the medical profession and to the laity. As "Enteronol" it is "advertised to the profession only" as the "greatest enteric antiseptic and germicide ever known to medical science;" as "Cholerol the great diarrhea specific" it goes to the public.

If the stuff had not been exposed for the fraud that it is, there might be some slight excuse for careless medical journals carrying advertisements of Enteronol. But when it is borne in mind that on two separate occasions The Journal has shown the preparation itself to be a therapeutic humbug and its method of exploitation to be an impudent insult on the medical profession, when it is remembered, too, that these exposés have been reprinted and widely distributed in the "Propaganda for Reform" booklet—when all this is called to mind there is absolutely no excuse for any medical journal carrying an advertisement of the nostrum. Yet it is still to be found exploited in the pages of the following publications:

Proctologist.

Medical Herald. } Owned by the same individual
Medical Fortnightly. }

Medical Summary.

Milwaukee Medical Journal.

Atlanta Journal Record of Medicine.

Toledo Medical and Surgical Reporter.

Whether these journals are being paid for their space in "preferred stock," in Enteronol tablets or in real money, makes little difference. The stuff has been shown to be a fraud and those medical journals which are helping to perpetuate the fraud are recreant to any trust their readers may have in them and are a disgrace to medical journalism.

ANTIDIABETICUM

A correspondent asks for information regarding "Bauer's Antidiabeticum" a preparation exploited by the Sanin Gesellschaft of Koetzschenbroda-Dresden. He states that the "literature" sent out concerning this preparation is extremely quackish and he wonders if the product is not in the same class.

Advertising matter on Bauer's Antidiabeticum is a good illustration of the "literature" of "patent medicines" in general. Making allowance for somewhat imperfect English, we gather from it that previous attempts to cure diabetes have failed but that the author has made a great discovery by which, the cause of the disease being known, he is able to present a scientific treatment. The cause of diabetes in his view is simply an "indigestion of the severest kind, a weakening and a refusal to act on the part of the nerves regulating the so-called 'flexus sympathicus' which causes auto poisons to pass into the blood, thus causing gradual dissociation of the blood and, therefore, deficient functions of all the tissues of the body." His explanation of previous failures is as follows: "All the different cures for diabetes failed until now, only because of their inability to fight and to render innocuous the diabetic acids, poisons and parasites; especially aceton, acetic and oxybutyric acid." The true cure is, of course, Bauer's Antidiabeticum. After describing the symptoms, the author proceeds as follows: "Bauer's Antidiabeticum in conjunction with the new diabetes therapy does gradually away with all these symptoms. Open wounds are rapidly cured through a strict diet along with the use of Bauer's Antidiabeticum; slowly, however, when the albumins of the body are already decomposing into sugar, when the blood is progressing favourably the tissues of all sorts which were destroyed by the poisons regenerate gradually."

There is no limit to his enthusiasm regarding his great discovery. "I wish hereby to call again particular attention to the absolutely certain cure of wounds after using 'Bauer's Antidiabeticum,' especially after amputation, as I have proved on various cases." He cautions us, however, that "every case is curable in which the diabetic poisons have not gone beyond a certain limit."

The "literature," so far as we can learn, gives no information as to the composition of this wonderful remedy. There appears to be some difference in the composition of the product as made in the United States and Germany. The following is the method of preparing, according to the U. S. patent specifications:

5000 gm. Eugenia jambolana and 5000 gm. dried kola nuts are mixed and ground as fine as possible. Then 125 gm. lime and 2500 gm. water are added and the mixture triturated at a gentle heat and then allowed to stand for 24 hours. Carbon dioxid is run in till the alkalinity of the mixture is about 0.2 per cent. Then water is added at 50° C. and the mixture filtered through animal charcoal. The resulting liquid has a specific gravity of 1.02.

According to Hahn-Holfert-Arends (Spezialitäten und Geheimmittel, edition 6, 1906, p. 24), however, the composition is said to be:

Ext. Condurango	15 gm.
Jambolana fruit	15 gm.
Jambolana bark	15 gm.
Ext. Arthante	10 gm.
Flaxseed	60 gm.
Bay leaves	2 gm.
Ext. Gentian	15 gm.
Rosemary flower	5 gm.
Ext. Calami	15 gm.
Star anise	3 gm.
Sodium chlorid	30 gm.
Ext. Cinchona, alcoholic	15 gm.
Salicylic acid	3 gm.

It is needless to say that no physician who understands the pathology of diabetes would expect to cure the disease by means of such an absurd combination.

Correspondence

Pharmaceutical Manufacturers and the Great American Fraud

To the Editor: An editorial entitled "Pharmaceutical Manufacturers and the Great American Fraud" in your issue of July 2, calls attention to one hitherto little appreciated link in the great American fraud chain. It has previously been hinted at that the "ethical" pharmaceutical manufacturing houses are in the business of supplying all comers, whether the goods be fraudulently exploited or not. To quote from your editorial: "Legally they may be within their rights, but ethically and morally their course is iniquitous. No amount of argumentative sophistry will justify, in the eyes of the medical profession, the attitude taken by those manufacturing pharmacists who are willing to sell their products to any who will pay for them, no matter to what use the drugs are put." And again, "How much longer manufactur ers of pharmaceuticals will maintain this Janus-faced attitude depends largely on the medical profession. It is safe to assert that no firm would for long continue this wretched business in the face of insistent disapproval from physicians."

Responsibility for the continuance of this lamentable state of affairs must rest somewhere—perhaps not entirely on the manufacturers and exploiters. But why, I would ask, place the burden of disapproval of the practice on the shoulders of the physicians? Why not seek a scapegoat nearer home? The Journal, through the activity of its Council on Pharmacy and Chemistry, is trumpeting loudly its emancipation from the thraldom of the nostrum maker. And it is well that it is so. But is there "argumentative sophistry" shrewd enough to explain The Journal's attitude of disapproval of a misbranded article advertised to the medical profession, while sanctioning a far greater offense—the active cooperation of the "ethical" manufacturer with the vilest of advertising schemers? The manufacturer who makes it possible for these criminals to rob and destroy, who furthers "the business by which the ignorant or gullible sick are humbugged and defrauded," who prepares for them such ammunition as "consumption-cure" pills, "force of life" and "make-man tablets"—ill deserves our respect and support.

If The Journal of the American Medical Association represents the united medical profession, why should not it (The Journal) don the cloak of disapproval for the united profession? If the flourishing Journal, with its circulation of over 53,000, is unwilling to live up to its professed convictions and say to such a manufacturer, "You have violated the confidence the medical profession has placed in you and are therefore *persona non grata* with this publication and cannot re-enter its pages until you have purged yourself of this practice," what influence can the disapproval of a handful—a hundred—or several times that number of physicians bring to bear? The "insistent disapproval of physicians" will give these manufacturers much food for the waste basket; the same disapproval expressed by The Journal in the manner suggested, will give them wholesome food for reflection.

Let it not be said that The Journal of the American Medical Association is Janus-faced; that if no amount of argumentative sophistry justifies the manufacturers' practice in the eyes of the medical profession, this practice shall remain uncondemned by that profession's official publication. Let it not be said that The Journal has failed to serve those in whose interest it professes to labor, and—splendid publication that it is—that its ethics are ethereal and its preachings mere oratorical flights.

Arthur J. Patek, M.D., Milwaukee, Wis.

Comment.—The arguments advanced by our correspondent—the late editor of the *Wisconsin Medical Journal*—are plausible but fallacious. The reason The Journal would place "the burden of disapproval of the practice," as he put it, on the "shoulders of physicians" is because that is where the burden belongs. The medical profession, either directly or indirectly, has been responsible in no small degree for some of the evils in the pharmaceutical manufacturing business, and the majority of physicians are beginning to realize this fact. It is for this reason the critical work of The Journal has been carried on in the spirit in which it has. While the nostrum exploiters, and those medical journals that stand for the nostrum interests, would have the profession believe that the propaganda for reform in proprietary medicines has been exclusively of a *destructive* nature, the better class of pharmaceutical manufacturers, and the higher class of medical journals, know that the chief—and by far the most important—work of the Association has been of a *constructive* nature.

It is probable that, with but possibly one or two honorable exceptions, every large pharmaceutical house in the United States has been making a practice of furnishing medicaments for quacks and fake medicine concerns. On the other hand many of these manufacturers have done a vast amount of original research work that has enriched the physician's armamentarium—and thereby done the public good service. True, the work was done for selfish purposes; but the whole history of human progress shows that practically everything we now pronounce necessary to our comfort and material happiness has been brought into being for selfish reasons—that of bringing the inventor or discoverer riches or honor.

To particularize, it may be stated without fear of contradiction that if the individual physician makes it clear to the various pharmaceutical houses, either through the detail men that call on him or by letter, that he resents the double-faced attitude shown up by The Journal, one of two things will happen. If furthering the great American fraud is more profitable than serving the profession, then such houses will frankly go into that business; if on the other hand there is more profit—as there is certainly more honor—in catering to the medical profession, then the manufacture of preparations for those who use them to deliberately swindle the public, will cease. That The Journal would hasten the necessary reform by excluding from its pages advertisements of products that are of value to the medical profession, no one who gives the matter more than the most shallow consideration, will for a moment believe. The Journal believes that it can best serve the interest of physicians by causing reforms from within rather than by ostracizing pharmaceutical houses which—with all their shortcomings—have done, and are doing, valuable work for the medical profession.

It is not, as our correspondent seems to intimate, a matter of losing advertising patronage that causes The Journal to retain the advertisements of those houses which it has shown to be guilty of furnishing drugs to those who would swindle and defraud the public. Those familiar with The Journal's attitude on the question of acceptable advertising, know how absurd it is to accuse it—even inferentially—of shaping its policy according to its advertising pages.

When The Journal believes that the best interests of the medical profession and the public can be served by ceasing to carry advertisements of reputable products, put out by firms who manufacture "patent medicines," then such advertisements will be dropped. Meanwhile we shall continue to let our readers know of all cases of which we learn, similar to those referred to, i. e., where pharmaceutical houses are in collusion with those who are deliberately swindling the public.

The Standing of Queen's Medical College, Kingston, Ont.

To the Editor:—In The Journal, July 2, there is a note on page 38, under Canadian news, on "The Carnegie Foundation Report and Canadian Medical Colleges," which contains such a serious misstatement that I am forced to protest against it and to ask you to give this equal publicity. The item reads: "According to this report four of the eight medical colleges would meet the needs of medical education in Canada. These are Toronto, McGill, Manitoba and Laval at Quebec." Now the Carnegie report (page 326) reads thus: "At this moment the needs of the Dominion could be met by the four better English schools and the Laval department at Quebec."

The Kingston school is one of the "four better English schools." It ranks next to McGill in point of size and efficiency, and it is placed in "Class A" by the Council on Medical Education of the American Medical Association (The Journal, June 18, p. 2062).

I presume that your correspondent did not read the report for himself, for I am unwilling to think that he would deliberately try to injure Queen's Medical School in this way.

As graduates of Queen's are to be found all over the United States, and as many of them are members of the Association and readers of The Journal, I beg to add that the position and the future of Queen's Medical School are perfectly secure. Its record, organization, progress, equipment and facilities compare well with those of any other Canadian school and the faculty invites the most rigid inspection and criticism.

J. C. Connell,

Dean, Queen's Medical Faculty, Kingston, Ont.

[Comment: The passage alluded to clearly contains a misquotation of the Carnegie Foundation's report and we are glad to publish the above letter to correct it.—Ed.]

Types of Bronchoscopic Tubes

To the Editor: The ingenious and skillful operation reported by Dr. W. E. Casselberry, "The Cutting in Two of a Large Steel Pin while Fixed in the Left Bronchus" (The Journal, July 2, p. 9), offers opportunity for comment on the relative merits of the Killian and Ingals or Jackson types of bronchoscopic tubes. The beveled "tubular spatula" of Killian is peculiarly adapted to exploration of the bronchi through the lower route and especially in searching for a pin.

In a recent operation in a case similar to Dr. Casselberry's—a steel glass-headed pin 1⅜ inches long in the left bronchus of an infant of 18 months—I was able to enter and bring into the field of vision the whole of the main bronchus without risk of touching the pin. The long beveled end turned to the left enables the operator to pass and straighten out the angle and examine that area where the point is apt to be embedded, that is, the median bronchial wall. The beveled end further aids in extraction, as it is necessary only to press the forceps grasping the pin near the point over against the projecting lip, thus avoiding the risk incurred in attempting to draw the pin into the lumen of the tube. The Killian tubes are not in general use in this country and it seems to me that the long beveled end is a very considerable advantage in the type of operation performed by Dr. Casselberry.

Thomas Hubbard, Toledo, Ohio.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TSUCHIYA'S METHOD OF ESTIMATING ALBUMIN IN URINE

To the Editor:—In a recent editorial (The Journal, July 16, p. 221) you referred to Tsuchiya's method of estimating the amount of albumin in the urine. Will you kindly tell me where I can find the details of the method? Chester Conyers, Chicago.

Answer.—Tsuchiya published his method in the *Zentralblatt f. inn. Med.*, June 13, 1908, p. 605, and a brief abstract is given in The Journal, July 25, 1908, p. 333. The formula is given by E. H. Goodman and S. Stern in The Journal, Dec. 12, 1908, p. 2056, as follows:

Phosphotungstic acid	1.5 gm.
Hydrochloric acid (conc.)	5 c.c.
Alcohol 95 per cent. q. s. ad	100 c.c.

Tsuchiya precipitates the albumin in a specially devised tube. Goodman and Stern titrate 5 c.c. of the reagent with urine until a whitish cloud appears after shaking.

UPHOLDING THE VITAL STATISTICS LAWS

To the Editor:—In The Journal (July 9, p. 133), under the above caption, you say: "It is an axiom in the legal profession that every lawyer is an officer of the state." What work does the lawyer perform in your state [United States] without remuneration? Why should the medical man be expected to serve the state gratuitously? What special privileges are granted the physician in your state [United States] as implied in your editorial? J. G. Munroe, M.D., Winnipeg, Canada.

Answer.—By his oath when admitted to practice law in the United States the lawyer becomes an officer of the court. He has certain duties and obligations; there are certain things he agrees to do and to refrain from doing, for the privilege granted him of making a livelihood by his practice before the courts. He may be assigned by the judge of any court to defend an indigent prisoner without compensation, and he may not refuse on penalty of contempt or perhaps of disbarment. The right to practice medicine in any state is wholly a special privilege, properly within the regulation of the state. The state makes certain laws requiring the reporting of diseases, births and deaths. The physician is no more exempt than any other citizen from complying with all the laws, and these special laws referring to him he virtually contracts to comply with when he receives his license from the state granting him the special privilege of practicing medicine. In return, the state protects him in this special privilege by preventing others from practicing medicine, just as the government protects all citizens in their personal and property rights in return for rates or taxes paid. The labor of making these reports is trifling, the state furnishing blanks and often even postage, and besides, the physician may be fairly said to be paid for the service in the fees he collects from his patients, as the service, in the case of births at least, is as valuable to the individual as to the people collectively. The physician is thus in a position toward the state analogous to that of the lawyer toward the court.

USE OF EPINEPHRIN IN ASTHMA

To the Editor:—Will you inform me where I can get treatises or information concerning J. Segel's paper on the oxygen-epinephrin inhalation treatment of asthma as abstracted in The Journal, July 9, 1910, page 178? C. P. Dolan, Worthington, Minn.

Answer.—The article of J. Segel appeared in the *Zentralblatt f. inn. Med.*, June 4, 1910. The Journal abstract gives practically all the technic described in the original article. Segel uses a special attachment for volatilizing medicaments in conjunction with the inhalation of oxygen. This he does not describe in his article. For asthma he causes the patient to inhale 1 c.c. of a 1 per cent. epinephrin (adrenalin) solution. The article is extremely optimistic, considering that he reports only two cases. The method is a modification of the hypodermic use of epinephrin for asthma, recently introduced into Germany by N. v. Jagic (*Berl. klin. Wchnschr.*, March 29, 1909, page 583), but which has been long practiced in America. Jagic refers to Kaplan (*Med. News*, 1905). C. Matthews (*Brit. Med. Jour.*, Feb. 19, 1910) has also applied an inhalation method by spraying the solution into the nose. This method was recommended by T. F. Reilly in The Journal, June 4, 1904, page 1475.

REFERENCES ON HAY-FEVER

To the Editor:—Please give me references to some of the latest literature on hay-fever. W. C. Hollopeter, Philadelphia.

Answer.—Kobrak, F.: Ueber den gegenwärtigen Stand der Heuschnupfenfrage, *Internat. Centralbl. f. Ohrenh.*, 1907, v, 167.

Wolff-Eisner, A.: Erfahrungen über das Heufieber aus dem Jahre 1906, *Deutsch. med. Wchnschr.*, 1907, xxxiii, 260.

Avellis, G.: Ueber Heuschnupfenbehandlung nach eigenen Erfahrungen, *Munchen. med. Wchnschr.*, 1907, liv, 518.

Billard, G.: Essais de sérothérapie contre le rhume des foins et contre l'asthme, *Jour. de physiol. et de path. gén.*, 1907, ix, 304.

Weichardt, W.: Ueber spezifisches Heufieberserum, *Sitzungsb. d. Phys.-Med. Soc. zu Erlangen*, 1906, xxxvii, 209.

Baerwald, R.: Alpine Heufieberstationen, *Deutsch. med. Wchnschr.*, 1907, xxxiii, 681.

Heymann, P.: Zur Lehre vom Heufieber, *Berl. klin. Wchnschr.*, 1907, xliv, 374.

FitzGerald, W. H.: Treatment of Hay-Fever, The Journal, 1907, xlviii, 1944.

Schadle, J. E.: The Antrum of Highmore as an Etiologic Factor in the Production of Hay-Fever, *Med. Rec.*, New York, 1907, lxii, 841.

Weichart, W.: Zur Heufieberfrage, *Berl. klin. Wchnschr.*, 1907, xliv, 678.

Boesser: Behandlung des Heuasthmas mit Atropin-Chinin Injektionen, *Deutsch. med. Wchnschr.*, 1907, xxxiii, 1007.

Pereira, J. A. W.: Note on the Symptoms and Treatment of Hay-Fever, *Lancet*, London, 1907, ii, 87.

Vigier, P.: L'oeil et la fièvre des foins, *Rec. d'opht.*, Paris, 1907, Series 3, xxix, 360.

Lloyd, W.: Hay-Fever, Hay-Asthma: Its Causes, Diagnosis and Treatment, H. J. Glaisher, London, 1907.

Hall, G. C.: Pollantin in Hay Fever, The Journal, 1907, xlix, 705.

McKee, E. S.: Hay Fever, *Lancet-Clinic*, 1907, New Series, xcviii, 138.

Reuter, J. A.: The Use of Diphtheritic Antitoxin in the Treatment of Hay Fever and Asthma, *Med. Sentinel*, 1907, xv, 412.

Dickenson, J.: The Bier Treatment; Report of Cases, *Cleveland Med. Jour.*, 1907, vi, 460.

Kühne: Erfahrungen in der Anwendung des Elektrotherms, *Monatschr. f. Unfallheilk.*, 1907, xiv, 319.

Variot: Le diagnostic de l'adénopathie trachéobronchique, *Rev. gén. de clin. et de thérap.*, 1907, xxi, 727.

Curtis, H. H.: The Etiology and Recent Treatment of Hay Fever, The Journal, 1907, xlix, 144.

Dunbar, W. P.: Hay Fever, Osler's Modern Medicine, 1907, iii, 605.

Albrecht: Immunisierung gegen Heufieber durch Antitoxin und die beim Gebrauche des letzteren beobachteten Fälle von Anaphylaxie, *Med. Klin.*, 1908, iv, 665.

Breggen, M.: Das Heufieber und seine Heilung durch Herstellung gesunder Nasenluftwege, *Therap. Rundschau*, 1908, ii, 317.

Yonge, E. S.: The Treatment of Intractable Hay-Fever and Paroxysmal Coryza by Resection of the Nasal Nerve, *Lancet*, London, 1908, i, 1488.

Grace, R.: The Treatment of Hay Fever, *Therap. Gaz.*, 1908, Series 3, xxiv, 537.

Todd, F. C.: "Pollinosis" or Hay Fever, *Jour. Minnesota Med. Assn.*, 1908, xxviii, 323.

Carini, A.: Existe a febre do feno no Brazil? *Tribuna Med.*, 1908, xiv, 105.

Sajous, C. E.: The Therapeutics of Diseases which Involve the Internal Secretions: Hyperesthetic rhinitis; Its Pathogenesis and Treatment, *Month. Cycl. and Med. Bull.*, 1908, i, 407.

Bourgeoise, H.: Un traitement chirurgical de l'asthme des foins et les coryzas spasmodiques, *Progrès méd.*, 1908, Series 3, xxiv, 457.

Friedländer, A. A.: Zur Therapie des Heufiebers, *Munchen. med. Wchnschr.*, 1908, lv, 1932.

Stein, O. J.: Some Observations on Hyperesthetic Rhinitis (Hay-Fever), with Suggestions for Its Rational Treatment, *Laryngoscope*, 1908, xviii, 692.

Alton, C. D.: Climate and Hay-Fever, *Tr. Am. Climat. Assn.*, 1908, xxiv, 20.

Liebermann, H.: Ueber Helgoland und Heufieber, *Munchen med. Wchnschr.*, 1909, lv, 1280.

Bachem, C.: Das Heufieber und seine Behandlung, *Therap Rundschau*, 1909, iii, 481.

Rabé: Traitement du rhume des foins, *Bull. de Laryngol., Otol. et rhinol.*, 1909, xii, 222.

Townsend, I.: Some Observations on Hay-Fever, *Homeopath. Eye, Ear and Throat Jour.*, 1909, xv, 468.

Hobbs, W. R.: Hay-Fever, *West Med Rev.*, 1909, xiv, 152.

Latchford, O. L.: Rose-cold and Hay Fever or Coryza Vasomotoria Periodica; its Prophylaxis and Treatment, *Therap Gaz.*, 1909, v, 172.

Kyle, B. D.: Chemistry of Saliva in Relation to Hay-Fever, The Journal, Aug. 3, 1907, p. 402.

Hürlimann: Superheated Air in Local Treatment of Hay-Fever, *Cor.-Bl. f. schweiz Aerzte*, Aug. 1, 1907.

DeWitt, J. F.: Hay-Fever, *Ohio State Med. Jour.*, October, 1908.

Gosney, C. W.: Treatment of Hay-Fever, *Kansas City Med Index-Lancet*, August, 1909.

Blos, E.: Operative Treatment of Hay-Fever, *Deutsch. med. Wchnschr*, Aug. 26, 1909; abstr. in The Journal, Oct. 2, 1909, p. 1141.

Tinder, J. W.: Hay-Fever, *New Mexico Med. Jour.*, February, 1910.

Scheppegrell, W.: Immunizing Treatment of Hay Fever, *Gulf State Jour. Med. and Surg. and Jour. South. Med. Assn.*, April, 1910.

The Public Service

U. S. Public Health and Marine-Hospital Service

Changes for the week ended July 20, 1910:

Gardner, C. H., surgeon, granted 1 month's leave of absence from Aug. 1, 1910.

Wickes, H. W., P. A. surgeon, granted 1 month's leave of absence from July 15, 1910.

Foster, M. H., P. A. surgeon, on return of Surgeon H. D. Geddings to Naples, Italy, relieved from duty at that station and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Korn, W. A., P. A. surgeon, directed to proceed to Perth Amboy, N. J., on special temporary duty.

Manning, Herbert M., P. A. surgeon, granted 1 month's leave of absence from Aug. 2, 1910.

Friedman, H. M., acting asst.-surgeon, granted 28 days' leave of absence from Aug. 1, 1910.

Gibson, L. P., acting asst.-surgeon, granted 7 days' leave of absence from July 18, 1910.

Hamilton, H. J., acting asst.-surgeon, granted 4 days' leave of absence from July 19, 1910.

Houghton, M. W., acting asst.-surgeon, granted 7 days' leave of absence from July 23, 1910.

Onuf, B., acting asst.-surgeon, granted 2 days' extension of leave from July 6, 1910, on account of sickness.

Porter, J. Y., Jr., acting asst.-surgeon, granted 1 month's leave of absence from July 15, 1910, with pay, and from Aug. 15, 1910, to Nov. 30, 1910, without pay.

Scott, J. T., acting asst.-surgeon, granted 30 days' extension of leave from May 4, 1910, on account of sickness.

Staton, L. W., acting asst.-surgeon, granted 14 days' leave of absence from July 16, 1910.

Stuart, A. F., acting asst.-surgeon, leave of absence for 30 days from July 5, 1910, revoked.

Wetmore, W. O., acting asst.-surgeon, granted 9 days' extension of leave from June 29, 1910, on account of sickness.

Dr. Richard A. Kearny commissioned (recess) an Assistant Surgeon in the Public Health and Marine-Hospital Service.

Dr. Warren F. Draper commissioned (recess) an Assistant Surgeon in the Public Health and Marine-Hospital Service.

Dr. Julian M. Gillespie commissioned (recess) an Assistant Surgeon in the Public Health and Marine-Hospital Service.

Surgeon M. J. Rosenau's resignation accepted by the President to take effect June 30, 1910.

Medical Corps, U. S. Navy

Changes for the week ended July 16, 1910:

Berryhill, T. A., medical inspector, commissioned medical inspector from March 5, 1910.

Commissioned Surgeons: Seaman, W., surgeon, from Dec. 13, 1909; Richardson, R. R., surgeon, from Jan. 30, 1910; Dunn, H. A., surgeon, from Feb. 19, 1910; Stuart, A., surgeon, from March 5, 1910; Stepp, J., surgeon, from March 24, 1910.

Short, W. H., P. A. surgeon, commissioned passed assistant surgeon from May 4, 1910.

Philips, E. W., asst.-surgeon, detached from the *Marietta* and ordered to continue treatment at the Naval Hospital, Portsmouth, N. H.

Irvine, W. L., asst.-surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to the *Marietta*.

Strine, F. S., P. A. surgeon, detached from the Naval Hospital, Olongapo, P. I., and en route home.

Brown, H. S., P. A. surgeon, detached from the Naval Hospital, Canacao, P. I., and ordered to duty at the Naval Hospital, Olongapo, P. I.

Changes during the week ended July 23, 1910:

Reed, E. U., P. A. surgeon, detached from duty from Naval Hospital, Norfolk, Va., and ordered to duty on the U. S. S. *Philadelphia*

Diehl, O., medical inspector, detached as fleet surgeon U. S. S. *Charleston*, Asiatic Fleet, and ordered home.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

EDITORIAL QUOTATIONS

"The Organization of Ill Health"

We quote the following from the (N. Y.) *Independent* as indicating the position of high grade, truly independent periodicals:

There are a number of commercial interests in this country that do not want an independent national department of health. In recent years we have had many exposures of the "patent medicine" swindle. We have learned that most of the most popular "patent medicines," the so-called tonics, were nothing more than dilute alcohol with certain bitter drugs so as to make them taste mediciny. Physicians have seen alcohol habits formed as a consequence of freely imbibing these alcoholic preparations. Some of them were meant particularly for women's diseases, and the consequence has been a feminine nipping at alcoholic products that has worked serious harm to the women of the country. We have also found that the headache powders so commonly advertised were composed of drugs which, when taken as freely as was advised on the labels of many of these preparations, were seriously dangerous. We have had not a few, but many, deaths as a consequence of them. The soothing syrups for children mostly contained opium and were seriously injuring the growing child at an important period of its development, and adding to the number of nervous wrecks with tendencies to drug addictions in after life that we had in this country.

For a time after these exposures the "patent medicine" swindlers were very quiet. In many cases their advertisements disappeared from their usual places. Now they are gaining courage again. The American people have proverbially a very short memory for such exposures. The "patent medicine" people dread very much the organization of a national department of health, because this will sadly interfere with their now happy prospect of reviving their business and fattening their purses at the cost of the health of our people. This is one element in the opposition organized for ill-health.

There are others. There are a number of people in this country who would like to be freer to foist drugs, impure foods and questionable products of many kinds on our inhabitants, so as to make money, cost what it might in the health of those who consumed them. The consumer's purse they are interested in, but not his health. The organization of the national bureau of health, with its strict enforcement of the Food and Drugs Act, and its sure tendency further to protect by legislation the health of our people, is a dread specter to such exploiters of the public, and, of course, they want to lay it if possible.

The League for Medical Freedom has a rallying cry. It is that the doctors are trying to create a medical monopoly, a doctor's trust. They insist that the Owen bill is due to the American Medical Association. As a matter of fact the bill emanates from the senator from Oklahoma himself, and the movement for a national department of health has been organized, not by the American Medical Association but by the Committee of One Hundred of the American Association for the Advancement of Science. This organization, as is well known, consists not of physicians, but of the united scientists of the country, and only a very small proportion of physicians are in the membership. The Committee of One Hundred contains the names of many of the representative thinking citizens of this country. They come from all over the country. It is absolutely absurd to talk about such men organizing a medical trust. Practitioners of all the different cults in medicine are agreed that a national department of health would be a good thing, and cannot possibly interfere with present state laws as to medical practice. This organization of opposition should of itself be a strong argument for the Owen bill. We have the Organization of Ill Health for commercial reasons. Let us recognize and appreciate at their true value exactly the elements that are engaged in it.

State Boards of Registration

COMING EXAMINATIONS

California: San Francisco, August 2. Sec., Dr. Charles L. Tisdale, 929 Butler Bldg., San Francisco.

Nebraska: State House, Lincoln, August 10-11. Sec., Dr. E. Arthur Carr, 141 S. 12th St., Lincoln.

District of Columbia January and April Reports

Dr. George C. Ober, secretary of the Board of Medical Supervisors, reports the written examinations held at Washington, January 11-14, and April 12-15, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75.

At the examination held in January, the total number of candidates examined was 8, of whom 4 passed and 4 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Howard University	(1906)	75.1
George Washington University	(1908)	77.6
University of Iowa, College of Medicine	(1907)	84.4
Leonard Medical School	(1905)	76
FAILED		
George Washington University	(1908)	72.5
Georgetown University	(1909)	69.5
Howard University	(1909)	73.3
Royal University of Naples	(1909)	71.3

At the examination held in April the total number of candidates examined was 10, of whom 6 passed and 4 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
George Washington University	(1908) 75, 81.3; (1909) 75.8,	78.9
Howard University	(1909)	76.7
Royal University of Naples, Italy	(1909)	79.7
FAILED		
Georgetown University	(1909)	**73.7
Howard University	(1909) **70.3,	*73.9
University of Virginia	(1903)	59.3

LICENSED THROUGH RECIPROCITY SINCE JANUARY 1, 1910

College	Year Grad.	Reciprocity with
College of P. & S., Baltimore	(1886)	Delaware
Maryland Medical College	(1905)	Maryland
University of Virginia	(1904) (1907)	Virginia

* Second examination.
** Third examination.

South Dakota January Report

Dr. E. W. Freyberg, secretary of the South Dakota State Board of Medical Examiners, reports the written examination held at Sioux Falls, January 12-13, 1910. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 30, of whom 26 passed and 4 failed. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined.
Georgetown University	(1895)	1
Coll. of P. & S., Chicago	(1905) (1908) (2, 1909)	4
Northwestern University Med. School	(1908) (1909)	2
American Coll. of Med. and Surgery	(1905)	1
Rush Medical College	(1880) (1906)	2
Bennett Medical College	(1908)	1
Keokuk Med. Coll., Coll. of P. & S.	(1901) (1908)	2
University of Iowa College of Medicine	(1909)	2
Sioux City College of Medicine	(1908) (1909)	2
Univ. of Minnesota College of Medicine	(1894) (1899)	2
Ensworth Medical College	(1908)	2
Kansas City Medical College	(1895)	1
Creighton Medical College	(1908)	1
McGill University, Quebec	(1900)	1
FAILED		
Hahnemann Med. Coll. and Hosp., Chicago	(1901)	1
University of Iowa, College of Medicine	(1908)	1
Sioux City College of Medicine	(1909)	1
Kansas City Hahnemann Medical College	(1904)	1

New Mexico April Report

Dr. J. A. Massie, secretary of the New Mexico Board of Health and Medical Examiners, reports the written examination held at Santa Fe, April 11, 1910. The number of subjects examined in was 13; total number of questions asked, 100; percentage required to pass, 75. Only one candidate, a graduate of the University of Tennessee, 1893, was examined and he failed with a grade less than 75 per cent. Twenty-eight candidates were licensed on presentation of satisfactory credentials. The following colleges were represented:

LICENSED ON CREDENTIALS College	Year of Grad.
Northwestern University Medical School	(1900)
Illinois Medical College	(1902)
National Medical University	(1906)
Louisville Medical College	(1893) (1906)
Hospital College of Medicine, Louisville	(2, 1903)
University of Louisville	(1909)
Southwestern Homeopathic Med. Coll., Louisville	(1903)
Detroit College of Medicine	(1905)
Ensworth Medical College	(1900)
Barnes Medical College	(1897) (1898)
Washington University, St. Louis	(1904)
St. Louis College of Phys. & Surgeons	(1906) (1908) (1909)
Creighton Medical College	(1902)
Northwestern Medical College, St. Joseph	(1890)
Albany Medical College	(1898)
Cleveland Homeopathic Medical College	(1898)
Medical College of Ohio	(1895)
Jefferson Medical College	(1883) (1888)
Vanderbilt University	(1891) (1901)
Medical College of Virginia	(1901)
University of Virginia	(1895)

Arkansas May Report

Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, May 10-11, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 92, of whom 73 passed and 19 failed. Eighteen reciprocal licenses were granted. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
University of Arkansas	(1909) 79; (1910) 76, 77, 78, 78, 79, 80, 80, 81, 82, 82, 83, 83, 84, 89.	
College of Physicians and Surgeons, Little Rock	(1910) 76, 79, 80, 81, 91.	
Hospital College of Medicine, Louisville	(1896)	83
Rush Medical College	(1870)	83
Tulane University of Louisiana	(1910) 78, 79, 83, 83, 85, 85, 85, 87, 89, 89	
St. Louis Coll. of P. & S.	(1896) 84; (1909)	75
Missouri Medical College, St. Louis	(1885)	82
Barnes Medical College	(1910)	88
Washington University, St. Louis	(1907)	86
University Medical College, Kansas City	(1910) 79, 81, 83, 84, 85, 87	
Vanderbilt University	(1897)	82
Meharry Medical College	(1910) 76, 79, 80	86
University of Nashville	(1889) 83; (1910) 75, 80, 81,	85
College of P. & S., Memphis	(1908) 85; (1910)	76
Memphis Hospital Medical College	(1886) 82; (1906) 75; (1910) 76, 76, 77, 78, 79, 79, 81, 82, 85, 85, 90.	
Baylor University	(1910)	85
Southwestern University Medical College, Dallas.	(1910) 78, 81, 84, 85.	
FAILED		
University of Arkansas	(1910) 69.2, 73.6, 74.4	
College of Physicians and Surgeons, Little Rock	(1909) 65.8; (1910) 56.4, 63.5, 64.9, 70.8	
University of Louisville	(1909)	72.6
Ensworth Medical College	(1908)	68.6
St. Louis College of Physicians and Surgeons	(1908) 67.3; (1909) 69.5	
Meharry Medical College	(1909) 63.7; (1910)	71.3
College of Phys. & Surgs., Memphis	(1909) 70.3, 71.2	
Memphis Hospital Medical College	(1910) 69.8, 71.2	
Dallas Medical College	(1903)	69.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1902)	Illinois
Jenner Medical College	(1908)	Illinois
College of Physicians and Surgeons, Chicago	(1907)	Missouri
University of Louisville	(1877) Missouri; (1892) Kentucky; (1907) Louisiana	
Hospital College of Medicine, Louisville	(1898) Indiana; (1892) Missouri; (1904) Kentucky	
Kentucky School of Medicine	(1906)	Kentucky
Tulane University of Louisiana	(1890)	Louisiana
Barnes Medical College	(1904)	Missouri
St. Louis College of Physicians and Surgeons	(1903)	Missouri
Kansas City Medical College	(1905)	Missouri
Washington University, St. Louis	(1869)	Louisiana
Vanderbilt University	(1880)	Kentucky
University of Nashville	(1901)	Louisiana
University of Virginia	(1909)	Oklahoma

The following questions were asked:

ANATOMY

1. Describe the temporal bone. 2. Name and describe bone broken in Colles' fracture. 3. What muscles form the tendo Achillis and where is it attached? 4. Give origin and insertion with blood supply of deltoid muscle. 5. What structures pass under Poupart's ligament? 6. Give origin and distribution of portal vein. 7. Give origin and distribution of facial artery. 8. Name the coats of the eye from without inward. 9. Give nerve supply of stomach. 10. Give origin, course and distribution of abducens or sixth cranial nerve.

CHEMISTRY

1. Name five elements and give their symbols. 2. Define an acid, a base and a salt. 3. Define specific gravity. 4. Give composition of atmosphere. 5. What are the two albumins and how distinguished? 6 How would you remove stains of silver nitrate? 7. Give test for albumin in urine. 8. What is the chemical antidote for arsenic? 9. What is uric acid? 10. Complete the following formula: $CaCO_3 + 2HCl$ —.

BACTERIOLOGY

1. Give a proper definition of bacteria. Name the three varieties or species of bacteria. 2. What is meant by inoculation? Vaccination? Intoxication? 3. State briefly the theory of immunity that appeals most to you. 4. Explain the mode of action of chemicals used for disinfecting. 5. Give the general mode of procedure for staining bacteria. 6. What is Gram's method of staining? For what is it chiefly used? 7. Describe the tubercle bacillus and give one method of staining. 8. Give method of differentiation between the tubercle and smegma bacillus. 9. What is the value of tuberculin as a diagnostic agent? As a therapeutic agent? 10. Give technic of the blood-serum diagnosis of typhoid fever.

HYGIENE

1. What trades predispose to tuberculosis? 2. What hygienic measures should be followed by those subject to "catching cold?" 3. Describe a sanitary method of disposing of human excretions in small towns and the country. 4. In what diseases should a high altitude be avoided and why? 5. What factors are preferable in the location of a sanatorium for tuberculosis? 6. To what diseases are negroes less susceptible than whites? 7. Define epidemic, endemic and pandemic diseases. 8. How may a physician guard against carrying a disease from one patient to another? 9. How may malarial districts be made healthy? 10. Describe in detail a thorough method of disinfecting a room.

PHYSIOLOGY

1. Describe cartilage. 2. Describe the spinal cord. 3. How does the pneumogastric nerve influence the heart? 4. What percentage of the body weight is lost before death from starvation? 5. What is the composition and action of saliva? 6. What is the source, composition and action of gastric juice? 7. Describe the course of the blood through the heart. 8. Describe the relations of the heart and blood-vessels to the lungs. 9. What are the different types of respiration? 10. What structures are necessary for the production of a secretion? Give three examples.

THEORY AND PRACTICE OF MEDICINE

1. Give diagnosis of amebic dysentery. 2. Give treatment of erysipelas. 3. Give diagnosis and treatment of lobar pneumonia. 4. How may pulmonary tuberculosis be early recognized? 5. Give differential diagnosis between malaria and typhoid fever. 6. Give diagnosis of chlorosis. 7. Give treatment of psoriasis. 8. Give medical treatment of gall-stones. 9. Give treatment of conjunctivitis. 10. Mention four diseases said to have a specific remedy and mention the remedy.

THERAPEUTICS

1. Give rule for determining dose for a child. 2. Describe the effects of an overdose of chloral hydrate. 3. What are the therapeutic uses of sodium chlorid? 4. What is the safest as well as one of the most efficient antipyretics? 5. What is the therapeutic action of resorcin? 6. Name the therapeutic uses of oleum tiglii. 7. What are the therapeutic uses of ichthyol? 8. Name three anodynes and give dose of each. 9. In what condition is camphoric acid especially indicated? 10. Name the therapeutic action of valerian.

OBSTETRICS

1. Why is it necessary to deliver the head hastily in breech or foot presentations? 2. What is the cause of phlegmasia alba dolens? 3. What factors make up the expulsive forces of labor? 4. What symptoms and signs would suggest pregnancy in a primipara two months pregnant? 5. Give diagnosis and treatment of a case of occipito-posterior presentation. 6. Give diagnosis and treatment of hydatid mole during pregnancy. 7 Give your management of the third stage of labor. 8. What are the causes of albuminuria and edema during pregnancy? 9. Describe the conditions likely to result in laceration of the cervix and the remedies and treatment you would employ to minimize the danger of such results. 10. How would you treat a case of placenta prævia?

MATERIA MEDICA

1. Differentiate materia medica and therapeutics. 2. Name two alkaloids of nux vomica and give dose of each. 3. Name the official salts of copper. 4. Name the antagonists of cocain and state which one you would prefer in case of cocain poisoning. 5. What is meant by a general anesthetic? Name three general anesthetics in common use. 6. Name three preparations of opium which are in common use and state the amount of each which represents one grain of opium. 7. What effect has benzoin on the urine? 8. Name the most powerful hydragogue cathartic and give its dose. 9. From what source is salicin derived and what is its dose and physiologic action? 10. From what is eserin obtained and what is its physiologic action?

PATHOLOGY

1. Describe the formation of an acute abscess. 2. What are the causes of hemorrhage? 3. State briefly the various etiologic theories of fever. 4 Describe an aneurism and state what conditions are essential for its development 5. What are the more common pathologic changes found in the aged? 6. Give the significance of albuminuria 7. What are the anatomic lesions of acute dysentery? 8. Name the pathologic conditions found in malarial hemoglobinuria. 9. What changes take place in the endocardium in chronic endocarditis? 10. Briefly what changes are found in the spinal cord in advanced locomotor ataxia?

GYNECOLOGY

1. Give the symptoms of salpingitis; also its varieties according to tubal contents. 2 Give the symptoms and treatment of gonorrheal vaginitis. 3 Give your treatment of a case of congenital atresia of the cervix 4 What are the most frequent causes of pelvic cellulitis? 5 How would you perform trachelorrhaphy and when amputation of cervix in cervical lacerations? Give technic of trachelorrhaphy. 6. What is the differential diagnosis of ascites and ovarian cyst? 7. When is the uterine sound contraindicated? When is the curette indicated? 8 State the causes of sterility in women and treatment of same. 9. Give the active treatment of sapremia; also of septic endometritis. 10. Give the differential diagnosis of acute non puerperal ovaritis and appendicitis

SURGERY

1. Define malignancy Describe the symptoms that characterize (*a*) benign tumors, (*b*) malignant tumors 2. Describe Nature's effects at repair of (*a*) simple uninfected injuries of the soft tissues; (*b*) infected injuries of the soft tissues. 3. Give the symptoms and treatment of a penetrating wound of the chest 4 Describe the varieties of hip joint dislocation and describe in detail two of these varieties. 5. Give the technic of two methods of skin-grafting 6. Describe lupus Give the treatment of lupus vulgaris. 7. Give a classification of burns. State the constitutional effects and give the treatment of burns 8. What is a sebaceous cyst, and how should it be treated? 9. Describe oval (Larrey's) method of amputation at shoulder-joint. What arteries need ligating? Give the method of inserting Wyeth's pins in shoulder-joint amputation 10 Give in detail the examination tests that should be applied to determine the causes of coma in a patient whose history is unobtainable.

Georgia Homeopathic May Report

Dr. R. E. Hinman, secretary of the Homeopathic Board of Medical Examiners, reports that at the May meeting one candidate, a graduate of the Hahnemann Medical College and Hospital, Chicago, 1891, was licensed through reciprocity with Wisconsin.

Nevada May Report

Dr. S. L. Lee, secretary of the Nevada State Board of Medical Examiners, reports the written examination held at Carson City, May 2-3, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 4, of whom 3 passed and 1 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad	Per Cent
New York University Medical College	(1882)	77.9
Jefferson Medical College	(1902)	88.8
University of Dublin, Ireland	(1877)	81

FAILED

College	Year Grad	Per Cent
Kentucky School of Medicine	(1906)	57.7

LICENSED THROUGH RECIPROCITY

College	Year Grad.		Reciprocity with
Rush Medical College	(1900)	(1905)	Illinois
University of Michigan, Coll. of Med.	(1893)		Minnesota
Creighton Medical College	(1906)		Nebraska
Cincinnati College of Medicine and Surgery	(1881)		Michigan

The following questions were asked:

ANATOMY

1. Describe location and name the divisions of the osseous labyrinth 2 What mediotarsal joint is the weakest in the arch of the foot? 3-4 What bones enter into the formation of the ankle joint? 5. Give origin and insertion of the trapezius muscle. 6. What is the combined action of the gastrocnemius and soleus muscles? 7 At what point in the neck does the common carotid artery divide? 8. Give location and approximate length of the fissure of Rolando. 9-10 How many pairs of cerebrospinal nerves are there? Of these how many pairs are spinal?

CHEMISTRY AND TOXICOLOGY

1. Give chemical test for determining the presence of lactic acid in stomach contents. 2 Give tests in detail for indican in urine. 3. Give the chemical reason why diabetics should abstain from starchy foods. 4. Describe the test for detecting the presence of strychnin 5 What is synthesis? Mention three coal-tar products extensively used in medicine that are prepared in the chemical laboratory by synthesis 6. State the antidote to practically all alkaloids, explaining its action. 7 What is tyrotoxicon, and in what is it found? 8. What is the treatment for poisoning by wood alco-

hol? 9. What emergency treatment should be used for poisoning by laudanum? 10. Name a poison, in poisoning by which fats and oils should not be administered. Explain.

PATHOLOGY

1. Give the pathology of amyloid liver. 2. Differentiate between epithelioma and lupus. 3. Give the pathologic changes occurring in a fracture of the skull at the base. 4. Give the pathology of the first and third stages of lobar pneumonia. 5. Give the pathology of erysipelas. 6. Give the pathology of pseudoleukemia. 7. Give the pathology of tabes dorsalis. 8. Discuss the pathology of gall-stone disease. 9. Give the pathology of acute gastritis. 10. Discuss the changes occurring in the spleen during an attack of typhoid fever.

BACTERIOLOGY

1. How is yellow fever conveyed, and how would you prevent its spread? 2. How would you manage a case of typhoid fever in a country with very poor sanitary conditions to prevent its spread? 3. Describe and name the bacillus of diphtheria. 4. How would you detect the tubercle bacillus? Describe it. 5. Describe the *Streptococcus pyogenes* and the *Staphylococcus aureus*, and where are they found? 6. What is meant by the terms antitoxin and immunization? 7. What do you know of the Noguchi method of the serum diagnosis of syphilis? How is tetanus antitoxin prepared and how does it act? 9. Describe the *Streptothrix actinomyces*. 10. Describe the Gram method of staining for bacteria.

PHYSIOLOGY

1. Describe the process of osmosis and give examples in the human economy. 2. Describe urea, its occurrence, variations in quantity excreted and recognition in the voided urine. 3. How can fresh blood stains be distinguished from older blood stains? 4. State where in the human economy the following substances are found: fibrin, chondrin, mucin, hippuric acid. 5. In what manner is the heart beat influenced by the pneumogastric nerve? What is the average number of heart beats per minute in (a) a child 1 year old, (b) an adult 70 years old? 6. Describe the vermicular movement of the stomach and intestines. What purpose does this movement serve? 7. Describe the glands and villi of the intestines. 8. Locate in the brain the seat of the special sense of sight, hearing and smell. 9. What would be the effect on digestion if the pancreatic duct were obstructed? 10. What is the office of the columnæ carneæ?

GENITO-URINARY AND DERMATOLOGY

1. Give the symptoms necessitating fixation of a floating kidney, and describe the operation. 2. Give the local treatment of venereal bubo. 3. What is hydrocele? Describe operations for its cure and state your choice. 4. Describe syphilis in all its stages, and give treatment of each stage. 5. Give symptoms of stone in the bladder. 6. Mention the most common sites of epitheliomata. 7. What is xanthoma? 8. What are the causes and treatment of keloid? 9. What are the causes, symptoms and treatment of bromidrosis? 10. What are the causes, symptoms and treatment of pompholyx?

PRACTICE OF MEDICINE

1. Discuss autointoxication. 2. Give etiology, symptoms and treatment of dilatation of the heart. 3. Differentiate typhoid fever, malaria and septicemia. 4. Describe the characteristic symptoms and course of morbilli. 5. What are the symptoms of abscess of the lung? 6. What is the etiology of progressive muscular atrophy? 7. Give the general symptoms of brain tumor. 8. Differentiate empyema from pulmonary abscess. 9. In what cases would the ophthalmoscope aid in diagnosis? 10. Describe a typical case of laryngismus stridulus.

SURGERY

1. Describe the anastomosis which takes place after ligation of the femoral artery at its middle third. 2. At what point is paracentesis thoracis preferably performed? 3. What is an adenoma? Give plan of treatment. 4. Through what channels is carcinoma disseminated? 5. Where is the swelling and fluctuation most prominent in synovitis of the ankle-joint? 6. Give a classification, either original or from competent authority, of burns. 7. What are the conditions which render excision of the lower jaw advisable? 8. What are the complications of dislocation of the hip? 9. Name the varieties of shoulder joint dislocation. 10. What operations are performed for intractable neuralgia of the fifth nerve?

MATERIA MEDICA AND THERAPEUTICS

1. What drug is antagonistic to pilocarpin? 2. State the source of ichthyol and give its use in medicine. 3. Describe the therapeutic action of spigelia. 4. Describe the therapeutic uses and the dangers of chloral hydrate. 5. Give the chief source and the dose of gallic acid. 6. Describe the therapeutic uses of chromium sulphate. 7. Describe the treatment of cerebrospinal meningitis. 8. What are the therapeutic uses of strophanthus? 9. Correct the following prescription:

℞ Atropinæ Sulphati . . . . grs. 1 ss
Potass. Iodidi . . . ½ oz.
Infusi Digitalis . . ½ fl. oz.
Elix. Simp. q. s. ad . . 2 fl. oz.
M. S.: Teaspoonful in water four times a day.

10. Give the theory of the alkaline treatment of rheumatism.

OBSTETRICS

1. Give the signs, approximate weight and length, and two principal diameters of the cranium of a fully developed fetus. 2. In what proportion do twins to single fetuses develop? Triplets to single fetuses? 3 4. Give diagnosis of fetal syphilis. What particular sign is most suggestive and generally accepted? 5. Give treatment for inevitable abortion. 6 7. Give your technic in treatment of face presentation. What is the fetal mortality in such cases? With that of the maternal? 8. Give treatment of post partum hemorrhage. 9 10. Give treatment for prolapsed cord. In whose position is it generally recommended that the patient be placed?

Book Notices

The Health of the City. By Hollis Godfrey, Author of "An Elementary Chemistry," etc. Cloth. Price, $1.25 net. Pp. 372. Boston: Houghton Mifflin Co., 1910.

This is one of the commendable books appearing so frequently nowadays, intended to educate and inform the public in matters of public and personal hygiene and sanitation, in this instance with particular reference to cities. It takes up such subjects as air, water, waste, food, housing, noise, their harmfulness or harmlessness, and also of civic conditions working for evil, and emphazing the necessity of the citizen placing greater reliance on the deductions of modern science in matters pertaining to his welfare. Feeding is not only a sociologic but also an economic problem, and employers of labor should recognize more clearly that a stipend which affords a better diet means better work and more of it. Factory luncheons are an economic benefit to employers, and community kitchens would also be beneficial. The making of food is a problem of sociology and natural science, and improvement in this direction depends on the laboratory investigator whose researches are gradually reducing dietetics to a science, and on the public spirit of societies and corporations who will make an effort to benefit the individual, and increase total efficiency through individual gain in power. Much of the time spent in present methods of education might better be devoted to education in cooking and to the household arts. The author believes that the housing problem of the future lies outside the city walls. The vision of the time to come shows the suburbs encircling the massed workshops, the homes of the employees set in the green trees and surrounded by playgrounds and fertile gardens. The book is made up for the most part of a series of articles formerly appearing in the *Atlantic Monthly*, and has a distinct literary quality.

La Tension artérielle en clinique. Sa Mesure; Sa Valeur Séméiologique. Par le docteur Louis Gallavardin, Médecin des Hôpitaux de Lyon. Paper. Price, 4 francs. Pp. 206, with 70 Illustrations. Paris: G. Steinheil, 2, rue Casimir Delavigne, 1910.

The book is divided into two parts. Part I deals with the technic of sphygmomanometry. Part II is a treatise on the clinical value of blood-pressure determinations.

The author gives accurate description of the various instruments used in measuring and recording blood pressure. For the determination of systolic blood-pressure he prefers the Riva Rocci method, using the wide arm-band. This method has been experimentally verified in man by Müller and Blauel at the seat of amputation of the arm. They found that the Riva Rocci reading was about 7.5 per cent. higher than the pressure obtained by a cannula within the artery. For determining the diastolic pressure Gallavardin prefers the method which permits one to perceive the first arterial collapse as the arm bracelet is relaxed.

In the clinical portion of this monograph the usual causes of hypertension and hypotension are set forth. The author considers hypotension so constant in atrophic cirrhosis and in pulmonary tuberculosis that the finding is of great diagnostic value. The "pulse-pressure" is discussed at length. Its chief value is in throwing some light on the amount of work performed by the heart.

The book is written in an interesting and suggestive style, but one is not impressed with a richness of clinical observation. No space is given to the important rôle of therapeutics as it relates to disturbances of blood pressure.

Heart Disease, Blood-Pressure and the Nauheim Schott Treatment. By Louis Faugeres Bishop, A.M., M.D., Clinical Professor of Heart and Circulatory Diseases, Fordham University. Pp. 284, with Illustrations. Third Edition. Cloth. Price, $3. New York: E. B. Treat and Company, 1909.

This edition differs from its predecessors chiefly in its consideration of the so-called Schott or Nauheim treatment. This is briefly considered both as it is carried out at Nauheim and as it may be practiced in other places. The technic of the resistance movements is made plain by figures with good descriptive text.

The rest of the book is much the same as in the second edition which has been previously noticed. It is in no sense a treatise on heart disease or blood-pressure—in fact, makes no claim to be such—but contains rather the personal views of the author on some of the questions pertaining to these conditions. Emphasis is laid on the importance of the peripheral vessels in the production of permanently high blood pressure; and the influence of mental hyperactivity and of the strenuous life in ultimately leading—through peripheral vascular contraction and overwork of the heart—to high blood-pressure and cardiac hypertrophy with consequent cerebral, cardiac or renal breakdown, is clearly set forth. Attention is justly called to the occurrence of primary and secondary low blood-pressures.

The book contains many suggestive hints as to physiologic and practical points concerning circulatory disease.

Diseases of the Eye. A Hand book of Ophthalmic Practice for Students and Practitioners. By G. E. deSchweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital. Sixth Edition. Cloth. Price, $5 net. Pp. 945, with 351 illustrations. Philadelphia: W. B. Saunders Co., 1910.

Much new material has been added in the sixth edition of this work and the former work thoroughly revised. Almost every department has been amplified. In refraction the use of the crossed cylinder is discussed. Especially valuable is the part dealing with the important subject of the relation of nasal accessory sinus disease to disease of the ocular apparatus. Many new operative procedures are described, notably those of Herbert and LaGrange, for establishing filtering cicatrices in glaucoma, and the Smith operation for the removal of cataract in the capsule. The chapter on plastic operations about the orbit and on the lids has been enlarged. The author's well-known and recent work on papilledema in brain tumor has been added. The subject of vaccine therapy has also been fully dealt with and especial attention has been given to ocular tuberculosis and the use of tuberculin in diagnosis and treatment. Altogether, this text-book continues to hold the front rank among ophthalmic manuals that it has occupied for so many years.

Medical Vademecum in German and English. By B. Lewis. With Preface by Dr. A. Politzer. First Edition. Cloth. Price, $5 net. Pp. 559. Philadelphia. P. Blakiston's Son & Co. [1910].

We have in this work an ingenious method of conveying at the same time a knowledge of medical German and information on important medical topics. The plan consists of giving in German and in English, on opposite pages, the text of postgraduate lectures by the teachers at the Vienna school. The German and the English translation are constructed in such manner that no dictionary is necessary in reading the text. The student thus becomes acquainted with the usual medical terminology and by numerous examples learns the phraseology needed for conducting the examination of a patient in a foreign language. The lectures, to the number of sixty, cover a variety of topics in the various specialties of medicine. We hope that this experiment will assist greatly in the acquisition of the German language by American physicians studying abroad, and will also facilitate the acquisition of a more intimate acquaintance with German medical literature.

Kurzgefasstes Lehrbuch der Kinderheilkunde für Aerzte und Studierende. Von Dr. Carl Seitz, A. O. Universitätsprofessor und Vorstand der Kinderpoliklinik am Reisingerianum in München. Third Edition. Paper. Price, 13 marks. Pp. 558. Berlin: S. Karger, Karlstrasse 15, 1910.

As the name implies, this book is a brief but comprehensive text-book of pediatrics for students and practitioners. It is lucidly and concisely written and embodies the results of the very latest researches in every department of pediatrics. It records, for example, the very most recent and epoch-making work of the Berlin school (Finkelstein, etc.) in the subject of infantile nutrition and its disturbances. Beyond this the work offers no striking individuality, and no superiority over other well-known German text books on diseases of children.

Handbook of Anatomy. Being a Complete Compend of Anatomy. Including the Anatomy of the Viscera and Numerous Tables. By James K. Young, M.D., Professor of Orthopedic Surgery, Philadelphia Polyclinic. Third Edition. Cloth. Price, $1.75 net. Pp. 402, with 172 illustrations. Philadelphia: F. A. Davis Company, 1909.

This is the third edition of a handbook prepared for students and those wishing to review the subject. The book is more elaborate than a quiz-compend and more condensed than a text-book. It will doubtless be of value to those desiring an up-to-date summary of the subject.

Medicolegal

Validity of Health Department Regulations of Ice Cutting

The Third Appellate Division of the Supreme Court of New York says, in People vs. Kirk (119 N. Y. S., 862), that the right to take private property without compensation for the public good is an extraordinary right, justified only by absolute necessity. Where the public good can be conserved by the regulation of a right, the power to destroy does not exist. It would seem undoubted that the harvesting of ice might be placed under such regulations as to give substantial guaranty that the purity of the water would not be endangered. With the possibility of efficient regulation, to prohibit the cutting of ice, or of the necessary means thereto, is beyond the power of the health officer. A contrary holding would work both private and public mischief. Much of the ice throughout the state is harvested from lakes or ponds, which are to an extent the source of the water supply of cities and villages. The power to prohibit the taking of ice from such sources would deprive the public of a large part of the ice which is now furnished for its health and comfort. These considerations are not without weight in the condemnation of a health order so drastic as the one involved in this case which prohibited the cutting of ice with men and teams on lakes and ponds used as a source of water supply for cities and villages.

It was insisted, however, that if that part of the order prohibiting the cutting of ice be void, nevertheless the remainder might stand, namely, that part forbidding horses and men from going on the ice. It does not appear, however, that ice can be otherwise harvested. These are the instrumentalities that are ordinarily used for that purpose. If their use be prohibited, the harvesting of ice is practically enjoined. On the evidence the danger to the public health lies in the chance of contamination from typhoid germs; but horses never have typhoid fever, and men so afflicted are not usually at work in ice fields. Even if it be assumed that a man might have typhoid for some time before it is diagnosed, the possibility of danger is so remote as not to be substantial. If this order, prohibiting men and teams from going on ice where the water may be used for general purposes, be valid, the cutting of ice may be stopped on the Hudson river, and in fact on any river in the state, which would be a result more deplorable than would come from the possible slight contamination by reason of the use of horses and men in harvesting ice under proper restrictions and regulations.

Therefore the court holds that a release of a party from imprisonment for violating the health department order in question must be affirmed.

Appointment, Contract With, Removal and Compensation of City Health Officer—Powers of Board of Health

The Court of Appeals of Kentucky says in Young vs. City of Ashland (125 S. W. R., 737), that there is no provision in the charters of cities of the fourth class with reference to the election of health boards, or health officers, so that sections 2059 and 2060 of the Kentucky Statutes apply to such cities. Under the statute, the appointment or removal of health officers is not lodged in the city council. The only authority the council has is to provide for the health officer a reasonable compensation for his services. The power of appointment as well as removal of this officer is lodged in the board of health.

As the board of health, as it had the right and authority to do, removed Dr. Young from office, it is manifest that he could not by virtue of his contract with the city for compensation as health officer maintain an action for a breach of the contract based on his removal from office. He took the office under and subject to the statutes giving the board of health the right to remove him at any time. And so his removal could not be a breach of contract. The only action that Dr. Young could maintain would be one to require the council to compensate him for his services during the time he acted as health officer under the appointment of the board of health.

But, while it was virtually conceded that the city was not under an obligation to compensate Dr. Young as health officer after his removal from office, it was nevertheless insisted that the city council had the power under the city charter to enter into a contract with Dr. Young for the performance of services in connection with the health of the city, and that independent of his appointment as health officer by the health board the city had the right to and did make, through its mayor, a contract with him by virtue of which he undertook to perform a number of duties not imposed on him as a health officer appointed by the board of health. The court does not doubt the authority of the council in a proper state of case to enter into a valid contract with a physician to conserve the health of the city, nor does it doubt that a municipal corporation is liable for a breach of a valid contract entered into by it. Therefore, if it should be assumed that the city council, independent of the board of health and for good and sufficient reasons, entered into the contract in question with Dr. Young it would follow that he might maintain an action against the city and recover damages for a breach of the contract. However, this view of the law had no application whatever to this case, it being clearly established by the proceedings of the board of health as well as the ordinances of the city that the contract entered into by the mayor with Dr. Young was due entirely to the fact that he had been appointed by the board of health as officer for the city. That the contract specified duties not imposed by law or the regulations of the board of health on officers appointed by it did not change this fact.

In disposing of this case the court has assumed that the contract in question entered into between the mayor and Dr. Young was a valid contract for the time he was health officer, although it might well be questioned if the mayor had the authority to enter into any contract with him or to define or prescribe his duties. The mayor did not appear to have been authorized by ordinance or resolution of the board or council to enter into a contract with Dr. Young, nor did the contract purporting to have been made with him appear to have been ratified or approved by the council. In the court's opinion the removal of Dr. Young by the board of health terminated the obligation of the city to pay him further as health officer. Wherefore, a judgment allowing compensation up to the time of his removal, and dismissing the remainder of the action, is affirmed.

Medical Witness Not Allowed to Testify to Surgeon's Competency

The Supreme Court of Alabama says that in Louisville & Nashville Railroad Co. vs. Elliott (52 So. R., 28), a personal injury case brought by the latter party, during the examination of a medical witness the witness testified that a competent surgeon who examined the plaintiff at the time he was hurt would be in a better situation to tell whether he had a fractured pelvis than he (the witness) and that he knew Dr. P. The question was then asked: "Is he a competent surgeon?" This question was objected to, and the objection sustained. In that there was no error. Without the testimony of Dr. P. it would be immaterial whether he was competent or not. He was subsequently examined, and testified as to his medical education and his experience in the practice. It was for the jury to determine what weight to give to his testimony, while it was the province of the court to determine his competency to testify as an expert, which the court did by admitting his testimony.

Cross-Examination May Extend to Trivial Details

The Supreme Judicial Court of Massachusetts says in the personal injury case of Minihan vs. Boston Elevated Railway Co. (91 N. E. R. 411), that the plaintiff clearly had the right to cross-examine the defendant's medical expert as to the grounds of his opinion including what took place at the examination as to her physical condition which he conducted in the presence of her physician, and whatever was said or done at the interview was competent, even if the inquiry extended to trivial details.

Society Proceedings

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Eighteenth Annual Meeting, held at New Haven, May 25-26, 1910

(Concluded from page 339)

Treatment of Infection Following Abortion, Miscarriage and Labor

Dr. C. A. Monagan, Waterbury: The ideal treatment is preventive—the development of a complete, rigid, aseptic technic. The general use of rubber gloves cannot, unfortunately, be enforced. When the condition is actually present, before the system has become loaded down with bacteria, the uterus should be curetted with a blunt curette; now, if at any time, intrauterine douches may be of service. Antistreptococcus serum has been disappointing in its results. As the prognosis of this grave condition changes very rapidly, undue credit is sometimes given to the remedy last used. The autogenous vaccine treatment has not had very good results, especially in cases of the acute type. The application of hyperleucocytosis often fails to arrest the contagion. I have not seen any good results follow the use of unguentum Credé. Ergot does good by contracting the uterus, thus preventing further infection. The medical treatment is the ordinary supporting treatment used in fighting any toxic condition. All drugs irritating to the stomach should be avoided. The patient's strength should be kept up by a liberal supply of nutritious food. Salt solution in large quantities is the best single means of controlling the inroads of sepsis. The temperature should be controlled with wet packs, sponging, cold baths, and abdominal coils. Opening into Douglas' pouch and packing with iodoform gauze has been advocated; also hysterectomy, for those patients who fail to improve after curettage. The latter procedure would be of use in cases caused by the presence of a suppurating tumor. In septic peritonitis, multiple incisions, thorough drainage, and the constant use of saline rectal infusions offer the best means of treatment. If a collection of pus can be located, it should be opened and drained.

DISCUSSION

Dr. S. M. Garlick, Bridgeport: While I would not abate one iota of the needful care in all cases of labor, I am far from convinced that every maternity case should have the same preparation and management as an abdominal section requires. The modern woman, with her highly apprehensive organism, is often brought to the verge of a state of nervous breakdown by the anticipation, worry, and fear engendered by such elaborate, detailed and expensive preparation. So often has my hospital experience shown me the bad results of indiscriminate and routine curettage that I am sometimes led to wish it had never been introduced. Antistreptococcus serum has been disappointing in my hands and under my observation. With autogenous vaccine treatment, I have had no experience. Two cases of hysterectomy for septic metritis have proved fatal. I have had no experience with unguentum Credé.

Dr. B. W. Crane, Stamford: Dr. Monagan outlined one method of treatment after another, as did Dr. Garlick afterward, and both said that these were all without merit. The treatment is prevention.

Dr. T. G. Sloan, Hartford: I recently saw in consultation a woman who died, at the end of ten days, of puerperal septicemia. It did not seem that she could have been infected by the physician who delivered her. I do not think that any douches were used previous to the confinement, and no nurse came in contact with the patient in a way to infect her. The woman's mother and sister had both died of puerperal septicemia. Where the infection came from, unless from the vagina, it is impossible to say.

Dr. A. H. Williams, Hartford: If the patient realizes that perfect cleanliness will insure her recovery, care of that sort will not cure her. The meaning of the precautions should be explained to her.

Surgical Treatment of Gastric and Duodenal Ulcer

Dr. E. J. McKnight, Hartford: The surgical treatment of gastric and duodenal ulcer and their complications shows a lower mortality and a higher percentage of permanent cures than can be produced by medical treatment alone. None of the complications or sequelæ, except hemorrhage, usually occurs early in the disease, and it is a question whether a perfectly healed, non-indurated scar following ulcer ever gives rise to further trouble. The healthy stomach has the same tendency to recover from injuries caused by traumatism as has any other healthy organ. In patients who do not recover, some extra factor is at work. Investigations point to hypersecretion and hyperchlorhydria as the most important factors in preventing the normal process of repair. The beneficial effects of a gastroenterostomy are due to regurgitation of biliary and pancreatic secretions into the stomach, neutralizing to some extent the excess of hydrochloric acid, rather than to a better drainage of the stomach. I prefer the grouping of symptoms used by Graham in The Journal of the American Medical Association, August 22, 1908. If the ulcer is located in the abdomen, gastroenterostomy is the operation of choice. In gastric ulcer, however, the removal of the ulcer is the only proper procedure for some cases; although in a majority of cases, a posterior gastroenterostomy is sufficient. Operation is rarely needed for the control of hemorrhage itself. One of the most serious complications of ulcer is perforation, which is more frequent when the ulcer is situated on the anterior wall. The results of the operation performed during the first few hours after perforation are exceedingly good. The patients should be watched as carefully after the operation as before, until a sufficient time has elapsed to enable the attendant to be certain that a permanent cure has been effected.

DISCUSSION

Dr. O. C. Smith, Hartford: It takes a reasonable length of time to determine whether medical treatment is to be successful or not. After this, the ulcer becomes a surgical disease. The fact that conditions lower down develop symptoms so similar to those of gastric ulcer that they are confused with it has been referred to; and the fact that many carcinomas develop on the basis of a gastric ulcer emphasizes the importance of early operation. It is not possible to tell before operation just what condition we are dealing with, and this argues for more frequent resection of the portion of the stomach bearing the ulcer. We should use a soluble material for sutures in the inner coat.

Dr. E. W. Smith, Waterbury: It is unusual to find present in one patient a healed ulcer and the production of symptoms of pyloric stenosis due to conditions lower down in the intestines. I have seen a case that showed these points. The man had had a peptic ulcer that had been healed by medical treatment. He then had pylorospasm simulated by an irritated appendix. When there is a gastric ulcer, the appendix had better be looked out for also.

Dr. W. H. Carmalt, New Haven: I think that Dr. McKnight has not made so much of the symptomatology of supposedly cured patients as he should. The condition of relief obtained from a course of medical treatment is not a cure, but simply a temporary condition of improvement. When several such series of symptoms occur in a patient, it is time to cease medical treatment.

Dr. W. F. Verdi, New Haven: There is a difference between a chronic ulcer and a perforating ulcer. Perforating ulcers come on, as a rule, in persons between 28 and 30 years of age. The symptoms are not usually severe, and the patients are able to continue their work. They are usually seized with the perforation while at work, and are brought to the hospital suffering intense pain that requires immediate relief. At first, it is the right half of the abdomen only that is affected. The intestinal contents are poured out under the surface of the liver, and go toward the right iliac fossa. The chronic ulcer is different. The patients have a long train of symptoms, going on over a number of years; and in these cases there is not much danger of perforation, because the ulcers are protected from perforation by a great many adhesions that form about them.

Dr. L. M. Gompertz, New Haven: It is extremely important for the medical man constantly to bear in mind that ulcers of the stomach and duodenum are much more common than is usually supposed. When patients complain of pain on an empty stomach, relieved by eating food, and then coming on again within from two to four hours, one should be suspicious of the presence of an ulcer at the pylorus or lower down. When an early diagnosis is made, the very acute ulcers are sometimes benefited by medical treatment; but it does not make any difference how patients with chronic ulcers are treated, for they will still have the ulcers. If they are to be cured they must be sent to the surgeon for operative treatment.

Dr. McKnight: We are all coming to feel that for ulcer of the stomach resection or partial gastrectomy is the operation of choice, considering the large numbers of cancers that develop on the basis of ulcers. I have operated in more cases of appendicitis that simulated gastric disease than I have on gastric ulcers; so these cases are not so rare as Dr Smith thinks. Regarding Dr. Verdi's distinction between the two classes of ulcers, I would say that in the case of a man of 55 there was a chronic ulcer with sudden perforation.

Treatment of Fractures

Dr. G. W. Hawley, Bridgeport: The treatment of fractures does not appear to have kept pace with the advance of modern surgery, and does not meet present-day needs. The enormous number of persons who are crippled every year as the result of fracture offers a challenge to surgical science. This industrial age will soon ask what is being done to lessen the great industrial loss through fractures. There is room for common sense in laying down principles on which treatment should be based. In all fractures, the bones tend to unite without assistance of any kind. The most that we can do is to help Nature to obtain useful union, and the only way to do this is by approximating the ruptured tissues, on the principle that the more accurate the approximation, the more perfect will be the repair. There is need for better means of holding divided bones in apposition, and there is opportunity for improvement in the technic of operations on fractures, based on the fact that bone stands trauma or infection but poorly. There is no reason why we should not repair an injured bone as readily as we would any other injured structures, and there is great reason to believe that the future will see an increased interest in fractures and a creditable advance in their treatment.

DISCUSSION

Dr. P. D. Bunce, Hartford: In general surgery, if the patient dies, he dies in an orthodox manner; and that is the end of him. If he has a fracture, however, and he has any final disability or deformity, the surgeon is judged to be the cause; and a monument of his skill exists so long as the patient lives. In general, accurate replacement of bones gives the best results, regardless of particular kinds of splints. Severe laceration of the soft parts often makes the application of splints and supports very difficult. Sutures of soft parts should practically never be used in compound fractures. In my opinion, any method of fixation in which nails or drills are allowed to remain projecting through the skin is bad. I believe that *x*-ray pictures should usually not be shown to the patient.

Dr. W. H. Carmalt, New Haven: I am rather surprised at the pessimism of Dr. Hawley compared with the optimism that I feel with regard to our success in the treatment of fractures. The principles of the care of fractures have not changed; we simply must restore the parts as nearly as we can. In these days of antiseptic surgery, there is no reason to hesitate to attack a bone that is not in good position and in which one thinks that there will be a bad functional result. It is not worth while to cut down on every bone that the *x*-ray shows is not in perfect apposition; if, from experience, one feels that the limb is going to be useful, let well enough alone.

Dr. S. M. Garlick, Bridgeport: It is all very well to take the public into our confidence, provided that everything is all right; but sometimes we discover that some things are not so right as we would like to have them. Professional confidence is wise and safe, but public confidence must be very carefully scrutinized.

Dr. Hawley: We certainly see a large number of deformities following fractures, and it has been impressed on me that a large proportion of these are unnecessary. In some fractures, too much treatment is done. I think that in a good many cases, little or no treatment other than protection is necessary.

Some Principles of Intracranial Surgery

Dr. W. H. Verdi, New Haven: The greatest difficulty encountered is not in the surgical technic, but in the cerebral localization. One should not wait too long after making a diagnosis of increased pressure before decompressive measures are instituted; if one does, there is danger of loss of vision. I do not consider operations on the brain and cord any more dangerous than operations elsewhere. The most troublesome thing encountered is hemorrhage; and infection is the second chief factor in the mortality of these operations. In my whole series of cases, however, I was obliged to stop only once on account of hemorrhage; and the only case of infection was that of a child operated on for a tumor of the cerebellum that at the time of operation proved to be a tuberculoma. This operation was performed in a private house, and the patient afterward became infected. There is nothing to be gained by the introduction of needles into the various parts of the brain in the exploration of tumors, as they usually have a consistency not very different from the brain itself. An operation for decompression is indicated in all cases that cannot be localized. I have seen the administration of iodids and mercury to patients with symptoms of intracranial pressure kept up until the patient's vision was destroyed. The use of chloroform or ether as the anesthetic is a mere matter of individual choice. While the results of operations for tumor of the brain are not so satisfactory as they should be, I consider the operation itself comparatively devoid of danger.

DISCUSSION

Dr. L. W. Bacon, New Haven: What little I have to offer in the way of remarks is based on a case of brain tumor in which Dr. Verdi was kind enough to assist me. The interesting part of the condition was the after-progress of the case. A hole was left in the brain substance as large as a turkey-egg. When we came to withdraw the last piece of gauze, and there was nothing left in the cavity to act as a cushion, we had a repetition of the pressure symptoms. For an interval of three or four days, the progress of the case was somewhat in doubt. After that, the woman went along very nicely to recovery; and she is well to-day. So far as I know, this was the first case of brain tumor removed in this city with the survival of the patient. Another case was one of the largest brain abscesses that I have ever seen. There was almost complete blindness when the operation was done, and there was entire recovery except for the sight. If the operation had been done a week earlier, I think that the girl would not have been blind to-day. This emphasizes the fact brought out by Dr. Verdi, that when cerebral compression exists, interference must not be too long delayed.

Dr. M. Mailhouse, New Haven: I suggested to Dr. Verdi that in a case of cerebellar tumor in which there was marked bulging of the cerebellum from the great intracranial pressure, a slight incision be made between some of the laminæ, thus possibly permitting the pressure to extrude the growth. This actually took place, and the patient was saved the loss of any material amount of brain substance. This same procedure might equally well be pursued in other areas of the brain. Opinions as to the presence of neoplasms based solely on the appearance of choked disc and pain are sometimes erroneous, as specific disease at the base may give this picture, yet when in doubt and the optic discs are in such a condition as to threaten vision the safest procedure for the patient is at least a decompression operation. In cases of fracture without extreme evidence of local injury, when the symptoms indicate increasing hemorrhage, the unilateral dilatation of the pupil is often an aid to localization. Of greater value, however, is the occurrence of unilateral convulsions on the contralateral side. That convulsive phenomena indicate cortical irritation was evidenced by the case reported by Dr. Verdi, in which, also, immediate incision of the dura at the time of the operation, in order to relieve pressure, was indicated. In the prognosis of the results after operation, one should be guarded.

Dr. W. H. Carmalt, New Haven: The last sentence of Dr. Mailhouse's remarks leads me to speak of a case of operative infiltrating glioma of the cerebellum in a patient previously operated on unsuccessfully for decompression, the boundaries of the tumor not being made out. There has been no recurrence of the tumor since, and I think that these cases are worth putting on record.

Treatment of Tuberculous Patients Outside the Sanatorium

Dr. B. D. Deming, Waterbury: Tuberculosis is a disease that needs careful medical attention and nursing. The attempt to treat outside of sanatoria patients in the social station in which the disease abounds is a poor substitute for sanatorium treatment. The disease, however, will not be eradicated by the establishment of sanatoria that admit only patients in incipient stages, while rejecting those in advanced stages and discharging patients who they fail to improve. The latter will become advanced cases, and thus spread the disease among others. Tuberculosis may be prevented, but not without the expenditure of vast sums of money to care for advanced and chronic cases in sanatoria, and to aid the different families thus deprived of their wage-earners. The giving of employment to uncured patients discharged from sanatoria is not unattended with danger to the community. The first and most important factor in the treatment of tuberculosis is to prevent its communication to others, and the second is to benefit the patient. Both these factors are, with the vast majority of patients, more advantageously carried out in a sanatorium than at home.

DISCUSSION

Dr. David R. Lyman, Wallingford: There is no tuberculous patient who does not have to be treated outside the sanatorium. Practically all that the sanatorium does is to arrest the disease. Every tuberculosis patient needs treatment for years after he gets home. The most dangerous point in the case is when the patient has got where he looks and feels perfectly well. He then has anatomic but not clinical tuberculosis; but he must be watched for several years, in order to make certain that the anatomic disease does not become clinical. We often see cases of tuberculosis carried on to arrest by the general practitioner as thoroughly as in any sanatorium; but this is not enough. The patient should be instructed to come back for examination at regular intervals, whether he is feeling badly or not. I do not believe that a good light indoor occupation is so bad for such persons as it is considered to be. If the patient's life can be regulated during the fourteen hours when he is not at work, he will probably recover. If he has a sleeping-porch he is out of doors a good part of this time. I do not believe in forced feeding or in overfeeding. Most of the stomach symptoms are due to this.

Dr. Henry F. Stoll, Hartford: There are many people who can work and recover from tuberculosis; and a good many people who can play, and recover; but very few who can both work and play, and get well. If these patients will go to bed at half past seven, a good many will recover and stay well under home treatment. With private patients, good results are obtained with tuberculin; it relieves the toxic symptoms and that is a great help. Patients who take tuberculin relapse less frequently and live longer than those who do not take tuberculin; but great harm can be done if it is not used properly.

Dr. I. E. Brainard, Wallingford: The handkerchief that is held before the patient's mouth when he coughs should be well taken care of afterward, and not stuffed into the pocket with damp sputum on it.

Dr. L. P. Swasey, Hartford: Outdoor treatment is not possible in our part of the country in certain seasons. In March we had high winds and the atmosphere was filled with dust. Many persons, unless especially instructed, would keep the patients outside in such weather, thinking it beneficial.

Dr. Deming: The matter of climate and location must be taken into consideration; but one of the greatest advantages of keeping the patient out of doors, even when it injures him, is the decreased risk of exposure to the other members of the family. A piece of gauze, sufficiently thick not to wet through, is better than a handkerchief, as it can be burned.

Some Features of Rectal Alimentation

Dr. L. M. Gompertz, New Haven: There is a wide difference of opinion among investigators as to the absorptive power of the rectum. In some experiments that I conducted in order to determine this point, I found salt to be absorbed almost as completely as when given by the mouth. Dextrose was either completely absorbed or was made to disappear through fermentation. As all authorities agree that there is practically no absorption of fat from the rectum, no experiments in this direction were made. If nutrient enemata do not reach the small intestine, proteins not predigested, when injected into the rectum, simply putrefy in the large intestine and pass out with the feces. Of the carbohydrates, dextrose was selected because the bulk of carbohydrate food reaches the blood as dextrose. If absorbed in sufficient quantity, it would take the place of protein. From these experiments it was evident that only a little over one-third the necessary amount of calories to sustain the body at rest was daily furnished by the dextrose solutions. Although the experiments were limited to the use of water, sodium chlorid and dextrose solutions, we must conclude that the rectum is capable of absorbing these in the form of rectal enemata; furthermore, that such substances, when absorbed, are helpful in nourishing the body and in supplying fluids and salts to the tissues. Therefore, I consider rectal enemata as useful in sustaining the body in emergency circumstances, preventing complete starvation for a short period.

DISCUSSION

Dr. L. B. Mendel, New Haven: The earlier favorable impressions of rectal feeding have largely been replaced by a skeptical attitude on the part of clinicians, and properly so. Our knowledge of the physiology of the alimentary tract has been greatly extended. It ought, therefore, to be possible to introduce anew such features of rectal alimentation as are promising in principle and susceptible of clinical application. Observations like these emphasize the helpfulness that comes from being able to measure in some way the results that any therapeutic procedure can accomplish.

Dr. C. J. Foote, New Haven: A nutrient enema is a makeshift, designed to meet an emergency, and cannot be continued for any length of time. It is not intended to furnish proteid or build up the body; but merely to furnish heat and energy, and to prevent retrogression. This can be done by using dextrose in the enema. Dextrose is absorbed rapidly, and furnishes energy; proteid is absorbed less rapidly, and does not furnish energy so quickly. I cannot, therefore, see the advantage of using it, even when predigested. Alcohol fills very much the same place as dextrose. As for the absorption of salt, we should be on our guard in certain cases. I have seen instances in which salt solution was taken readily in cases of uremia, and large quantities were given; but, at the same time, there was a small excretion of urine, so that a great deal was retained in the system. The patient, in such circumstances, becomes water-logged and develops edema of the lungs.

Dr. F. P. Underhill, New Haven: Most of the physicians with whom I have talked seem to think that because we cannot supply the entire 1,800 calories, there is no use in employing rectal feeding. I think, however, that it is much better to give half a loaf than to give none. Under the conditions that I have worked with, the carbohydrate rectal feeding has been very successful.

Dr. W. L. Barber, Waterbury: On one occasion, my wife could retain nothing on her stomach but water. For over a week, I kept her up on rectal alimentation, using milk, beef-juice, whisky and quinin. I do not know whether the rectum received these or the lower intestines, but she recovered.

Dr. J. F. Calef, Middletown: I believe that in vomiting of pregnancy of the severe type, there is, more than is usually apparent in any other disease, a reversed peristalsis, which may carry rectal alimentation more readily to the stomach than in any other case; for I am sure that in one case that I had, a very small portion of milk was carried up into the stomach.

Dr. E. Pratt, Torrington: Has Dr. Gompertz made any experiment with predigested protein in connection with the dextrose?

Dr. G. A. Eliot, New Haven: We have all had experience with the difficulty in getting these enemata retained in some cases. It seems a very useful preparation to have the milk partly peptonized by the addition of bicarbonate of soda and extract of pancreas. I have used this, at times, with beneficial results.

Dr. Gompertz: I have given predigested protein in days gone by, but had no analysis of the feces made in these cases; so I do not know whether these enemata were absorbed or not. Patients can live for weeks with only water by rectum; but they are in the beginning stage of starvation, as they live on the tissues themselves. As no accurate measurements were made in the case that Dr. Barber spoke of, I think it very doubtful whether any nutrition was furnished by the milk. With the dextrose solutions, we were able to supply nutrients.

Chronic Family Jaundice

Dr. W. Tileston, New Haven: The disease is characterized by chronic icterus, of moderate intensity, with enlargement of the spleen and anemia. It is usually hereditary; less often, familial or acquired. Males and females are affected with equal frequency. The jaundice is of the non-obstructive type, with well-colored stools and absence of bile in the urine. There is usually a marked urobilinuria. The blood shows the presence of bilirubin and a considerable degree of anemia of the secondary type. The spleen is markedly enlarged; the liver, only slightly so. The patients suffer frequently with "bilious attacks," gallstone colic, and nosebleed; but are otherwise fairly healthy, and often live to a good old age. The red corpuscles are abnormally fragile and readily destroyed; hence, the anemia, and an increased formation of bile pigment from the hemoglobin thus set free. This leads to the icterus, which is pleiochromatic in origin. The prognosis is good for life; absolutely bad for recovery. Treatment should be confined to general hygiene. Iron may be tried for the anemia. The presence of colic is an indication for the operative removal of the gall stones. I have reports of thirteen cases, occurring in four families.

DISCUSSION

Dr. G. Blumer, New Haven: When the patients are first seen at night, they ought to be seen again in the daytime, in order to make out the jaundice. Has Dr. Tileston seen any suggestion of a relation between this disease and paroxysmal hemoglobinuria, another disease in which there is excessive fragility of the red blood corpuscles? So far as I know, although other varieties of hemolytic jaundice have been described, there is no statement to the effect that there is an absence of bile in the urine in these other forms. Another point that might cause confusion is the so-called Gaucher's disease, in which there is family enlargement of the spleen, but not usually associated with jaundice. It is interesting to consider whether, if there were actual obstruction from gall-stones, as well as the other type of jaundice, the urine would contain bile. One other point that should be emphasized is not to remove the spleen in such cases.

Dr. Tileston: There was one case in which there was a condition of paroxysmal hemoglobinuria associated with the family jaundice, but there is not a very close relationship between the two diseases. Regarding the absence of bile in the urine in other types of hemolytic jaundice, there was usually no bile, but only urobilin; although in some cases there was a small amount of bile. Eleven of the twelve reported instances of Gaucher's disease were in females, so it would be unlikely to have been Gaucher's disease in my cases. When the patients get obstruction with gall stones, they also get bile in the urine, with increase of jaundice.

Periodic Attacks of Indigestion in Children

Dr. W. G. Murphy, East Hartford: Diacetic acid is one of the highest chemical compounds associated with acetone, and is the result of intestinal decomposition of food. Various theories have been suggested associating diacetic acid with cyclic vomiting and recurrent attacks of indigestion. The exciting causes of the attacks of vomiting are fright, excitement, fatigue, anger, exposure to cold, and similar influences acting through the nervous system. Many argue, also, that the attacks are not due to errors in diet. Acetone may be present in other conditions; and the neurotic and rheumatic aspects must be recognized as contributing causes. The condition is, I believe, a neurosis, toxic in character, based on a defective nervous control, the result of an inherited unstable and irritated nervous system. If this idea is correct, treatment should be directed to the cause, and not to the result. Most of the children are neurotic and anemic. On account of their digestive troubles, they are often underfed. A full and generous diet should be given them, and general care of the hygienic conditions. On the appearance of symptoms of an attack, stop food and thoroughly clean out the digestive tract with castor oil, and give repeated doses of sodium bicarbonate.

DISCUSSION

Dr. F. P. Underhill, New Haven: There is little doubt that the symptoms described by Dr. Murphy are dependent on defective nervous control. It is well-known that a child is much more easily put into a condition of defective nervous regulation than is an adult. Excessive putrefaction in the intestine may serve as a stimulus in these neurotic and under-nourished subjects. I do not think that the presence of diacetic acid in the urine in these cases should be over-emphasized. Acetone bodies probably arise within the body as the result of the incomplete combustion of fats. I believe that diacetic acid is neither the cause nor the direct result of the pathologic condition under discussion; indeed, I should ascribe the presence of this substance in the urine to the condition that accompanies the abnormal manifestation, *viz.*: the undernutrition, in which it may be easily demonstrated that diacetic acid is always present. Young children are thrown into a condition of acidosis with extreme ease; and a moderate degree of acidosis, especially in children, should not be regarded as a grave symptom.

Dr. C. A. Goodrich, Hartford: We should also bear in mind certain intestinal disorders in children in which there is, besides cyclic vomiting and convulsions, a certain nervous phenomenon resembling the beginning of diabetic coma in adults. These cases should be included in considering this matter. Inasmuch as in a good many cases the diet apparently does not influence the attacks, these children become increasingly subject to malnutrition. The suggestion of such a simple clinical test as a considerable aid in certain of these intestinal disturbances, and also the point of considering the patients' well-being between these attacks, are of great value.

The Relative Value of Symptoms, Physical Signs, Tuberculin and the X-Ray in Diagnosis of Tuberculosis

Dr. H. F. Stoll, Hartford: In tuberculin we have a diagnostic aid of accepted value, if used in conjunction with the symptoms and physical signs. The x ray is of a great deal of assistance in the diagnosis of pulmonary conditions. The negative must not only be perfect, but the interpretation thereof is of value only when made by one who has had a large experience in this particular field; as it is the most difficult of all x ray work. Incipient cases that have been carefully examined come to post mortem but rarely; and much more can be learned by a comparison of the physical signs and the x ray findings in a series of early cases than by the autopsies of advanced cases. There is no better way to ascertain one's diagnostic ability or limitations than to compare the physical signs in one's cases with the x ray plate. In deep-seated lesions, especially of the lower two thirds of the lung, the x ray will sometimes demonstrate a lesion that does not give physical signs. When the involvement is slight, it may be necessary to make several plates before a diagnosis can be given. If we are to detect incipient tuberculosis, we must inspect, palpate, percuss and auscultate our patients. We must also question them at length. An incomplete examination gives the patient an unwarranted sense of security.

DISCUSSION

Dr. W. B. Bartlett, Hartford: There is a great difference between clinical tuberculosis and anatomical tuberculosis. The relative value of symptoms, physical signs, tuberculin, and the x-ray is very different in the two forms of the disease. It is, however, with the diagnosis of clinical tuberculosis that we are concerned. Physical signs, tuberculin, and the x-ray, if without symptoms, may all three be disregarded; with symptoms, the diagnosis of tuberculosis may be made, even though signs, the x-ray, and the tuberculin test are negative. When obtainable, the history of exposure to infection from some tuberculous relative or friend is important. It is surprising, however, how seldom such a history can be obtained. The importance of malaria in the past history should be emphasized. Among symptoms, pain is very important. I should like to add to Dr. Stoll's statement that râles at the apex may be due to other causes, the statement that râles at the base most frequently are due to other causes. A positive tuberculin reaction does not mean clinical tuberculosis. Notwithstanding the many new and simple tests with tuberculin that have been introduced, we are gradually coming back to a dependence on the subcutaneous method as the most reliable; and even this may occasionally be at fault.

Dr. D. R. Lyman, Wallingford: Dr. Stoll's comparison of the relative value of these four means of diagnosis shows that not one of them is of such supreme value that we can afford to leave everything else out of consideration. About the only thing that he did not mention was the constant occurrence of little localized dry pleurisies in the chest in these cases. Tuberculin is one of the most powerful poisons that we have. I have never seen ill effects from its subcutaneous use in small doses. I do not, however, think it necessary to employ it if the diagnosis can be made without it and the patient is willing to accept one's opinion and act on it. I have never felt like using the eye test, when I could use the subcutaneous test, which is free from danger. I do not think that there is any question that an expert can discover with the x-ray deep-seated lesions that an ordinary person would miss.

Dr. F. S. Crossfield, Hartford: On behalf of the laryngologist, I would say that in the early stages of pulmonary tuberculosis there are no absolutely pathognomonic symptoms in the larynx.

Dr. J. B. Griggs, Hartford: While the positive tuberculin test is not valuable, the negative test is. The negative test is particularly valuable in adults, while the positive test is of value in children.

Dr. Stoll: As I said in my paper, if the tuberculin test is negative, the possibility of the presence of tuberculosis is very slight; but it does not exclude the disease. Long before the stethoscope was invented, and purely and solely by means of the symptoms, physicians diagnosed tuberculosis. After a careful history has been obtained, it is unusual to have the physical signs not agree with the diagnosis made from the history and the symptoms.

AMERICAN PROCTOLOGIC SOCIETY

Twelfth Annual Meeting, held at St. Louis, June 6-7, 1910

The President, Dr. Dwight H. Murray, Syracuse, N. Y., in the Chair

Officers Elected

The following officers were elected for the ensuing year: President, Dr. George J. Cook, Indianapolis; vice-president, Dr. Jerome M. Lynch, New York City; secretary-treasurer, Dr. Lewis H. Adler, Jr., Philadelphia; executive council, Drs. Dwight H. Murray, Syracuse, N. Y., chairman; George J. Cook, Indianapolis, Louis J. Hirschman, Detroit, Mich.; Lewis H. Adler, Jr., Philadelphia.

The meeting in 1911 will be held at Los Angeles, Cal.

Undergraduate Proctology

Dr. Dwight H. Murray, Syracuse, N. Y.: One of the most important duties of this society is an educational one. With the increasing appreciation and demand for this kind of special work, the colleges should take up the subject in a manner in which its importance demands. Proctologic teaching in colleges should be done by men learned in the specialty and not by general surgeons. The time given to the specialties should be shared in a proper way with proctology, which would not detract from the importance of the older specialty but would recognize the importance of proctology. At the same time this would put the young graduate in possession of knowledge that would not only be of great value to him but of far greater value to his patients. There are certain common and important diseases in every specialty that the young physician is sure to meet and ought to be able to recognize.

Malformations of the Anus and Rectum

Dr. Alois B. Graham, Indianapolis: Congenital malformations demand prompt surgical treatment. Many cases are never reported and the percentage is evidently much larger than statistics indicate. These malformations are sufficiently uncommon and interesting to warrant placing every case on record. I wish to report four cases. 1. No trace of anus or rectum. Colostomy suggested but refused. Child died four days later. Autopsy refused. 2. Complete obstruction of the anus by a membranous diaphragm, which was perforated by the attending physician. Examination revealed a dense stricture, almost impermeable, involving the entire anal canal. The interesting point was the presence of a hypospadias through which feces had escaped for two years. The communication between the rectum and urethra was the result of ulcerations above the stricture rather than defective embryologic development. Surgical treatment was refused. 3. A well-formed anus and a protruding or bulging imperforate rectum. Posteriorly, the rectum had no attachments, and the finger could be introduced easily behind the bulging imperforate gut, through the anal canal, into a blind pouch. A fistulous opening was found in the vagina just behind the hymen. The meconium and a small quantity of feces had escaped through this opening. The protruding rectal mucosa was dissected from its attachments and excised. The rectal mucosa was then sutured to the free skin at the anal margin, except for one-eighth of an inch posteriorly. This was used for drainage in case the blind pouch became infected. This patient made a good recovery. 4. Imperforate urethra and no trace of anus. Penis and scrotum were well developed, but neither testicle could be palpated. Careful dissection and exploration failed to find any trace of a rectum. At autopsy no bladder was found. While the local examination revealed a male child, with the exception of being able to palpate the testicles, the examination of the specimen removed at autopsy reveals marked evidence of the female generative organs. This child was a transverse hermaphrodite—namely, one in whom the external genitals seem to be of one sex and the internal of the other. Report of examination of specimen states that the pouch-like termination of the intestine is formed of three organs, namely, the bladder, uterus and rectum.

Atony of the Rectum

Dr. William M. Beach, Pittsburg, Pa.: Factors contributing to atony are (a) traumatism to the perineal body; (b) disease in the anal canal; (c) enteroptosis secondary to general systemic conditions or local anatomic anomalies; (d) the abuse of injections and drastic catharsis; (e) disease in adjacent organs, as prolapsed uterus, adhesions, neoplasms, appendicitis, prostatitis, circulatory disturbance as engorged portal vessels and primary gastric diseases; (f) atony may be the sequel to lues or senility. The treatment is that of constipation, being guided by the cause. Alterative, dietetic and mechanical agencies are to be invoked.

Villous Tumor of the Rectum

Dr. T. Chittenden Hill, Boston: The chief point of interest about these tumors is that a certain percentage of them show a marked tendency to undergo malignant degeneration. I believe that if there is a distinct pedicle without infiltration of the adjacent mucous membrane, tumors of this type are generally benign and if completely removed by ligation, or otherwise, there is but little likelihood of their recurring. On the other hand, if the base is broad, whether there be induration or not, a total extirpation of the rectum should be advised.

Another point of some interest borne out by a study of reported cases is that the longer the condition has existed the less likely is it that the growth will prove malignant. In a case operated on by me over three years have elapsed since the operation and as yet there is no sign of recurrence.

Significance of Rectal Hemorrhage

Dr. Louis J. Krouse, Cincinnati: Rectal hemorrhage must not be considered conclusive of the existence of piles. Many other diseases besides piles are accompanied with bleeding. Every patient is entitled to a thorough examination, and physicians are in duty bound to use all the means at their command to accomplish it. Earlier recognition of malignancy would add materially to the future welfare of the patient which can be obtained by surgical measures, and it therefore behooves the general practitioner to be on his guard and examine carefully every case of bleeding so as to detect malignancy in its incipient stage.

Ano-Rectal Affections of Infancy and Childhood

Dr. A. J. Zobel, San Francisco: From the first hour after birth the ano-rectal region is of vast importance. At that time malformations may be determined and proper relief promptly afforded. Some of these abnormalities pass unnoticed throughout a long life but others are the source of great discomfort and distress. While hemorrhoids are common in adults the possibility of their presence in the young is rarely considered. Malignant growths of the rectum while rare are occasionally met with. Benign growths are more common. Adenoma is the most frequent of these. They are often diagnosed as internal hemorrhoids, and like them, may become strangulated. Fissure of the anus is present more often than it is usually diagnosed. Pruritus ani is a very frequent source of great discomfort and torment to the little ones. It is very rarely suspected or diagnosed and it accounts for much of that peevishness in these little ones for which no cause can usually be assigned. I have found superficial lesions of the anal mucous membrane in these cases, and the symptoms disappeared when local treatment was instituted. Fistulo in ano is met with occasionally in children and even in nurslings. While it may be tuberculous it may also be of a congenital nature. Ischio-rectal abscesses are met with even in early infancy. When incised they rarely end in fistulæ. Prolapse of the mucous membrane of the anus and rectum is a common condition during the second and third years of life.

The Tuberculin Reaction in Cases of Perirectal Infection

Dr. Collier F. Martin, Philadelphia: I was so impressed with the frequent coincidence of pulmonary tuberculosis and perirectal infections that I began a series of tests and examinations to determine their relation. I used the Moro tuberculin reaction, combined with physical and bacteriologic examination. In 36 cases I got the following results: Group 1. Rectal pyogenic infections, including here fistulæ, abscesses, and deep rectal ulcerations. There were 20 positive reactions out of 21 cases. The negative case was one profoundly tuberculous. Group 2. Non pyogenic rectal cases. There were 11 cases, including hemorrhoids, fissure, and catarrhal proctitis, with three positive tuberculin reactions. This he holds, is probably the ratio of tuberculosis in this class of cases. One negative case in this group was intensely tubercular, with extensive lung lesions evident, and with abundant tubercle bacilli in the sputum.

A Unique Case of Laceration of the Sphincter Ani

Dr. A. B. Cooke, Nashville, Tenn.: Feb. 26, 1910, a boy, seven years old, gave the following history: About noon on the day named the boy, who lived on a farm, went out behind the corn-crib to attend to a call of Nature. While engaged in the act, a pet dog, a hound of middle size, came up from the rear and mounting him affected entrance into the anus and became accoupled. The boy's outcries quickly brought his mother on the scene. The dog had reversed his position and was in the same relation to the boy as is ordinarily assumed in the natural act with a bitch. The mother's excitement was naturally marked and in her frantic efforts to disentangle the two she used considerable violence and finally succeeded in separating the dog. Traction on the anus showed that several internal lacerations of considerable extent were present. Under general anesthesia the deepest of these was found to be in the middle line posteriorly, extending from a point two inches up the rectum through the sphincter muscles, and out on the skin surface for a distance of approximately one inch. The external sphincter was torn in two places at this site, one tear being complete, and the other partial. Anteriorly there was a second laceration, into but not through the fibers of the sphincter. In addition there was a number of minor tears in the anal margin involving the superficial tissue only. Fourteen interrupted cat-gut sutures were used in repairing the posterior laceration, and four in the anterior one. The others did not require suturing. The result was entirely satisfactory. Union was prompt and complete and the patient returned home in two weeks with perfect sphincter control.

Incontinence Following Rectal Operations

Dr. George B. Evans, Dayton, Ohio: Evidently the only true sphincter ani is the external—the internal sphincter ani is not subject to volition—and its sphincteric influence must be largely due to the support afforded it by the practically amalgamated muscles which form the floor of the pelvis and whose main function is the support of the hollow viscera of the pelvic cavity. Would it, therefore, be illogical, to believe that the internal sphincter is not, neither can it be made by any surgical procedure an efficient voluntary constrictor? Certainly it is true that efficient and satisfactory sphincteric function is dependent on normal support of the bowel by a normal muscular floor, with a normal interdependent power of sphincter muscles, hence any trauma which interferes with muscular function disables proportionately to the extent of the injury. That incontinence does follow division of the external sphincter, that incontinence does follow division of the internal sphincter, is not denied and when their division becomes a necessity the best way, if there is one, of making the incision should be chosen. Considering the anatomic conformation of the perineum, the mutual dependence of perfect function, I would admonish those engaged in rectal surgery to not forget that indifferent and multiple injuries (even surgical injuries) should not be indulged in, for fear of a result that would prove more painful and unendurable than the condition which indicated operative interference. I believe that incontinence can be obviated by relieving the tension of the fibers of the levator ani muscle at their attachment to the external sphincter, or both the external and the internal sphincter by nicking the fibers of said muscles on either side of the fistulous tract and thus permitting an incision of the muscle at right angles to the same.

Ulceration of the Rectum in Pregnant Women and the Part It Plays As a Factor in Abortions

Dr. Louis Straus, St. Louis: I have operated twenty-four times for the relief of irritable ulcer of the rectum in pregnant women. Not all of these operations were made to prevent abortion. In fact only fourteen had had one or more abortions. That leaves ten for whom the operation was made to relieve the distressing pain from which these patients suffer.

Case of Post-Operative Delirium

Dr. Samuel T. Earle, Baltimore: The minor character of the operation preceding the attack in the present case makes it more interesting, which is doubtless accounted for by the age of the patient. A. T., aged 78, had suffered with hemorrhoids since before the Civil War, but had persistently determined not to be operated on. Early in May, 1910, they became thrombosed and inflamed, at which time he consented to an operation. The usual hypodermic of 1/6 of a grain of morphin, atropin 1/120 and strychnin sulphate 1/30 was administered prior to the anesthetic. Fearing the effect of ether or chloroform, on account of his age, it was decided to administer a mixture of nitrous oxid gas and oxygen. This mixture did not keep him thoroughly anesthetized, consequently the operation was not completed as quickly as usual and as a result there was more blood lost, which did not exceed two or three ounces. The operation was completed, he regained consciousness in a few minutes but almost immediately became very excited and delirious. Thinking this might be due to pain, 1/4 of a grain of morphin was given at the end of two hours from the time he received the first hypodermic; a third dose was given three hours following the second dose. The patient continued very delirious during the night and for three days following. The second and third nights we were able to quiet him for a few hours by hyocin hydrobromid, grain 1/50, and morphin, grain 1/6, administered hypodermically. For the remainder of the first week, the hyocin hydrobromid, grain 1/50, was sufficient to give him a quiet night, but the delirium continued for one week from the time of the operation, but not nearly so active as during the first few days and with some lucid intervals. His temperature did not exceed 99.5 F. the first three days but on the fourth day it reached 100.5 and again on the seventh day, for a short time without any apparent cause, otherwise the patient made an excellent recovery, and was able to be about the house in about ten days after the operation.

Appendicostomy: A Consideration of the Preservation of the Blood-Supply of the Appendix in the Technic of the Operation

Dr. Frank C. Yeomans, New York City: The method here advocated and in practice found successful preserves the arteries intact and consequently the vitality of the entire appendix. It is accomplished by separating the two layers of the mesentery at its juncture with the posterior mural peritoneum, beginning at its free border, and carefully displacing the cellular tissue with its contained appendicular artery and branches, as far as necessary toward the appendix. The two layers of peritoneum are then divided transversely to the base of the appendix, turned in and sewed, to obliterate the raw space on the posterior abdominal wall. Experience teaches that it is unnecessary to test the patency of the appendix, until the wound has healed, i. e., in 4 or 5 days. Further precautions are not to obliterate any arteries by forceps, ligatures, sutures, torsion or tension in fixing the appendix in a position where it does not rest naturally, or by closing the wound too snugly about it.

By following this technic, the operation is without mortality and post-operative leakage of feces and hernia—the two troublesome sequelæ of appendicostomy, are avoided. Appendicostomy should continue to grow in favor over cecostomy in all cases where prolonged irrigation of the colon is indicated.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

July 16

1 *Throat Symptoms in General Diseases. H. L. Swain, New Haven, Conn.
2 Surgical Aspects of Gastric Ulcer. P. Syms, New York.
3 *Tension of the Eyeball. D. K. Shute, Washington, D. C.
4 M[illegible], Addison's Disease, and Pulmonary Tuberculosis. I. N. Kahn, New York.
5 Anesthesia of the External Auditory Canal and of the Membrana Tympani with Ethyl Chlorid Spray. C. J. Koenig, Paris, France.
6 Tuberculosis of the Larynx. H. Parrish, Philadelphia.
7 The Value of Test Meals. J. R. Verbrycke, Washington, D. C.
8 Twelve Points in the Diagnosis and Treatment of Appendicitis. M. [illegible], Baltimore, Md.

1. **Throat Symptoms in General Diseases.**—In this paper Swain limits himself almost entirely to the discussion of the throat symptoms of syphilis. Speaking of the treatment, he says that if it is sure the lesion is syphilitic, the bichlorid

solutions may be used, 1 to 200 or 1 to 250 being caustic to mucous membranes, can be applied and will cause the ulcer to heal up with rapidity, especially if one is giving the proper treatment internally. By chance he once applied a 10 per cent. zinc chlorid solution to a Vincent's ulceration and it healed up so promptly that he has used it ever since, to the exclusion of other remedies. He generally cleans the ulceration out with full strength peroxid and then applies the 10 per cent. solution of zinc chlorid very thoroughly to every accessible spot. The patient, of course, is made to gargle weak peroxid solutions following it with one or another form of alkaline gargle. Nothing seems so good for canker sores as pure stick of silver nitrate. For shrinking up the gums or the relaxed mucous membranes which follow the healing of ulcerations, old-fashioned tincture of myrrh still holds a strong place in Swain's affections. Glycerite of tannin helps many a stomatitis in its final healing. For a bland application to irritated areas not ulcerated a solution of boroglycerid deserves confidence. Concerning the care of gross syphilitic defects as they appear in the hard and soft palate, it must, of course, be a cardinal rule to get the greatest possible effect from the antisyphilitic medication in the shortest time possible, so as to limit defects. In the case of bone death, let the dead be separated from the living by natural processes, for surgery generally botches the job and rarely hurries the final healing. Caustics rarely do good and often do harm to tertiary lesions. In the case of the pharynx and palate too great care cannot be used to prevent the inevitable contraction of scar tissue with obliteration more or less complete of the opening down into the nasopharynx and below into the esophagus.

3. **Torsion of the Eyeball.**—Shute says that three very distinct and separate portions of the cornea are to be noted, viz.: (1) The apex of the cornea; (2) the horizontal meridian of the cornea and its outer or temporal extremity; and (3) the vertical meridian of the cornea and its upper extremity as observed in the primary position of the eyes. The position of the apex of the cornea at the end of a version of the eye is ascertained in reference to rotations around two fixed lines in Listing's plane—a vertical and horizontal axis. Rotations about the vertical and transverse axes in this plane can be compounded into rotations about any intermediate axis. The amount and character of the deviation of the apex of the cornea are noted in reference to the point of intersection of the fixed vertical and horizontal lines in Listing's plane; in other words, in reference to the location of the apex of the cornea in the primary position of the eye.

The amount and character of the virtual torsion of the eye are ascertained by noting the tilt, one way or the other, of the upper end of the vertical plane through the whole length of the line of fixation, and by regarding the eye along the line of fixation and not by regarding the eye along a fixed anteroposterior axis perpendicular to Listing's plane. Further, we must rigidly distinguish between actual rotations or versions around axes in Listing's plane, and virtual rotations or torsions around the line of fixation of the eye.

Boston Medical and Surgical Journal

July 14

9 *The Occurrence of Infantile Paralysis in Massachusetts in 1909. R. W. Lovett, Boston.
10 Bilious Attacks in Children. P. S. Potter, North Adams, Mass.
11 Etiology of Common Colds. A. Coolidge, Boston.

9. **Infantile Paralysis in Massachusetts.**—This is a most exhaustive study of infantile paralysis and for full details the original article by Lovett should be consulted. There are 354 cities and towns in Massachusetts, in 136 of which there occurred cases of infantile paralysis in 1909. The incidence ran from 526 per 100,000 inhabitants to 15 in 100,000. In 1909 the disease was relatively much more prevalent in small towns than in the cities and larger towns.

The last six years have been very dry. In 1907 there was practically a normal rainfall and 234 cases in the state. In 1908, a very dry year with 7 inches deficiency of rainfall, there were few cases, 136. In 1909, with more rain (3 inches deficiency) there were 923 cases. In Massachusetts the prevalence of the disease by the year has not, therefore, been coincident with deficiency of rainfall.

The 150 cases of [illegible] studied occurred in 142 families. The total number of children under 15 in these 142 families was 47[illegible]. [illegible] any cause in these families [illegible] with the presence of paralysis [illegible] 157 [illegible]. Of the 157 children, 149 were paralyzed; of the 12 [illegible] 8 was paralyzed. This leaves 19 cases of [illegible] followed by [illegible] which are to be [illegible] abortive cases of the disease. [illegible] the [illegible] houses it is evident that [illegible] houses. Yet the [illegible] Dorchester [illegible] active and [illegible]. It [illegible] the average age of [illegible] than that of the houses of [illegible] as a whole. The disease in many respects [illegible]. Among 142 families, 134 [illegible]. The [illegible] among domestic animals and fowls has been found to [illegible] with outbreaks of [illegible] in [illegible] instances reported. In [illegible] of 87 [illegible] animals, sickness [illegible] appeared in these animals about the time of the paralysis in human beings.

The relation of the disease to rabies was investigated [illegible] in three of the towns [illegible] studied epidemics had occurred in the past, but no [illegible] of rabies in 1909 had any relation to these 150 cases of paralysis, and no one of the 150 paralyzed children had in the past received the Pasteur treatment. With regard to evidence of communicability, instances of direct contagion from child to child occurred with an incubation period of 1 to 14 days. In [illegible] instances in the 150 cases the disease followed intimate contact with persons with old infantile paralysis, often of many years' standing. Instances of what would appear to have been contagion occurred in [illegible] out of 150 cases. Forty-five institutions were investigated where 3,000 young children lived. Only one child of the 3,000 developed the disease and this was under remarkable conditions. Out of 150 patients, 62 were swimming or wading just before onset. No child living on breast milk alone of the 150 carefully studied was affected by the disease. Possible favoring conditions preceding or attending infection were: insect bites or stings, 35; wounds, 13; sore throat, 42; diarrhea, [illegible]; otitis media, 2; coryza, 1; measles, 1; pin worm, 1; bronchitis, 1. Ninety-three had one or more of the above possible sources of infection; and 57 had no such history. Three hundred and sixty-three males and [illegible] females were affected. Only 7 per cent. of the cases occurred in the first year of life, but 71 per cent. occurred in the first 5 years and 87 per cent. in the first ten years.

In 147 cases the early symptoms were fever, [illegible]; pain, [illegible]; tenderness, 108; vomiting, 67; constipation, 72; retraction of head, 60; drowsiness, [illegible]; [illegible], 33; delirium, 15; anorexia, 15; irritability, 24; [illegible] and restlessness, 11; [illegible], 3; nausea, 18; convulsions, 4; twitchings, 3; cough, 8; dyspnea, 4; sore throat, 8; [illegible], 3; chills, 2; weakness, 1; [illegible], 2; abdominal distention, 7; pain in abdomen, 1; [illegible]; vertigo, 2; double vision, 2; difficulty or inability to swallow, 1; difficulty in articulation, 2; gastro-intestinal [illegible]; diaphragmatic breathing, 1; coryza, 1.

Six patients had skin eruptions: 1 [illegible] measles and [illegible], 1 whooping cough, 1 [illegible].

Distribution of paralysis was as follows: [illegible]; both legs only, [illegible]; one arm only, 32; both arms only, [illegible]; one arm and leg, same side, 57; one arm and leg, opposite sides, 17; both legs and one arm, 18; both arms and one leg, 6; both arms and both legs, [illegible]; one-sided, [illegible]; back, [illegible]; abdomen, 37; face, 8; [illegible].

What appears to be [illegible] paralysis occurs more [illegible] than is generally supposed. [illegible] per cent. of such cases [illegible] investigation of the recoveries in 150 cases. [illegible] these had wholly recovered. The [illegible] of the attack was mild in 6, moderate in 17, [illegible] in 2. Pain and tenderness in the [illegible] existed in 19 out of 25 recovered cases.

The statement may therefore be made that in the whole group of 628 cases 10.8 per cent. of the patients were reported as [illegible] [illegible] that in the smaller group of 150 cases, 16.7 per cent. of the patients are known to have recovered, and that a study of character of onset, distribution and tenderness in these cases gives no means of distinguishing them from other cases at the time of the attack.

Medical Record, New York

July 16

12 The Psychoneuroses: An Interpretation. J. Collins, New York.
13 *Duodenal Alimentation. M. Einhorn, New York.
14 Treatment of Suppurative Diseases of the Nasal Accessory Sinuses. A. Braun, New York.
15 Drainage and Dressing of Wounds in Minor Surgery. A. E. [illegible], New York.
16 *Fistula in Ano: Excision and Suture. C. Beck, New York.
17 A [illegible] Manometer. N. Fedde, New York.

13. **Duodenal Alimentation.**—Einhorn cites three examples of successful feeding of patients who were unable to take nourishment on account of vomiting by means of the duodenal tube and pump. Milk and eggs were the main food materials forced through the very small tube. None of the three patients fed by him lost appreciable weight, they felt well, and the feeling of hunger was satisfied, while without food they felt tired and weak.

16. **Fistula in Ano.**—To the usual splitting open of the fistula Beck adds the dissection of the scar tissue that has formed along the track of the fistula, and which prevents healing. The wound is then carefully sutured in its entirety, and the bowels kept from moving for four days.

Lancet-Clinic, Cincinnati

July 9

18 The Use of Quinin and Urea Hydrochlorid as a Local Anesthetic in Ano-rectal Surgery. L. J. Hirschmann, Detroit.
19 The Indications for and Usefulness of Some Diagnostic Methods for Diseases of the Digestive System. J. H. Schroeder, Cincinnati.
20 Goiter. W. D. Hamilton, Columbus, Ohio.

Pennsylvania Medical Journal, Athens

June

21 *History of the Progress Made in the Control of Communicable Diseases. A. B. Moulton, Camp Hill.
22 *The Rôle of Microzoa in the Causation and Transmission of Disease. J. McFarland, Philadelphia.
23 *Some Etiologic Factors in Scarlet Fever. J. F. Schamberg, Philadelphia.
24 Preventive Measures When Disease is Due to Drinking Water. M. A. Earl, Warren.
25 *Preventive Measures When the Disease is Transmitted by Food Supplies. M. B. Ahlborn, Wilkes-Barre.
26 *Preventive Measures Against Infectious Diseases. A. J. Smith, Philadelphia.
27 *What Shall we do About Trachoma? C. P. Franklin, Philadelphia.
28 *Isolation and Quarantine in Management of Communicable Diseases. W. M. Welch, Philadelphia.
29 Disinfection. J. J. Quiney, Easton.
30 Vocal Gymnastics: The Field of Their Usefulness. W. B. Weidler, New York.
31 Brain Abscess: Operation. B. M. Dickinson and T. Diller, Pittsburg.
32 The Principles of Anesthesis. E. B. Smith, Philadelphia.

21. Abstracted in The Journal, Oct. 16, 1909, p. 1323.

22, 23, 25, 26, 27, 28. Abstracted in The Journal, Oct. 23, 1909, pp. 1423, 1424.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

July

33 *Uterine and Vesical Prolapse. C. Jewett, Brooklyn.
34 *Uterine and Bladder Prolapse. J. M. Baldy, Philadelphia.
35 *Genital Prolapse: Its Operative Correction Based on a New Study of Cleavage Lines and Sliding Segments. R. L. Dickinson, Brooklyn.
36 Intramural Sequestration and Fixation of the Corpus and Fundus Uteri for the Cure of Procidentia Uteri Existing in Women with Whom Further Pregnancy is not Possible. F. A. Harris, Paterson, N. J.
37 Contributions to Medical and Surgical Literature by George Granville Bantock, M.D., Formerly Surgeon to the Samaritan Free Hospital, London, England. I. S. Stone, Washington, D. C.
38 Varicocele in the Female. G. Hofmann, Kansas City, Mo.
39 *Heart Diseases in Pregnancy and the Puerperium. J. F. Moran, Washington, D. C.
40 Friedreich's Ataxia. E. L. Hunt, New York.
41 The Exceptionally Bright Child. M. P. E. Groszmann, Plainfield, N. J.
42 Differences Between Anatomic, Physiologic, Psychologic and Chronologic Age as Causes of Derailment. C. W. Crampton, New York.
43 Ethnic Factors in Education. M. Fishberg, New York.
44 Congenital Hypertrophic Pyloric Stenosis. G. L. Kaufmann, Chicago.
45 Treatment of Cervical Tuberculous Adenitis at the Sea Breeze Hospital. L. W. Ely, New York.

33. **Uterine and Vesical Prolapse.**—Jewett holds that practically all operable cases may be grouped in three principal classes: 1. uncomplicated uterine or vesical prolapse; 2. extreme prolapse of uterus and bladder; 3. cases between these extremes. Simple cystocele may be treated by any procedure which contemplates a firm reattachment of the lower end of the anterior vaginal wall to the fibrous structures at the posterior face of the pubic bones on either side of the urethra, supplemented by a close perineoplasty and a resection, if needed, of the redundant fascia. These principles are embodied in the first operation. Satisfactory perineal support is assured only by one of the various procedures which overcome the diastasis of the levators, essentially the pubo-coccygei, good examples of which are Goffe's, Barrett's and the Holden operation. Beginning descensus of the uterus may be corrected by a close and high colpoperineorrhaphy, together with one of the round ligament operations. In more marked descensus, amputation of the cervix should be added. Shortening the uterosacral ligaments, though sound in theory, is difficult work and the results are not in all cases wholly satisfactory. The operation of White may serve in moderate visceral prolapse.

An operation formerly practiced by Watkins is not wholly unlike that of White. In extensive prolapse of the uterus and bladder, hysterectomy, when practicable, offers the best results. The broad ligament stumps are securely sutured to denuded surfaces at the lateral angles at the upper end of the vagina or they are shortened, sutured firmly together, and the bladder and vaginal walls fixed to the transverse beam thus formed. In either procedure effective suspension of the vagina may be further assured by utilizing the round and the uterosacral ligaments as well. A thorough perineoplasty also is, of course, essential. With this technic his results have invariably been good.

Cases intermediate between the foregoing extremes Jewett has treated by the interposition operation. In this procedure the uterus for most of its length becomes a constituent part of the pelvic floor. The cervix is lifted toward the sacral hollow by torsion of the broad ligaments, the slack in the anterior vaginal wall is taken up in part or fully by backward traction, the lower or anterior end of the wall is drawn up by the upward pull of the fundus, and the prolapsed portion of the bladder is displaced upward over the fundus of the uterus. These ends, in Jewett's experience, have been fully attained only when the vaginal wall has been sutured to the uterus nearly or quite to the level of the round ligaments. With the technic at its best, the immediate mechanical result leaves little to be desired. The mechanics of Goffe's very definite technic amounts in effect to a vesicovaginal interposition of the uterus. Goffe's operation must be credited with the advantage that it brings about a more nearly normal relation of the pelvic viscera and a safer condition of affairs in the event of subsequent pregnancy. With the Alexandroff-Dudley operation, though ideal in principle, and with that of Reynold's, Jewett has had no very satisfactory experience; with the Freund-Fritsch technic, with Polk's recent proposal, and with cystohysteropexy, espoused by Dickinson, none at all.

34. **Uterine and Bladder Prolapse.**—Baldy emphasizes that no one procedure, or series of procedures, will answer in all cases. The injuries are multiple and the relaxations and stretching of tissues varied, and the successful operator will be he who having first appreciated all the underlying causes and difficulties will not try to return the parts to their original minute anatomic positions, but will do away with hair splitting and adapt himself to the conditions as they face him in each case and will work for a result no matter what the technical criticism of the steps may be. Nature is a great adaptor, and if we will get the organs in their relatively proper positions and hold them there, it matters little whether there are a few folds more or less in the bladder, whether the bladder is a bit encroached on, whether certain ligaments are put

out of business, whether there be a true fascia in the vaginal vault or not. Nature will soon get used to the changed condition, and all rough edges which have not been too nicely trimmed up (with consequent unnecessary prolongation of operation), all irritability of the bladder, all faulty ligaments will be found subsequently to be a thing of the past and the patient enjoying good health and comfort.

38. **Genital Prolapse.** From the point of view either of pathologic anatomy or surgery the frozen sections showed Dickinson the importance of recognizing certain cleavage planes in the pelvic diaphragm, and intervening segments that slide. The cleavage runs 1, postpubic close to the bones; 2, in the urethrovaginal septum; 3, in the rectovaginal septum; and 4, along the anorectal canal. If the urethral segment falls any considerable distance, only ventral fixation at the rear or top of the pubes will hold the upper urethra and anterior bladder-wall. The second segment (vagina bladder base, cervix) is the common hernial mass. A convenient nomenclature would be intravaginal cystocele, protruding beyond the hymen on straining, and complete extrusion, bladder, cervix, uterus, one or all. For the worst cases, the writer employs ventral fixation of the bladder, whether vaginal hysterectomy is done or not. The retroanal segment, when very badly prolapsed, particularly in the presence of protrusion of the uterorectal pouch, may call for sigmoid fixation, and the wide open, bony outlet of the pelvis may present no tissue out of which a diaphragm can be built, so that flaps from the buttocks may be required.

39. **Heart Diseases in Pregnancy.**—Moran believes that it is quite possible that varying degree of temporary dilatation of the heart take place in pregnancy similar to that which occurs after great exertion, so that the cardiac mechanism is capable of maintaining the circulatory equilibrium without undergoing appreciable hypertrophy or increasing markedly the blood-pressure.

Normal pregnancy does not predispose to the development of inflammatory or degenerative changes in the heart muscle or endometrium, nor is the pulse rate or tension markedly altered. Systolic heart murmurs heard at times in pregnant women are not due to organic lesions, but are identical with those observed in chlorotic and anemic patients, or produced by slight compression of the heart. Anomalies in pulse-rate, as arrhythmia or tachycardia, are as a rule only nervous manifestations. Moran recently delivered two women who had inorganic heart murmurs with disturbance of rhythm; both were of very nervous temperament and anemic. He has had seven cases of heart disease complicating pregnancy and the puerperium, 5 of which were seen in consultation. One had good compensation; another fair; in four it was bad, and in one there was acute dilatation of the heart in a case of typhoid complicating the puerperium. Two of the mothers died; all of the infants lived. The infrequency of heart disease during pregnancy, like toxemia and placenta prævia, emphasizes the importance of a thorough physical examination of the patient and constant supervision during pregnancy in order that the complications may be promptly detected and such measures undertaken in the interest of the mother and infant as the exigencies of the case may determine.

Texas State Journal of Medicine, Fort Worth

June

46 The Narcotic Drug Addictions, Etiologic Factors; Reasons for Past Failures; Principles Involved in Treatment. G. T. Pettey, Memphis.
47 The Old and the New State Association. W. B. Russ, San Antonio.

Annals of Surgery, Philadelphia

June

48 The Neuropathologic Cytology of Anemia, Infections, Graves' Disease and Surgical Shock. G. W. Crile, Cleveland, Ohio.
49 *Therapy by Bacterins and Tuberculins in Mixed Suppurative Bone and Joint Disease. DeF. Willard and B. A. Thomas, Philadelphia.
50 *Etiology of Cancer Based on Clinical Statistics. I. Levin, New York.
51 *Simulation of Neoplasms by Inflammatory Processes. C. A. Hamann, Cleveland.
52 *Prognosis and Operative Treatment of Fracture of Skull. J. Ransohoff, Cincinnati.
53 *Diagnosis and Surgical Treatment of Esophageal Diverticula. C. H. Mayo, Rochester, Minn.
54 *Resection of the Pancreas. J. M. T. Finney, Baltimore.
55 *Hepaticoduodenal Anastomosis. G. E. Brewer, New York.
56 Wandering Spleen. A. MacLaren, St. Paul.
57 Separation of the Colon from Its Mesentery. [illegible], Cleveland, Ohio.
58 *Congestion of the Lower [illegible] of the Right Lung as [illegible] Symptom in Appendicitis. [illegible], Philadelphia.
59 *Removal of the R[illegible] for Cancer. W. J. Mayo, Rochester, Minn.
60 *Chorioncarcinoma. A. [illegible].
61 Momburg's Method of [illegible] by [illegible] Constriction. A. G. [illegible].
62 Old Irreducible [illegible] of the [illegible] Joint. A. F. Jonas, Omaha.
63 Operations on the Ap[illegible]. C. A. McWilliams, New York.

[illegible]

64 Operations on the Hypophysis. F. [illegible], Austria.
65 Tumor of the Hypophysis [illegible] Infantilism. S. J. [illegible] and A. Quackenboss, Boston.
66 *Intratracheal Insufflation (Meltzer); Its Value in Thoracic Surgery. C. A. Elsberg, New York.
67 *First Case of Thoracotomy in a Human Being Under Anesthesia by Intratracheal Insufflation. H. Lilienthal, New York.
68 Thoracic Surgery on Human Beings. W. Meyer, New York.
69 Artificial Respiration and Intrathoracic Esophageal Surgery. N. W. Green and H. H. Janeway, New York.
70 *Cancer of the Esophagus and Cardia. H. H. Janeway and N. W. Green, New York.
71 Experimental Surgery of the Thoracic Aorta and Heart. A. Carrel, New York.
72 *Treatment of Wounds of the Heart. W. [illegible] Kirchner, St. Louis.
73 *Abnormal Position of Duodenum. G. E. Armstrong, Montreal.
74 *End-to-End Intestinal Anastomosis by the Invagination Method. C. L. Gibson, New York.

49, 50, 52, 54, 55, 58, 59, 60. Abstracted in THE JOURNAL, July 9, 1910, pp. 160, 161, 162 and 163.

51. **Simulation of Neoplasms by Inflammatory Process.**—The resemblance, clinically, between certain inflammatory processes and tumor is great, and, according to Hamann, often leads to errors in diagnosis. Chronic osteomyelitis and other forms of bone disease resulting in enlargement of bones, formative osteitis, as the result of various irritants, leading to the production of swellings which simulate neoplasms; myositis ossificans, circumscribed enlargements of muscles, myositis fibrosa; inflammatory thickening around foreign bodies in abdominal wall (ligature and foreign body tumors), inflammation of the omentum after ligation of portions of it; pseudoneoplasms of stomach; inflammatory pseudo-neoplasm of intestines; periappendicular swellings; diverticulitis associated with the formation of connective tissue masses; tumors of the rectum and perirectal tissues of inflammatory origin are in many instances mistaken for tumors.

53, 68, 73, 74. Abstracted in THE JOURNAL, July 2, 1910, pp. 46, 47.

66. **Intratracheal Insufflation.** The experiences Elsberg has had with intratracheal insufflation have demonstrated that the results obtained by Meltzer and Auer, by Carrel, and by himself, in animal experiments, can also be obtained in the human being, but a much larger experience is necessary before any definite statements can be made. There is every reason, however, for a thorough trial of the method. Meltzer's method of intratracheal insufflation recommends itself by its very great simplicity. If the future shows that it is as safe for the human being as it is for the animal—and Elsberg's experience seems to point in that direction—then surgery will have a very simple method for the prevention of the dangers from acute pneumothorax, a danger which has been the chief hindrance to the development of intrathoracic surgery.

67. **Anesthesia by Intratracheal Insufflation.**—The most remarkable feature of the anesthesia in this case was the total disappearance of the noisy rattling respiration which existed during the administration of the ether by the usual method. Lilienthal considers that this case was a most severe test of the Meltzer method of anesthesia because of the foul and septic condition of the discharge from the pulmonary cavity. In spite of this there was no pneumonia, not even a bronchitis.

70. **Cancer of Esophagus and Cardia.**—This is a description of an operation for removal of such a cancer by the transthoracic route under conditions of differential pressure.

72. Abstracted in THE JOURNAL, Jan. 15, 1910, p. 232.

Journal Arkansas Medical Society, Little Rock

June

75 *The Progress of Medicine. J. H. Lenow, Little Rock.

75. Abstracted in The Journal, June 11, 1910, p. 1991.

Alabama Medical Journal, Birmingham

June

76 Educational Campaign Against Hookworm Disease. H. G. Perry, Greensboro.
77 *The Diagnosis of Obscure Cases of Appendicitis. M. Rogers, Birmingham.
78 *Chronic Gastro-mesenteric Ileus. A. L. Stavely, Washington, D. C.
79 *The Employment of the Police Power for the Promotion of Health. J. M. Foster, Montgomery, Ala.
80 Intubation in Laryngeal Diphtheria by the General Practitioner. A. M. Stovall, Jasper, Ala.

77, 78, 79. Abstracted in The Journal, May 28, 1910, pp. 1818, 1819.

American Journal of Surgery, New York

June

81 *A Modified Technic for the Combined Operation of Extirpation of the Rectum. J. P. Tuttle, New York.
82 The Treatment of Placenta Prævia, Based on the Study of Forty-two Cases. A. A. Hussey, Brooklyn.
83 *Tuberculosis of the Fallopian Tubes as an Etiologic Factor in Extrauterine Pregnancy. A. M. Taylor, San Francisco.
84 The Removal of the Tonsils. N. L. Wilson, Elizabeth, N. J.
85 The Surgical Significance of Nystagmus and Vertigo. P. Fridenberg, New York.
86 Perforation in Typhoid. F. E. DuBois, Plainfield, N. J.
87 Gastro-colic Fistula Due to Carcinoma: Operation. W. H. Axtell, Bellingham, Wash.

81. **Extirpation of the Rectum.**—Tuttle concurs in the universal opinion of surgeons that theoretically the combined operation is the operation of choice for the extirpation of the rectum in any condition requiring the removal of more than the lower four to five inches of this organ. Its hitherto high mortality, and the fact that many operators have made the artificial anus a necessary accompaniment of this operation, are the only arguments against it. As to its high mortality, this is steadily decreasing, until to-day it is less than that of the perineal operation 10 years ago.

83. **Extrauterine Pregnancy.**—Taylor's attention was first called to the importance of tubal tuberculosis as an etiologic factor by the circumstance of encountering three cases of extrauterine pregnancy within a month, each case being associated with advanced pulmonary tuberculosis. In three other cases of twin pregnancy one fetus in the tube and one in the uterus, the tubes were tuberculous. In another case in which there was a seven months' extrauterine pregnancy, the placenta extended from the upper inner third of the uterus through the ruptured right tube into the abdominal cavity and was attached to the peritoneum, omentum, bowel and liver; the uterus was enlarged to that of a four months' pregnancy. This patient was tuberculous. Altogether Taylor recalls that out of 61 cases of extrauterine pregnancy 42 were tuberculous, the pathologic condition having been confirmed in the laboratory. These clinical experiences, strengthened as they are by the inherent probability of tuberculous infiltrations being obstructive rather than destructive to normal fetal growths, force on him the conviction that in tuberculous salpingitis is found the most common cause of extrauterine pregnancy.

Illinois Medical Journal, Springfield

June

88 The Medical Profession—Present Condition and Future Prospects. J. L. Wiggins, East St. Louis, Ill.
89 Dilatation of the Stomach and Chronic Benign Ischochymia. M. Einhorn, New York.
90 Suprapubic Prostatectomy. A. D. Bevan, Chicago.
91 Diagnosis of Prostatic Lesions. L. E. Schmidt, Chicago.
92 Employers' Liability Insurance. W. H. Allport, Chicago.
93 The Lymphoid Masses: The Part They Play in Infections Gaining Entrance into the Body. F. L. Auten, Belleville, Ill.
94 Anti-Vaccine in Traumatic Infections. C. R. G. Forrester, Chicago.
95 Acute Diffuse General Suppurative Peritonitis. L. Feingold, Chicago.
96 Chronic Overwork. A. Hamilton, Chicago.
97 The Responsibility of the Medical Profession. H. H. Lavill, Chicago.
98 [illegible] the General Practitioner Use the Roentgen Rays? M. Reichmann, Chicago.

Journal of the Tennessee State Medical Association, Nashville

June

99 Discovery, Distribution, and Consequences of Hookworm Disease. C. W. Stiles, Washington, D. C.
100 Symptomatology of Hookworm Disease. L. Leroy, Memphis.
101 Pathology of Hookworm Disease. N. Evans, Nashville.
102 Hookworm Dissection with Special Reference to the Non-oviparous Female. W. Litterer, Nashville.
103 *The Clinical Significance of Silent Fluids in the Thoracic Cavity. F. A. Jones, Memphis.
104 *Symptoms and Effects of Adenoids. W. L. Simpson, Memphis.

103, 104. Abstracted in The Journal, April 30, pp. 1465, 1466.

Interstate Medical Journal, St. Louis

July

105 The Diagnosis of Mitral Stenosis. J. M. Patton, Chicago.
106 The Poisonous Scorpion, Including a Review of Some Recent Literature and Personal Experiences. H. V. Jackson, Durango, Mex.
107 *Etiology of Epidermidolysis Bullosa. M. F. Engman and W. H. Mook, St. Louis.
108 Hyperesthesia Rhinitis (Hay-Fever). O. J. Stein, Chicago.
109 Diagnosis and Pathologic Findings in an Unusual Case of Epithelioma of the Larynx. D. B. Delaven, New York.
110 Gonorrheal Vulvo-Vaginitis: Its Specific Treatment and Prophylaxis. W. J. Butler, Chicago.
111 *Differential Points in the Character of the Bone Lesion in the Tuberculous, and Acute Osteomyelitis, Rachitis and Syphilis. A. E. Horwitz, St. Louis.

107. **Epidermidolysis Bullosa.**—Having found the elastic tissue absent in 5 patients suffering from epidermidolysis bullosa, sections from all presenting practically the same histologic picture, Engman and Mook feel justified in asserting this absence to be the etiologic factor of the disease.

111. **Bone Lesions.**—Horwitz found that in acute osteomyelitis the cortex is thickened and irregular, the periosteum is raised and new bone of lesser density is deposited underneath it. In congenital syphilis, new bone of increased density is symmetrically deposited on both sides of the shaft. In acquired syphilis, this new dense bone is irregular and "furred." Abscess in osteomyelitis is found in the medulla; in syphilis within the cortex, the medulla not being involved. In osteomyelitis, the joints are very rarely involved, the same condition existing in acquired syphilis. In congenital syphilis, on the contrary, joint involvement is the rule. Syphilis shows thickening on both sides of the cortex, rickets on the concavity of a bowed limb only, and with no increase in the diameter of the shaft. In syphilitic spina ventosa a periostitis with dense bone deposit is seen; in the tuberculous form the medulla and cortex are merged into one mass of soft bone. In all forms of syphilis the original outline of the bone is retained and clearly seen within the new formation; in rickets the shaft is distorted; in osteomyelitis there is a disturbance in all the layers of the shaft; in tuberculosis a merging of the cortex and medulla. Syphilitic epiphyseal enlargement is bilateral. In rickets the epiphysis is enlarged, the end of the diaphysis is widened and cup-shaped for the reception of the epiphysis, and the bone is of diminished density. In tuberculosis the epiphysis is squared and a rarified area surrounds the focus, which is of indefinite outline; in osteomyelitis the focus, clearly outlined, is surrounded by a dense eburnated area.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

June

112 *Progress of Therapeutics. J. C. Wilson, Philadelphia.
113 *Treatment of Pneumonia. A. McPhedran, Toronto.
114 *Malarial Infections in the Canal Zone and Their Treatment. F. M. Shook, Washington, D. C.
115 Pathology and Diagnosis of Psychoneurosis (concluded). B. Sidis, Portsmouth, N. H.

112, 113, 114. Abstracted in The Journal, May 28, 1910, pp. 1809, 1810.

Woman's Medical Journal

June

116 Chemical Tendencies of Adolescence in Girls. M. S. Macy, New York.
117 Epidemic of Acute Anterior Poliomyelitis in Wisconsin, Summer of 1908. J. Manning, Eau Claire, Wis.
118 Hookworm, Malaria, Yellow Fever, and Their Relation to the Health of American Citizens. J. Van R. Hoff, U. S. Army.
119 The Hypodermic Seawater Treatment of Disease. J. W. Carpenter, Cincinnati.

Bulletin Johns Hopkins Hospital, Baltimore

July

120 *Multiple Subcutaneous Hemangio-Endothelioma, Multiple Lymphangio-Endothelioma of the Intestinal Tract and Multiple Polypi of the Stomach Undergoing Malignant Changes. M. C. Winternitz and T. R. Boggs, Baltimore.
121 Recent Advances in our Knowledge of Tropical Diseases. J. L. Todd, Montreal.
122 Anaphylaxis and Its Relation to Clinical Medicine. J. F. Anderson, U. S. P. H. and M.-H. S.
123 *Unusual Case of Cerebral Tuberculosis Following Tuberculous Otitis Media. H. O. Reik, Baltimore.
124 *Etiology of Chronic Arthritis. H. W. Marshall, Boston.

120. **Hemangio-Endothelioma; Lymphangio-Endothelioma and Multiple Gastric Polypi.**—The case reported by Winternitz and Boggs presents may unique features and is of interest, not only as a remarkable example of multiple heterologous tumor formation, but also as a basis for some generalizations on the origin of tumors. Each of the three groups of tumors, present in this one case, is unique in the extent and character of its occurrence, and that all three should have occurred in one individual is remarkable. The patient was an old man, with a marked alcoholic history, extreme generalized sclerosis of arteries, veins and parenchymatous tissues. In the blood-vascular system was found an extreme grade of sclerosis affecting the aorta and larger arteries throughout the body, and a very marked phlebo-sclerosis, as well. In the subcutaneous tissue this sclerosis resulted in obliteration of much of the stream bed and a compensatory formation of new vessels. These new blood-vessels are formed by the proliferation of the endothelium, as in granulation tissue. But in many places the endothelium loses its power of organization with a resultant exuberance of endothelial growth into cavernous angiomata. By a still further loss of this organizing force, the vegetative function of the cell predominates and we have the formation of solid endothelial tumors. The solid tumors may in turn give rise to metastases.

In considering the proliferation of the lymphatic endothelium in the intestine, it is suggested that the extreme portal obstruction associated with the cirrhosis of the liver and the proliferative peritonitis and ascites may play a part somewhat analogous. It is further suggested that portal obstruction leads to overloading of the lymph channels and that, in the attempt to compensate for the extra load, proliferation and new formation of lymph channels may take place. Here again a loss of organization may lead to the development of cavernous angiomata and of solid endothelial tumors.

The authors suggest a sequence here somewhat as follows: Cell destruction as a result of chronic alcoholism; chronic gastritis as a protective effort on the part of tissue; regeneration in excess with polypus formation; and lastly, as a result of loss of organization, lawless growth with the production of adenoma and carcinoma, at many points simultaneously.

123. **Cerebral Tuberculosis Following Tuberculous Otitis Media.**—From the history and examination in Reik's case, it was apparent that it was a case of chronic suppurative otitis media, possibly of tuberculous origin, which had certainly invaded the mastoid and probably the intracranial structures. Fever, profuse discharge of pus, fistula in the external auditory canal and partial facial paralysis did not necessarily mean anything more than mastoiditis. Convulsions and a paretic condition of the left side were difficult to explain; the first might be due to a general septic condition accompanying mastoiditis, or to an extradural collection of pus; the increased intracranial pressure produced by the latter lesion might explain the existence of both the convulsions and the paresis. Leptomeningitis was ruled out by the normal condition of the spinal fluid. A cerebral abscess was considered possible, but there were no strong supporting symptoms; only once, at the time of admission, had the temperature been below normal, and that was readily accounted for otherwise; a differential blood count did not indicate it; there were no localizing symptoms; the muscular impairment of the left side suggested a cerebral lesion on the side of the brain opposite to the affected ear. The only possible conclusion then seemed to be to perform a mastoidectomy and explore the base of the brain through this wound.

The operation was performed and proved very interesting. When the soft tissues were retracted it was found that Nature had done a fairly complete exenteration of the mastoid, and that, in addition, there was a large sequestrum of the squamous portion of the temporal bone; the postero-superior bony wall of the canal and the superficial cortex of the mastoid, down nearly to the tip, had necrosed and were represented by a mass of dead tissue only; the sequestrum included the temporal ridge and the squama from above and measured 20 mm. square. Between this and the dura was a considerable collection of pus. It was then a case of mastoiditis with extensive bone destruction and an extradural abscess, the margins of the abscessed areas being completely walled off by inflammatory adhesion of the dura to healthy bone. The immediate result of the operation was satisfactory. The general condition gradually became worse and the patient died six months later. An autopsy was performed. The left hemisphere presented a large abscess cavity involving almost the entire temporo-sphenoidal lobe. Cutting into the brain substance through the diseased-looking spots on the external surface exposed large areas of tuberculous caseation that involved the greater portion of the temporal and parietal lobes. It would seem probable that this was originally a case of tuberculous otitis media and that the mastoid disease and the cerebral abscess were direct sequelæ of this infection.

124. This article will be abstracted in the Department of Therapeutics.

Bulletin American Academy of Medicine, Easton, Pa.

June

125 *Principles of Medical Education. G. H Hoxie, Kansas City, Mo.
126 The Influence of Race on Infant Mortality. R. C Cabot and E. K. Richie, Boston.
127 A Plan for the Reduction of Infant Mortality. R W Bruere, New York.
128 Educational Responsibilities of a Milk Depot. I. S Wile, New York.
129 The Responsibilities of General Relief Agencies in the Prevention of Infant Mortality. S. C. Kingsley, Chicago.
130 Philanthropic Experiments in Increasing and Decreasing Infant Mortality. W. Hutchinson, New York.

125. Abstracted in THE JOURNAL, April 2, 1910, p. 1158.

Northwest Medicine, Seattle

June

131 Fractures of the Skull W House, Portland.
132 Idem. Points in Diagnosis and Indications for Surgical Treatment. E O. Jones, Seattle
133 Medical Organization. P. W. Willis, Seattle
134 The School Child and the Future Neurasthenic F J Labbe, Portland.
135 Difficulties Occasionally Met in Diagnosis of Pneumonia C W. Shaff, Lewiston, Ida
136 The Place of Electricity in Medicine. F. M Taylor, Portland, Ore.
137 Tonsillotomy and Tonsillectomy. J. A M Hemmeon Seattle, Wash.
138 Vasomotor Trophic Neurosis. C. W. Sharples Seattle

Old Dominion Journal of Medicine and Surgery, Richmond

June

139 *Suggestions for a Better Organization. V V Anderson, Lynchburg, Va
140 Paracelsus P S. Roy, Washington, D C
141 Ptomain Poisoning Complicated by Metallic Elements. I B. Wiggs, Richmond
142 Four Cases of Pellagra. W F. Lockwood, Baltimore
143 Lamblia Intestinalis W Allen, Charlotte, N C

139. **Suggestions for Better Organization.**—The financial side of medicine is reviewed by Anderson, and he emphasizes the fact that physicians must unite to enlighten the public on the danger of ignorant, ill-trained and poverty stricken physicians, and on the duty of the public to support and encourage both legally and economically a medical profession which can afford to be disinterested, unselfish and philanthropic. If this is not done, the next decade will see the standard of the medical profession lowered simply through force of economic pressure.

Leading men all over this country are lending their efforts toward uniting the profession; are working in season and out of season for better organization, asking the profession to lay aside jealousies and unite for the common good. Local medical societies are discussing the necessity for more wide-spread interest in the doctor's welfare; medical economics is arousing more interest than ever before.

Vermont Medical Monthly, Burlington

June

144 What Can be Done to Control the Spread of Venereal Diseases? W. S. Reynolds, New York
145 Renal Insufficiency. W. W. Townsend, Rutland.
146 The Trouble with Therapy. C. H. Beecher, Burlington.
147 Puerperal Septicemia. A. M. Butterfield, Burlington.
148 Treatment for Burns. E. P. Lunderville, Richford, Vt.

New Mexico Medical Journal, East Las Vegas

June

149 Obscure Tuberculous Adenitis. F. T. B. Fest, Las Vegas.
150 Bronchopneumonia. J. R. Graham, Artesia.
151 Surgical Complications of Typhoid Fever. H. A. Ingalls, Roswell.
152 Home Treatment vs. Sanitarium Treatment of Tuberculosis. A. G. Shortle, Albuquerque.

Montreal Medical Journal

July

153 Levulosuria, and Its Significance in the Diagnosis of Hepatic Conditions. W. F. Hamilton, Montreal.
154 *Regeneration of Shaft of Tibia Following Extensive Osteomyelitis. L. A. Hutchison, Montreal.
155 Surgical Treatment of Exophthalmic Goiter. F. J. Shepard, Montreal.
156 The Psychoneuroses in Asylum Practice. W. H. Hattie, Halifax, N. S.
157 Acute Poliomyelitis Based on the Observation of Thirty-eight Recent Cases with Two Autopsies. C. K. Russel, Montreal.
158 Colored Toric Lenses for Use in Examining Cases of Ocular Paralysis. W. G. M. Byers, Montreal.
159 Amblyopia or Anopsia with Acquisition of Good Vision. G. H. Matthewson, Montreal.

154. **Regeneration of Shaft of Tibia.**—The diaphysis of the right tibia being devoid of periosteum and virtually separated from both the upper and lower epiphyses, Hutchison removed it. Involucrum was already present. After disinfection with pure carbolic acid and alcohol, the part was packed with iodoform gauze and limb placed in a plaster cast, leaving a fenestra over the wound. Eleven days later, under ether anesthesia, the cavity was disinfected, the periosteum separated from subcutaneous tissue and brought together at a few points with catgut sutures, with a view to reproducing the original circular form of the periosteum. The periosteum was then filled with Mosetig-Moorhof's plumbage. The skin being brought together over the surface, provision was made for drainage by the introduction of iodoform gauze at the upper and lower margins carried down to the epiphysis. The limb was put in a plaster cast supplemented with a weight and pulley extension apparatus, in the hope that this might aid in retaining the normal position of the limb during the process of repair, thus preventing curving due to fibula continuing its longitudinal growth, as well as the lack after the removal of the sequestrum. Drainage was kept up for many months, small particles of iodoform plumbage being washed out from time to time. Patient was discharged five months later in good condition with his limb in a plaster case. There was slight antero-posterior movement in the middle of the shaft on the new growth. A year later complete regeneration of the bone had taken place.

Western Medical Review, Omaha

June

160 Present Status and Tendencies of the Medical Profession. F. H. Salter, Norfolk, Neb.
161 Epidemic Infantile Poliomyelitis. G. P. Shidler, York, Neb.

Journal Advanced Therapeutics, New York

June

162 Obliterating Endarteritis of the Digitals, Dorsalis and Plantares. H. W. Frauenthal, New York.
163 Action of the X-ray and High Frequency Currents in Pulmonary Tuberculosis. F. deKraft, New York City.
164 Diabetes Mellitus. J. B. Bishop, Washington, D. C.
165 Goiter. H. Snow, Norwood, Ohio.

St. Louis Medical Review

June

166 Tuberculosis. H. L. Bellaire, St. Louis.
167 Conservation of Human Life. J. H. Montgomery, Chicago.
168 *Treatment of Trachoma. F. T. Hornback, Hannibal, Mo.
169 Surgery of the Nasal Septum. W. D. Black, St. Louis.
170 Headache. G. L. Butler, Chicago.
171 Sarcoma of the Uterus. H. C. Dalton, St. Louis.

168. **Treatment of Trachoma.**—The suggestion Hornback makes refers to dilatation or stretching of the lids exerted mainly on the external portion of the lids, that is, toward the outer canthus, thereby avoiding the possibility of in any way disturbing the integrity of the canaliculi. This treatment is applied especially to selected cases, in which, by reason of the irritation accompanying trachoma, the lids were tightly drawn and almost constantly blinking, and, as it were, fairly wearing the cornea away. Under cocain anesthesia Hornback gently introduces the tip of the forefinger or the end of the smooth broad handle of an appropriate instrument, beneath the upper lid. Gentle but firm traction is then made on the lid especially toward the outer canthus. The degree of traction will have to be governed by the individual case. After finishing with the upper lid, the lower lid should receive the same kind of treatment, but to a lesser degree, as usually very little irritation of the cornea comes from the lower lid. In the after-treatment of these lids, one gets a slight dilatation when making the application itself. Hornback takes a stiff applicator, either metal or wood, and winds it firmly with absorbent cotton, dips it in whatever solution he wishes to use, then passes it beneath the lid and gently pulls toward him as he rubs the applicator from side to side beneath the lid. This application serves a three-fold purpose, viz., slight dilatation, friction, or massage, and medication.

Atlanta Journal-Record of Medicine

June

172 Practical Aids in Medical and Surgical Diagnosis. L. M. Gaines, Atlanta.
173 Vaccine in Tuberculosis. E. C. Thrash, Atlanta, Ga.
174 Treatment of Chronic Prostatitis. A. L. Fowler, Atlanta, Ga.
175 The Doctor, The Public and Medical Legislation. J. G. Dean, Dawson, Ga.
176 Brain Tumor, with Exhibit of Two Patients. W. Taylor, Atlanta, Ga.
177 Alcoholism and Drug Addictions. W. A. Starnes, Atlanta.
178 Hookworm Eradication. L. J. Sharp, Commerce, Ga.
179 Purpura. L. C. Allen, Hoschton, Ga.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 2

1 *The Treatment of Chronic Bright's Disease. W. P. Herringham.
2 *The "Pancreatic Reaction" in Abdominal Disease. W. Russell.
3 *The Results of the "Pancreatic Reaction." P. J. Cammidge.
4 Gall-stones: Acute Pancreatitis: Recovery. C. E. Salter.
5 Impacted Gall-stones in Cystic Duct: Operation: Recovery. C. F. Fothergill.
6 Dermatitis Artefacta and Its Sequel. R. O. Adamson.

1. **Treatment of Chronic Bright's Disease.**—For the headache of chronic diffuse nephritis, Herringham has never, he says, found any drug so good as cannabis indica. It is better than any of the coal-tar compounds. He generally combines it with small doses of iodid and bromid of potassium. High blood pressure he has come to regard as a conservative effort. In older people, no doubt, it brings dangers of its own, especially of cerebral hemorrhage from rupture of the vessels. Endarteritis is not the same thing as, is not even a cause of, fragility. That is due to changes in the media which depend chiefly on age. Accordingly, these patients stand a blood-pressure which older patients could not bear, and, as a matter of fact, seldom die of cerebral hemorrhage. Herringham maintains that one is not obliged to regard their high blood-pressure as a serious danger. It is an effort not only to maintain the general circulation, but also the flow of blood through the kidneys, which is of the last importance to postpone uremia.

Uremia he is inclined to regard as due to the absorption of some product of renal cells destroyed in the progress of the disease, and compares it to the condition called cholemia in which many cases of hepatic cirrhosis terminate. The symptoms of each are not unlike, and the morbid process is similar also. What are we to do, he asks, when the urine becomes scanty? It may seem madness to employ digitalis when the pressure is already excessive. Herringham has given reasons for believing that the danger in this direction is not so great as we think, and the circumstances are desperate. Accordingly, while endeavoring to lighten the task of the kidneys by means of the skin, while using hot packs, hot air baths, and even injections of pilocarpin nitrate in order to secure the removal of some water and salts by perspiration, we must at the same time, by digitalis and theobromin sodium salicylate, try to raise the blood pressure and recover the level of excretion. If the uremia manifests itself, as it sometimes does, rather by dyspnea than by convulsions, the inhalation of oxygen is an additional aid. Should, however, the fits continue, relief must be given by bleeding.

2. **Pancreatic Reaction in Abdominal Disease.** In his investigation Russell confined himself to the examination of the urine in patients with abdominal symptoms, or definite abdominal lesions, as his aim was to ascertain whether any assistance was to be obtained from the presence or absence of the reaction in making a differential diagnosis. Cases were selected in which it was thought that the reaction might be helpful in one or other direction. He has tabulated 78 cases which are fairly representative of the types of abdominal cases met with. There are four cases in which the reaction was not only positive, but marked in amount and in the promptness of its appearance. One patient had necrotic pancreatitis and died of a profound toxic asthenia. The second patient was a man with not very definite gastric symptoms who shortly after admission developed a condition of toxic asthenia, and whose urine deposited Cammidge crystals copiously after ten minutes. This patient passed one or two motions involuntarily which contained altered blood, as shown by chemical examination. At the autopsy there was found a small malignant growth on the posterior wall of the stomach which had become a slough, while the liver presented an extraordinary appearance from the presence not only of secondary growths, but extensive necrosis from infarction. The pancreas presented no abnormal change. Three cases of cirrhotic liver gave a positive reaction.

Fifty-five cases, most of them hospital cases, with symptoms referable to disordered gastrointestinal function, sufficiently severe to require hospital treatment, or with definite lesion, constitute a series of almost consecutive cases, in many of which it was thought the reaction might be found to be of some diagnostic significance. In 26 of them the reaction was negative, in 29 it was positive. Of 5 check cases in persons with no abnormal symptoms, one, a case of arteriosclerosis with normal pancreas; gave three times a positive reaction and once a negative; another, a woman suffering from subacute rheumatism, gave three times a positive reaction. Seven observations made on three of the staff gave 6 positive reactions and one negative, and these men were all in excellent health at the time.

From these results it is seen that a positive Cammidge reaction may be obtained from the urine of persons in good health suffering from a great variety of abdominal disease or disorder; that it may be present when autopsy shows that the pancreas is not the seat of any anatomic change. All this to the physician and to the pathologist definitely excludes pancreatitis as the cause of the Cammidge reaction.

3. **Pancreatic Reaction.**—Thirteen cases of acute pancreatitis gave a positive pancreatic reaction; 6 patients were operated on, and the pancreas was found to be acutely inflamed in all, with disseminated fat necrosis in 5. The diagnosis was confirmed by post-mortem examination in 3. Gall-stones were discovered in the common bile duct of 2. One had a history of repeated attacks of jaundice with spasm, and had probably suffered from common duct cholelithiasis, but there was no jaundice at the time of analysis. In three, the pancreatitis was the sequel of an attack of mumps, but in 4 other cases of the same disease the urine gave no reaction. Two cases gave a history of indigestion and abdominal discomfort extending over several months previous to the attack. Three of the patients operated on died, and 3, including the 2 in whom gall-stones were found, recovered. All the patients not operated on died, except the 3 whose pancreatitis followed mumps.

Cammidge examined specimens of urine from 264 patients in which gall-stones were found at operation, and of these 149 (56 per cent.) gave a positive reaction. In 183 patients the gall-stones were in the common bile duct, and of these 131 (69.6 per cent.) gave a positive, and 57 (30.4 per cent.) gave a negative pancreatic reaction—percentages which correspond fairly closely with the proportion of patients in whom the common bile duct lies embedded in the pancreas (62 per cent.) and runs in a groove on the surface of the gland (38 per cent.). Out of 76 patients in whom gall-stones were found in the gall bladder or cystic duct at operation only 18 gave a positive pancreatic reaction and were stated to have pancreatitis; 58 gave a negative result, as did also 17, diagnosed clinically as cholecystitis, 6 of whom were operated on, that Cammidge included in the miscellaneous group. Bile pigment was found in the urines of 11, including 9 of those that gave a positive pancreatic reaction; 15 gave a reaction for urobilin, and of these 10 gave a pancreatic reaction. Calcium oxalate crystals were met with in the deposit from the urines of all those that gave a positive pancreatic reaction, and in 4 of those with which no reaction was obtained. Of 403 cases in which the clinical symptoms and results of the analysis of the urine and feces point to there being disease of the intestine other than a malignant growth, the urines of 211 (52 per cent.) gave a positive pancreatic reaction.

A diagnosis of catarrhal jaundice was made in 53 of the patients examined and in 42 of these a positive pancreatic reaction was obtained, suggesting that in over 79 per cent. the condition was associated with some active degenerative changes in the pancreas. Fifteen of the patients giving a positive reaction were submitted to operation because of the persistence of the jaundice, and in all of these the pancreas was found to be enlarged and harder than normal. Cammidge examined specimens of urine from 50 cases of ulcer of the duodenum and 47 of gastric ulcer, all of which were confirmed by operation; 27 (54 per cent.) of the former and only 5 (10.6 per cent.) of the latter gave a pancreatic reaction. In 2 of the cases of gastric ulcer, and in 1 of duodenal ulcer, the ulcer was said to be eroding the pancreas. Out of the 13 cases of sprue, 8 gave a positive reaction, and in 2 of these post-mortem examination showed pancreatitis; 4 out of the 6 cases diagnosed as pernicious anemia gave a pancreatic reaction. In one of these, examination after death revealed chronic inflammation of the pancreas and an ulcerated condition of the duodenal mucous membrane. Operation on 2 also tended to confirm the diagnosis of chronic pancreatitis. Six cases diagnosed as tuberculosis of the intestine gave a negative reaction, as did also 3 of pulmonary tuberculosis. Cammidge has examined the urine from 92 cases of malignant disease, and obtained a positive pancreatic reaction in 34 (37 per cent.). Of the four patients with pancreatic cyst that he has examined the urines of 2 gave a positive pancreatic reaction and in 2 it was negative. One of the latter had, however, been operated on, and the cyst drained for some three months. Of the 73 cases diagnosed as cancer of the pancreas that Cammidge has examined, the urines of 24 of the patients (33 per cent.) gave a positive reaction and 49 (67 per cent.) gave a negative reaction. The diagnosis was confirmed by operation in 18, and by post-mortem examination in 7. Two of the latter had given a positive result and 5 a negative reaction, which corresponds with the proportions diagnosed clinically at operation, which have given a positive and negative results respectively. In a miscellaneous group of 467 cases 461 gave a negative pancreatic reaction. Of normal specimens of urine from 50 presumably healthy individuals, none gave a positive pancreatic reaction.

Lancet, London

July 2

7 *The Cerebrospinal Fluid. F W Mott
8 The Behavior of the Leucocytes in Infection and Immunity F. W. Andrewes
9 *The Pelvic Conditions Resulting from the Slighter Forms of Puerperal Sepsis and Their Treatment W J Sinclair
10 The Tuberculous Gland: Its Significance and Treatment R W. Philip
11 Administration of the Public Health and Education Acts in Relation to the Prevention and Cure of Diseases of the Nose and Throat T. J. Faulder
12 Points in Favor of Early Operation in Appendicitis A H Buck.
13 *Distribution of Treponema Pallidum in Congenital Gummata. A E. Shaw
14 Obscure Cases of Extrauterine Pregnancy T B. Broadway

7. **The Cerebrospinal Fluid.** It is contended by Mott that the cerebrospinal fluid comes into relation with the nerve cell elements and therefore may be the ambient fluid. Substances are unable to pass from the capillaries into the lymph spaces, but experiments show that substances are able to find their way rapidly into the blood when injected into the subarachnoid space. This may be by the channels already alluded to Mott has shown that the perivascular lymphatics open into

the subarachnoid space, and if these perivascular lymphatics contained ordinary tissue lymph, the cerebrospinal fluid would contain a very much larger amount of protein and lymph-cells than it does; there must be some medium of exchange between the blood in the capillaries and the neurons, and, therefore, why not, he asks, the cerebrospinal fluid?

Suppose it be granted that the cerebrospinal fluid may functionate as the lymph of the brain, and is the ambient fluid in which exchanges take place between the blood in the capillaries and the neurons, can we explain why substances do not pass out of the capillaries into the fluid? Most authorities are agreed that there is no lymphatic sheath on the capillaries, so that we have only, so far as we know, the wall of the capillary intervening between the blood and a fluid which is similar to blood plasma in its crystallized diffusible substances although not identical, for its alkalinity is only half that of the blood, and the sugar it contains is less. Is it a reasonable hypothesis, asks Mott, that the osmotic pressure as regards water and carbon dioxid is from the ambient cerebrospinal fluid of the blood, and that certain of the salts and sugar pass from the blood to the fluid through the wall of the capillary? As we have no precise knowledge of the composition of the cerebrospinal fluid as it leaves the cells of the choroid plexus, we can only say it is possible that this fluid is not exactly the same in composition as that which is contained in the subarachnoid space. By this Mott means to infer that the fluid which is secreted by the epithelial cells of the choroidal gland in its passage from the subarachnoid space along the perivascular lymphatics back to the subarachnoid space may receive substances—e. g., an addition of sugar and possibly some salts.

Whether this fluid, as it is secreted by the choroid plexus, is the same as that withdrawn from the subarachnoid space by lumbar puncture is the crucial point which requires to be settled before the hypothesis Mott would draw, can be maintained. The hypothesis is that the fluid as it circulates in the perivascular and pericellular channels may give up water and carbon dioxid and take up oxygen and sugar. Seeing that there is no proof that the fluid contains a glycolytic ferment, it may, if this hypothesis is true, be assumed that the ganglion cells produce the necessary glycolytic ferment by which the sugar can be converted into neural energy. The observations and experiments are, however, all in a preliminary stage and much work still is necessary before any safe conclusions can be drawn. The results so far obtained, however, are sufficiently encouraging to lead to a continuance of the work.

9. Same as No. 36, below.

13. **Treponema Pallidum.**—In a section of a small liver gumma (which was about ¼ inch in diameter) Shaw was struck by the appearance of a dense black band disposed more or less concentrically to the center of the gumma, but at its periphery. This band occupied the position of a boundary zone between the healthy liver tissue and the gumma tissue; it was, in fact, the periphery of the gumma. This was seen with a ⅙ inch objective. On applying the 1/12 inch oil immersion this black band resolved itself into a dense felted network of spirochetes which were lying at every possible angle to the plane of section, and overlying each other like handfuls of pins. Proceeding inward from this band toward the center of the gumma there were many more, but proceeding outward from the black band above mentioned they rapidly diminished in number as healthy tissue was reached, till at a distance of about a millimeter from the gumma they were very infrequent. Similarly prepared and cut sections of many other gummata were examined and in all of them the peripheral band could be seen, varying in thickness and occasionally more or less interrupted, and always on being examined it was found to be caused by thickly aggregated spirochetes.

Clinical Journal, London

June 22

15 Foreign Bodies in the Air Passages. C. Wall.
16 The Treatment of Indigestion. E. I. Spriggs.

June 29

17 Inguinal Ruptures Which are Difficult to Manage and Their Treatment. C. B. Lockwood.

Australasian Medical Gazette, Sydney

May

18 Filaria in Queensland. E. S. Jackson.
19 Id. P. Bancroft.
20 Filariasis. J. B. McLean.
21 *Two Interesting Human "Dermoid Cysts" of the Ovary (Embryomata). J. B. Cleland.
22 Treatment of Hydatid Sinuses by Injections of Bismuth Vaselin. P. Bollen.
23 Bullet Wound in the Abdomen. P. T. S. Cherry.
24 Tests for Color Vision. C. H. Taylor.
25 Question of Premature Termination of Pregnancy. W. T. Chenhall.
26 Extrauterine Pregnancy. H. R. Rice.

21. **Human "Dermoid Cyst" of Ovary.**—In the first of these cysts seen by Cleland a small embedded mass had the naked-eye appearance of the thyroid tissue, and, on microscopic examination, showed the typical characters of that gland. The other cyst besides having contents of fatty matter and hairs, and showing several perfect teeth, and microscopically many sebaceous glands, had at one part a projecting mass. On the under side are a number of teeth—in the center two perfect incisors, on each side of these a perfect bicuspid, while on the (observer's) left side, two masses irregularly placed probably represent unerupted molars. Above this was a mass of cancellous bone and muscular tissue, through which traveled backward, immediately above the teeth, a laterally compressed smooth lined cavity, divided into two by a partition. From the outer wall of this cavity on one side projected mesially a rounded fold (turbinated bone?). These cavities were evidently the nasal. Above them was a vague mass of fatty and other tissue, and above this again a broad strand of nervous matter, loosely adherent to the underlying structures. This strand was 1½ inches long by ¾ inch broad by ⅛ inch thick. It was enveloped by an imperfect membrane and attached to it and projecting forward in front of the teeth was a smooth-lined cyst, 1½ inches long by ¾ inch wide by ½ inch deep, which stretches across the cavity of the dermoid to be attached to the opposite wall. A small cyst, attached to the nervous strand, contained a light yellow fluid which did not actually reduce Fehling's solution, but altered slightly its color.

Sections of the band of nervous tissue showed a granular matrix with fairly numerous scattered small cells like neuroglia cells and small vessels. There were also a few large cells highly suggestive of cortical cells and scattered concentric bodies (corpora amylacea). At one spot was a large mass of melanin granules surrounded by fibrous tissue.

Dublin Journal of Medical Science

June

27 Acute Leukemia. T. G. Moorhead.
28 Splenomedullary Leukemia Treated by X-rays. M. R. J. Hayes.
29 The History of the Prevention of Smallpox. T. P. C. Kirkpatrick.
30 *Radical Operation for the Cure of Umbilical Hernia. J. S. Darling.

30. **Umbilical Hernia.** Darling's operation differs from Mayo's in that the lower portion of the ring is deeply embraced in the split rectus muscle above, and a double abdominal wall is opposed to the internal pressure.

Medical Press and Circular, London

June 22

31 Head's Area as a Diagnosis in Dental Cases. A. W. W. Baker.
32 Referred Cardiac Pain. F. G. Thomson.
33 Gall-stones: Their Medicinal and Prophylactic Treatment. J. E. McCracken.
34 *A New and Simple Method of Performing Wassermann's Test for the Diagnosis of Syphilis. R. Weiss.

June 29

35 Demonstration of Surgical Cases. A. H. Tubby.
36 *The Pelvic Conditions Resulting from the Slighter Forms of Puerperal Sepsis and Their Treatment. W. J. Sinclair.
37 The Prevention of Mortality after Pelvic Operations. H. Macnaughton Jones.
38 The Wassermann Reaction. P. Rostaigne.

34. **Wassermann Test for Diagnosis of Syphilis.**—Weiss describes his method as follows: Open the bottle containing antigen and draw the fluid up into the dark amber glass pipette to the graduation. Eject this into two tubes. Add 2 c.c. salt solution to the antigen in tube 1. Place 2 c.c. salt solution in tube 2. (This tube forms the control.) Place two complement papers in each test tube. These must be completely immersed in fluid. Take up defibrinated blood in

the light brown pipette to the graduation mark. Transfer this to tube 1. Put an equivalent amount of defibrinated blood in tube 2. Let the two tubes remain at a temperature of the room for an hour. Shake from time to time. By means of an ungraduated pipette, transfer the contents of one amboceptor bulb to tube 1 and a similar quantity of amboceptor to tube 2. Shake well. Ten to fifteen minutes later again shake. In a short time the control tube 2 will show solution of the blood-corpuscles, and the liquid will become red. In tube 1, if the reaction is negative, the appearances will be identical with those in the control tube (either at the same time or a little later). If the reaction is positive, tube 2 will show a sedimentation of the red corpuscles, but no solution, and in about 30 minutes the blood-corpuscles will have settled to the bottom of the tube without the blood-cells being dissolved, and the supernatant liquid will be clear and light. A certain amount of solution of the red corpuscles may take place in tube 1, if it is allowed to stand for some hours. As controls it is recommended that serum known to yield a positive result should be tested, and also serum from a healthy individual.

36. **Pelvic Conditions in Puerperal Sepsis.**—Sinclair holds that every woman should be carefully examined 6 or 8 weeks after her confinement; if subinvolution without complication is discovered treatment should at once be begun with the object of bringing the uterus to its normal condition; if uncomplicated retroflexion is diagnosed the use of tampons, followed by the temporary wearing of a pessary, may possibly be successful; if tampon and pessary fail to restore the uterus to its normal condition and position, adhesions must be suspected and efforts made to break them down by manipulations under anesthesia; failing success by manipulation, ventrofixation with the necessary modifications is the only rational operation; in every case of one-child sterility with retroflexion, whatever the negative evidence, puerperal sepsis to some degree should be assumed as the case and ventrofixation resorted to. Sinclair says that as the futility of pessary treatment becomes more generally recognized, ventrofixation will take its proper place as the only reliable and successful method of treating all complicated cases of displacement of the uterus.

Indian Medical Gazette, Calcutta

June

39 The Treatment of Snake-bites with Potassium Permanganate. W. B. Bannerman.
40 Operation Rooms in the Tropics. W. G. King.
41 The Indian Oculist; His Equipment and Methods. H. E. Drake-Brockman.
42 Technic of the Hypodermic Injection, Including a Critical Survey of the Types of Syringe in Use. W. E. McKechnie.

Bulletin de l'Académie de Médecine, Paris

June 21, LXXIV, No. 24, pp. 613-650

43 *Vaccination of Man Against Typhoid Fever. H. Vincent.
44 *Inflammatory Tumors Produced by Lint from the Dressings. (Tumeurs inflammatoires produites par certains pansements.) P. Reynier.
45 Symmetrical Brachydactylia and Other Skeleton Anomalies Inherited Through Several Generations. (Tératologie humaine.) E. Vidal.

43. **Vaccination Against Typhoid.**—See Paris Letter, July 9, page 138.

44. **Inflammatory Tumors Produced by Scraps of Cotton from Dressings.**—Reynier and Masson found a cotton thread in the depths of a tumor that developed after operative removal of a mammary cancer in one case and of a cancer of the neck in a young man. In each case the cotton fiber had evidently been pressed or sucked into an open vessel and it had induced an extensive reaction of phagocytic giant cells. They suggest that the intense sterilization to which the gauze sponges are subjected renders them friable so that scraps of lint may readily be left behind. In a third case the inflammatory tumor had developed in the stomach after an operation on the pylorus. They suggest hemming the gauze to do away with raw edges. These pseudorecurrences of cancer are probably quite common; the brief interval—only 20 days in the first case—and the size of the lesion in comparison with this short interval, should suggest the true nature of the tumor observed. Possibly the fact that the above were all cancer cases may explain the exuberance of the phagocytic reaction. In the first case the inflammatory tumor extended along the pectoralis muscle, and it was hard and knobby, of fibrous consistency, compelling removal of a large mass of muscle, curetting the axilla and resecting 6 cm. of the axillary vein.

Presse Médicale, Paris

June 22, XVIII, No. 50, pp. 465-472

46 *Autoserotherapy with Ascitic Effusion. G. Roque and V. Cordier.
47 Staphylococcus Vaccine in Treatment of Staphylococcus Skin Disease. A. Mauté.
48 Technic for Determination of Typhoid and Paratyphoid Bacilli in the Stools. A. Sicre and E. Combe.

June 25, No. 51, pp. 473-488

49 *Catheterization of the Ureters and Intravesical Segregation of the Urine. H. Boyer.
50 Physiologic Bases of Medical Electricity. (La sclérolyse électrique.) A. Zimmern and P. Cottenot.
51 The Painful Spots in the Abdomen with Chronic Appendicitis. J. Silhol.
52 The Ciliary Ganglion as the Peripheral Center for the Pupil Reaction to Light and the Argyll-Robertson Phenomenon. A. Marina.

46. **Autoserotherapy of Ascites.**—Roque and Cordier had such favorable experiences with autoserotherapy of pleuritic effusions that they were impelled to try this method of treatment in several cases of ascites, but the results were discouraging. It is possible, however, they say, that they encountered an unusually unfortunate series, and they are now still trying the treatment, as their experiences have amply demonstrated its entire harmlessness.

49. **Catheterization of the Ureters.**—Boyer reviews a number of experiences at the Necker Hospital at Paris in which catheterization of the ureters proved of decisive differential value while attempts at segregation of the urine in the bladder by the Luys and Cathelin methods gave misleading findings. The best of all means of testing the functioning of the kidneys Boyer believes to be Albarran's two-hour experimental polyuria method. The catheters are placed in the ureters and left there for two hours, the amount of urine collected is measured every half hour, and between the first and the second half hour the patient drinks three tumblerfuls of water, inducing extra functioning on the part of the kidneys. The results of this test are always instructive and sometimes fairly marvelous, Boyer exclaims. In one case the segregation findings seemed to indicate normal functioning of one kidney while the pyonephrosis of the other had suppressed entirely its functioning. The polyuria test, however, revealed that the apparently sound kidney was utterly incapable of responding to even this slight extra demand, showing that the contemplated nephrectomy would have been fatal. Simple nephrostomy tided the patient past the danger point. In another typical case three surgeons counseled nephrectomy for supposed tuberculosis of the kidney, but the ureter catheter revealed that the trouble was hematuria complicating an absolutely latent hydronephrosis. The ureter catheter not only diagnoses the trouble but it is a potent means of treatment besides. One of the patients had suffered for twenty years from pains in the right side, and had been treated for supposed liver, intestinal and gastric trouble, and even the gallbladder had been removed, but the pains continued unmodified. The ureter catheter disclosed that the trouble was merely a slight pyelonephritis in a movable kidney with a little dilatation of the pelvis. A few lavages of the pelvis cured the infection and the patient was freed at once from all disturbances and has had no recurrence for over a year to date. In another case the ureter catheter displaced a small calculus which had totally obstructed the flow of urine from a large single kidney, after anuria for seven days. The harmlessness of catheterization of the ureters is amply proved by "Mother Jolly," the woman for whom Albarran invented the ureter catheter in 1885, and on whom he tried it again and again until he had perfected it to his satisfaction. She had pyonephrosis but refused to have the kidney removed, preferring to submit to anything rather than nephrectomy. Her kidney is still *in situ* and it still gives its 7 or 8 gm. of urine a day with 12 per thousand urea. She has passed through two normal pregnancies since and is still active as a sick nurse. Partly from therapeutic purposes and partly from kindly interest in the advancement of medical science she has served

as a living manikin for the demonstration of catheterization of the ureters for hundreds of students, so that her right ureter has been catheterized more than five hundred times.

Semaine Médicale, Paris

June 29, XXX, No. 26, pp. 301-312

53 *Spasmodic Ileus and Chronic Enterospasm. L. Cheinisse.

53. **Spasmodic Ileus and Enterospasm.**—Cheinisse has been able to find quite a number of cases on record in which enterospasm induced ileus, simulated appendicitis or was responsible for serious disturbances otherwise. The spasmodic contraction may be a reaction to the presence of even a small gall stone, foreign body, débris of food or helminths in the bowel, or it may be a reaction to some abdominal lesion outside the intestines as in the case reported recently by Exner and Jäger, in which a retroperitoneal tumor had involved the nerves of the region, and the enterospasm was evidently due to nervous influences outside. The enterospasm may be acute or chronic. Rinne has recently reported a case in which a portion of the small intestine four inches long was tightly contracted, but the long chronic disturbances subsided for three years after the laparotomy. Then they returned under the influence of emotional stress. Hot applications and belladonna, which had before been ineffectual, this time rapidly conquered the enterospasm. In Descœudres' recently published case the acute intensely painful enterospasm in a farmer of 50, was accompanied by somnolency, subdelirium and vomiting. The laparotomy revealed that the small intestine was contracted over a clump of six long ascarides, all dead. The symptoms grew worse and the patient died 72 hours after their first onset. The symptoms on the part of the nervous system observed in this case were probably due to absorption of toxins from the living or dead helminths.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVI, No. 3, pp. 183-325. Last indexed June 4, p. 1969

54 *Minute Doses of Tuberculin as Means to Abolish Fever. (Ueber Entfieberungen bei Lungentuberkulose durch kleinste Dosen Tuberkulin.) Philippi.
55 *Tuberculous Consequences of Idiopathic Pleurisy. H. Allard.
56 *Serodiagnosis of Pulmonary Tuberculosis. F. Starkloff.
57 Combined Specific Treatment of Tuberculosis. A. Aravandinos.
58 *Temperature of the Tuberculous at Night. (Ergebnisse nächtlicher Temperaturmessungen bei Tuberkulösen.) F. Junker.
59 Omentum Tumor. (Netztumor.) O. H. Teutschlaender.
60 Tuberculin Immunity. F. Hamburger and R. Monti.
61 Early Recognition and Treatment of Tuberculosis with Tuberculin. (Frühzeitige Erkennung und Behandlung der Lungenschwindsucht durch Tuberkulin.) Lobedank.
62 *Titration Method of Tuberculin Test. (Untersuchungen über die diagnostische Bedeutung des Tuberkulintiters.) A. Erlandsen and O. V. C. E. Petersen.

54. **Disappearance of Fever Under the Influence of Tuberculin.**—Philippi remarks that there have been comparatively few articles published on tuberculin as a means to restore the temperature of the tuberculous permanently to normal, and yet he considers this one of its most important functions and a most decisive proof of its therapeutic efficiency on the whole. He reports 90 febrile cases and states that the fever was thus banished in 65; that is, in 72.2 per cent. He gives the tuberculin in the minutest doses, and the results in the chronic subfebrile cases are surpassing all anticipations. The guide to dosage is the systematic examination of the tuberculous focus in the lung 24 hours after each injection and again just before repeating the injection. He aimed merely to keep the dose just at the level of a distinct action on the focus without general reaction. This method requires extreme individualization, adapting the dose to the special conditions encountered at each examination. The doses ranged up to 3 and 6 millionths of a milligram; the febrile reaction sometimes observed even with these minute doses confirms their pharmacologic power. A focus in the lung shows a reaction to the tuberculin more readily than a bone, glandular or laryngeal process. The 90 cases were under observation in the course of 1½ years and an average of 30 or 21 days was required before the temperature became permanently normal in the 27 patients in the first stage of tuberculosis, from [illegible] to 25 days in the 23 patients in the second stage and [illegible] 11 days in the 40 in the third stage. All this material was compared with control series in each group, not given tuberculin treatment.

55. **Tuberculous Sequences of Idiopathic Pleurisy.**—Allard has been investigating how many patients with idiopathic pleurisy acquire tuberculosis later. After reviewing the literature on the subject he gives the results of inquiry into the present condition of all the patients with idiopathic pleurisy at the three hospitals in Gothenburg since 1881, most of them having been examined twice with an interval of 5 years. Of the 200 patients, 61 have died of tuberculosis and 27 per cent. of all the children under 15 and 54 per cent. of all the patients between 16 and 50 are now tuberculous. The tuberculous focus is generally on the same side as the pleurisy. The data presented seem to indicate that idiopathic pleurisy is of tuberculous origin more often than is generally suspected.

56. **Serologic Diagnosis of Tuberculosis.**—The various methods for serologic differentiation of tuberculosis were given a thorough trial by Starkloff, but none stood the test except J. Bauer's method of passive transmission to guinea-pigs of the hypersensitiveness of the tuberculous. This is demonstrated by the reaction afterward of the animal to injection of tuberculin. The anaphylaxis thus conferred on the animal was the more pronounced the more serious the tuberculosis in the patient yielding the material. The advantage of this technic is that the reaction to the tuberculin test is transferred from the patient to the guinea-pig and the patient is thus spared the disagreeable reaction, while the findings are equally conclusive as if it had occurred in him. The animals are kept for a few days in an equably warmed room, and their temperature taken every four hours. They are then given a subcutaneous injection of 1 or 2 c.c. of human serum, centrifugated and injected under the skin of the abdomen. The temperature is then taken every 2 hours and, at the end of 24 hours, 0.1 c.c. of "old" tuberculin is subcutaneously injected and the temperature taken every hour, as the reaction is liable to occur early and be brief; it may even be past in 2 hours. An unmistakable rise in temperature is a proof that the tuberculin injected has encountered antibodies in conjunction with which it induces the temperature reaction. In other words, the rise in temperature demonstrates the passive transmission of hypersusceptibility and shows that the person from whom the serum had been derived must have, himself, been hypersusceptible. The control tests were all negative in Starkloff's extensive research when the serum had been derived from persons without active tuberculosis.

58. **Taking the Temperature at Night in the Tuberculous.**—Junker uses a rectal maximal thermometer in the form of a small suppository which he has found very convenient, and which has revealed an unsuspected frequency of high temperatures during the night in the tuberculous, or of fever when the temperature was normal during the day. The "retention" maximal thermometer either day or night may also prove useful in estimating the severity of tuberculosis.

62. **The Quantitative Titration Tuberculin Test.**—Erlandsen and Petersen comment on the errors liable with other methods of tuberculin testing and especially the sensitization liable to occur on repeating the subcutaneous tuberculin test, inducing misleading findings. These errors are obviated with the simultaneous application of the tuberculin in varying concentrations according to the Erlandsen and Ellermann titration method (described in The Journal, May 15, 1909, page 1634, and May 14, 1910, page 1656). This article reports the findings with this test applied to 566 persons, including 44 tuberculous, 46 suspects and 157 with no clinical signs of tuberculosis. The post mortem findings in 27 autopsies confirmed those of the titration test. A row of 5 incisions is made with a lancet adjusted to cut only to a certain depth; one serves as a control, the others are inoculated with a 32 per cent., 8, 2 and 0.5 per cent. solution of tuberculin. The diameter of the papules measured at the twenty-fourth and forty-eighth hours, is the criterion, and the average diameter of the four papules is used in the formula to compute the actual titration finding. The material reported on is classified as (1) the clinically non-tuberculous, *a*, without tuberculosis in the family, and *b*, with; (2) the suspects, *a*, with suspicious antecedents, and *b*, with scrofula in childhood, and (3) the tuberculous, *a*, in the first stage of pulmonary disease or

with bone, glandular or other tuberculous lesions, and *b*, advanced tuberculosis in any organ. The entire material is tabulated with the details. The titration value persists high for a long time in persons who had glandular or bone tuberculous process in youth, and this should be borne in mind in estimating any reaction to tuberculin. When the titration value is low in persons known to have had a tuberculous process, this sustains the assumption that it is no longer active.

Berliner klinische Wochenschrift

June 13, XLVII, No. 24, pp. 1093-1164

63 *Diagnosis of Typhoid. (Klinische Betrachtungen zur Typhusdiagnose.) L. Wagner.
64 *Importance of Bacteria of the Paratyphoid B Group in Human and Animal Pathology. E. Hübener.
65 Paratyphoid Infection in an Infant. Eckert.
66 Systematic Prophylaxis of Diphtheria. (Zur Frage der systematischen Diphtheriebekämpfung.) R. Otto.
67 Pathologic Anatomy of Disturbances in Heart Rhythm. (Rhythmusstörungen des Herzens.) W. Koch.
68 *Traumatic Origin of Fat Embolism. W. Bergemann.
69 *Cosmetic Treatment of Facial Paralysis by Loop of Wire Drawing up Corner of Mouth. (Behandlung der Facialislähmung nach Busch.) O. Momburg.
70 Improved Technic for Laryngectomy. (Ueber ein Hindernis bei der Kehlkopfexstirpation nebst einigen Bemerkungen zur Technik der Operation.) C. Pochhammer.
71 Occlusion of Ureter by Non-malignant Bladder Tumor. (Ureterverschluss durch gutartige Blasengeschwülste.) O. Rumpel.
72 *Transplantation of Human Ovaries. F. Kayser.
73 Recognition and Military Importance of the "Psychopathic Constitution." E. Stier.
74 *Cerebral Syphilis During the Secondary Stage. (Zur Kenntnis der Gehirnsyphilis im Sekundarstadium.) H. Löhe.
75 Behavior of Retina with Choroidal Tumors. (Zum Verhalten der Netzhaut im Bereiche von Aderhauttumoren.) O. Napp.
76 *Diagnosis of Intraocular Tumors by Transillumination. (Diagnose intraocularer Tumoren mittels Durchleuchtung des Augenhintergrundes.) Langenhan.
77 *Eye-Migraine Caused by Unsuspected Frontal Sinusitis. (Augenmigräne und Stirnhöhlenerkrankung.) Oertel.
78 Portable Apparatus for Sterilization of Drinking Water of Troops in the Field. (Zur Trinkwasserversorgung der Truppe im Felde.) W. Hoffmann and K. H. Kutscher.
79 Motor Wagons in the Army. (Kraftwagen im Heeressanitätsdienste.) G. Schmidt.
80 The Founding of Berlin University. A. Köhler.
81 Pathologic Histology in the Service of Surgery. H. L. Posner.
82 The New Building of the Military Medical Academy. (Kaiser Wilhelms-Akademie.) O. F. Paalzow and Zeyss.

63. **Diagnosis of Typhoid.**—Wagner expatiates on the importance of bacteriologic confirmation of the diagnosis of typhoid, citing a typical case of sepsis simulating typhoid, but after all, he says, the general impression of the clinician is the most important factor in differentiation.

64. **Paratyphoid Infection.**—Hübener remarks that the clinical picture of paratyphoid infection is far from resembling typhoid, and the name is a misnomer. Infection may occur from man, from diseased animals and from inanimate nature. The bacilli have been found in healthy animals, horses, pigs, beeves, mice, rats, guinea-pigs, rabbits and dogs. The bacteria of the paratyphoid group possess an elective action on the digestive tract even when they do not enter the body by the mouth, and further the faculty of inducing septicemia, penetrating into all the organs, glands and muscles and setting up catarrhal, hemorrhagic and suppurative, necrotic processes. He adds that Sanarelli's yellow fever *Bacillus icteroides* is a paratyphoid bacillus; bacteria of this group have been found in the blood in scarlet fever, measles, malaria, tuberculosis, pneumonia, tonsillitis, meningitis and typhoid and a long list of local processes. It is probable that they may change from a saprophytic to a pathogenic existence if the body becomes weakened by any general or local infection.

68. **Traumatic Origin of Fat Embolism.**—Bergemann ascribes fat embolism to the crushing of the bone tissue forcing fat into the veins in the bones. His clinical experience indicates the importance of refraining from crushing the bone in operations.

69. **Cosmetic Treatment of Facial Paralysis.**—Momburg has treated 5 patients with disfigurement from facial paralysis by carrying a wire loop from the malar bone to the corner of the mouth, through the soft parts of the cheek. By this means it is possible to draw the mouth up and improve the aspect remarkably. He has modified Busch's original technic by passing the wire around the malar bone and giving the loop a broader hold at the mouth. He prefers to operate under the first whiffs of ether. The article is illustrated showing the patients before and after, and the bayonet-shaped needle which passes readily through the cheek tissue.

72. **Transplantation of Ovary.**—Kayser was obliged to remove a tubo-ovarian cyst four years after the other ovary had been removed. As part of the ovary at the last operation seemed to be normal, he transplanted two wedge-shaped pieces in the thigh. The patient was a woman of 32 and menstruation apparently continued while there were no symptoms at any time of the artificial menopause. The menstrual hemorrhage is a little more profuse than formerly, and the intervals irregular. He reviews the experiences of others in this line and declares that transplantation of ovarian tissue must now be regarded as fully established on a broad physiologic basis as a means to preserve women from the severe injuries following the loss of the internal function of the ovaries.

74. **Brain Syphilis in the Secondary Stage.**—Löhe gives the details of two cases of cerebral disturbances, in the first, coming on only three months after syphilitic infection, receiving prompt and energetic mercurial treatment but proving rapidly fatal from arterial disease and incipient meningitis. In the second case initial sclerosis and hemiplegia were noted only twenty-four days after infection, but they yielded to calomel. Both patients were robust soldiers of 28 and 31. The cerebrospinal fluid in each case gave a negative Wassermann reaction, while the serum was strongly positive.

76. **Transillumination of the Eye.**—Langenhan has been applying Hertzell's method of transillumination of the fundus from the throat outward, and found it very useful for the early diagnosis of intraocular tumors of the rear segment of the eyeball. It is especially valuable for differentiating such from serous accumulations under the retina.

77. **Ocular Migraine and Frontal Sinusitis.**—In the case described by Oertel there was a chronic catarrhal inflammation of the right frontal sinus entailing periodical attacks of intense migraine, as the secretions accumulated and compressed the nerve terminals in the orbit. Notwithstanding the long duration of the sinusitis there was no pus. The case teaches the importance of examination of the nose and sinuses even with purely functional affections of the eye.

Deutsche medizinische Wochenschrift, Berlin

June 23, XXXVI, No. 25, pp. 1161-1208

83 *Surgical Treatment of Lupus. E. Lang.
84 *Finsen Treatment of Lupus. F. Zinsser.
85 *Radium Treatment of Lupus. P. Wichmann.
86 *Treatment of Lupus by Other Methods. E. Gottschalk.
87 *Perforation of Gastric Ulcer. (Ueber Ulcus ventriculi perforatum.) K. Heinemann.
88 Inflammatory Pseudocarcinoma of the Appendix. (Die entzündlichen Pseudo-Karzinome des Wurmfortsatzes.) R. Milner.
89 Size of the Heart in Various Diseases. (Herzgrösse bei verschiedenen Krankheiten.) S. Wideröe.
90 *Association of Diabetes with Constitutional Asthenia. (Zusammentreffen von Diabetes mellitus mit asthenischer Konstitutionsbeschaffenheit.) G. Graul.
91 *Eye Symptoms with Frontal and Ethmoidal Sinusitis. (Augensymptome bei Erkrankungen der Stirnhöhle und Siebbeinzellen.) A. Gutmann.

83 to 86. **Treatment of Lupus.**—This number of the *Wochenschrift* gives an oversight of the status of treatment of lupus to date, surgical treatment, Finsen, radium and other methods of treatment being described by experts with long experience in their several lines, as presented at the recent lupus conference at Berlin. The discussions that followed the various papers are also given in full. A combination of the various methods was advocated for many cases, and fine results were reported in many instances, not only from the well-equipped clinics for surgical and Finsen treatment, but also by the dermatologist, especially when he had called on a laryngologist and rhinologist to take charge of the affected mucosa. Veiel reported a case in which such associated treatment resulted in the complete cure of lupus involving the entire face, nose, palate and larynx. The cosmetic results are better, he declared, the longer the wound takes to heal. He makes much use of pyrogallol, believing that the results with it are second only to those of Finsen treatment. Several

reported that the lupus had continued to progress under Roentgen rays and that their experience compelled them to advocate treatment on surgical principles from the start. Koenig declared that the excision is usually not radical enough—many patients with extensive lupus tell of having the first lesion excised in early childhood. It is astonishing, he adds, to what a depth the lupous tissue can penetrate. Doutrelepont has obtained good results with the method devised by Payr, described in The Journal, Nov. 13, 1909, page 1701. The lupous patch is undermined and iodoform gauze drawn through underneath the bridge flap thus made. Fabry and others always precede pyrogallol treatment with energetic curetting. The experience of Lang of Vienna includes 441 lupus patients treated by radical excision of a total of 745 foci, including 250 on the face. Of the 308 patients traced to date, the cure has been permanent in 276, the interval ranging from one to sixteen years. He urges the dermatologist to train himself to be his own surgeon for lupus. As the overwhelming majority of his patients needed but a single operation, the expense and time required cannot be compared with those of radiotherapy.

87. **Perforation of Gastric Ulcer.**—The diagnosis is generally easy but the question as to when and how to operate is still open to discussion, Heinemann remarks. He thinks that cautious lavage of the stomach as a preliminary to operating can do no harm while it may afford useful information as to the site and extent of the opening. Fully 60 per cent. of the patients with perforation of a gastric ulcer are now saved; the results depend on the resisting powers as well as on the length of the interval before the operation. The gastric juice generally ensures that the stomach content is sterile, and consequently infection is not threatening. Shoemaker's patient recovered although seven days had elapsed before operative treatment and general peritonitis had developed. Heinemann found the stomach content still sterile two weeks after its removal after a test breakfast, although it had been kept in the incubator all that time.

90. **Coincidence of Diabetes with Universal Asthenia.**—Graul states that in a total of 170 diabetics he has encountered only 4 presenting the constitutional anomaly which Stiller calls asthenia universalis. These 4 patients were from 18 to 40 years old, and the diabetes was evidently of nervous origin; an inherited predisposition to diabetes was manifest in each case. The cases were further distinguished by the fact that the syndrome remained mild, no tendency to a progressive course being evident in any instance during the five years and more that the patients have been in his charge. The universal asthenia seems rather to increase the tendency to nervous diabetes, but at the same time it seems to keep the diabetes in a milder form than is generally the case in the young.

91. **Eye Symptoms with Sinusitis.**—Gutmann reports some cases to show the ocular symptoms liable to be encountered with frontal, sphenoidal and ethmoidal sinusitis before and after operative treatment. The danger of involvement of the optic nerve is especially imminent with ethmoidal empyema. In a number of cases on record central scotoma was an early symptom of ethmoidal sinusitis, encroaching on the eyeball, although in some instances the sinus contained only polypous growths and no pus. Their prompt removal saved vision in some cases but the operation came too late in one of the personal cases reported.

Jahrbuch für Kinderheilkunde, Berlin

June, LXXI, No. 6, pp. 645-804

92 Importance of Reduction of Whey in Infant Feeding. (Bedeutung der Molkenreduktion für die Ernährung junger Säuglinge.) H. [illegible]
93 Raw Milk in Infant Feeding. (Zur Frage der Rohmilchernährung.) K. Bamberg.
94 *Albumin Milk in Infant Feeding. (Ueber "Eiweissmilch.") H. Finkelstein and L. F. Meyer.
95 [illegible] Cretins in a Vienna Family. R. Eller. Commenced in No. 5.

94. **Sugar-Poor Mixture for Infant Feeding.**—This is the continuation of the article reviewed in these columns July 2, page [illegible]. The experiences with the new "albumin milk" with 311 infants are here summarized in detail, with especial regard to pathologic conditions in the children.

Medizinische Klinik, Berlin

June 19, VI, No. 25, pp. 967-1006

96 System of Examining the Sensory Functions. (Zur Methodik der Sensibilitätsuntersuchung.) T. Ziehen.
97 *Cocainization of the Pericardium to Prevent Disturbances from Its Irritation During Operations. (Herzstörungen durch Reizung des Perikards.) M. Heitler.
98 *Spontaneous Hemorrhage into the Bed of the Kidney. (Spontanblutungen in das Nierenlager.) P. Pick.
99 Tincture of Iodin Sterilization of the Skin. (Zur Jodtinkturdesinfektion nach Grossich.) W. Kausch.
100 Metastatic Gonorrheal Conjunctivitis. H. Davids.
101 *Chronic Chorea. Kuckro.
102 Contact with Gonococci not Necessarily Followed by Infection. (Zur Frage der Kupierung der Gonorrhoe.) Hellig.
103 Nitrites in Relation to Cause of Cholera. (Bedeutung der Nitrite, der salpetrigen Säure und des Stickoxyds bei Cholera indica.) R. Emmerich and V. R. Stühlern.

June 26, No. 26, pp. 1007-1042 and Supplement

104 *The Psychic Epidemic now Prevailing Among Physicians. (Eine psychische Epidemie unter Aerzten.) A. Hoche.
105 *Nystagmus. St. Bernheimer.
106 Extraperitoneal Cesarean Section. (Zur Indikationsstellung und Technik des extraperitonealen Kaiserschnittes.) A. Strempel.
107 Pathogenesis of Febrile Visceral Syphilis. O. Hermann.
108 Pathologic Fixation or Displacement of Abdominal Organs and Roentgen Diagnosis. C. B. Schürmayer.
109 Treatment of Nervous Impotency. E. Kantorowicz.
110 Prophylactic Appendicectomy. (Nochmals die Appendix bei gynäkologischen Laparatomien.) F. Weisswange.
111 Functional Tests of the Pancreas. (Zur Functionsprüfung des Pankreas.) A. Stanlek.
112 Appendicitis. (Aktuelle Fragen aus dem Gebiet der Appendizitislehre.) A. Ebner.

97. **Cocain to Prevent Irritation of the Pericardium During Operations.**—Heitler suggests the possibility of keeping the heart action regular by local application of a 10 per cent. solution of cocain during operations involving the pericardium. He bases this suggestion on the experiences with dogs, the pericardium showing itself extremely sensitive to the slightest touch, while under the influence of cocain the heart rhythm persisted regular throughout.

98. **Spontaneous Hemorrhage into the Bed of the Kidney.**—Pick adds another to the few cases on record of spontaneous pararenal hemorrhage. His patient was a woman of 53 who eight years before had had gall-stone colic. She was suddenly seized with violent pains in the right abdomen, with other signs of cholelithiasis. Only during the operation was it discovered that the trouble was a retroperitoneal hematoma in the bed of the kidney. Differentiation is difficult and the prognosis unfavorable without prompt surgical treatment, which proved successful in his case.

101. **Chronic Chorea.**—The positive Babinski on the left side and the fact that a brother of the youth affected had chorea minor, suggested to Kuckro an organic basis for the chronic chorea in the first case reported. There were occasional normal intervals but the recurrences were so numerous and frequent that the case may be styled chronic. In a second case right hemichorea developed three years after an attack of apoplexy in a man of 64. In a third case the chorea developed suddenly and persisted uninterrupted to date, that is, for 17 years. There must have been some poliomyelitic lesion responsible for the chorea in this case. In two other cases of chronic chorea without inherited predisposition, a man of 42 developed the chorea which has persisted for 20 years, while in the other case the chorea came on at 42 and persisted for over three years to date. In this case there were signs of chronic lead poisoning.

104. **A Psychic Epidemic Among Physicians.**—Hoche thus refers to the present vogue of Freud's conceptions as to the "sexual neuroses," a large number of nervous and psychic disturbances being ascribed by Freud to conscious or subconscious influences in the sexual sphere during the preceding years of childhood. (An abstract bearing on this subject was published in The Journal, July 17, 1909, page 244.)

105. **Nystagmus.**—After discussing nystagmus in general and its interpretation, Bernheimer reports a case in which it was evidently, he thinks, of purely cortical origin, elicited by psychic influences. The eyes functioned normally, vision was normal and yet covering one of the eyes was followed at once by horizontal nystagmus in both eyes, which continued until the patient could see again with both eyes. There was some tendency to neurasthenia but the patient, a waiter, 28 years old, was otherwise apparently healthy.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

June, XXXI, No. 6, pp. 687-808

113 *Treatment of Contracted Pelvis. (Zur Therapie des engen Beckens.) K. Menge.
114 Experiences with Contracted Pelvis at Prague and Giessen. O. v. Franqué.
115 *Insufficiency, Atony and Hyperplasia of the Uterus and Uterine Hemorrhage. A. Theilhaber.
116 Importance of Lecithin for Differentiating Various Species of Hemolytic Streptococci. E. Sachs.

113. **Treatment of Contracted Pelvis.**—Menge comments on the revolution that has taken place since the dawn of the new surgical era in obstetrics, the amazing result having proved to be that now far more births occur by the spontaneous forces of Nature than before. As the obstetrician knows that he has the choice of several operative methods for delivering the woman at any moment, he now placidly waits until Nature has done all that she possibly can before he attempts to interfere. And he finds that she is able to accomplish far more than he used to suppose her capable of. There is no danger now of letting the proper moment for interference pass, as he used to dread when prophylactic measures, version, etc., were his sole reliance. Menge consequently advises the general practitioner to send to some institution all parturients with a conjugata vera of 5.5 cm. or under, and also those with a diameter between 5.5 and 7.5 cm. if the child is still living. If the fetus is dead, he can manage the case himself. But for all pelves over 7.5 cm., he should manage the case on strictly aseptic conservative principles, and with cephalic presentation strive to realize a spontaneous natural delivery, which is generally attainable. If spontaneous delivery is impossible he advises sending the woman to an institution or even craniotomy of the living child. The latter is rarely necessary if Nature is given time to do her work.

115. **Insufficiency of the Uterus and Hemorrhage.**—Theilhaber emphasizes the importance of muscular contraction for the arrest of hemorrhage, regarding excessive uterine hemorrhage as often due to muscular insufficiency of this organ. Not only anatomic but also functional disturbances in the uterine musculature may be responsible for the continuance of hemorrhage. An atonic uterus is not always insufficient, but insufficiency of the uterine musculature is usually a consequence of atony, although it may be due to other causes. The insufficiency becomes manifest when there is a lack of proportion between the blood content of the uterus and the development of its muscle. In 62 cases of uterine hemorrhage under the age of 19, he found the uterus unusually small in 58; in only 4 was it of normal size. Excessive hyperemia in an insufficient musculature is liable to entail hemorrhage from it, and sexual excitement, maintaining the hyperemia in the uterus, is an important factor in uterine hemorrhage. He adds that masturbation is extraordinarily prevalent among women, especially in the years of greatest development, but also later. The uterus accommodates itself poorly to frequent sexual excitement. In a typical case a widow of 46 had sacral pains, evidently rheumatic; the uterus was large and hyperplastic, menses normal. A year later she returned for relief from violent uterine hemorrhages. She acknowledged that she had an "affinity" and had been inclined herself to ascribe the hemorrhages to her liaison. Meat and alcohol are liable to induce congestion in the uterus and thus entail hemorrhage; abstinence from both has sometimes aided in the cure of long persisting uterine hemorrhage, in his experience, especially among girls. He thinks that the assumption of a hyperemia in excess of what the musculature can take care of amply explains uterine hemorrhage in many cases.

Münchener medizinische Wochenschrift

June 21, LVII, No. 25, pp. 1321-1376

117 *Present Status of Operative Treatment of Ear Disease. (Der gegenwärtige Stand der Otochirurgie.) B. Heine.
118 Pantopon. H. Sahli.
119 Means to Influence the Breathing Capacity. (Die Beeinflussung der Mittellage der Lunge bei Gesunden.) J. Forschbach and A. Bittorf.
120 Tuberculin Immunity. (Ueber Tuberkulinimmunität.) F. Hamburger and R. Monti
121 *Diagnosis of Large Retroplacental Hematoma. A. Mayer.
122 Route of Infection and Course of Pneumococcus Meningitis. J. Grober.
123 *Tuberculosis and Lactation. (Tuberkulose und Stillen.) A. Deutsch.
124 Lactation Among African Natives. (Zur Frage der Stillfähigkeit.) Fock.
125 Enrichment Medium for Tubercle Bacilli. (Zu dem Zahnschen Anreicherungsverfahren für Tuberkelbazillen.) P. Mende.
126 Swallowed Foreign Bodies in Hernia. (Fremdkörper im Bruchdarm als Ursache schwerer Komplikationen.) E. Fabian.
127 Double Tubal Pregnancy. (Doppelseitige Tubarschwangerschaft.) F. Süssmann.

117. **Management of Otitis Media.**—This dissertation is addressed to the general practitioner and among the points emphasized by Heine is the necessity for being on one's guard against complications after the drum membrane has perforated and the patient feels no further inconveniences beyond the persisting suppuration and the deafness. These cases with no external manifestations are insidiously dangerous, and persons over 40 seem to be most predisposed to this form. Among the 63 fatal cases of uncomplicated suppurative meningitis at the Berlin ear clinic, 31 were due to acute and 32 to chronic otitis media. Twelve of the chronic cases were in patients between 11 and 20, while 16 of the fatal acute cases were in persons over 40. This age should therefore suggest extra caution, and he urges the mastoid operation systematically when the suppuration has persisted for 6 or 8 weeks, even when there are no serious symptoms, especially for persons over 40. In the young the mastoid process is less compact, and it does not offer such resistance to the penetration of the pus. In other cases there may be no symptoms, but the experienced eye will note that the lumen of the auditory canal is growing smaller, the rear upper wall is sinking down, a sign of more pus in the antrum than can be voided through the opening in the membrane. The sinking of the wall is merely the swelling over a focus of periostitis. Operative treatment should be sought at once, as also when the suppuration increases and the canal fills up again at once after it has been cleaned out, showing that there must be some reservoir in the mastoid. Diabetics are particularly liable to profuse suppuration of this kind in consequence of rapid breaking down of the bone, although there may not be the slightest pain. Facial paralysis is also a sign that speedy operation is required, as it shows that the nerve in its passage through the mastoid has become involved in the lesion. The Bier suction and constriction hyperemia method of treatment is too uncertain and may allow the proper moment for operation to slip past. Heine differentiates a lesion in the bone from one in the mucosa in the chronic cases by the aspect of the drum membrane; in the bone cases—which always indicate operative treatment, if suitable medical measures do not promptly cure—the perforation of the membrane is in the outer edge while with a mucosa suppuration it is central, always surrounded by membrane tissue, and this latter form does not require surgical treatment. If in the later course of an acute or with a chronic otitis media in an adult, the temperature goes up and no other source for this can be discovered, this indicates either meningitis or pyemia as a rule. Serous meningitis generally retrogresses after the mastoid lesion has been evacuated, and repeated lumbar puncture may benefit. If meningitis can be excluded, the transverse sinus should be exposed its entire length. If found bathed in pus and if the fever has not been of long duration, this may be enough in itself; otherwise the sinus should be opened and the thrombus removed. He adds that Pitt found that 1 death in each 158 at a London hospital was the result of middle ear disease; Gruber, 1 in 173 at Vienna, and his own experience has been 1 in 154; that is, 70 deaths for which otitis media was responsible out of 10,830 autopsies. At the Berlin ear clinic, in 22 years there have been 118 cases of otitic pyemia, 77 of uncomplicated suppurative meningitis and 51 brain abscesses. Only 21.4 per cent. of his own series of 40 patients with brain abscesses recovered, mostly already complicated with sinus thrombosis or suppurative meningitis; 50 per cent. of his patients with sinus thrombosis were saved by the operation.

121. **Diagnosis of Large Retroplacental Hematoma.**—Mayer refers to the cases in which there is no external hemorrhage, but vigorous and painful labor contractions continue after the birth of the child; the uterus feels large and hard, even taut. Suddenly the patient complains of nausea, the radial pulse grows almost imperceptible and the uterus is felt growing larger. All the blood escaping has accumulated behind the

placenta and the uterus reacts with extremely painful contractions. When this condition is recognized, the placenta should be at once removed, thus sparing the patient further loss of blood.

123. **Tuberculosis and Lactation.**—Deutsch found that lactation constantly manifested an unfavorable or even pernicious influence on the progress of the tuberculosis in 30 certainly tuberculous mothers and 14 suspects. Four other tuberculous women who did not nurse their children were much better off physically than the nursing group. The children nursed by the tuberculous women developed tuberculosis later in a much larger proportion than the children artificially fed. In some of the families the nursed children died of tuberculosis, while following infants, fed artificially by the same tuberculous mothers and without any improvement in the environment, grew up healthy.

Therapeutische Monatshefte, Berlin

June, XXIV, No. 6, pp. 281-336

128 *Medical Reprints and the Advertising of Proprietaries. (Reklame durch Sonderabdrucke.) W. Heubner.
129 *The Coincidence of Oxyuris and Chronic Constipation. (Notiz betreffend das Nebeneinandervorkommen von Oxyuris und chronischer Koprostase.) W. Ebstein.
130 Action of Yohimbin Salt in Reducing the Blood Pressure. (Ueber "Vasotonin," ein neues druckherabsetzendes Gefässmittel.) F. Müller and B. Fellner, Jr.
131 Operative Measures in Treatment of Internal Ear Disease (Operative Eingriffe bei Erkrankung des Ohrlabyrinths.) Graff.
132 Local Application of Fullers' Earth in Treatment of Leucorrhea, Etc. (Zur Bolustherapie des Ausflusses, etc.) M. Nassauer.
133 Absorption and Elimination of Some Salicylates. (Resorption und Ausscheidungsdauer einiger Salizylpräparate.) E. Pinczower.

128. **Medical Reprints and the Advertising of Proprietaries.**—The Journal mentioned last May, page 1731, Heubner's article commending the step taken by the *Therapeutische Monatshefte* in refusing further to supply manufacturing chemists with reprints of articles that have appeared in its columns for them to distribute with their advertising matter. The editor of the *Therapie der Gegenwart*, Dr. G. Klemperer, followed with the statement that he saw no necessity for this step and should continue to supply the commercial firms with reprints if requested. Heubner here replies to Klemperer, showing that the moral effect of a reprint, with the stamp of the journal and its moral backing, is far more potent than mere extracts culled from the journal and sent out by the manufacturing firm—the physician receiving such advertising matter knows what to think of it. Klemperer's plea that physicians ought to be kept posted in regard to good publications on good remedies, and that it is up to the editors of the medical journals to see that the articles in their columns are really valuable ones, is replied to by Heubner as follows: "The reprints in question are on new remedies, and it is too early to decide whether they are going to prove truly 'good' or 'bad' in their ultimate therapeutic outcome. Any physician using the new drug must understand that it signifies an experiment on the living subject, but his appreciation of this fact is too often dulled by the moral influence of the reprint." In respect to the editors of medical journals being always able to sift the good from the bad articles offered them, he remarks "I can only admire Dr. Klemperer's confidence in his judgment in this respect. As for myself, I regard the task of passing critical judgment on reports of clinical or ambulant study of the therapeutic workings of a new drug, as the most difficult and the most ticklish of all the tasks that ever confront me." Klemperer stated that he could look back on his twelve years of editorship with complacency, 'confident that no cuckoo's egg had been smuggled into the columns of his journal." To this Heubner remarks that he could point out several articles in the other's journal in the twelve years in question which he is convinced are of the cuckoo egg variety. He adds that articles of this kind have not been in the *Therapie der Gegenwart* alone, but also in his own journal and in the leading weeklies, and he does not reproach Klemperer on this account, but merely takes exception to his view that editors of medical journals are always able to tell the chaff from the wheat. The medical press, he says, is the arena where the valuable has to fight for its right to survive, and if Klemperer continues to supply reprints to the manufacturing chemists then he will sometimes be found to be lending the influence of his name and journal to bad articles on bad drugs. Heubner adds that it not infrequently happens that the manufacturers keep on sending out laudatory "literature" when the writers have since retracted their first announcements. The main point is that the "literature" is culled from the standpoint of business interests, and this is fostered by the supplying of medical reprints, rendering impossible an impartial, objective opinion. He continues that he does not see the necessity for keeping every physician fully posted in respect to every new drug or modification of drugs that comes out. A physician who "uses" the "literature" of the manufacturers but does not keep abreast of the times otherwise by reading, visiting annual meetings, congresses, etc., should not feel that he is especially called to "test" the new drugs. Any one who looks around him can keep himself better posted from the reports of society proceedings, etc., in the leading journals than is possible from the favor of the drug manufacturers. In conclusion he urges the readers of medical journals to express their opinion on the matter.

129. **Helminthiasis and Chronic Constipation.**—Ebstein cites an instructive case to show that it does no permanent good to treat helminthiasis alone without curing the tendency to chronic constipation at the same time. For this a course of treatment in some institution is almost indispensable. In the case reported severe disturbances from the oxyuris kept recurring again and again notwithstanding repeated courses of treatment by various physicians. It was finally banished by systematic large oil and saline enemas according to Ebstein's method. The patient was a merchant, 20 years old, who had suffered from the helminthiasis since childhood.

Wiener klinische Wochenschrift, Vienna

June 23, XXIII, No. 25, pp. 919-962

134 *Seroreaction with Extract of Beef Myocardium in Diagnosis of Syphilis. (Die Cuorinseroreaktion zur Diagnose der Syphilis.) Y. Teruuchi and H. Toyoda.
135 Suture of the Heart. Four Cases. (Kasuistische Beiträge zur Herznaht.) O. Födert. (Fall von geheilter Herznaht.) A. de Grisogono.
136 *Early Symptoms of Serum Sickness. (Frühsymptome der Serumkrankheit.) R. Pollak and B. Mautner.
137 *Predisposition to Tuberculosis in Young Children. (Bemerkungen über den Habitus tuberculosus im frühen Kindesalter.) J. K. Friedjung
138 *The Ultimate Fate of Children with Inherited Syphilis. (Die gesundheitlichen Lebensschicksale erbsyphilitischer Kinder.) K. Hochsinger. Commenced in No. 25.
139 Folklore History of Medicine (Der Aber- und Wunderglaube in der Chirurgie früherer Jahrhunderte.) E. F. Heeger.

134. **Serodiagnosis of Syphilis.**—In this communication from the Tokio institute for infectious diseases Teruuchi and Toyoda report promising experiences with a specific reaction for syphilis with the reagent isolated from beef myocardium. This reagent seems to have a specific action with syphilitic serum, the results paralleling the Wassermann reaction in nearly every case, although the latter seems to be more truly specific.

136. **Early Symptoms of Serum Sickness.**—Pollak and Mautner noticed a swelling of the glands in the region after injection of horse serum in 100 children. Nearly every child reacted in some way to the injection of serum although the reaction to the first injection was rudimentary in the majority. The reaction was unmistakable in all after a second injection, showing a marked difference between this and the first injection. The fully developed picture of serum sickness was much more common after serotherapy of scarlet fever than with diphtheria antitoxin, as with the former up to 200 c.c. was injected, while the dose of antitoxin was generally 5 or 10 c.c.

137. **The Tuberculous Habitus in Infants.**—Friedjung has been studying this subject for over ten years and has found that almost invariably infants and young children who develop tuberculosis later are those with the paralytic thorax, delicate, dry skin, and long dark eyelashes with blonde hair, deep blue iris with a darker outer margin, and lanugo between the shoulder blades, over the deltoid, on the forearm, and on the legs and temples. Brunettes lack the striking difference between the color of the hair and eye lashes. These characteristics were encountered so often with tuberculosis in children and adults that he accepts a causal connection between them. The Pirquet test applied to 29 such infants gave a positive

result in 11 although there was nothing to indicate tuberculosis otherwise. The reaction became positive in larger proportions with increasing age, and he is convinced that there is a close connection between this habitus and tuberculosis, but he does not venture to decide which is primary.

138. **The After-History of Children with Inherited Syphilis.**—Hochsinger has with great effort been able to trace to date the history of 263 children born alive with inherited syphilitic taint in 134 families who have been constantly under his charge for many years. He classifies and tabulates this material, which he thinks is the first extensive study of the kind. Fully 25 per cent. grew up to be healthy adults and only 14 per cent. of the children died during the first year. The financial position of the families insured good care for all the children. The findings confirm the fact that syphilis in the parents has a more injurious influence on the physical and mental development of the offspring than is observed with any other disease. Even when the inherited syphilis does not manifest itself as such, it may render the children physically and morally unfit for their proper place in society. He found that when puberty had been passed without manifestations, there was every probability that the individual would permanently escape them. The manifestations were more severe when the children showed the effect of inherited syphilis most notably in early childhood. Among the 72 healthy adults, 21 showed traces of their inherited taint, saddle-nose in 19, hyperostosis of the skull in 17, and scars on the lips in 7. Excluding these, there are thus only 51 absolutely normal out of the 208 under observation from 4 to 24 years. The tendency to migraine he ascribes to the hypertrophy of the skull and hydrocephalus, entailing a lack of proportion between the capacity of the skull and skull content. The Wassermann reaction was positive even when there were no signs of the inherited taint, and this with a remarkable persistence, notwithstanding mercurial treatment. The positive reaction was sometimes obtained with children who have always been free from any sign of the inherited taint. The severity of the infection at birth seems to be of supreme importance for the later fate. None of the children with pronounced symptoms soon after birth grew up healthy. In some of the families the children displayed a tendency to moral insanity which he attributes to their syphilitic inheritance. The cause of many cases of defective physical, mental and moral development may remain a mystery until suddenly cleared up by discovery of a history of syphilis in the parents. When it is noted that several children in a family display this nervous, irritable tendency, a family history of syphilis should be suspected. Severe disturbances in the central nervous system from the inherited taint generally develop at puberty if at all.

Zentralblatt für Chirurgie, Leipsic

June 25, XXXVII, No. 26, pp. 881-904

140 Experimental Firearm Wounds of the Skull. (Zur experimentellen Erzeugung der sogenannten "Krönlein'schen Schädelschüsse.) E. Bircher.
141 Improved Technic for Chondrotomy. (Neue Methode der Rippenknorpelresektion bei Lungenemphysem.) H. Krüger.

Zentralblatt für Gynäkologie, Leipsic

June 25, XXXIV, No. 26, pp. 865-896

142 *Extraperitoneal Cesarean Section Does not Entail Danger of Rupture of Uterus in Following Childbirths. (Extraperitonealer Kaiserschnitt und Uterusrupturgefahr bei späteren Entbindungen.) F. Lichtenstein.
143 *Plaster of Paris as Dressing for the Vagina. (Ueber Tamponbehandlung und Austrocknung der Scheide.) E. Kraus.
144 Fibroma of Round Ligament. F. v. Zur-Mühlen.

142. **Extraperitoneal Cesarean Section Does Not Entail Tendency to Rupture Later.**—Lichtenstein makes this assertion on the basis of 2 personal cases and of 9 that have been reported, in which a subsequent pregnancy and delivery progressed without any tendency to rupture, although labor lasted up to 38 hours in one case. The interval between the pregnancies was only from 10 to 15 months in 6 cases and under 26 months in the others. A longitudinal incision in the center of the cervix seems the best technic, Lichtenstein concludes from this material and theoretical considerations.

143. **Plaster of Paris as Dressing for the Vagina.**—Kraus insufflates dry plaster of Paris into the vagina to absorb secretions, having found that it takes up moisture by a chemical combination as well as by the remarkable capillary attraction which it shares with kaolin or bolus alba, which has also been commended for the purpose. He reports further good results from the use of chamomile tea for vaginal lavage.

Zentralblatt für innere Medizin, Leipsic

June 25, XXXI, No. 26, pp. 651-672

145 Serologic Behavior of the Urine. H. Pribram.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 23, XXXI, No. 75, pp. 793-800

146 Appendicitis. (Note pratiche sull'appendicite.) B. Oreste.

Riforma Medica, Naples

June 6, XXVI, No. 23, pp. 617-644

147 *Serum of Blood from Goat's Renal Vein in Treatment of Experimental Nephritis. (Il siero di Teissier nelle nefriti sperimentali.) P. Tria.
148 *Anaphylaxis from Gastric Juice in Diagnosis of Gastric Cancer. (La anafilassia da succo gastrico.) S. Livierato.
149 Infantile Splenic Anemia from Leishman Bodies—Kala-azar? S. Cannata.
150 Dilatation of Cicatricial Stenosis of the Esophagus by the Mouth After Temporary Gastrostomy. P. Gilberti.

June 13, No. 24, pp. 645-672

151 *Unilateral Laryngeal Paralysis. (Caso di sindrome Longhi Avellis. Forma associata.) G. Ferarri.
152 *Degeneration of Nerves and Recurrence of Hernia After Ligation. (Ancora di un particolare nella cura radicale dell'ernia inguinale.) C. Mantelli.
153 Progressive Muscular Atrophy Following Malaria. F. Fazio.

147. **Treatment of Experimental Nephritis with Blood from Renal Vein.**—Tria reports experiments on dogs with nephritis (induced by uranium nitrate), injected with serum from the blood of the renal vein of goats. In 8 of the 14 dogs marked benefit was apparent from the injections, while the nephritis persisted unmodified in the controls. He injected 10 to 40 c.c. of the serum according to Teissier's technic, and he reviews the literature on the subject since the latter's first communication published in 1896.

148. **Diagnostic Importance of Anaphylaxis from Gastric Juice.**—Livierato found that gastric juice from normal persons had no toxic action when injected under the dura of guinea-pigs, even in doses of 1 c.c. On the other hand, gastric juice from patients with cancer of the stomach proved rapidly fatal even in one-tenth of this amount, symptoms following when over 0.05 c.c. was injected. By preparing the animals beforehand with injections of minute doses of aqueous extract of mammary carcinoma and then injecting the minimal dose, 0.05 c.c., phenomena of anaphylaxis were observed at once when the gastric juice came from a cancer patient, but not with gastric juice from patients with ulcer or any form of non-malignant disease. These phenomena of anaphylaxis may serve to differentiate gastric cancer, he remarks, besides throwing light on the general biology of cancer. The anaphylaxis was observed in animals prepared only twenty-four hours before the test.

151. **Unilateral Laryngeal Paralysis.**—Ferarri reports a case of what he calls the Longhi-Avellis syndrome in a farmer of 59. There was first abducent paralysis and paralysis of the velum, lasting for about five years with no other symptoms except occasional dizziness, until an intense headache was followed by complete paralysis of the face and shoulder and vocal cord on this side. He compares this case with those on record, explaining the disturbances as the result of a toxic infectious neuritis of the branches of the spinal nerve involved, gradually extending backward to the nucleus.

152. **Cause of Recurrence after Herniotomy.**—Mantelli has become convinced that the nerves are liable to be injured by a ligature applied in the course of treatment of inguinal hernia and that this injury of the nerves leads to degeneration of the tissues which they innervate.

Policlinico, Rome

June 26, XVII, No. 26, pp. 803-834

154 *Pellagra Due to Filaria in Drinking Water from Shallow Wells, etc (Nuove ricerche sulla etiologia della pellagra II.) G. Alessandrini.

June, No. 6, Medical Section, pp. 241-284

155 Leishman Bodies in Spleen of Children with Kala-Azar (Studio dell Leishmanie nel succo della milza del bambini affetti da kala-azar.) A. Tomaselli.
156 Malarial Pigment. V. Ascoli.

157 *Pathologic Anatomy of Severe Anemia with Enlargement of the Spleen. (Sulle anemie gravi con splenomegalia.) N. Pende.
158 Improved Technic for the Romanowski Staining Method. (Ricerche sulla colorazione di Romanowski e metodo rapido ottenerla.) A. Petacci.

June, No. 6, Surgical Section, pp. 241-288

159 Congenital Cystic Lymphangioma of the Neck. (Linfoangioma cistico congenito del collo.) R. Stefano. Commenced in No. 5.
160 *Early Operative Treatment of Tuberculous Osteitis of the Spine. (L'intervento precoce nell'osteite tubercolare della colonna vertebrale.) P. Sabella.
161 The Physiologic and Anatomic Relations Between Rats in Parabiosis. L. C. Zapelloni.

154 **Origin of Pellagra.**—Among the arguments presented by Alessandrini to sustain his theory of the cause of pellagra are that the seashore and mountainous regions are exempt, and that the disease ceases to spread when artesian wells are installed to take the place of shallow wells and surface drinking water. In the Gualdo Tadino district the endemic zone is distinctly separated from the immune territory by the course of two streams, but the number of cases is no larger close to the streams than elsewhere throughout the endemic zone.

157. **Anemia with Enlargement of the Spleen.**—Pende presents clinical data to sustain his view that there is no special affection that can be called splenic anemia; there may be a primary anemia accompanied by a primary splenomegaly. The anemia may be of the Banti, the Biermer periodical or pernicious progressive type, or of the leucoanemia type, or the Cardarelli type of infantile splenic anemia, while the spleen may present varying lesions with each of these types. The character of the anemia and of the splenomegaly may differ in each individual case.

160. **Early Operative Treatment of Tuberculous Lesions in the Spine.**—Sabella reports excellent results from laminectomy and resection of the diseased spinous process in a man of 47 with six healthy children. For six or seven years he had noticed occasional pains in the lumbar region and then they became so intense that he was confined to bed. Tuberculin tests were negative or dubious and no benefit was derived from medical measures, but the operation relieved him at once from the pain and insufficiency of the sphincters which had developed from compression. The cure has been complete for the six months since. The tuberculous process was restricted to a single spinous process.

Ugeskrift for Læger, Copenhagen

June 9, LXXII, No. 23, pp. 661-702

162 *Malignant Granulomatosis. V. Scheel and V. Ellermann.

June 16, No. 24, pp. 703-730

163 Occupation as Aid in Sanatorium Treatment of the Tuberculous. (Arbeidsterapi som Led i Sanatoriebehandlingen.) K. Lundh.

June 23, No. 25, pp. 731-764

164 *Disturbances of the Singing Voice and Their Causes. (Forstyrrelser af Sangstemmen med særligt Hensyn til deres Aarsager.) H. Mygind.

162. **Hodgkin's Disease.**—Scheel reports the clinical history and autopsy findings in two cases resembling Sternberg's "peculiar form of tuberculosis of the lymphatic apparatus." Ellermann follows with a second case and the case recently reported by Lichtenstein in *Hygiea* (May, 1910), is compared with them. Scheel's patients were two women of 23 and 57, the others were men. The high, frequently remittent fever and the usual polynuclear leucocytosis distinguish this syndrome, Scheel says, from ordinary pseudoleukemia, which it otherwise so closely resembles. The characteristic granuloma tissue was found in all the cases, but his first patient had no lymphatic enlargement, the granulomatosis being confined to the spleen, bone marrow and liver, and there was nothing to suggest tuberculosis; the Pirquet tuberculin test was negative and the disease ran an acute, rapidly fatal course. The number of megaloblasts suggested pernicious anemia. He states that no benefit has been derived from arsenic in these cases of malignant granulomatosis, or from the Roentgen rays in the one case in which they were applied, but that Roentgen treatment deserves further trials. Ellermann's patient was a robust man with symptoms of what was supposed to be pseudoleukemia, fatal after two years. No signs of tuberculosis were found at autopsy but guinea-pigs inoculated with granulomatous tissue from the spleen died, too soon for any conclusions as to tuberculosis. Lichtenstein's patient presented both the Sternberg syndrome and tuberculosis in various organs. Animals inoculated developed granulomas, and his further research seems to demonstrate that attenuated tubercle bacilli are able to induce the production of the granulomatous lesions without tubercle formation. He found the typical granuloma tissue in 14 out of 45 guinea-pigs inoculated with attenuated tubercle bacilli.

164. **Vocal Disturbances Affecting Singers.**—Mygind comments on the feverish haste with which possessors of a singing voice seek to train it so that they can win the laurels and emoluments of the upper circle of vocalists, while the effects of this haste keep them back. Another obstacle to their progress, he says, is that teachers often strive to force every voice to conform to their special method instead of adapting the method to the voice. As a typical case he cites that of a young woman with a light mezzo soprano whose teacher trained her voice constantly higher, with the result that there was hoarseness over the entire register and a catarrhal secretion; the patient lived in the usual environment of the poor student coming to a large city to cultivate her voice. The congested throat was relieved by local treatment but on resuming the singing lessons the condition grew worse again and the young woman had to give up singing entirely. He has had 250 patients among singers, all women but 58; all types of voices were represented in the series, but the higher registers much predominated. Chlorosis was evident in 40 per cent. of the women, and he regards this as a very important indirect factor in the development of vocal disturbances, while the most important direct factor is overuse and forcing of the voice. He discusses the various forms of local disturbances and lesions as he has encountered them, but does not refer to treatment more than to warn against injuring the delicate mechanism of the vocal chords by injudicious local measures. General treatment of the indirect causes is most important and this alone may cure the local lesions. Robust health and sound nervous system are almost the *sine qua non* for a first-class voice—the phenomenal singers are or have been nearly all of this type, and vocal students should not forget this. He urges them to take for their motto Goethe's words, *Ohne Hast aber ohne Rast*, "Without haste but without rest," which Sir Morell Mackenzie has also striven to impress on would-be vocalists.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Index Catalogue of Medical and Veterinary Zoology. Part 26. (Authors: S. to Schnyder. Pp. 95.) Part 27. (Authors: Schoch to Silvestrini. Pp. 91.) By Ch. Wardell Stiles, Ph.D., Consulting Zoologist, Bureau of Animal Industry and Albert Hassall, M.R.C.V.S., Assistant in Zoology, Bureau of Animal Industry, U. S. Department of Agriculture. Bureau of Animal Industry Bulletin No. 39. Paper. Pp. 2168, of entire work so far issued. Washington: Government Printing Office, 1910.

Transactions of the American Dermatological Association At Its Thirty-third Annual Meeting, held in Philadelphia, June 3, 4 and 5, 1909. Official Report of the Proceedings by Grover W. Wende, M.D., Secretary, 471 Delaware Ave., Buffalo, N. Y. Paper. Pp. 289, with illustrations.

Handbook for the International Prison Congress, Oct. 2-8, 1910, and the American Prison Association, Sept. 29-Oct. 8, 1910, Washington, D. C. Paper. Pp. 52. Publicity Agent, Mr. O. F. Lewis, 135 East Fifteenth Street, New York.

Précis du Traitement des Fractures par le Massage et la Mobilisation. Par Dr. Just Lucas-Championnière, Chirurgien Honoraire de l'Hôtel-Dieu. Paper. Price, 3.50 francs. Pp. 267. Paris: G. Steinheil, 2 rue Casimir-Delavigne, 1910.

Monographs on Medical and Allied Subjects. Published by the Rockefeller Institute for Medical Research. No. 1. Issued June 30, 1910. Paper. Pp. 130, with illustrations. New York: 66th St. and Ave. A, 1910.

Fortschritte der naturwissenschaftlichen Forschung. Von Dr. E. Abderhalden, Berlin. Volume I. Paper. Price, 10 marks. Pp. 308, with 47 illustrations. Vienna: Urban & Schwarzenberg, 1910.

The Development of Public Charities and Correction in the State of Indiana. Paper. Pp. 132, with illustrations. Indianapolis: Board of State Charities, State House 1792-1910.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOL. LV, NO. 6 CHICAGO, ILLINOIS AUGUST 6, 1910

THE SURGICAL CONSIDERATION OF CONGENITAL AND DEVELOPMENTAL DEFECTS LEADING TO OBSTINATE CONSTIPATION *

JOHN G. CLARK, M.D.
PHILADELPHIA

To arrive properly at a basis for the study of constipation and tympanitis, with their coincident autointoxication, one must start well back of the condition of disability and investigate the various embryologic, anatomic, and physiologic factors which may ultimately promote the train of pathologic symptoms.

Probably no condition is more lightly viewed by physicians in general than constipation, possibly because it is so common, and possibly, also, because in many instances it is more or less easily set aside by laxatives. Unless, therefore, this symptom becomes so exaggerated as to suggest a possible obstruction, it is usually viewed with professional equanimity. There is a growing tendency to look on the various laboratories of the human body as the generating ground, not only of physiologic, but under abnormal conditions of various pathologic products, in one instance beneficent, in the other very deleterious to health. The thyroid has already taken its place as the emanating source of various toxic principles, likewise the adrenals, the tonsils, etc. From that vast group of individuals who are designated neurasthenics have been culled certain groups which may be traced to these sources. Of late years the gastro-intestinal tract has been found to be a prolific source of neurasthenic symptoms, and such radical enthusiasts as Metchnikoff would have us believe that the colon, because of these noxious emanations, is a worse than useless reservoir, and following this train of thought Arbuthnott Lane advises the extirpation of this organ in chronic constipation and claims brilliant results from the operation. Between all radical negative and positive viewpoints of a theoretical nature there is usually a happy midway position; to ignore the colon as a source of trouble would be heresy, for it is self-evident that fecal stasis is a source of serious autointoxication. On the other hand, as we better understand this question, the total excisions of the colon would appear too radical, for Cannon's work indicates beyond question that the large intestine has a very important function in the absorption of residual food products passed on from the small intestine. It is therefore not a temporary reservoir but a very important food receptacle from which much nutrition is abstracted.

COMPARATIVE ANATOMY

There is no organ in the body with such diversity of morphology to suit variations in function in different species of animals as the intestinal tract. The stomach actively participates in the mixing and digestion of certain portions of foods; the small intestine, beginning with the duodenum, further elaborates the process, and from that point on not only digestion but active absorption is taking place. The physical life of the animal, bird or reptile, and the character of food which it ingests, appear to determine the morphology of the small and large intestine. Thus, as stated by Huntington, in such creatures as birds which make long flights, requiring not only sustained effort but incredible repetitions of dynamic explosions, the food must be rapidly absorbed, and there is no place for residual food from which slow abstraction of nutrition occurs. For instance, the canvasback duck has relatively a very long small intestine and a very short colon, almost of a cloacal type. On the contrary, the ostrich, which is slower of movement and feeds on a more bulky food, has a very long colon. The wide variation in animals is noted in such birds of prey as, for instance, the eagle; the length of the colon as compared with the small intestine is only 1 to 68 or 70, while in the cassowary, a species of ostrich, it is 1 to 6, or practically more than ten times as long. In animals which have long resting periods with only occasional demands for great rapidity and sustained effort, the colon is usually very capacious, in some species becoming an enormous reservoir.

As the result of his splendid research in the comparative physiology of the large intestine, Huntington[1] says:

> While digestion of food substances will not be inaugurated in the large intestine, material already in the process of digestion and mixed with the intestinal juices of the preceding segment will be further elaborated in this portion of the canal and the nutritive products absorbed. This is especially the case in herbivora and omnivora, whose food is bulky, containing a large amount of refuse material and is hence only slowly digested. On the other hand the food of the carnivora is easily and rapidly digested and absorbed. After passing through the small intestine hardly any substances remain which are capable of digestion and absorption. Hence the large intestine of herbivora and omnivora is usually longer in proportion to the small intestine than it is in carnivorous animals. In the former this segment of the canal functions as an accessory digestive apparatus and hence often develop accessory structural modifications, such as a large cecum and spiral colon, while in the latter it acts almost solely as a canal for the evacuation of the indigestible remnants. Again, the large intestine is better developed in the higher animals, in mammalia and to a lesser degree in birds, in whom the functional demands for nutrition are active and require that a relatively large amount of food should pass through the digestive tract in a given time.

---

* Chairman's address before the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St Louis, June, 1910.

* For reasons of space, the article is slightly abbreviated by the omission of some of the case reports. The complete article appears in the Transactions of the Section and in the author's reprints.

[1] Anatomy of Peritoneum and Abdomen, p. 198.

Man occupies a midway position in colonic development. The human race is omnivorous, taking all classes of food. A good absorbing surface as represented by the 17 to 18 feet of small intestine is necessary, and at the same time a capacious colon for the retention of residual food products is likewise essential.

From this brief review of the comparative anatomy of the large bowel it is evident that in either the lower or higher animals it is not a useless, although it may be a dispensable, organ.

PHYSIOLOGY OF THE LARGE AND SMALL INTESTINE

The general principle of alimentary digestion may be defined as consisting of three phases; first, mixture of food with the digestive juices; second, the exposure of food to the absorbing mucous membrane, and, third, the propulsion of the food through the alimentary canal. The first takes place in the stomach and duodenum; the second in the small and a part of the large intestine. The rate of propulsion and fluid state of the food largely determine the amount of absorption. Food in transit from the stomach to the anus usually requires 24 to 36 hours, only 6 to 8 of which are occupied by the small, and the remainder by the large intestine.

As a broad proposition, therefore, one may say that the mechanical causes of constipation exist in the large and not in the small intestine. In the small bowel the food is fluid, and therefore is easily propelled along this 18 feet of flexible tubing. When, however, it reaches the large intestine in a mushy or semi-fluid state, slower inspissation takes place through the assimilation of the last remains of the nutritious portion of the food. This process must necessarily be slower, for the minimum part of the nutriment with a maximum of residue is emptied from the ileum into the cecum.

Cannon has shown in his splendid series of investigations on the physiology of digestion that the small intestine is much more actively engaged in the segregation or segmentation of food than in its mere propulsion from one end to the other. He has shown that there are two types of motility, one given over to the segmentation of food in short blocks in the small intestine, thus giving sufficient time for thorough digestion as well as absorption. During this process the mucous membrane, with its large absorbing valvulae conniventes, is thrust into the food mass thus exposing its maximum surface to absorption. The second movement is peristaltic, slowly carrying the food from one block to another downward toward the cecum.

From this brief reference to intestinal digestion it is evident that the small bowel plays very little if any part in mechanical constipation. That the diminution or absence of certain intestinal juices in the food may lead to constipation of a more or less functional character is unquestioned, but this does not as a rule account for the progressive constipation, starting in infancy or adolescence and terminating in symptoms closely related to or actually terminating in partial obstruction. It is to this class of cases that we are giving our attention, and it is this type which is largely ascribable to mechanical faults of congenital and developmental character.

EMBRYOLOGIC CONSIDERATIONS

To understand properly the progressive constipation of adults we must recur to the development of the intestinal tract. We cannot study this complicated developmental process without arriving at the conclusion that here lies the chief cause of the defect, or, as very clearly summarized by my associate, Dr. Floyd Keene, "The potential factors are present in early life and later become active as the result of habit, physiologic sluggishness or mechanical defects, especially developing in women from defective child-bearing process."

The gastrointestinal canal consists * primarily of a straight tube closely attached to the primitive posterior abdominal wall. Very early a portion of the upper segment shows a bulging posteriorly and a concavity anteriorly, corresponding to the greater and lesser curvatures, respectively, of the stomach. As the result of the increasing volume of the liver and increased length of the stomach segment there is a rotation to the right, so that what was originally the left side has become the anterior surface and the right side the posterior surface of the fully developed stomach. At first there is no line of demarcation between the stomach and duodenum. According to Tandler there is a great increase in the epithelium of the duodenum during the second month, so that the lumen may be greatly narrowed or even completely obliterated. This probably explains some cases of congenital stenosis. During the third month the lumen is restored by an increase in the diameter of the gut.

Early in fetal life the size of the liver is out of all proportion to that of the abdominal cavity. Consequently the rapidly increasing length of the intestine demands more room for its development. In order to find space it passes out of the abdominal cavity through the wide open umbilicus, where it continues to remain for some time. As the result of this migration an anteroposterior U loop is formed, consisting of a proximal descending and a distal ascending limb. During this process the mesentery has naturally become lengthened, and even at an early age shows the blood vessels found in adult life. The superior mesenteric artery courses between the limbs of the U loop; the inferior mesenteric supplies the posterior and lower segments.

As the limbs of the extra-abdominal loops increase in length they approach one another, and later an axial rotation of the loops takes place so that the lower limb passes over the upper. It is from this lower or distal limb that the colon develops; hence, this explains why the upper portion of the small intestine lies beneath the superior mesenteric artery. While both limbs increase in length, this takes place far more rapidly in that portion which is to become the small intestine, viz., the original upper limb. Mall has demonstrated that, while the intestine lies extra-abdominally, the small gut arranges itself into six primary coils which in their further growth become more complex but nevertheless can be definitely outlined in the adult.

As the result of the axial rotation referred to, the small intestine assumes a position below and to the left of the large intestine, which is now inverted U shape, and extends antero-posterior to the midline of the posterior abdominal wall. Later there is a rapid increase in the size of the abdominal cavity which permits the intestines to reenter. According to Mall the upper portion of the small intestine first assumes its position in the left hypochondriac region, to be followed by the remainder of the small intestine and colon, the cecum returning last. The coils which were primarily arranged vertically now assume a transverse position.

In early fetal life the cecum develops as a small bud at the beginning of the ascending limb. The appendix at first comes from its tip, like the handle of a funnel, but as the result of unequal growth of the anterior and right

---

* Summarized from Piersol's "Anatomy" and Quain's "Embryology."

walls the appendix is thrown posteriorly and to the left. On reentering the abdomen the colon retains its inverted U shape, but the upper limb of the U is pushed transversely by the underlying small intestines below and the liver and stomach above, the cecum lying beneath the liver. The colon continues to grow after birth, and with this growth there is a migration of the cecum downward into the right iliac fossa, with the formation of the ascending colon. This does not take place completely until some time after birth. At birth the sigmoid forms a large portion of the colon (one-half, according to Piersol) and is an intra-abdominal organ, and the adult proportions do not exist until the third year of life.

As the result of peritoneal fusion the ascending and descending colons are deprived of a distinct mesentery.

GENESIS OF ENTEROPTOSIS AND CHRONIC CONSTIPATION

As the result of Dr. Keene's finding in autopsies on babies ample evidence in favor of the congenital origin of enteroptosis is discovered. Theoretically the sequence of events is as follows: During youth and early adult life the intra-abdominal pressure is perfectly maintained by the tonicity of the abdominal musculature. A potential or latent enteroptosis may be present, but is not symptomatic because the redundant colon is held in such a position that the lumen is not interfered with. That such a redundancy exists has been shown in several autopsies on babies where, for example, in several instances the transverse colon was plicated on itself in order to find sufficient room for its development. It might be thought that the increase in size of the abdominal cavity would permit of an unfolding and straightening of the intestines, but this is not probable because the increase in size is not sufficient, since these colons are sometimes enormous when compared with the general development of other organs, and, secondly, the colon continues to increase in length after birth. The theory that the transverse colon will be straightened in the further developmental cycle by the descensus of the cecum and formation of ascending colon is not tenable, for in several of our observations redundant transverse colon was coincident with complete descensus of cecum.

Given such a case, an actual symptomatic enteroptosis replaces the potential or latent enteroptosis when one or more of the following factors come into play: As the result of childbirth or wasting disease the tonicity of the abdominal musculature is replaced by a hypotonicity, with consequent diminution of the intra-abdominal pressure, permitting a sagging of the intestine with the formation of kinks at the junction of the movable and fixed portions. While faulty posture, as pointed out by Goldthwaite, may have the same effect, in addition to the removal of the normal buttresses of the abdominal organs, as cited by Martin, we are inclined to the view that posture and the characteristic body form of some of these individuals may be the direct result of faulty nutrition in infancy and childhood, and are therefore a resultant and not a cause of the enteroptosis. Congenital and acquired adhesions and kinking must also play a part. Fecal stasis should be looked on, not as the cause of these conditions, but as the result of them. No doubt the presence of a large fecal mass more or less constantly exercising its weight may exaggerate the disability.

Dr. Keene's autopsies have verified Treves' observations that the sigmoid at, and even several months after birth, forms a large part of the colon.

From this reference to the embryology with the autopsy findings in Dr. Keene's series of infants it is evident that from the very beginning abnormalities of formation and position of the large intestine may exist with coincident colonic sluggishness which early leads to constipation. It is interesting to note in this connection that the majority of exaggerated enteroptoses, and particularly those of colonic type, that the history of constipation is traced back to childhood days. In the light of these embryologic deviations, which are so frequently noted, we are not surprised to find constipation such a prevalent complaint in infancy and childhood

Thus Coolidge[2] says:

> Relatively more patients are brought to us for treatment of constipation than for any other one disease. Babies of all ages and conditions whether breast fed or bottle-fed seem to suffer equally from this condition. In a large per cent. of the cases we find the cause of constipation in the infant due to improper food which is taken by the baby itself or else by the mother, if the child is breast fed. A few cases have a decided weakness of the rectal muscles, making it impossible for the baby to expel the feces even though the food is well digested and suited to the individual child. Constipation due to defective portal circulation and lack of bile secretion is one of the most difficult forms to treat in young infants; frequently this cannot be entirely overcome until the child is old enough to take solid food and systematic exercises.

Constipation, therefore, in infancy is a besetting symptom; its explanation, while largely theoretical, harks back to anatomical as well as functional defects. One may be relieved with careful medical and hygienic regulations; the other is not so easily overcome, as this persistent symptom in adults demonstrates.

Until the advent of the *x*-ray as a diagnostic agent in enteroptosis clinicians had made little progress over the original discovery of Glénard, for there was no accurate method of determining the organ or group of organs chiefly participating in the visceral descensus. This failure to recognize these conditions probably accounts for the widespread adoption a few years ago of nephrorrhaphy, a procedure which captivated many gynecologists and general surgeons. Those careful observers who followed the after course of their cases soon realized that this operation was far from a cure-all, and, indeed, as frequently performed on the more palpable indications of undue mobility, ended in lamentable symptomatic failure. We soon realized that many of these patients were persistent neurasthenics, and for a cause, but the kidney was but one part of that cause and usually a very small part.

It is a classical fact that the neurasthenic individual is of all other cases the worst for surgical intervention unless there is a well defined indication for its adoption. The participation of a movable kidney in the presence of other prolapsed viscera is therefore of small account in the general abdominal symptoms noted by Glénard. Failure to cure these cases has caused our attention to be centered in a more analytical manner on symptoms emanating from other organs of this group. The use of the *x*-ray has done much in segregating the stomach in one class of cases as the dominant source of symptoms and the colon in another class, and we now believe far the greater of the two. Also the *x*-ray has helped in differentiating between cases of redundant sigmoid and the transverse colon of exaggerated length and displaced and angulated flexures.

While great assistance has come from the use of the *x*-ray in this anatomic isolation of gastrointestinal segments, we have also learned that it is not the court of last resort in defining treatment. Clinical data and close observation of the symptomatology alone can do this. Exaggerated ptoses are not necessarily productive of profound symptoms. Time and time again we have observed cases with very deeply dependent transverse colons or with great redundancy of the sigmoid and moderately good or even perfect function maintained. Manifestly it would be a most injudicious procedure to disturb by a surgical operation such an intestine; on the other hand, a well defined history of increasing constipation extending back to babyhood, and at times approaching full obstruction, which has been uninfluenced by medical skill, should have surgical attention. I approach the discussion of the surgical treatment of these cases with trepidation, for I realize from my experience that unless most cautiously employed it will be hazardous, not so hazardous to the life of the patient as to the repute of surgery. On the other hand, experience also teaches that operative treatment holds happy possibilities if proper care is observed in the selection of cases.

---

[2] Bull. Lying-in Hospital, New York.

I therefore preface my suggestions as to surgical intervention with this caution, for these patients are now in neutral ground between medicine and surgery. One class, much the larger, should remain within the medical domain, while the other must be transferred to the surgeon. An indiscriminate tendency to operation, however, will cast unjustifiable criticism on measures which may be most beneficial if properly selected. This is, I believe, the frontier line of surgery and should be developed by careful methods and by men of wide experience. It is not the field for a novice.

From our clinical study of these cases we now find greater possibilities of differentiating between those with dominant gastric symptoms or with major colonic symptoms. In many cases of exaggerated coloptosis the gastric function is normal because the stomach is little interfered with. On the other hand, in marked types of gastroptosis there may be no coloptosis.

This address has as its theme exaggerated constipation due to abnormalities of the colon, and I therefore pass over the question of gastroptosis.

ANATOMY OF THE COLON

One cannot take up this subject without harking back to Treves' classical lectures on "The Anatomy of the Intestinal Canal and Peritoneum."[1] This classical research not only lays down the groundwork of our present knowledge of the intestinal canal but forecasts in a few trenchant paragraphs the pathologic aspect of embryologic and developmental deviations.

In his consideration of the ascending, transverse, descending and sigmoidal portions of the colon, Treves renders many interesting observations on the individual portions. The mutual relations existing between the segments in the adult do not exist at birth, but only assume their morphologic associations some time after extrauterine life. Thus the hepatic flexure does not exist at birth and the cecum completes its descensus after that time. The colon, therefore, assumes in many instances a more or less oblique direction from the right iliac to the left colonic area without a hepatic flexure. Should the hepatic flexure lapse through faulty development, at once a weakened area in the colon develops, which may lead to stasis of this portion of the gut. Such deviation, however, as we have frequently observed clinically does not necessarily lead to disabilities, for the colonic function under these conditions must be maintained unimpeded.

The cecum may remain without descensus high in the right hypochondrium or even occupy a position under the liver. In other instances it may undergo exaggerated descensus, dropping well over the brim of the pelvis or even into Douglas' cul-de-sac. Unquestionably some exaggerated cases of the latter type not only give rise to chronic appendicitis but maintain cecal and ileac peristalsis with considerable pain, even after this organ is removed. A very flabby cecum falling into the pelvis may cause considerable disturbance in the discharge of alimentation from the ileum into the cecum. While these cases may be rare, we should not lose sight of this possibility, and in cases of exaggerated ceca they should be sutured back into the proper position. This procedure is both simple and safe and should not give untoward results. In a few cases in our own experience a happy relief has been afforded by this measure.

No portion of the colon is subjected to greater variations than the transverse; it is, indeed, so variable that we may even doubt whether there is a normal situation and length. Treves found that the transverse colon averaged about 20 inches in length, the shortest noted being 12 inches, the longest 33.

On drawing a thread transversely across the abdomen from the highest point of one iliac crest to the other he ascertained that in the majority of instances the inverted colic arch was above this line, while a fourth were below it.

One cannot note this observation without being irresistibly forced to the conclusion that this smaller percentage of cases cannot functionate properly, and that from this class a considerable number of defectives must be culled as typified by the neurasthenic of constipated habit. To draw the conclusion that Treves' thread defines a health zone above or a neurasthenic boundary below would be indeed a far cry, but we may not go false in our reasoning if we assume that some at least of these exaggerated cases must give us the slim-chested, long-waisted, peripatetic neurasthenic, drifting from one office to another, and finally exhausting all the modern pathies in the search for health. Such dependent colons must inevitably be sluggish in action, for they frequently have exaggerated hepatic and splenic kinks, which retard peristalsis, and thus a reservoir for deleterious fermentative products is established. When we assume that perfect alimentation is synonymous with ideal development we must logically follow the corollary: Imperfect alimentation will retard or lead to imperfect growth. If, therefore, we accept the theory which appears to be well based on embryological and developmental observations, that many cases of exaggerated constipation are of embryologic or early extrauterine origin, we are led to the inference that the so-called enteroptotic figure or faulty posture in these individuals arises from this defect rather than causes it. If this be true these patients can at best be only temporarily helped and not cured by orthopedic or gymnastic treatment. However, this is a digressive thought rather than a criticism, for no form of treatment should be left uninvestigated that may lead to the relief of these patients, for they are indeed miserable sufferers and form the list of undesirables in all medical offices.

Treves believes that these deviations in the colic arch are due to embryologic malformation and effects of persistent distention, for he found in these subjects that the dependent loop was overloaded and distended with fecal matter, and he anticipates our viewpoint when he says, "Such individuals have probably been the subjects

---

1. Brit. Med. Jour., 1885, i.

of chronic constipation and have more or less constantly presented a distended state of the colon."

How easy, too, as we have so often observed clinically, for these same individuals to become martyrs to an otherwise beneficent surgical operation through adhesions binding in fixed position the previously very sluggish bowel. Thus under such operative sequelæ a chronic constipation may become an obstruction of varying severity.

The descending colon is subject to few variations, and these are of small pathologic significance. On the other hand, the sigmoid flexure is given to extensive variations. The infant with the large, redundant and dilated sigmoid, suffering with Hirschsprung's disease, in my opinion, is only an exaggerated predecessor of the obstinately constipated adult with a lesser degree of sigmoid redundancy and dilatation. The sigmoid flexure in the adult varies in length from 7 to 27 inches, the average being about 7½ inches. There can scarcely be said to be a normal length, the variations in the sigmoid being so great. As with the transverse colon, one cannot apply the tapeline or measuring stick to this organ to define what is functionally normal. We must consider these cases from the symptomatic standpoint in order to determine the degree of functional abnormality in relation to anatomic defects. Just as the tapeline will not give us a measure of pathologic function, so does the x-ray also fail. This entire question must not be considered from these viewpoints, for they will lead to gross errors of judgment, just as such serious errors have arisen in thus viewing movable kidneys.

Actual and well-defined functional disturbances directly centering in these areas must determine the necessity for treatment. A kidney with a wide excursus, which has no renal crisis or fixed symptoms incident to ureteral obstruction, is not an organ for surgical intervention. On the other hand, another kidney with a much smaller excursus and yet the seat of renal or ureteral colic should be relieved by operation.

So one sigmoid of exaggerated length may yet functionate properly, and the surgeon who, because it measured more than 17 inches, should determine to suspend or excise it, would display poor judgment.

The gist of the whole matter is that neither the anatomic standard nor the x-ray picture is to serve as a standard for an operation. Symptoms, indeed, exaggerated symptoms must be the guide. Further, one cannot approach the surgical treatment of these cases with such optimism as experience justifies in acute surgical lesions, for if we accept the view that many of these cases are of congenital origin we have at best a defective machine to deal with, in which the dynamic power is seriously or hopelessly impaired and in which there will not be a healthful rebound such as gives such gratifying results in acute surgical cases. I believe we are establishing well-defined surgical principles in some of these cases, and that from this hitherto hopeless medical flotsam and jetsam brilliant cases of surgical cure may be culled, and, further, that while a complete cure may not be effected, at least a sufficient relief may result from well-selected surgical procedures as to cause us to give these poor individuals closer study in the hope that we may afford them even partial relief.

SYMPTOMATOLOGY

From our observations in this class of patients we have discovered that a very precise history is necessary. Too often the bald statement is found in a poorly elucidated history that the patient "suffers from constipation." Such brevity is worse than valueless, for this symptom should be traced with full elaboration back to its fundamental source. In this way only may we differentiate between a functional and an anatomic constipation. Even after a history traces the symptoms back to early infancy one should not jump to the conclusion that a serious developmental defect exists, for the therapeutic test must be applied. An individual in whom the regulation of diet or the administration of some simple laxative, even if necessary of constant repetition, cannot be said to be seriously affected. Such cases have no place in the surgical domain. On the contrary, when an individual must resort to powerful purgatives and drastic enemata, and especially if there is an associated tympanitis with painful peristalsis, he must be considered as suffering from some serious anatomic or pathologic defect. My point will be best illustrated by type histories, which point with accuracy not only to these defects, but also to the segment of the colon most involved.

CASE REPORTS *

REDUNDANT SIGMOID WITH GREAT PTOSIS OF TRANSVERSE COLON

Case 2.—*History.*—Single woman, aged 27, of spare build, with no adipose tissue, bust being flat and undeveloped. Patient has never had any serious illness. Up to puberty had the average health of a young girl but was always greatly troubled from infancy with obstinate constipation. Does not remember the time when bowels were evacuated without a cathartic. For one year she was under constant treatment for anemia, taking large doses of iron. Her maximum weight is only 100 pounds. Her complexion is smooth but sallow. One year ago was seized with sudden severe pain in the right ileac region, although the pain was more or less general and of a paroxysmal, colicky nature, and was associated with abdominal distention, nausea and vomiting. This pain lasted several hours but the tenderness persisted at McBurney's point. For several years she had noted at times pain in the region of the ascending colon, and for some time there has been tenderness to pressure over the cecum and ascending colon. Deep pressure in ileac region causes pain to move upward to the hepatic area. Since the first attack she has had frequent colicky seizures which are always relieved by a bowel movement. She has always been embarrassed by loud borborygmus, and there is occasionally very distressing distention. She very definitely outlined the gurgling sensation along the course of the colon. No symptoms referable to gall bladder. Menstrual history normal. No backache; no renal or vesical symptoms.

Examination.—Pelvic examination negative. The x-ray reveals a greatly ptosed colon. The pelvic area shows a broad shadow making the differentiation of the transverse colon from the sigmoid impossible.

Operation.—Median hypogastric incision. Pelvic organs normal. Sigmoid flexure markedly redundant and dilated. Transverse colon markedly redundant: apex of colic fold in pelvis. Hepatic and splenic flexures in normal situation but greatly dragged on by colic ptosis. Cecum dilated. Appendix small, no adhesions, no sign of chronic inflammation. Twelve inches of sigmoid flexure resected, appendix removed, transverse colon suspended by Coffey operation.

Subsequent History.—Third day: Excellent recovery, condition satisfactory.

Seventh day: Wound healed. Bowels moved freely and easily.

Nineteenth day: Patient discharged today. Since the bowels were moved following the operation there has been a marked change in the ease of evacuation. While previously even large doses of cathartic failed, or only partially relieved the obstinate constipation (obstruction), now there is a spon taneous movement as a rule, and at most only 15 drops of cascara are required to give two movements daily. There is no abdominal distention and the patient is enthusiastic over her improvement.

---

* Some of the case reports are omitted. See footnote at beginning of article.

Four months have now elapsed since the operation and the return to health has been most satisfactory.

CONGENITAL ADHESIONS CAUSING PARTIAL OBSTRUCTION OF SIGMOID

Case 3.—*History.*—Married woman, aged 24. Menstrual history normal. So far back as patient remembers she has had obstinate constipation. By persistent treatment she has had temporary intervals of comparative comfort. For the last eight years she has had a dull aching sensation in the left iliac region, and for the last six years she has had recurring attacks of sharp colicky pain in the left side, greatly increased by inattention to bowels and relieved to some extent by defecation. She volunteers the information that gas seems to meet some obstruction at the "sore spot." Posture does not change the character of the pain, but there is some abatement on lying down. For some time she has been under skilled medical treatment without relief. Enemata have been given, and during this time there has been considerable vesical irritability with frequent micturition. Recently there has been more or less mucus in the feces. She is subject to occasional attacks of sick headache. No indigestion; in fact, has an unusually good appetite. There is no excessive peristalsis. "The pain seems to be caused by gas rolling up against something."

Examination.—*X*-ray examination reveals a considerable massing of bismuth in the region of the sigmoid. No evidence of ptosis of transverse colon.

Operation.—Median hypogastric incision. On first attempt to ascertain cause of disability nothing of pathologic significance was noted, but after a closer inspection it was found that the sigmoid, instead of starting directly from the termination of the descending colon, continued along the pelvic brim and was firmly bound down by a congenital band of peritoneum which pulled the pelvic bend of the sigmoid close in against the pelvic wall. Above this point the intestine was greatly dilated, below, contracted.

The point of constriction corresponded to the area of pain. These peritoneal bands were divided by careful dissection, and on their release the sigmoid assumed its normal position. As there was danger of recurrence of the adhesions, several Pagenstecker linen stitches were carried from the base of the sigmoidal epiploic appendages to the ventral wall of the left groin, thus retaining the gut in its normal topographic position. A careful survey of the entire abdomen failed to reveal any other abnormality. The pelvic organs presented no trace of previous inflammation, thus excluding this focus as the cause of the adhesions.

Subsequent History.—The convalescence was uneventful, and the patient was uneventful, and the patient was discharged 21 days after the operation. All pain and sensation of obstruction promptly disappeared and the bowel resumed its normal function. Defecation was usually spontaneous. Four months have intervened since the operation without the slightest recurrence of her old symptoms.

EXCESSIVE PTOSIS OF THE TRANSVERSE COLON

Case 4.—The following history illustrates the effect of potential congenital factors becoming active after childbirth.

History.—Married woman, aged 31. Has given birth to three children, the youngest being 6 years of age. Until four years prior to examination she was largely free from abdominal symptoms. At this time she was in a runaway accident and was thrown violently with another woman from the carriage, her companion falling heavily on her abdomen. She was unconscious for a time and following this had fever ranging from 99 to 100 F. for several days. On getting up she was conscious of a constant feeling of pressure to the right of the umbilicus extending from the costal margin downward to the right iliac fossa. She noticed also some time after eating a constant churning sensation along the course of the ascending colon (suggestive of Cannon's description of movement in this area). There is also considerable distention in this area from gas. Appendicitis had been suspected. One year previously vesical tenesmus with frequent micturition became a distressing symptom, and was treated for some time without relief as cystitis, although the urine was always negative. She described a sensation as though something were rubbing against the bladder. All of the symptoms were markedly increased when standing. She particularly called attention to the fact that for the last ten years, since the birth of her first child, she had been greatly constipated, and this had become more exaggerated since the accident. She had been almost completely invalided for the last year.

Examination.—*X*-ray revealed a mass of bismuth entirely within the pelvis. With this picture as a guide in conjunction with the above history, a diagnosis of exaggerated ptosis of the transverse colon was made.

Operation.—Median hypogastric incision, revealing a very serious dislocation of the colon, even worse than indicated by the *x*-ray. The cecum and what should have been the ascending colon possessed a long mesentery. There was complete absence of any sign of an hepatic flexure. The cecum occupied the pelvis and six inches above it there was sharp angulation at the point where the colon passed obliquely upward to the splenic flexure. The colon proximal to the kink was greatly dilated as was also the appendix. The latter organ was as large as the little finger and distended with gas, without any point of constriction. Its walls were attenuated through over-stretching. Beyond the stricture the bowel was normal. The patient was particularly anxious that no unusual risk be taken, and although excision of a portion of the bowel seemed to be indicated we adopted the less hazardous operation of restoring the bowel as nearly as possible to its normal fixation points.

To accomplish this a second incision was made in the hepatic area. A point on the colon was selected for conversion into a hepatic flexure. Several peritoneal sutures were so placed as to snugly fix the intestine well back under the costal border of the liver. A careful examination of the upper zone of the abdomen revealed no further abnormality. The position of the stomach was essentially normal. After restoring the hepatic flexure a line of omental fixation was established across the abdomen, thus pulling the transverse colon well up out of the abdomen. The dilated appendix was removed. The kidneys were normal.

Subsequent History.—The subsequent recovery of the patient was uneventful although slow because of the severe asthenia. The bowels are still sluggish but are moved without difficulty. One aloes, strychnin and belladonna pill, with one drachm of sodium phosphate are sufficient laxatives.

For a time she suffered with painful peristalsis, but this subsided. The vesical symptoms disappeared within 24 hours and have not returned. She easily retains her urine for the normal length of time without discomfort. Likewise the "churning sensation" in the right side (Cannon movements), is no longer felt. Two months after leaving the hospital the patient reported from the Virginia Hot Springs that she had made splendid gains and was able to walk two miles without much fatigue and with great comfort. One week later on her return home further improvement was noted. The patient now has no abdominal discomfort.

CONCLUSIONS

1. Developmental anomalies are at the bottom of many cases of chronic constipation.

2. Posture is frequently a result rather than a cause of this ptosis.

3. Congenital potential factors are present in many individuals which become active through accident, such as traumatism, rapid and badly-cared-for childbirth, habitual constipation, operative adhesions, etc.

4. Neurasthenia often dates from childhood or puberty; operations, therefore, in the adult may give only partial relief because of this constitutional asthenia.

5. Cases in which there is a recent acquirement of the active factor give the best surgical results.

6. Various suspension operations are valuable in properly selected cases but disappointing in the remainder. At best these fixation points may be unstable.

7. Radical excision of obstructive portions of the large bowel may give the highest percentage of operative mortality but is likely to give the best ultimate results in the survivors.

8. In no field of surgery should haste be made slower than in this. It is not a field for the novice.

9. The most important factor in the diagnosis is a detailed clinical history pointing accurately to obstructive possibilities. A well taken skiagraph is of the greatest confirmatory value.

Note.—My two associates in this work, Dr. Floyd E. Keene and Dr. Nate Ginsburgh, will publish shortly papers on the embryologic and anatomic aspects of this question. I am greatly indebted to both for their assistance in this investigation.

2017 Walnut Street.

EXPERIMENTS WITH "CACTINA" AND "CACTIN" *

E. P. LYON, Ph.D. and GUY L. QUALLS, B.S., M.D.
ST. LOUIS

The continued use by some physicians of the preparations of *Cactus grandiflorus* is perhaps sufficient justification for the publication of another investigation into their pharmacologic properties.

PART I.—EXPERIMENTS WITH CACTINA (SULTAN DRUG CO.)

The experiments to be described were begun at the request of Mr. F. Sultan, of St. Louis, Mo., who furnished the Cactina and also the Erlanger sphygmomanometer employed in part of the work. The investigation of Cactina was undertaken with the understanding that Mr. Sultan should furnish any apparatus needed, but that no compensation was to be made for the work, and that the results should be published after a report had been made to Mr. Sultan. Such a report was sent to him on July 4, 1908. Since that date some further experiments with Cactina and all those with Cactin (Abbott Alkaloidal Co.) have been performed.

EXPERIMENTS ON ANIMALS

It has been claimed that the effects of some of the alkaloids found in members of the cactus family are slow in manifesting themselves. This is said to be true of pellotin, a derivative from one or more species of the genus *Anhalonium*. To test this matter for Cactina, long continued experiments of blood pressure in dogs were undertaken. Six healthy and strong animals were employed in experiments lasting from four and a half to ten hours. Three animals were anesthetized with ether administered through a tracheal cannula and three with Grehant's chloroform mixture by the stomach.

All were given morphin hypodermically one-half hour previous to anesthetizing. The blood-pressure, pulse and respiration were studied by the graphic method.

The drug was administered in physiologic salt solution direct into the jugular vein. Varying doses were employed from as low as 0.13 gm. Cactina (0.65 gm. of dissolved pills of Cactina and milk sugar) in ten hours up to 6.5 gm. Cactina (32.5 gm. of Cactina and sugar) in nine and a half hours.

The tracings and tables from these experiments agree with the results of Hatcher[1] and Matthews.[2] There is absolutely no evidence of any strychnin or digitalis-effect, even under enormous doses. Throughout the six experiments there was noticed no constant rise or fall of blood-pressure. The blood-pressure rose somewhat at times and fell slightly at times, but not more than often occurs in an untreated animal, especially in an experiment continued over such a length of time.

The heart and respiration also were very regular and showed no constant or certain changes, as would have been sure to occur under digitalis or strychnin. The vagus nerve, stimulated at intervals in every experiment, always produced its usual effect on the heart. The temperature, as is usual in such experiments, fell from 1 to 3 degrees C. during the experiment. Never was there at any time heightening of the reflexes or convulsions or any other evidence of a physiologic action. Experiments with frogs to ascertain whether the diastole of the heart was affected in the manner described by Meyers[3] were also negative. No effect could be discovered, whether the drug was injected or was applied directly to the exposed heart.

EXPERIMENTS ON MEN

Series 1: Experiments on the Pulse-Rate.—In the first series the pulse was counted before and after the administration of Cactina in a large number of healthy young men (medical students). The primary precaution in such experiments must be the elimination so far as possible of the psychologic element. The following tables show the results of suggestion on groups of medical students, to all of whom milk sugar pills were given. The determination of the pulse-rates was not made by the students concerned nor did the counter know what suggestion had been made.

A. The pulse-rates of a group of 13 students were counted. They were then given milk sugar pills. They were told that they had taken a heart stimulant. To make the case more vivid, the possible action of such drugs was discussed during the time intervening between the first and second counts. After 40 to 60 minutes the pulse rates were counted again. The results are shown in Table 1.

TABLE 1

Student	Rate Before.	Rate After.	Change.
One	78	80	+ 2
Two	100	98	2
Three	94	106	+12
Four	74	80	+ 6
Five	108	106	— 2
Six	80	84	+ 4
Seven	82	90	+ 8
Eight	90	90	0
Nine	88	90	+ 2
Ten	60	70	+10
Eleven	76	94	+18
Twelve	54	64	+10
Thirteen	94	80	—14

Average increase, 4.2 beats a minute.

B. The pulses of 17 students were counted. Then they were given milk sugar pills and told that they had taken a new synthetic depressant. This was followed by a talk about possible action and results which had followed too large doses. After from 25 to 40 minutes the pulses were counted again, with results shown in Table 2.

---

* From the Physiologic Laboratory of St. Louis University School of Medicine.

[1] Hatcher, R. A.: Cactus Grandiflorus and Cactin or Cactina, The Journal A. M. A., Sept. 21, 1907, p. 1201.

[2] Matthews, S. A.: Cactin and Cactina. An Examination into Their Physiologic Action, The Journal A. M. A., March 21, 1908, p. 956.

[3] New York Med. Jour., liii, 681.

TABLE 2

Student	Rate Before	Rate After.	Change.
One	82	90	+ 8
Two	80	78	— 2
Three	58	60	+ 2
Four	72	70	— 2
Five	94	78	—16
Six	106	96	—10
Seven	74	68	— 6
Eight	92	90	— 2
Nine	72	70	— 2
Ten	64	66	+ 2
Eleven	96	88	— 8
Twelve	94	90	— 4
Thirteen	80	80	0
Fourteen	96	90	— 6
Fifteen	92	80	—12
Sixteen	84	76	— 8
Seventeen	84	76	— 8

Average decrease 4.4 beats a minute.

Although it is possible that part of the changes seen in these experiments are due to other causes than suggestion, the foregoing illustrate the need of every precaution to avoid suggestion in experiments on human beings. The need for precaution was further shown in one experiment in which students were given milk sugar without any suggestion. The first two students to be counted showed a lowered frequency and the rest jumped to the conclusion that they had received a depressant drug. Their counts were therefore nearly all low.

To avoid such results it was our custom to give half the class Cactina and the other half milk sugar, not telling any member what he was receiving but stating that half were taking merely milk sugar as a control. None of them knew what drug was being investigated nor the effects supposed to be produced. Three experiments of this kind were performed. The results of only one of these will be given here, as all agreed in the general result that Cactina had no effect on the pulse-rate.

Experiment 2: October 24, 1907. Each pulse-rate given is the average from 3 counts made by different men.

TABLE 3.—Part 1. Each student took 3 Cactina pellets; second count, one hour after taking

Student	Before	After	Change.	
One	82	82	0	
Two	107	102		—5
Three	71	71	0	
Four	72	80	+8	
Five	71	69		—2
Six	62	62	0	
Seven	95	91		—4
Eight	76	80	+4	
Nine	90	86		—4
Ten	70	67		—3
Eleven	89	85		—4
Twelve	82	85	+3	
Thirteen	70	77	+7	
Fourteen	86	83		—3
Fifteen	93	92		—1
			+22	—26

Part 2. Control; each student took 3 milk sugar pellets, second count, one hour after taking

Student	Before	After	Change	
Sixteen	81	80		—1
Seventeen	72	72	0	
Eighteen	81	82	+1	
Nineteen	101	77		—24
Twenty	78	75		—3
Twenty-one	80	91	+11	
Twenty-two	96	92		—4
Twenty-three	86	90	+4	
Twenty-four	72	78	+6	
Twenty-five	82	84	+2	
Twenty-six	84	83		—1
Twenty-seven	78	74		—4
Twenty-eight	85	84		—1
Twenty-nine	68	71	+3	
Thirty	79	81	+2	
Thirty-one	84	79		—5
Thirty-two	81	73		—8
Thirty-three	83	84	+1	
Thirty-four	76	78	+2	
			+32	—51
Omitting Student nineteen				—24
				—27

The decrease in the case of Student nineteen is abnormally large. Subsequent trials showed that his heart rate was extremely variable. If we omit this case the averages with and without Cactina are very nearly equal. In any case no general increase or decrease is indicated with either Cactina or milk sugar.

The pulse-rate is so responsive to a great variety of conditions that the slight differences in the averages cannot be attributed to the Cactina. Furthermore one of the other experiments varied in the opposite direction.

The pulse-rate was also determined from the tracings made with the Erlanger sphygmomanometer. These determinations possess the value of eliminating the personal element on the part of the counter. No effect on the heart rate was demonstrable after the administration of Cactina in any dosage, even if continued through several days.

Series II: Experiments on Blood-Pressure in Men.—In this series of experiments eight healthy men were employed. The blood pressure was taken each day at the same time and under the same conditions, and with alternate periods usually of three days with and without Cactina. The usual dose was two or three of the pellets an hour during the part of the day that the man was awake. In some instances as high as twenty pellets an hour were taken for three hours in the morning, after which the blood-pressure and pulse-record were taken. In all about 200 tracings were obtained by the Erlanger apparatus, and at the same time the pressure was taken by the Riva-Rocci method. Study of the tracings and tables reveals no effect of Cactina.

Table 4 shows the results obtained with four of the subjects. "N" indicates "no drug" during previous 24 hours or more. "C" indicates "Cactina" taken at intervals during previous 24 hours or more. The determinations were made at the same time each day. Usually two or more trials were made at each sitting. The figures given are averages of each day's results.

TABLE 4.—EXPERIMENTS WITH THE SPHYGMOMANOMETER, SHOWING MM. OF MERCURY AT WHICH THE PULSE RETURNED (RIVA-ROCCI METHOD).

W. B. B.		L. B. B.		J. E. P.		E. P. L.	
1908	mm.	1908	mm.	1908.	mm.	1908	mm.
4 22 N	102	4 22 N	104	4 27 N	114	4 30 N	113
4 24 N	105	4 28 N	97	4 25 N	112	4 29 N	112
4 27 N	97	4 30 C	100	4 30 N	111	5/ 1 C	115
4 27 N	105	5 1 C	102	4 29 N	117	5/ 2 C	110
4 28 N	105	5 4 C	105	5 1 N	118	5/ 4 C	113
4 30 C	96	5 5 N	96	5 2 C	108	5 5 N	109
4 29 C	103	5 6 N	107	5 5 C	111	5/ 6 N	112
5 1 C	104	5 7 N	106	5/ 6 C	119	5/ 7 C	114
5 2 C	106	5 8 N	104	5/ 7 C	115	5/ 8 C	113
5 4 C	107	5 11 N	96	5 8 N	117	5/ 9 N	114
5 5 N	107	5 12 C	98	5 9 N	115	5 11 N	113
5 6 N	97	5 14 C	104	5 12 N	103	5 13 N	113
5 7 C	95			5 11 N	110	5 12 N	115
5 8 N	104			5 13 N	108	5 15 C	107
5 9 N	97			5 16 C	115		
5 11 N	96						
5 13 N	97						
5 14 C	94						

	W. B. B. mm.	L. B. B. mm.	J. E. P. mm.	E. P. L. mm.
Average without Cactina..	101.1	101.4	112.5	112.6
Average with Cactina	100.7	101.8	113.6	112.0

PART II.—EXPERIMENTS WITH CACTIN (ABBOTT ALKALOIDAL CO.) ON BLOOD PRESSURE AND PULSE RATE IN MAN

Series I.—In these experiments with Cactin only human beings were used. Eight normal men were tried at first. From this number, after several normal tracings were taken, four were selected whose blood-pressure varied the least from day to day. We thus eliminated those of a nervous temperament in whom the psychic element would make our determination of a less conclusive nature. The blood pressure of the four men selected was taken by both the Erlanger and the Riva-Rocci methods for several days at as near the same hour and under as near the same conditions as possible. From these determinations the normal average was reckoned. After a few days another determination was made in most cases to see if the blood-pressure showed any decided change.

These records were followed by the administration of Cactin which was bought in open market in St. Louis. At first therapeutic doses, as recommended by the manufacturer, were administered. This was continued several days and cumulative effects were looked for. No effect of any kind on blood-pressure or heart-rate was demonstrable.

After several days, in which no drug was used, another series of tests was made, in which from ten to fifty times the recommended dose was given repeatedly for several days. No objective effects were seen either immediately or at any time. On being asked concerning subjective symptoms the subjects (who did not know what they were taking) stated that they did not feel anything. They were emphatic in the belief that they were not receiving any effective drug.

Series II.—At a later date, on a new lot of students, a series of pulse-counts was made.

Experiment 1. April 5, 1910, a. m. The pulses of 36 students were counted for half a minute, each three times. They were then told the purpose of the experiment and that part would receive milk sugar and part a drug, but that no one was to know what he personally received. In Group I each one received three sugar pills. In Group II each received three Cactin pills of 1/67 grain. During the next hour they remained quiet, a lecture being given to occupy the time and divert their attention. Then the second count was made, each man's pulse being counted three times by separate individuals. After another hour of lecture the third count was made. The results are shown in Table 5.

TABLE 5

Group 1: Milk Sugar Pills

Student.	Average Before Taking.	Average After One Hour.	Average After Two Hours.
One	45	38	40
Two	52	42	43
Three	49	37	43
Four	43	34	36
Five	37	33	32
Six	32	28	28
Seven	34	31	35
Eight	34	31	32
Nine	34	28	27
Ten	39	35	36
Eleven	35	32	36
Twelve	45	40	40
Thirteen	42	38	36
Fourteen	42	35	38
Fifteen	44	37	36
Sixteen	48	38	38
Average	41.9	34.8	36.0
Average change	...	—7.1	—5.9

Group 2: Cactin Pills

Student.	Average Before Taking.	Average After One Hour.	Average After Two Hours.
One	32	28	33
Two	40	33	34
Three	34	31	31
Four	37	33	33
Five	37	31	32
Six	40	40	37
Seven	36	32	34
Eight	46	35	36
Nine	38	34	32
Ten	45	41	39
Eleven	38	30	32
Twelve	39	36	36
Thirteen	36	30	32
Fourteen	45	35	36
Fifteen	37	30	34
Sixteen	41	35	37
Seventeen	42	40	37
Eighteen	32	28	29
Nineteen	40	35	33
Twenty	43	37	36
Average	38.9	33.7	34.2
Average change	...	—5.2	—4.7

Experiment 2: April 5, 1910, p. m. The pulses of 24 students (not those used previously) were counted for half a minute, three counts being made for each man. The experiment was repeated as above, except that half of the men took from six to twelve Cactin pills, each 1/67 grain. The results are shown in Table 6.

TABLE 6

Group 1: Milk Sugar Pills

Student.	Average Before Taking.	Average After One Hour.	Average After Two Hours.
One	36	42	41
Two	34	31	33
Three	34	28	28
Four	37	31	32
Five	32	32	30
Six	31	28	26
Seven	37	38	37
Eight	39	36	33
Nine	39	32	31
Ten	48	44	38
Eleven	40	37	39
Twelve	33	35	34
Average	36.7	34.5	33.5
Average change	...	—2.2	—3.2

Group 2: Cactin Pills

Student.	Average Before Taking.	Average After One Hour.	Average After Two Hours
One	37	37	34
Two	46	40	39
Three	39	37	33
Four	37	37	34
Five	41	35	35
Six	33	29	28
Seven	37	34	33
Eight	44	41	38
Nine	31	30	31
Ten	35	29	30
Eleven	38	36	35
Twelve	40	36	34
Average	38.2	35.3	33.7
Average change	...	—2.9	—4.5

It will be noted that there was a decrease in the average heart-rate in both groups and in both experiments. This was doubtless partly due to the fact that the first count was shortly after a meal; also partly, perhaps, to too short a rest in sitting posture (five to ten minutes) allowed after the students entered the laboratory before the first count was made. Perhaps the psychologic element of interest also had a part. It will be noted that in the first experiment the average decrease was less for those taking Cactin. It would have been easy to ascribe the difference to the drug, but the reverse was true in the second experiment. It is therefore evident that the differences in the averages are only such as one should expect when using no greater number of individuals. These results impress one with the need of caution to be observed in drawing conclusions from a limited number of experiments. It will be noted that during the second hour the average pulse-rate for the first experiment went up. In the second experiment, second hour, it went down. In both experiments "Cactin" and "milk sugar" averages go hand in hand.

CLINICAL RESULTS

Series III.—One of the authors (Qualls) has had the opportunity during the last year of testing Cactin clinically on patients in the City Hospital. Records of the pulse and systolic blood-pressure were made through long periods of time. For the most part patients were selected who were confined to their beds so as to eliminate the changes inevitable in persons who are moving about. It was thought wise to study first the effect of rest in bed, in order to be able better to interpret the cases in which the drug was used. The record of such a case follows:

Case 1. *History.*—Patient entered the hospital Feb. 12, 1910, complaining of weakness, loss of appetite and shortness of breath. The heart rate was rapid, and the pulse weak and irregular. Some ventricular systoles did not reach the radial pulse. The rate of perceptible radial pulse varied markedly, at times reaching 150 per minute. The patient's feet were swollen; he was cyanosed, and breathing was difficult. Urine showed large amount of albumin.

Diagnosis.—Nephritis, myocarditis and edema of lungs. The patient was put to bed and put on a milk diet for a few days, together with diuretics and cathartics. From a study of vascular system with the daily determination of blood-pressure it was seen that patient required no cardiac stimulant. Records of pulse and blood-pressure were as follows (each pressure given is the average of two or more trials):

TABLE 7

Date.	Pulse Rate Per Min.	Blood Pressure mm. of Hg.	Date.	Pulse Rate Per Min.	Blood Pressure mm. of Hg.
Feb 12....	150	140	Feb. 21*. .	70	115
Feb 13 ...	120	145	Feb. 22.. .	72	108
Feb 14 ...	115	135	Feb. 23....	70	112
Feb. 15....	90	135	Feb. 24 ...	80	135
Feb. 16 ...	105	120	Feb. 25...	72	120
Feb 18 ...	76	100	Feb. 26 ..	80	125
Feb 19 ...	60	95	Feb. 27....	65	115
Feb 20 ..	67	100	Feb. 28....	75	120

* Diet increased on this date.

Inspection of Table 7 shows that as patient was relieved of his edema and toxemia his blood-pressure was lowered. The pulse-rate also was lowered and much more regular. A freer diet was given and the pressure became higher. The patient's condition required rest in bed during time determinations were made. He improved and was discharged from hospital with only slight cardiac arrhythmia. This case demonstrates what erroneous conclusions might be drawn as to the value of so-called cardiac tonics if some inert substance had been given during early part of the time the patient was in bed.

The foregoing is a fair sample of five cases in which no drugs were given from date of admission for periods of seven to thirty days and in which similar "steadying" of the pulse and readjustment of blood-pressure occurred. Following these experiments eight cases were studied in similar manner, Cactin being administered for some portion of the time. A fair example follows:

Case 2. *History.*—The patient entered the hospital Jan. 28, 1910. Clinical diagnosis, tabes dorsalis with Charcot's joints. Patient was at rest in bed. Some slight arteriosclerosis of radials; no other marked sclerotic findings in vascular system. After patient's pulse and systolic pressure had been determined for ten days, Cactin was commenced, as shown in Table 8, with results as indicated. Every blood pressure determination in the table is the average of two trials.

TABLE 8

Date	Pulse Per Min	Blood Pressure mm. of Hg	Drug.	Grains Per Day
February 6	99	135	None	
February 7	90	132	None	
February 8	89	122	None	
February 9	90	125	None	
February 11	96	126	None	
February 13	115	135	None	
February 14	81	120	None	
February 15	84	108	None	
February 16	90	125	None	
February 18	72	100	None	
February 19	78*	102*	Cactin	1 34x4
February 20	90	118	Cactin	1 17x4
February 21	99	142	Cactin	1 17x4
February 22	87	115	Cactin	1 17x4
February 23	88	115	Cactin	1 67x3
February 24	75	115	Cactin	10 67x3
February 25	81	130	Cactin	10 67x4
February 26	81	125	Cactin	20 67x4
February 27	78	112	None	
February 28	75	108	None	

* In all cases the drug was administered during 24 hours previous to determination.

If now we calculate the average pulse and blood-pressure for the first ten days during which no drug was given we get 90.6 and 122.8 respectively. For the eight days during which Cactin was given the pulse averages 84.7 and the blood-pressure 120.2. If we average all the days, "before and after taking" in which no drug was administered we have pulse, 88.2, blood-pressure, 120.7. Averaging two days without drug following the period of administration: pulse, 76.5; pressure, 110. In other words pulse and pressure go down "on drug" and also "after drug."

Of more significance is the general observation that the blood pressure and pulse vary as much under the drug as without and that during the drug period there is no relation between the determinations and the dose nor any cumulative effect.

Case 3.—The patient had tabes dorsalis and cirrhosis of liver. The results of the experiment are shown in Table 9.

TABLE 9

Date.	Pulse Per Min.	Blood Pressure mm. of Hg.	Drug.	Grains Per Day.
February 6........	115	118	None	
February 7........	118	135	None	
February 8........	115	125	None	
February 9...	115	115	None	
February 11........	115	122	None	
February 13	88	100	None	
February 14........	90	120	None	
February 15	90	130	None	
February 16........	96	105	None	
February 18........	90	118	None	
February 19...... ..	90	120	Cactin	1 34x4
February 20........	90	110	Cactin	1 17x4
February 21... ..	84	115	Cactin	1 17x4
February 22........	84	110	Cactin	1 17x4
February 23........	90	115	Cactin	1 67x3
February 24...	90	118	Cactin	1 67x3
February 25	91	112	Cactin	10 67x4
February 26..	90	118	Cactin	20 67x4
February 27.	96	116	Cactin	50 67x2
February 28........	90	115	None	

The average pulse and pressure respectively for the ten determinations before the drug was given we find to be 103.5 and 118.8 For the nine days during the administration of the drug 89.5 and 114.9. A lowering of the pulse and pressure as the result of Cactin might be asserted. But suppose we omit the first five days during which the rest in bed manifests its "steadying action." The averages without drug are now 91, pulse; 114.6, pressure; results more nearly like the Cactin averages than the average of any five days of its own period.

The two experiments cited show averages of pulse and blood pressure under the drug slightly less than those of the preceding "no drug" period. It is possible to get just the opposite result, for example:

Case 1. Typhoid complicated with nephritis.—On Feb. 5, 1910, after patient's temperature was normal, determinations of systolic pressure were commenced. Patient was still on typhoid diet and was gradually put on full diet during the course of the experiments; he also was kept in bed during the course of the experiments.

Results.—Average pulse for thirteen days, February 5-18, no drug, 87.7; average blood-pressure, same period, 110.4 mm. Cactin treatment then begun, dosage from 1 34 grains to 1 grain a day. Average pulse-rate for periods, 97.5; average blood-pressure, 118.7 mm.

It is seen that the average blood-pressure after the administration of the drug is about 8 mm. higher than before drug was given; but this is no more than could be expected with a patient recovering from an infectious process, with the increase of diet. It was also seen that the systolic pressure bore no relation to the amount of drug used; for example, on February 27 the largest amount of drug was given; however, the blood-pressure was lowest on this day of any time during which patient received the drug.

Another example of rise of blood-pressure during administration of Cactin follows, but in this case the pulse average goes in opposite direction.

Case 5. *Diagnosis.*—Trichinosis complicated with nephritis. After the temperature was normal and the patient was able to leave the bed and walk about the experiment was begun.

Results.—The average pulse and pressure for eleven days without drug were respectively, 82.5 and 108; for eight days following on Cactin treatment averages were 77.6 and 120.1, respectively. The dose varied from 3/67 to 100/67 grain a day. There was no relation between the pulse or pressure and the dosage.

One more case will be cited in which the "enormous" (?) dose of 3 grains a day of Cactin was administered.

Case 6. Tuberculosis of hip.—Circulatory system normal. In bed from Jan. 28, 1910. Experiment begun March 20, 1910. Results shown in Table 10.

TABLE 10

Date.	Pulse Per Min.	Blood Pressure mm. of Hg.	Drug.	Grains Per Day.
March 20	89	108	None	
March 21	84	118	None	
March 22	90	107	None	
March 23	84	110	None	
March 24	86	112	None	
March 25	87	115	Cactin	10/67x2
March 26	81	104	Cactin	10/67x3
March 27	89	102	None	
March 28	90	112	None	
March 29	90	105	None	
March 30	90	102	Cactin	50/67x4
March 31	88	112	None	
April 1	98	115	None	
April 2	81	102	None	
April 3	84	102	None	
April 4	75	102	None	
April 5	90	98	None	
April 6	81	104	None	

It is evident that there are no variations in heart beat or blood pressure attributable to the Cactin.

SUMMARY

A large number of experiments were made on animals, on healthy young men and on patients in bed, and no effects of "Cactina" (Sultan) or "Cactin" (Abbott) could be demonstrated.

THE RÔLE OF OBSTETRICS IN PREVENTIVE MEDICINE*

W. P. MANTON, M.D.
DETROIT

With rare humor Dr. Oliver Wendell Holmes once wrote a prescription for longevity. Arriving at 60, to attain the ripe age of 80 "become the subject of a mortal disease," he says; but he fails to enlighten us as to how we may reach the year at which to begin his remedy. It is the object of every living being to lengthen life to the utmost, and in this prolongation of existence lies, with qualifications, the success of the state and the race. But as from the intervention of disease, few attain to that period when "every man with his staff in his hand for very age" marks the decline of usefulness, it is the object of preventive medicine to attempt so to safeguard life that it may be lengthened out to four-score years and ten of normal existence. Every century sees improvement along these lines, for increasing knowledge of disease brings with it the power and ability, not only to cope with existing conditions, but to anticipate and forestall those disorders which in their course tend to premature death or functional disability—a condition so nearly allied to non-existence as to render its subject of little or no value to society.

"To prepare us for complete living," says Herbert Spencer, "is the function that education has to discharge," and it is only through the education of the people and the profession—and one is sometimes inclined to agree with Gowers that "knowledge filtrates slowly through the profession"—that results can be attained in the uplift of the whole.

The subject which has been assigned me, the rôle of obstetrics in preventive medicine, is so broad and comprehensive that in the time allowed for its presentation I can hope only to touch on a few of the well-known facts, leaving much of profit to be brought out in discussion.

DEFINITION OF OBSTETRICS

Ask any ten men in the medical profession what they understand by the term "obstetrics" and the majority will give the dictionary answer, the care and attention rendered woman at the time of childbirth. But this is obviously too narrow and restricted a concept, for it has regard to only one of the actors in the drama, the mother, while the child, in which are grouped all of individual, family and national potentialities, is ignored, and the father left entirely out of the question. It is evident that if obstetrics has a place in preventive medicine its definition, in its broadest sense, must include all of those factors which enter into the production of children and the employment of all of those agents which make for strong and healthy bodies and sound mentality. Thus defined, the scheme of obstetrics would embrace the whole of the life of woman from gamete existence to climacteric accomplishment, the child from conception to birth, and to an extent the man also. By this we may understand that the obstetrician's duty does not begin and end with the delivery of the parturient, but reaches back to a consideration of heredity, and the study of antenatal development and pathology, including all of those conditions which make for the welfare of the child.

And it thus becomes evident that the science of obstetrics is complex, and so mortised with biology, pathology and general medicine that it is inseparable from either of these, and that while, like the colors of the spectrum, each component part is susceptible of analysis, each is so blended and interwoven with the others that it is only when taken together that a complete and luminous whole is possible.

EUGENICS

Whatever may be our views regarding the inviolability of the germ-plasm, it is certain that characters and tendencies are handed down from generation to generation, and that disorders manifested in the parents may be reproduced in their progeny. The breeding of best to best must result in the production of the best, while, conversely, the issue of bad and bad or bad and good cannot attain to the same standard of excellence, even with the aid of "ancestral pull."

Stirpiculture may not be as readily directed in the human species as in the lower animals, and yet a persistent propaganda by way of suggestion, warning and advice on the part of physicians would in ultimate outcome be of greatest profit. If the marriage of those possessed of a family "taint," of the consanguineous, and of the socially and morally unfit could be prevented, eugenics would be advanced, the results for good would be incalculable, and the financial saving to the state enormous.

Inherited weakness in man, and especially in woman, is often magnified in the products, for, as Thomson observes, "an individual inheritance is a mosaic of ancestral contributions." Fortunately, sterility often puts a stop to further degeneracy along these crooked lines, and in the interval preventive medicine attempts its best to bolster up a feeble and tottering organism. And this is worth while, as, according to Hamilton, where a "vicious line is introduced it may die out, and probably does in most cases die out by interbreeding with a series of pure stocks;" even if "no reliance can be placed on its not recurring atavistically, it may be generations after."

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Prophylaxis, therefore, must begin with life before birth and continue during the period of reproductive activity; an undertaking of vast proportions; but why should not the relation of the state and the physician be reciprocal?

FACTORS INFLUENCING FETAL DEVELOPMENT

Although maternal impressions, as popularly understood, are probably scientifically impossible, it is well established that impressions are constantly influencing the child during the whole of intrauterine gestation. Our knowledge of these facts is not imaginary but is derived from laboratory experiments and investigation, pathologic chemistry and clinical observation.

From the beginning of pregnancy the anatomic barriers between mother and child are such that no particle of formed matter can pass from one to the other, but untoward tendencies, notably an unstable mental and nervous organization of the mother, and deranged maternal metabolism, may seriously interfere with the nutritive processes of the child, or produce diseases of the fetal structures terminating in maldevelopment of organs, which end existence or prevail in crippled function throughout life. Morbid conditions arising within the placenta itself may prove, not only injurious or fatal to the fetus, but of serious consequence to the mother (hydramnios, hydatidiform mole, etc.).

It is also demonstrated that continued or repeated violence to the nested ovum is capable of producing malformations and monstrosities, and strong mental emotions, fright and traumatisms of the mother not infrequently lead to maldevelopment of body and mind in the offspring.

The placenta has been found not to be the perfect filter, as was formerly supposed, for morbid germs pass through its substance and invade the fetus, giving rise to the same diseases as suffered by the mother or to equally serious conditions (syphilis, tuberculosis, septic infection, smallpox, etc.). Other maternal disorders, the active agents of which may not be demonstrable in the fetal tissues and some of which may remain dormant for a considerable time after birth, sooner or later become manifested in postnatal life.

Again, toxic agents, for example, alcohol, tobacco and lead are responsible for fetal malformations and mental obliquities, frequently reappearing in successive generations. It is true that the presence of most of those antenatal disorders to which reference has been made cannot be diagnosticated during intra-uterine existence, and that malformations and monstrosities are largely due to errors of embryonic development, still, with the knowledge acquired from antenatal pathology, we are in position to apply anticipatory measures in the interests of both mother and child, and by prophylaxis and timely interference, to bring about results which, in a proportion of cases at least, must make for greatest good. In undertaking preventive measures, however, we must not lose sight of the fact that many antenatal conditions are dependent on circumstances antedating uterogestation, so that to insure somewhat of success preventive steps must be inaugurated before the advent of conception. In other words, prophylaxis must be started with beginning postnatal life. Especial attention must therefore be directed to the proper management of the child, and efforts made not only to prevent or inhibit the diseases of that period of life, but also to eliminate as far as possible all those factors of the plastic years which may result in conditions inimical to future normal pregnancy and motherhood.

FACTORS INFLUENCING POSTNATAL DEVELOPMENT

"The rearing of healthy children," says Knopf, "is the most valuable asset to a nation's strength and prosperity," but this is impossible unless the whole cycle of reproductive life be included.

The sequelæ of the acute exanthemata and other diseases in the kidney and pelvic organs may have a bearing on fertility and the pregnant state, the one by possible influence on normal development of uterus and ovaries, the other by weakening organs on the integrity of which depends so largely the successful progress and outcome of normal pregnancy.

The influence of scarlet fever in the production of cardiac disease and as a direct cause of deaf-mutism, which in Great Britain is reported to reach as high as 23.5 per cent., may also be mentioned. Moreover, according to Gowers, "more cases of epilepsy are consecutive to scarlet fever (apart from the influence of nephritis), than all other acute diseases put together"; while Funkhouser has recently pointed out the importance of this disease as an etiologic factor in the causation of psychoses (postfebrile and exhaustive psychoses, dementia præcox, etc.).

Regarding other diseases of childhood which may lead to future obstetric disaster, much might be said, but I will confine myself to calling attention to one of the most important and far-reaching evils in this connection, namely, child-labor. Fürst has called attention to the relation between severe continued bodily exertion and uterine deviations and adnexal inflammations. During the formative years of life when the local organs are most susceptible to external as well as internal influences, the increase of intra-abdominal pressure from heavy lifting and straining, especially with overfilled bladder or rectum, favors pelvic congestion and displacements. If to these be added the nervous strain induced by monotony of work, as in factories, with the relaxation of tissues in a deteriorated body from unhealthy environments, lack of fresh air and liberty for out-door exercise, poor and insufficient food and a life of poverty, we have an array of agents the baneful operations of which cannot be overestimated. A recent writer in a popular publication has well summarized the effects of such unhealthful occupation. "The factory woman," she says, "if she is married, is too tired to show much attention to her home. She may give her baby drugged cordials to keep it quiet, most of her children die near infancy and those that survive are anemic. If she is not married she is likely to be some time, and she is using up energy that belongs to her children, to whom she will give an enfeebled life, and so bring down the general average of the race."

Were these the worst features that might be enumerated they would be bad enough, but of still greater importance to the future mother are the effects produced on the development of the pelvis in young girls—deformities and contractions—which may become evident only at time of parturition. In many of the conditions induced by child-labor the symptoms may at first be so slight as to escape attention, but their sequelæ are sure to appear later; in the unmarried in the form of amenorrhea, dysmenorrhea, endometritis, oöphoritis, salpingitis and the like; while after marriage they are shown in metritis, sterility, abortions, difficult or impossible delivery, etc., the maternal and fetal mortality and morbidity statistics of childbed being thereby largely increased, with a growing list of female morbidities met with in the clinics. If laws could be enacted and enforced controlling child-labor, the rôle of obstetrics in preventive medicine would be greatly lessened.

HEALTH AND DISEASE IN PREGNANCY

Pregnancy being, according to the books, a physiologic process through which most women pass without untoward event, the practitioner in the past has presumed too much on "Nature's" ability to take care of the gravida, and has therefore shirked responsibility. But the effect of the growing ovum on the maternal organism differs in different individuals, and it is wrong to assume that a process which may be normal in one is necessarily normal in all. As a matter of fact, of which we are all cognizant, the border-line between health and disease in pregnancy is often a shadowy one, and unless the patient's health is closely supervised during the whole period of uterogestation serious complications may arise, which, in their culmination, may prove of gravest import to the mother, child, or both, with resulting discomfiture, mortification and regret to the physician. It is an old adage, but true, that "he who cures a disease may be the skillfullest, but he who prevents it is the safest physician."

Newell has called attention to two types of women with which the physician of to-day has to deal; one, the natural woman, generally of the poorer class, in spite of privations and hard work, preserving a vigorous and healthy body and ignorant of nerves, goes through her pregnancy and labor with the least possible difficulty and without after reaction; the other, the "overcivilized" woman, in whom the nervous system is exaggerated and overdeveloped—whatever may be her somatic state—stands the trials of pregnancy but poorly; the test of labor becomes almost a pathological process; and the woman too often, from the imposed strain, breaks down after delivery is accomplished. The latter is usually the product of the older communities, where social obligation stands first, antagonizing the rearing of healthy children, and imposing conditions the penalties for which are exacted by maternity. But into whichever class the patient may fall, she must not be disregarded during this greatest of tests of bodily fitness, and each patient must receive that care and solicitious attention which the condition demands. Knowing that every abnormal process, preceding or inaugurated during pregnancy, is presaged by some sign or symptom, the physician should be ever alert to detect the earliest evidences of threatening danger, and, by anticipating possible evils, seek to check those morbid showings which may lead to serious results. Women who exhibit or have shown in former pregnancies, a tendency to pathologic complications should receive particular care and attention. In this connection much might be accomplished by the establishment of what Ballantyne calls prematernity hospitals, or the setting aside of special wards in existing lying-in institutions, where morbid pregnancies might be studied and "their treatment elaborated and placed upon a sure basis founded on experience." In such a hospital the poor would be cared for free of expense, and the well-to-do and rich placed under the most favorable conditions for a happy termination of a morbid gestation. The benefits to be derived from hospital treatment and supervision, especially in the instance of the working woman, under normal conditions, has been investigated by Pinard and others, and it has been found that the children of such patients, who were thus enabled to rest during the days preceding confinement, are heavier in weight, and undoubtedly healthier and stronger than the infants of those who engage in active work up to the onset of labor.

RESPONSIBILITY OF THE OBSTETRICIAN

Nature is said to be kind, for out of the thousands of women delivered annually, few, in comparison, suffer seriously from the disorders of pregnancy. The sins of omission may possibly be forgiven but not so those of commission, for which there is often little or no excuse excepting ignorance and unskilfulness. It is in the delivery of the patient that the physician displays his shortcomings most conspicuously. Into his hands are committed the lives of two individuals, and how often the responsibility is lightly assumed and without thought of fitness for the task! And yet how important to the future of the patient is the skilled conduct of labor, and how frequently is indifferent and sloppy midwifery responsible for years of suffering and ill-health in the after life of the mother, while the child may perish or not as the case may be!

Midwifery is the golden key which unlocks future possibilities and success to the young physician by opening up opportunities to family practice which might otherwise be difficult or impossible to obtain. And yet it is safe to assert that, whatever may be the reasons assigned, in no department of medicine in which he is called on for conscientious and capable action is the beginner—and this unfortunately applies to many an older practitioner—less equipped and competent than in obstetrics. We demand that the educated and well-qualified physician, before entering into private practice, shall have had a hospital training in medicine and surgery, but who has ever heard it urged that he shall also round out his knowledge by experience gained in a maternity? The question when to interfere in delivery or when to abstain from active assistance, demands rare judgment and experience, as well as when by preventive measures may be gained the ounce of safety that is worth so many pounds of after-treatment.

If, as President Eliot says, the first duty of the physician is to prevent as well as cure disease, "the first step in prophylaxis," as some one cleverly remarks, "is to get a sufficient experience with what one wishes to prevent," and nowhere outside of a maternity hospital can this be so successfully accomplished.

Obstetrics has made great advancement during the past quarter century and the observance of asepsis and the larger knowledge of morbid conditions and their sequelæ which has been acquired have enabled the practitioner to afford assistance to the parturient under circumstances which in the past would have been impossible. As illustration, the interest which has been manifested within the past few years regarding the contracted pelvis is noteworthy as indicating the trend of modern obstetric thought and purpose.

MANAGEMENT

In the question of the management of such cases many different considerations are involved, and it is only by weighing the mortality and morbidity of mother against those of child, with reference to any given operation, that the one promising most satisfactory results can be adopted. A familiarity with the bony pelvis, being the foundation for a knowledge of treatment, leads to the consideration of those elements which conduce to the intra-partum safety of the mother as well as the safe delivery of the child. By careful pelvimetry, a study of the woman's physical and nervous make-up, and information gained as to the size of the fetal head in relation to that of the canal through which it must pass, the obstetrician is enabled to determine to a degree what may be expected at time of labor, and sometimes to inaugurate preventive measures which may secure relief, but always to prepare before hand for such intervention as may become necessary in the individual case.

While it is true that the interpolation of accidental conditions, which often cannot be anticipated, make "foreknowledge absolute," impossible, yet, the physician being to a large extent forewarned, the fault is his if in the time of need he is not also found forearmed.

The prophylaxis of the puerperium should be anticipated in pregnancy and in labor, for a clean gestation and a clean delivery usually sign for a healthy childbed. The occasional development of a pathologic state post partum must be met as it arises, but that many, if not most, of these are preventable incidents is within the experience of all. Unwise and uncalled-for tinkering by the physician—frequently resulting from alarm occasioned by a rise in temperature due to an overdistended bladder or rectum, to nervous irritation or some such trifling cause—are responsible to a large extent for the mishaps of the lying-in period. Only recently I have seen in consultation two cases of pelvic abscess which resulted, in each instance, from unnecessary curettage, and which entailed weeks and months of suffering to the women, to say nothing of the apprehensive fears of physicians and families, and the unnecessary expense to those who were not in position to bear the burden.

MIDWIVES

The advent of septic infection in the lying-in woman has rarely an excuse, for the principles laid down by Holmes and Semmelweis, Pasteur and Lister, if carried out, make the occurrence of this disorder mostly preventable, so that the responsibility and blame for its presence must be borne by those who have the patient in charge. That the midwife, especially in congested districts, is generally accountable for the morbidity and mortality resulting from infection during and after labor, is evident from the reports of city boards of health. Miss F. Elizabeth Crowell, who personally visited 500 midwives in the Borough of Manhattan, New York City, found that of this number only fifty, or 10 per cent., could be qualified as capable and reliable, and those seen represented only about half of the practitioners in that borough.

We require that the physician shall have taken a prescribed course in a reputable medical school, the examinations of which he must have passed and later those imposed by a state board of registration, before he can legally enter into practice, and yet we permit, in many states without a question, an ignorant and dirty woman, such as depicted by Miss Crowell, "whose hands were indescribable, whose clothing was filthy, the condition of whose bag beggars description," to officiate in obstetrics, an important branch of medicine, and thus to slay and kill without one word of protest. Laws there are, which are enforced, for the protection of children, animals and birds, but the unfortunate mother and newborn babe are left unprotected to the mercy of the ignorant and indifferent. With all our vaunted philanthropy it would seem as if the times were ripe and civilization advanced enough for legislative control of these carriers of disease and death, and it should be the especial concern of every physician having the welfare of his community at heart constantly to urge, in season and out of season, either the elimination of the breed, or, what seems more desirable, the creation of educational standards and state examinations and a supervision of midwives by legislative enactment.

DIFFICULT LABOR AND INFANT MORTALITY

The dangers to the infant incident to prolonged and difficult labor should ever be borne in mind, and early intervention in the interests of the child, when not inimical to the welfare of the mother, should be the rule of practice. But in carrying out such prophylactic measures it must not be forgotten that forceps and manual traction on the child are capable of much mischief, often resulting, if not in immediate trouble, in subsequent disorders of the brain and nervous system. The latest government statistics for the year 1907 and 1908 show that one-fifth of the deaths that occurred during that period were in infants under one year of age, while during 1908 more than one-eighth of a million (136,432) babies died in about one-half the total population of the United States. Ignorance and society have been largely responsible for the disastrous conditions which have heretofore prevailed, for, according to Prof. Irving Fisher, 47 per cent. of the diseases of the neonatus are preventable. Goussew states that in the Munich clinic 50 per cent. of antenatal deaths result from syphilis, and this disease undoubtedly plays an important part in the death-rate of early postnatal life.

FEEDING

It is also true that a large mortality results directly or indirectly from the improper feeding of the new-born. While for lack of something better, artificial food mixtures must be used in a certain percentage of cases, it is universally acknowledged that breast-fed infants are better qualified to carry on existence and resist disease than those brought up on the bottle. The investigations of Tugendreich in this connection are of interest. This observer found that of 388 breast-fed babies in 61 families there was a mortality of only 19.8 per cent., while in 229 bottle-fed infants the death-rate rose to 43.3 per cent., a strong and unanswerable argument in favor of a fast-declining custom, maternal suckling.

INFECTIONS OF THE NEW-BORN

Nearly, if not quite all, of the infectious diseases of the new-born are preventable, the germ being introduced, as a rule, during or immediately following labor. Morse is of the opinion that the wiping out of the child's mouth by dirty fingers or contaminated cloths is a prolific source of evil. Twenty-seven years ago,[1] I called the attention of American obstetricians for the first time to a disease of great importance and danger, ophthalmia neonatorum, and urged its prophylactic treatment by the nitrate of silver method, just then worked out by Professor Credé of Leipsic. Two years later I again took up the subject,[2] but both of these articles apparently fell on barren ground, for, excepting the splendid work of Garrigues at the New York Maternity Hospital, little attention was given to the subject until more than twenty years later. The profession is now alive to the gravity of the condition, interest having been created principally through the efforts of the

---

[1] Am. Jour. Obst., October, 1883.

[2] Boston Med. and Surg. Jour., Aug. 13, 1885.

New York Association for the Blind and its special committees. When it is considered that one-quarter of the blind children in the schools for the blind of this country have been unnecessarily deprived of sight, the seriousness of the matter becomes apparent. Physicians, and particularly midwives, are responsible for loss of sight from this cause, and it is a matter of shame and opprobium to the profession that a single individual should be doomed to lifelong darkness when at the expense of a little trouble and the employment of so simple a preventive this might be absolutely prevented.

CONCLUSIONS

In the foregoing remarks I have attempted to indicate a few of the many conditions in which obstetrics plays an important rôle in preventive medicine. Surely, as "the child is father to the man," and woman the "treasury of the continued race," no pains which may be taken to preserve each in normality and health should be accounted too great.

32 Adams Avenue, West.

ABSTRACT OF DISCUSSION

Dr. Henry B. Hemenway, Evanston, Ill.: We well know that a large share of the diseases, particularly of the nervous system, are due primarily to heredity. For example, in London, speaking roughly, a large share of the mental defects, including epilepsy, and the ordinary neuroses, are traceable to the use of alcohol in the preceding generation. In Switzerland it is found that a large proportion of the children in institutions for the imbeciles and epileptics are begotten at a time when their parents are probably under the influence of intoxicants. During my practice I had a case of acephalus, the ante-partum history of which was as follows: During the third or fourth month of pregnancy the mother of the child attempted to stop a cow which was getting out of the barn, and was struck on the abdomen. I observed the case closely and I have no doubt but that the blow there caused hydrocephalus. Supposing that I had to deal with a very large amnion, I ruptured the membrane. When the child was born, I found that evidently I had mistaken the head itself for the membrane, and that the acephalic condition was the result of that injury.

When Dr. Manton first put forth his idea of ophthalmia neonatorum, some of us thought that perhaps he was a little bit visionary; but I think that facts have demonstrated that he was far-sighted. The danger of spreading the various infections through carelessness in the attendance on cases of confinement is illustrated by one instance which I remember. A physician attended a case of erysipelas, and went thence to three successive confinements and every one of those women died from what was familiarly called puerperal fever.

Dr. P. M. Townsend, Marshalltown, Ia.: We know that if the bone salts in the blood of the mother are ample and abundant, the bones of the child are well-nourished; but if for any reason there is a lessening of the bone salts in the blood of the mother, the bones of the child will be softer. The food of the mother before it becomes nerve tissue or muscle tissue, goes through a variety of processes, and is built up into more or less complex substances. The blood-supply of the child and the blood-supply of the mother presumably have the same composition in elemental food-supplies; the child's different tissues would therefore receive the same proportionate supply of food-elements; in that manner possibly those brain functions in the child would be best nourished which correspond with the brain functions active in the mother and therefore calling for a food-supply and influential in having the mother's blood contain a large proportion of such food-supplies as these activities require. The blood of the musician would be well supplied with such food elements as would nourish nerve tissue, whereas the blood of the woman whose time was taken up almost solely with washing would be well supplied with such food-elements as supply muscle tissue and we would expect from the child in the latter case a more thorough muscular development, but in the former case a better endowment of the nervous system.

We should educate for parentage as for any other social functions of the human being.

Dr. C. W. Stiles, Washington, D. C.: The relation between obstetrics and preventive medicine is a tremendously important matter in rural districts. In rural districts where I have been working in connection with other matters, it is the exception that the women in confinement see a physician; and I think that we can not infrequently trace back to the period of confinement the conditions that we find among some of our country children, and the later conditions in life of many of the farm mothers.

Dr. Allen W. Freeman, Richmond, Virginia: I suppose our experience in Virginia has been that of all other health departments on this subject. We have walked around and around it, looking at it, realizing its importance, but not feeling quite like attacking it: but I think it is time for somebody with Dr Hurty's nerve to open up operations. There is no doubt that tens of thousands of women are being absolutely murdered by ignorant midwives. Every one who has ever practiced obstetrics knows how filthy and dirty, how officious and meddlesome these women are: and we know what a tremendous total of fatal and crippling illness they cause every year. If we try to get rid of the midwife, the public takes the attitude that we are trying to get a little more money for the average practitioner and do the poor working woman out of her $3 or $5 fee: but we should not let that keep us back: we must tell the people how many women these midwives are killing, and how much illness they are causing. I don't think people want to run the risk of being infected or killed by midwives; they run the risk because they don't know. The obstetrician and the health officers are the only people who apparently do know: and if we are going to be true to our duty, we must bring this information to them.

Dr. C. Hampson Jones, Baltimore: The midwife question is one in which we of Baltimore and Maryland have been much interested for many years; and I am glad to say that at a meeting of the last legislature we succeeded finally in passing a law which will enable us to improve the situation a great deal. For many sessions of the legislature, bills had been introduced which met defeat regularly: and only by the greatest care in drawing up this last bill, so as, while being effective, yet not too strongly to antagonize the interests of the midwives, did we succeed in getting the bill through.

Some years ago I wrote a short paper reciting cases of tetanus neonatorum; I think there were 32 cases occurring in one year; and out of those, but 28 were in children under 20 days old. Among those twenty-eight cases, twelve cases occurred in the practice of one midwife; and on examination it was found to be undoubtedly due to the filthy condition of the woman's hands in treating the cord of the child. One very distressing case of tetanus was produced in the mother.

Midwives undoubtedly cannot be abolished, and I don't know that it is at all desirable to abolish them, because they attend cases which physicians do not want to attend, and in which trained nurses can not be employed. The institution being a necessity, therefore, we should undoubtedly regulate it legally The number of cases that would be treated by midwives can be considerably lessened, I believe, if special care is taken by the managers or superintendents of maternity hospitals to separate carefully pregnant women who are married from those who are not married; the fact that a woman is poor does not mean that she is blind to the association with a woman who is not of the same character.

Dr. Walter P. Manton, Detroit: For a good many years I have been chairman of a committee on the examination of midwives, in the Detroit Board of Health, and have come into contact with a great many of these people. We have no particular laws, and are practically helpless, but we are hoping to get a law through the next legislature governing the matter.

IDIOCY AND HEREDITARY SYPHILIS

STUDY OF 204 CASES WITH THE SERUM DIAGNOSIS TEST*

CHARLES E. ATWOOD, B.S., M.D.
Neurologist, Children's Hospital and Schools and Hospital for Nervous Diseases; Assistant in Neurology and Psychiatry, Vanderbilt Clinic
NEW YORK

[BLOOD TESTS BY DR. NOGUCHI, ROCKEFELLER INSTITUTE]

The present study was undertaken to obtain positive knowledge of the proportionate relationship between syphilis in the progenitor and idiocy in the offspring. Wassermann and Plaut[1] first demonstrated by the serum reaction test the connection between syphilis and some of the psychoses, while Stertz[2] showed further by the same method that inherited as well as acquired syphilis can produce disorders of the nervous system. It has long been recognized that syphilis plays an important rôle in the causation of idiocy and the arrest of brain development. The exact percentage, however, could not be ascertained, until the application of the phenomenon of complement fixation made it possible, since which definite positive serum reactions have been found in idiocy, imbecility, epilepsy, dementia præcox, and nearly all cases of general paresis; while the utilization of the test is of daily occurrence in all diseases, of whatever nature, in which syphilis is suspected; and the test is found to be a very trustworthy one for syphilis when made under certain conditions.

Among idiots we are quite unable, from signs, symptoms or history alone, to gain the slightest clue, in most cases, as to the presence of syphilis. Statistics, therefore, obtained from such data are unsatisfactory and more or less unreliable. In German clinics percentages have ranged from 11 to 23 per cent.; in other miscellaneous clinics, including English figures, from 0 to 2 per cent. Figures on the frequency of congenital syphilis in general are fragmentary. Power and Murphy[3] state that in 4,830 out-patient children under 10 years, seen at the King's College Hospital, there were but 29 cases of undoubted syphilis, or 0.6 per cent.; and if suspicious cases were included in this estimate the percentage would be brought up to only 1.5 per cent. That these figures give no idea of the actual frequency of congenital syphilis appears from statistics of foundling hospitals, which show the high mortality of the disease in early life. Thus at an institution at Moscow it was recorded, about 1870, that of 2,038 syphilitic children 75 per cent. died within the first six months of life; while of actual syphilitic births over 80 per cent. are still-births, according to Hyde of Chicago, and the great number of syphilitic abortions is well known.

Lippmann[4] of Munich is the only one so far who has published a definite number of serum tests in idiots, though Raviart, Breton and Petit examined a few cases for this reaction in the blood. Lippmann applied the test to 78 juvenile idiots at Uchtspringe and got a positive reaction in seven, or 9 per cent. of the cases. These figures give a much lower percentage than that found clinically by Heubner and Ziehen, but notably higher than the 2 per cent. of certain other men. He next tested the material at Dalldorf and found 13.2 per cent. positive.

It has been settled that in persistent hereditary syphilis the reaction may disappear in time and that it is modified by treatment. Lippmann therefore investigated, for clinical evidences of syphilis, the material which had not given a positive reaction, and claimed from this, and historic evidence, a final percentage of 33.8 per cent. This seemed to me such a high percentage in comparison with what all other clinical evidence had shown that an independent inquiry into the whole subject was deemed worth while, especially as such an inquiry was calculated to throw light on the etiology of the disease.

Specimens of blood, about 2 c.c. in each case, were obtained from 204 idiots of low grade, in my service at the New York City Children's Hospital and Schools, Randall's Island. The Wassermann-Noguchi[5] test was made at the Rockefeller Institute by Dr. Noguchi[6] or under his direction. The 204 idiots selected were all of low grade. Eighty-eight of them were girls and 116 boys. A rough classification of the cases is shown in the following list:

CLASSIFICATION OF THE 204 LOW-GRADE IDIOTS TESTED

Idiopathic idiots	120
Diplegics	47
Hemiplegics	7
Epileptics without paralysis	13
Hydrocephalics	5
Microcephalics	6
Cretins	2
Myxedematous	1
Amaurotic family idiocy	1
Idiocy with cerebellar ataxia	2

Several (4) of the patients were blind, and several (4) mute. There were other physical disorders, not syphilitic, in other cases.

AGES OF THE 204 PATIENTS TESTED

Under 5 years of age	13
Between 5 and 10 years of age	34
Between 10 and 15 years of age	62
Between 15 and 20 years of age	31
Between 20 and 30 years of age	25
Between 30 and 40 years of age	22
Between 40 and 50 years of age	9
Over 50 years of age	1
Unascertained (adult)	7

It will be seen from this list that 140, or over two-thirds of the aggregate, were under 20 years of age.

Positive tests were obtained in 30 of the total 204 cases, or 14.7 per cent. Of these patients, 20 were females, being 22.7 per cent. of the 88 females examined, and only 10 were males, being 8 per cent. of the 116 males examined.

All of the positive seroreactions were in idiots under 40 years of age, divided as follows:

AGES OF THE 30 IDIOTS WITH POSITIVE SEROREACTION

Under 5 years of age	1
Between 5 and 10 years of age	7
Between 10 and 15 years of age	7
Between 15 and 20 years of age	6
Between 20 and 30 years of age	6
Between 30 and 40 years of age	3

It is interesting to note that the reaction had not disappeared even at so late a period as the ages of 31, 35 and 37 in three positive cases; also, that stigmata of syphilis appeared in only four of the total thirty cases with positive serum reaction.

---

* Read before the New York Neurological Society, May 10, 1910.

[1] Wassermann and Plaut: Ueber das Vorhandensein syphilitischer Antistoffe in der Cerebrospinalflüssigkeit von Paralytikern, Deutsch. med. Wchnschr., 1906, xxxii, 1769.

[2] Stertz: Die Serumdiagnostik in der Psychiatrie und Neurologie, Allg. Ztschr. f. Psychiat. u. Med., 1908, lxv, 565.

[3] Power and Murphy: System of Syphilis, 1908, i, 291.

[4] Lippmann, H.: Ueber den Zusammenhang von Idiotie und Syphilis, München. med. Wchnschr., Nov. 23, 1909.

[5] Noguchi, Hideyo: Serum Diagnosis of Syphilis, J. B. Lippincott Company, 1910.

[6] I am under great obligations to Dr. Noguchi and his assistant for the laboratory work.

CLASSIFICATION OF THE 30 IDIOTS WHO SHOWED A POSITIVE SEROREACTION, WITH PERCENTAGES OF EACH FORM

	Positive.	Total.	Percentage.
Idiopathic	13	120	10
Diplegics	11	47	23
Hemiplegics	2	7	28
Microcephalics	1	5	20
Epileptic without paralysis	1	12	8
Cerebellar ataxics	2	2	100

Still further analyzed, one of the diplegics with positive reaction was epileptic, one hydrocephalic, and one epileptic with mutism. One of the cerebellar ataxic patients was microcephalic, and one of the diplegics was blind. One out of four deaf-mutes showed a positive seroreaction. The myxedematous idiot, the two cretins, and the patient with amaurotic family idiocy showed negative reactions.

The percentage of positive reactions found was much greater, in proportion, in idiots with superadded gross organic brain defect than that found in idiopathic idiocy.

The great frequency with which a positive reaction was found in diplegics (over 23 per cent.) would seem to warrant one in believing that there are other causative lesions to be sought for in these cases than those which result simply from trauma or asphyxia; causative lesions, due to syphilis, such as for example an imperfect development of the vascular system. The subject is worthy of careful study and investigation. At any rate, 14.7 is certainly a sufficiently high percentage of positive cases to warrant the suggestion that every case of idiocy should have a serodiagnosis test to ascertain whether syphilis is a factor in its etiology; and something might also be accomplished, in the way of prophylaxis, as suggested by Lippmann, by applying the test to pregnant women in the lying-in and gynecologic hospitals. The importance of this suggestion is enhanced by the statement of Baisch that in women three-fourths of the cases of syphilis are latent. In other words, Baisch obtained positive seroreactions in women three-fourths of whom presented no clinical evidence whatever of syphilis. Aside from the opportunity of treating the mother, an inunction cure of the infant after birth, is often attended by striking success. Many cases of marked improvement are on record in which the mercurial treatment of mental defectives was employed. The indiscriminate specific treatment of all cases of idiocy, as in some cases of the clinics abroad, without a careful preliminary blood test in each case, can scarcely be recommended, as the use of mercury or of the iodids, when not directed with a definite purpose, is capable of considerable harm on account of conditions of malnutrition in the little patients.

I shall undertake further studies relative to treatment, and to the frequency of hereditary syphilis as an etiological factor in imbecility and feeble-mindedness.

14 East Sixtieth Street.

Yeast in Treatment of Vulvar Pruritus in Diabetics.—P. Carnot describes in the *Progrès Médical*, 1910, xxxvii, 307, his success in curing chronic vulvar pruritus in diabetics. Besides general and dietetic measures, hot local applications and the *x*-rays, he found that the best results were obtained by preventing prolonged contact of the glycosuric urine with the irritated parts. This he accomplished by lotions and vaginal injections of brewer's yeast, a tablespoonful of fresh yeast in a quart of water. In a recent rebellious case the yeast applications alone, twice a day, put an end to the pruritus remarkable for its intensity and tenacity. He recommends this yeast treatment for various forms of diabetic disturbances; the yeast removes the residual sugar in the urine by fermentation, replacing it with a weak and tonic alcohol solution.

THE RÔLE OF OTOLOGY AND RHINOLOGY IN PREVENTIVE MEDICINE*

JOHN J. KYLE, M.D.
Medical Reserve Corps, U. S. A.; Professor of Otology, Rhinology and Laryngology, Indiana University School of Medicine
INDIANAPOLIS

The otologists and rhinologists of this country have, I believe, a decided opinion that the ear, nose and throat have a rôle in the etiology of many general diseases, contributing directly in certain diseases and indirectly in others. Specific citations will be offered in the discussion of this important subject.

FUNCTION AND PATHOLOGY OF THE NOSE

The nose is both a respiratory and an olfactory organ. As a respiratory organ it prepares the air for the lungs, filters it, warms and moistens it. The normal mucus secreted from the nose, in addition to furnishing moisture for the inspired air, is a factor in digestion. It is especially true that gastro-intestinal disorders are not uncommon in very young children suffering from diseases of the upper air passages, and are due to putrefactive changes from the action of bacteria on the intestinal mucosa rather than on food particles.

Nasal stenosis produces a distinct reversal of Nature's method of respiration, that is, mouth-breathing, which when once forced on the individual, predisposes to general lowering of the resistance of the body, mental apathy, destruction of the blood cells, and diseases of the lungs. Individuals with obstructed nasal passages working in a dust-laden atmosphere are more prone to the various forms of pneumonoconiosis than are those with normal noses.

Olfaction is an important physiologic function of the nose, directly influencing the sense of taste, both of which govern the ingestion of suitable foods for the maintenance of the body. Alteration in the sense of smell may directly affect the general nervous system or *vice versa*. The sense of smell is essential in certain occupations, and many industrial diseases, such as alcoholism, dementia præcox in musk workers, insanity, etc., are due to these occupations.

Hypersensitive points in the mucosa of the nose as etiologic factors in hay-fever and asthma are too well known to require other than passing notice. According to Professor Killian, these points are the anterior end of the inferior turbinate, the front part of the septum, the lateral wall of the nose, above the anterior end of the middle turbinate, and the upper end of the septum about the tubercle. The cure or relief of such irritation is in cauterization of these points with the actual cautery or trichloracetic acid. There is a form of nasal turgescence, vasomotor in character, simulating hyperesthetic rhinitis, which is dependent on a neurotic temperament, which in turn is irritated by exhausting mental work, sexual excitement, alcoholic indulgence and gastro-intestinal disorders.

The influence of acute or chronic suppuration of the nasal sinuses is especially far-reaching. There is an intimate venous anastomosis between the roof of the sinuses of the nose and the meninges and brain, sometimes producing meningitis, thrombophlebitis and intradural abscess, and predisposing to mental apathy, ocular and aural affections, bronchial and gastro-intestinal disorders. Sometimes, in a chronic suppuration of the sinuses, a dehiscence may exist in the roof of the sinus which permits the direct extension of infection to the meninges and brain. The effect of inhalation of foul odors, often observed in patients suffering from a chronic suppuration of the sinuses, is certainly irritating to the lungs and nervous system. In these cases there is a low form of auto-intoxication present all the time.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The early local treatment of acute suppuration of any of the sinuses consists in the reduction of the swollen mucous membrane and establishment of free drainage, both of which are very essential. The early surgical interference in all chronic suppuration in the nose is most important. By such interference ozena, atrophic rhinitis, systemic disorders, and diseases of the lower air-passages are prevented.

Catarrhal inflammation of the skin, vasomotor erythemata, and angioneurotic edema may accompany, or alternate with, an acute inflammation of the nasal mucosa.

Leprosy, lupus erythematosus, lupus vulgaris, tuberculosis, rhinoscleroma and anthrax have a predilection for primary origin in the nose.

"Many of the infectious diseases, such as scarlet fever, smallpox, measles, diphtheria, pneumonia, grip, meningitis, typhoid fever—due to infected dust—plague from an abrasion of the skin or mucous membrane and infection with the *Bacillus pestis* of Kitasato, and gastro-intestinal disorders, have their origin and atria of infection in the nose and nasopharynx. The nose of a healthy individual may possibly be a carrier of infectious diseases. This infection is more often carried through the air from the nose and throat of one individual to another than by the skin, and by hygienic measures could probably be prevented from securing a new foothold. We know that it is a matter of daily observation that many of the so-called catarrhal fevers respond much more rapidly when attention is given to frequently cleansing the nose and throat with mild alkaline douches and sprays. In scarlet fever and measles many of the severe anginotic and aural symptoms are likewise mitigated."[1]

The prevention of many of the diseases enumerated depends on the application of the rules of hygiene, that is, frequent cleansing of the nose with mild antiseptic and alkaline solutions, free nasal drainage, and good general hygienic surroundings. It is, I think, quite true that both measles and scarlet fever are carried from the nose and throat of an infected individual. The condition of the nose and throat should govern the time of the isolation of the patient, rather than the appearance of the skin, and others go so far as to express the belief that the skin lesion in scarlet fever is a sequence of the toxemia, which has its origin in the nose and throat. The many cases observed lead me to say the same thing of measles.

The fact that the nose (also the throat) is a carrier of the bacillus of diphtheria is well known. Unfortunately, no cleansing agent is known which possesses sufficient penetrability, in the strength endured by the nose, to destroy the organism. In the discussion of this subject, a very important point to remember is that a latent infection of the nose with the bacillus of diphtheria requires additional infection from a new organism to start an acute inflammation. Therefore it is advisable to isolate for a short time cases of simple sore throat, especially in children.

FUNCTION AND PATHOLOGY OF THE TONSILS

The function of the faucial tonsils and of adenoid tissue which is found in the vault of the pharynx in most children at birth, is as yet imperfectly understood. That the tonsils sometimes allow bacteria to enter the tonsillar epithelium and lymphatic channels of the neck and also that they sometimes prevent the entrance of bacteria into the lymphatic channels, are undisputed facts. It may be that in a healthy tonsil bacteriolysins and antibodies are produced in sufficient quantities to neutralize any bacteria or bacterial products which may penetrate the crypts or surface epithelium, thus preventing constitutional infection. In many cases some local or general condition may so irritate the tonsils as to allow infection to enter the epithelium or lymph-stream, producing local or general symptoms. There is a direct connection between the cervical lymphatics and the tonsils, and it is probably by this avenue that general infection spreads from the tonsils through the body, supplemented sometimes by the blood stream. It is observed that hypertrophied cervical lymphatic glands have a tendency in most cases to disappear on the removal of the tonsils in their capsule. *The size of the tonsils has nothing to do with cervical adenitis and general infection.* A small cryptic tonsil of a degenerative type is usually more productive of adenitis and general infection than large pedunculated tonsils, whose greatest harm is interference with normal respiration.

THE TONSILS AND TUBERCULOSIS

The question of the relation of the tonsils to tuberculosis is very important and the great majority of laryngologists believe that a relation exists. It is a reasonable presumption that the bacillus of tuberculosis may be found in the epithelium or in the crypts of the tonsils in a majority of cases of pulmonary tuberculosis. This, however, argues nothing. When we find evidence of tubercle bacilli in the tonsils, and swollen cervical glands, tuberculous in character, without observable lung involvement, the evidence is quite conclusive that the tonsil is the portal of infection. It is the opinion of Jonathan Wright, who is probably the greatest authority among laryngologists in this country, that "tuberculous cervical glands at the angle of the jaw are almost always secondary to primary tuberculosis of the tonsil." (G. L. Richards.)

From personal experience I do know that not infrequently patients have come under my observation suffering from the general symptoms of incipient tuberculosis, that is, loss of flesh, general apathy and elevated temperature, in whom the tubercle bacilli were found in the cheesy deposits of the tonsils, and immediately after complete removal of the tonsils in their capsule, all the symptoms disappeared, with speedy restoration of the individual to health. I have also observed marked benefit to follow the removal of tonsils in cases of pulmonary tuberculosis in the early stage, in which tubercle bacilli were easily demonstrated in the sputum. Some patients apparently recovered. These patients gave a history of recurrent attacks of tonsillitis or irritation in the tonsillar region.

The direct connection of the cervical glands with the apices of the lungs makes it comparatively easy for the tubercle bacilli to seek the point of least resistance, which is the apex of the lung in many cases.

In those cases of apparent localized tuberculosis of the larynx, the removal of hypertrophied or ragged tonsils, which usually accompany such a condition, is marked by a cessation of many of the local symptoms.

---

[1] Kyle: The Nose, Hygienic and Economic Aspect of the Nose, Laryngoscope, January, 1910.

A diseased tonsil, that is, one which is subject to recurrent attacks of tonsillitis, or in which the crypts contain bacteria, adds to an already existing pulmonary tuberculous infection sufficient new bacterial poisons to stimulate inflammation or to flame into activity a slumbering localized ulceration in the lungs. It therefore seems reasonable to me that in all suspected cases of pulmonary tuberculosis the tonsils should be inspected, and if possessing the slightest evidence of possible irritation, should be removed in their capsules. I think it is fair to say that simple tonsillotomy in such cases is an obsolete operation. The crypts of the tonsils extend to, or very near, the capsule, and a partial removal of the tonsil will do no good. The tonsils must be completely removed, thus sealing up the lymph-ducts which have their beginnings in the capsule or gland proper.

THE TONSILS IN RHEUMATISM

The rôle of the tonsils in the etiology of acute articular rheumatism has many advocates among laryngologists, and the majority, I believe, recognize a close relationship between acute tonsillitis and rheumatism. I have observed a number of cases of acute tonsillitis, follicular in character, which were followed by acute or subacute articular rheumatism. A few weeks ago I removed the tonsils of a young man who had suffered from six attacks of acute articular rheumatism, each following an attack of tonsillitis. It is, of course, too early to prognosticate the possibility of a return of rheumatism in this case. Other observers have reported an improvement in the rheumatic condition, acute or subacute, after the removal of the tonsils, very suggestive proof that the tonsils in a great many cases are an etiologic factor in acute rheumatism.

TONSILS IN OTHER AFFECTIONS

Many conditions such as endocarditis, meningitis, nephritis and appendicitis are reported as probably originating from a disease of the tonsils in certain specific cases. Such reports are not especially valuable, however, as the infection of the tonsils and the other organs at the same time or at a short interval, may have been only coincident. I believe, however, that there is good reason to suspect the tonsils, provided the diseases as cited above, follow in the wake of acute suppuration in the tonsils. The character of the infection in the tonsil evidently plays an important rôle in causing the spread of the disease and metastatic foci may be anticipated in cases of streptococcic infection.

PREVENTIVE MEASURES

Since the tonsils are a possible menace to the general economy, it would be better, I think, to remove at the earliest possible time those tonsils which are hypertrophied whenever observed in young children to produce mouth breathing, and if the cervical glands are enlarged even small tonsils should be removed. In young and old that form of tonsil known as degenerative, in which the crypts are filled with a cheesy deposit and are subject to recurrent attacks of irritation, should be removed.

ADENOIDS

Adenoid tissue in the vault of the pharynx plays a part in causing cervical adenitis, though not so important as diseased tonsils. Acute inflammation of adenoid tissue occurs more often in young children. Adenoid glands sometimes have within their folds a cheesy deposit resembling that which is often observed in the tonsils. The drainage from adenoid tissue is much better than that from the tonsils and in consequence, inflammation of an active type is less frequently observed than in the tonsil. Inflammation and hypertrophy of the tissue in the vault of the pharynx predisposes to recurrent attacks of postnasal infection, deformities of the face, mouth breathing, deafness, Balnes' cough or nocturnal cough, infectious diseases, and, as pointed out by Ponthiere, Sydenham's chorea.

Bronchoscopy has opened up a new field for the better understanding of diseases of the trachea and bronchi. Some obstinate cases of asthma, which have defied all forms of treatment, have been reported as entirely relieved by application direct to the mucous lining of the bronchi. In addition, tumors of the trachea are sometimes treated as bronchial asthma, and a diagnosis can be established only by this method of examination. The presence of cicatricial bands in the bronchus, with partial or complete consolidation of the lungs, can by this method be established and thus empirical treatment of the lungs be prevented.

THE EAR IN GENERAL DISEASES

The rôle of the ear in general diseases is well established. A progressive deafness with or without tinnitus, is especially important as an etiologic factor in general nervous exhaustion and many functional nervous disorders. Dr. Clarence Blake,[1] the dean of otologists in this country, says in regard to this subject:

> Few intelligent observers outside of the very deaf themselves, or those who have to deal much with persons so afflicted, can appreciate the profound exhaustion resulting from the effort to compensate for a deficiency in this particular line of communication with the outer world, in the person whose perception of that mode of motion to which we give the name of sound was once made without appreciable effort, and who has, under conditions of impaired hearing, first of all, to make an effort to hear, and, in default of hearing, an effort to appreciate vocal utterance by watching the motion of the lips of the speaker; and finally, in default, either through lack of perceptive power or through ability only to catch consonant sounds which are formed in front of the mouth, to solve the puzzle of the spoken sentence by filling in the missing consonant sounds, or, inadequately seen, from the appreciable context of the sentence; so that where once understanding came without effort, three distinct and appreciable brain-efforts are required: first, to hear; the second, to see; and the third, to understand.

In arteriosclerosis, the ear symptoms are sometimes the first to call the attention of the observer to this insidious and intractable disease.[2]

> "The ear symptoms which should direct our attention to a local or general circulatory disturbance, are unilateral or bilateral tinnitus, slight and progressive deafness, loss of air and bone conduction, dizziness, sometimes early in the disease, and in the later stages of the disease, sometimes hallucinations of hearing. The ear symptoms necessarily vary according to the extent of the sclerosis."

Another symptom belonging to the internal ear which is important in many diseases, is vertigo. Vertigo may or may not be associated with nystagmus, and may be continuous or alternating in character. If alternating, it may be said to be due to an explosion, as it were, in the center of equilibration situated in the cerebellum or semicircular canals, and is probably functional in character, and due to circulatory disturbances or gastro-intestinal disorders. If continuous, it is probably due to a destructive change in the center of equili-

---

[2] Kyle, J. J.: A Study of Ear Symptoms in Arteriosclerosis with Special Reference to the Labyrinth, Annals of Otol., Rhinol. and Laryngol., June, 1907.

[illegible] or semicircular canals, which may result from a tumor or suppuration. Impressions producing functional vertigo travel to Deiters' nucleus by the spinal vestibular tract, the cortical vestibule tract or associated fibers of the cranial nerves.

Vasomotor ataxia, local in character, may occur about the auricle and adjacent structures from irritation of the different ganglia of the ear, causing hives, herpes, simple erythemata and sometimes angioneurotic edema, and we must be careful not to class such skin conditions as the local expression of a mastoiditis.

A suppurating ear as a cause of metastatic abscess in the brain, lungs, or liver is so well known that I need not dwell on this feature of the subject further than to remark that too often a general septic thrombophlebitis is attributed to some general infection rather than to a condition originating in a suppurating ear, which is only taken into consideration after the disease is well established and beyond surgical interference. A chronic suppuration of the ear is certainly a menace to life, and any rise of temperature or slight pain in the region of the ear affected should, in the absence of a distinct cause, be looked on with grave suspicion as orginating from the ear.

226 Newton Claypool Bldg.

ABSTRACT OF DISCUSSION

Dr. Robert Levy, Denver: Frequent examinations of the ear during cases of scarlet fever, measles, etc., should be a routine measure, and one often is rewarded, after such an examination by detecting a redness or a bulging of the membrana tympani that indicates the otitic involvement. Early relief by a free incision will often prevent a permanent discharge from the ear and a consequent deafness through the rest of the patient's life, not to speak of complications such as mastoiditis, etc., which we all recognize as a consequence.

I would also like to impress, perhaps emphasize, what Dr. Kyle has said with regard to the size of the tonsil as indicative of disease of this organ. The most dangerous tonsils to the welfare of the patient are those that are submerged, those that are not prominent and that can only be examined thoroughly by drawing forward with a retractor the anterior pillar.

Now, as to the finding of tubercle bacilli and tuberculosis in tonsils with cheesy discharge my experience has not been in accord with Dr. Kyle's. It has been my experience that the demonstration of tubercle bacilli in tonsils and in these various discharges from the tonsils is an extremely difficult matter. I mean difficult, not from a technical point of view, but from the fact that they do not exist there, and even if they [illegible] tubercle bacilli found in the crypts of the tonsils are not evidence of tuberculosis. They are there simply as they are in the nose, and we know that in the vestibule of the nose one finds not only tubercle bacilli, but other micro-organisms after contact with patients having the specific disease. After one has gone through a ward of diphtheria, after [illegible] in a tuberculosis hospital for any length of time or after treating many throats, you can demonstrate the presence of micro-organisms that are entirely inert so far as [illegible] are concerned, and so one must be careful [illegible] tonsils of the tonsils in cases in which tubercle bacilli [illegible] demonstrated. At the same time it is a fact that there may be [illegible] changes, the tonsils indicating the development of tuberculosis without being able to demonstrate the presence of the tubercle bacilli.

With regard to the removal of tonsils in its relation to the development or to the recurrence of rheumatism, I might say [illegible] one finds that immediately after enucleation of the tonsils a very severe attack of acute rheumatism [illegible]. I [illegible] and I have also seen the development of a very intense chorea immediately after the removal of tonsils. In one instance the patient's rheumatism was followed by an endocarditis and a permanent heart lesion. In all of these instances, the operation was blamed for the result. I was the operator, and I have not to this day been able to assure these people that the operation was not directly the cause, but as a matter of fact, the operation did have a bearing. I believe that acute tonsillitis is a local manifestation of an infective micro-organism, which micro-organism is also the cause of rheumatism; and that the tonsils acting as portals of infection for this micro-organism, retaining this micro-organism in its passage into the cervical lymphatics, and then into the system generally, such tonsils take on an initial inflammatory condition which we term acute tonsillitis. And so, if a tonsil is infiltrated, as it were, with micro-organisms causing specific infection such as rheumatism or chorea, the attack on that tonsil by an operation brings about an intense virulence of the micro-organism, followed by absorption of the micro-organism and the resulting general rheumatism, chorea, or endocarditis.

Dr. H. W. Hill, Minneapolis: I hear the term "vicious tonsils." I should like to know if there are any tonsils that are not vicious. I am constantly asked that question: Should not a child's tonsils be removed in any case?

Dr. J. J. Kyle, Indianapolis: As to the question whether or not or when, the tonsil shall be removed, especially in young children, I should say if a tonsil is hypertrophied and obstructive to breathing I would recommend its removal. In the young child suffering from cervical adenitis and inanition, I would recommend the removal of the tonsils. In the young child with simple hypertrophy of the tonsils without any obstruction to breathing and without any enlargement of the cervical lymphatics, I would leave the tonsils alone. A tonsil may possess some function that we do not quite understand; and with the presumption that it has a function, I can not see the excuse for always removing it.

NASAL DIPHTHERIA*

DUNBAR ROY, A.B., M.D.

ATLANTA, GA.

Malignant diphtheria is an exceedingly serious condition with which to contend and complications of a grave nature are comparatively infrequent. The introduction of antitoxin as a routine method of treatment has reduced very markedly the malignancy of this disease making the gravest cases more benign. In fact the custom of resort to antitoxin on the very first decidedly suggestive symptom of diphtheria is so universal that statistics show the frequency of this dreaded disease to be greatly minimized. The proper management of a case of diphtheria is supposed to be a knowledge possessed by every competent physician and yet there are complications not mentioned in text-books which sometimes arise which try the skill of the most experienced clinician. A case of this kind some time ago came under my observation.

Case 1.—*History.*—On Sunday night, Oct. 8, 1905, I was called by telephone to a near-by town, with instructions to come prepared to operate on a tonsillar abscess. I arrived about 11 p. m. and was met by the physician in charge who gave me the following history: The patient, a boy 9 years old, on returning from Atlanta two weeks before, had been taken sick with an attack of tonsillitis. Both tonsils were involved, but the left became abscessed, broke and discharged a very foul pus. This continued intermittently as the throat became better and the patient seemed to be gradually improving. On the morning previous (Saturday) the patient began to have stridulous breathing in the larynx, which continued with increasing severity. The temperature at no time had been higher than 102. He had suffered with two hemorrhages from the nose, the last one having occurred the night previous and was checked with great difficulty. Nourishment had been taken throughout the sickness.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Examination.—The patient was lying asleep on the bed but could be aroused without difficulty. The breathing was entirely through the mouth and seemingly unobstructed as an examination showed the air to be passing freely into the lungs. The lips were dry and clotted blood could be seen at the nasal orifices. The face was pale and expression anxious; lids very much swollen; temperature 99 and pulse 120. With reflected light an excellent view could be obtained. On the left tonsil there was a large greenish-yellow patch, gangrenous-looking and bleeding on the slightest touch. The same but less in extent was on the right tonsil, the pharynx, and extending into the nasopharynx. The nasal cavities showed the same character of the membrane at that point. The larynx was very little affected. The odor was exceedingly foul and offensive. The submaxillary glands were enlarged. Auscultation showed that air was passing freely into the lungs. The child was evidently saturated with poison, as manifested by every appearance.

Course of Disease.—Diphtheria had not been suspected until that morning when 2000 units of antitoxin were given. The system showed clearly a case of gangrenous diphtheria and the only question was, whether the body had sufficient strength to throw off the poison which was already overwhelming the system. Five thousand units of antitoxin were immediately given, injections of strychnin and the swabbing of the throat with hydrogen peroxid were also continued. The patient's pulse was strong but of high tension. He slept at intervals. About 3 a. m. the nurse called me from an adjoining room on account of a severe nasal hemorrhage. With cotton plugs, epinephrin solution and other adjuvants the hemorrhage was finally checked after one hour's work. The patient was becoming very weak and at times seemed to gasp for air. The laryngeal breathing becoming decidedly obstructed, I intubated, which immediately brought temporary relief, but only for a moment, as the nose again began to bleed both anteriorly and posteriorly so freely that the blood went into the larynx before we suspected what was happening, filling up the intubation tube and cutting off the air. Before I could get instruments for tracheotomy and while I was keeping the child's head down, the patient died.

This proved to me an exceedingly interesting although unfortunate case in that such complications as severe and almost uncontrollable epistaxis could not be found mentioned in text-books and other writings at my command. Experience is sometimes a valuable although a sad teacher, and should I ever be so unfortunate as to be called in a similar case, a different management would most assuredly be adopted. In the first place, although I recognized that the patient was extremely septic and probably would have died even had not the complications arisen, still I did not realize then the gravity of such a symptom as severe epistaxis, which in the end was the real cause of death. When one realizes that the nasal mucous membrane is covered by a gangrenous deposit, which when dislodged will leave a surface from which it is exceedingly hard to check the hemorrhage, then one will realize that a bleeding from the whole surface is an exceedingly grave complication with which to contend. Every plug introduced into the nasal cavity only makes the bleeding worse, for the very force of its introduction uncovers a new surface and a new point for hemorrhage. Besides the nasal cavities and the nasopharynx in cases such as the one described are filled with the membranous exudate which in itself will almost occlude these cavities. Epenephrin solutions must remain as the surest and best remedy in these cases. The proper course to pursue would have been to perform tracheotomy just as soon as the case was seen and the true nature of the pathologic condition was recognized, especially since there was a history of a severe epistaxis on the day previous. Only in this way could we have been in a position to manage a severe hemorrhage should it occur. If necessary the mouth, nasopharynx and nasal cavities could then have been plugged and the hemorrhage have been properly managed.

Another point impressed on me by the history of the case was the fact that in all cases of diphtheria complicated by severe epistaxis, tracheotomy is preferable to intubation because if bleeding should occur posteriorly without the knowledge of the attendant and if the blood should run down into the larynx, the tube could immediately be obstructed by clotted blood.

Fortunately such extreme cases as the one here reported do not often occur and I readily believe that had the case been diagnosed earlier and antitoxin administered from the start, the outcome might have been much more satisfactory.

While we have been discussing a case of nasal diphtheria, acute in character and extending up from the nasopharnyx, I cannot refrain from mentioning those cases of nasal diphtheria which might more properly be designated as chronic in character.

During the last two winters I had under my care five cases of this condition. They occurred in children aged from 5 to 10 and presented the same characteristic features. Two of them were in brothers who had been going to public schools continuously, although the history of these cases showed the disease to have been present for weeks. Some authors speak of this condition as membranous rhinitis, and clinically this certainly seems to be an appropriate term.

The symptoms in these cases are very similar. There are practically no constitutional manifestations so far as temperature is concerned, and but for the local symptoms the little patients rarely experience any discomfort.

Helot,[1] however, has reported two cases of nasal diphtheria in one of which there were severe general symptoms; but this must be classed with those more acute in character.

One of the first symptoms noted is persistent nosebleed, and this is probably the first sign to which the parents' attention is called.

McKee[2] reports several cases of nasal diphtheria and has this to say in reference to the importance of epistaxis in the diagnosis of nasal diphtheria:

> 1. Staining of the nasal discharge with blood is quite commonly seen in nasal diphtheria and epistaxis of moderate severity is not unfrequently observed.
>
> 2. Nosebleed is a symptom of much diagnostic value, for it may suggest the possibility of nasal diphtheria in any case, but particularly in the dangerous (to the community) mild cases. Among causes of epistaxis, diphtheria of the nose should be accorded a separate and prominent place.
>
> 3. In malignant, mixed infection with streptococci and diphtheria bacilli (Northrop) in the nose, epistaxis may be most alarming and may be even the immediate cause of a fatal termination.

In addition to the above the child will seem to have a bad cold in the head, some mild purulent discharge from the nose and possibly enlargement of the submaxillary glands. On rhinoscopic examination one will find a distinct membranous deposit on one or both sides, which, with the attendant swelling, will almost completely block the nasal passage. At the mucocutaneous margins, crusts and abrasions will be present showing the irritative character of the nasal discharge. If an attempt is made to dislodge this membrane a very severe hemorrhage will frequently be produced, difficult sometimes to check if the child is obstreperous. Most such patients continue in school and, until the character of the condition is recognized, mingle with the other children without restrictions. I believe that many cases of diphtheria which have their origin in the schools come from unsuspected cases like this, allow an extension from one child to another.

---

[1] Helot: Ann. d. mal. d. l'oreille et du larynx, June, 1903.

[2] McKee: Therap. Gaz., March 15, 1904.

On the other hand we are compelled to recognize the fact that there must be a lowered vitality, some surface alteration to afford a proper habitat for the diphtheria bacillus before individuals can be infected, otherwise the diphtheria would be much more common than at present.

Reports show that diphtheria bacilli, virulent in character, can be found in the respiratory tract of even healthy individuals and it is impossible to isolate such individuals; in reality it is not necessary to isolate from the public all well persons in infected families, etc.

Roux and Yersin of Paris, have reported an examination recently of fifty healthy children, living in a village near the coast, where diphtheria was unknown. They found the diphtheria bacilli in the secretions of the mouth in 52 per cent. of the cases.

These facts, however, should not lead to laxity in quarantine methods, for although it may be true that it requires something more than the presence of the bacilli themselves to cause diphtheria, still it is impossible to tell when some fit subject may come in contact with such cases and so aid the spread of the disease.

In the cases of Roux and Yersin the membrane was examined and the report showed the presence of the Klebs-Loeffler bacillus. In none of my cases did the membranous deposit extend to the pharynx or in fact beyond the nasal cavities, so far as could be determined and in none of the cases was it necessary to use antitoxin or even to confine the patient to bed. In other respects these patients felt perfectly well. I report here a typical case which occurred in my practice during last winter.

Case 2.—A boy, aged 1½, was brought to my office during the month of December on account of a long-continued obstruction to the nose from cold. This had been present for three weeks and with the exception of the nasal symptoms the child appeared to be in perfectly physical condition. I found both nasal cavities covered with a whitish membrane which was difficult to remove. A culture was immediately taken which showed the presence of the true diphtheria bacillus. The mother would not believe the diagnosis and the family physician said that he had never seen a case of nasal diphtheria without high temperature. They agreed, however, to isolate the patient and 2000 units of antitoxin were administered. This injection was the only one given during the course of the disease, the treatment being mainly topical. Three days later a younger sister developed a case of typical pharyngeal diphtheria and had to be treated with antitoxin throughout the course of the disease.

This case but shows one of the typical forms of chronic nasal diphtheria which was virulent enough to produce a true pharyngeal diphtheria in another patient but which in itself might have run along unnoticed. I firmly believe that the cases of this chronic nasal diphtheria are much more prevalent than supposed, and I believe that cultures should be made more frequently from patients with nasal diphtheria.

The treatment of the case was tedious and rather long continued because of the time necessary for entire removal of the membrane.

The best management was found to be as follows:

The nasal cavities were cleansed and the membrane disintegrated by using a weak solution of hydrogen dioxid. This was followed by a swabbing of the nasal cavities with a solution of silver nitrate 20 gr. to the ounce. At home nothing was used but an ointment of phenol and menthol in petrolatum, applied every night and morning.

Many rhinologists no doubt often have looked into the nasal cavities and have found adhesions between some portions of the turbinates and septum and have asked immediately whether there has not been an operation previously on that side. Many such cases no doubt are due to operations in the nose, especially ill-advised and ill-executed galvanocautery applications, but some of them are due also to this condition of chronic diphtheria or membranous rhinitis, for in one of my cases, in spite of the very best attention, an adhesion did form between the lower turbinate and septum on one side which later had to be cut.

In conclusion, allow me to say that we must recognize the multiform manifestations of diphtheria wherever there is a mucous membrane; and whenever a child continues to have a cold in the head with excoriations at the mucocutaneous surface and occasional nosebleed we must look on this condition with suspicion.

ABSTRACT OF DISCUSSION

Dr. William E. Casselberry, Chicago: My experience agrees with that of the essayist in respect to the two distinct types of diphtheria of the nose which possibly may grade into each other, but the cases which I have observed were distinctly characteristic of one type or the other. The first accompanies grave systemic diphtheria, having commenced in the pharynx, extended through the nasopharynx and then involved the nose by which time the diagnosis is usually plain; but even in this class a doubt can arise between diphtheria and a scarlatinous exudate, as in the case of a physician who, having been exposed to scarlet fever, developed an exudate in the pharynx, with fever and a nasal exudate, in which, however, no Klebs-Loeffler bacilli could be found. In the treatment of a complicating epistaxis as severe as the essayist has described, I do not know anything one can do other than to pack the nostrils and if one must pack I know of nothing that I would resort to with greater confidence than the rubber finger-cot tampon filled by a packer with gauze such as I have previously described before this body.

The other type of nasal diphtheria, that in which the exudate is limited usually to a part of one nostril and without systemic illness, the essayist has observed only in children; I have observed it only in adults, which shows the difference in individual experiences. The exudate commences in the anterior part of the nostril, which indicates inoculation by the finger, particularly as the cases I have observed have been in nurses and physicians who had been attending diphtheria patients. It is at first a thickish membrane, but about the seventh or eighth day the membrane thins out. There is much irritation with soreness about the nasal orifice, but the membrane does not extend further back than the middle region of the nose. In diagnosis this type is to be distinguished from syphilis. In the treatment locally a mild antiseptic alkaline solution, for cleansing, followed by an emollient containing resorcin, 5 gr. to the ounce, has afforded the greatest relief to the nasal discomfort.

Dr. Burt R. Shurly, Detroit: It is true that I have been one of the unfortunate victims of a unilateral infection of the nasal mucous membrane which is exceedingly rare in the practice of medicine. In a very considerable experience with diphtheria through a period of fifteen years I have seen a number of cases of nasal diphtheria very few of which were primary and remained primary nasal diphtheria. In my own particular case the infection came while I was an intern at the Children's Hospital during an epidemic of diphtheria. The symptoms which bring the trouble before us are, first, epistaxis; in my own case that was the first symptom, and in all the others I have seen there has been an epistaxis as one of the symptoms of onset. Coryza, swelling of the nasal mucous membrane, swelling of the chain of lymphatics connected with the nasal mucous membrane, temperature rarely over 100 also develop. In these primary cases there is more or less characteristic odor to the discharge from the nose. Almost all cases of nasal diphtheria which we see in epidemics are attended by secondary infection of the nasopharynx, especially of the malignant and dangerous type. In the nasopharynx we have the key to all the complications that come with nasal diphtheria. There are undoubtedly a good many cases that are unrecognized. It is not a malignant condition and many cases pass on and are never seen after diagnosis. The problem of diagnosis is very quickly cleared up when the Klebs-Loeffler bacilli are found.

The essayist spoke of giving 2,000 units of antitoxin; I think we all recognize the advantage of a full dose, at least 5,000, as the initial dose. It has seemed to me that absorption is increased by tampering too much with the mucous membrane. A simple mild alkaline treatment to the nasal mucous membrane is best. We can do all sorts of things with the mucous membrane of the throat that we cannot do with the mucous membrane of the nose.

As to intubation, the case that Dr. Roy related in detail was one of a particularly toxic type. The mortality is exceedingly high in all such cases. In true laryngeal diphtheria the value of intubation is well recognized. When the child is intubated and you have a considerable amount of discharge from the postnasal region, if the position of the child is changed to that of an inclined plane of about 45 degrees and the head kept lower than the feet, I am sure you will find that the child will do much better after intubation. Children under three years of age have not the expulsive cough to help the drainage from the different cavities. They do very much better if the head is kept at a lower level than the feet.

Dr. M. A. Goldstein, St. Louis: Too much emphasis cannot be laid on the importance of one type of diphtheria which has been admirably brought out by the essayist—the attenuated type, without the usual characteristic symptoms of nasal diphtheria. To illustrate the point I want to make I would refer to a case I reported locally about four years ago; that of a little girl 7 or 8 years of age who came from dancing school one afternoon where she had been in contact with forty or fifty children of her own age. The mother describing the case briefly said that the child had had a discharge from the nose for three or four weeks. On examination the nasal mucosa was found much swollen and the nose filled with a membrane. Secretion almost in the nature of a cast of the entire lower meatus was pulled out. The disease was unilateral in character, no clinical symptoms, temperature normal, the child complaining of no inconvenience of any sort. The child had a little six-months-old brother at home who evidently was autoimmunized, and there were two or three other children in the family that did not contract the disease; but within a week after I had seen this case, six cases of diphtheria developed in that dancing school, probably all contracted from this child. The cast of plastic exudate drawn out from the nasal meatus of the one side of the nose submitted simply to smear test showed the presence of pure Klebs-Loeffler bacilli, even without culture. A guinea-pig inoculated with that material died within twenty-four hours.

This to me is the keystone of the essayist's report—the fact that diphtheria can exist in an attenuated form in so harmless a type that it may go unnoticed and yet may by contact of this one child with its playmates spread the contagion so that there may be the development of a complete epidemic.

Dr. J. A. Stucky, Lexington, Ky.: Two or three points in the essay should be emphasized, especially for the benefit of the younger members of the profession. A little scientific neglect in some of these cases of nasal diphtheria is preferable to too much treatment. By that I mean this—that there is a temptation to clean out every little speck one finds in the nose. In doing this one opens up new avenues of infection. The patients with nasal diphtheria I have found complain more bitterly than any other class of patients with this disease; they are stopped up and they want you to clean the nose out and make them comfortable and if you do this with your atomizer or douche, or pull off this membrane and leave a raw surface, you increase the absorption.

Another point is the manner of stopping the hemorrhage. There is danger in packing the nose, and yet you must stop the bleeding. If it comes anteriorly and the posterior nares is completely blocked up with exudate you can stop the hemorrhage often by packing the vestibule and then closing the cartilaginous sides of the nose firmly with adhesive straps. If hemorrhage is profuse posteriorly I think it is preferable to use the postnasal tampon rather than to pack the whole nose.

I think tracheotomy in diphtheria should be the last resort. We can try intubation and be ready at any moment to do a tracheotomy if necessary.

Another thing I have noticed is the wonderful tolerance to antitoxin of these patients with nasal diphtheria. They require two or three times as much when they have nasal diphtheria as they do in the pharyngeal and laryngeal forms, and we should bear this in mind and start with a maximum dose and repeat it frequently, as often as every eight or twelve hours.

Dr. George F. Cott, Buffalo: Before the days of antitoxin laryngeal diphtheria or membranous croup, was considered the most dangerous form of diphtheria. Since that time nasal diphtheria has come to be considered the most dangerous. In every case I have found that where the glands of the neck become so swollen as to protrude beyond the angle of the jaw every one of the patients died, whether the patients appear very sick or not; usually they do not appear to be very ill. I think it is advisable to do a tracheotomy. To intubate first is a waste of time and endangers the life of the child. Dr. Roy says the reason he would rather do tracheotomy is to prevent the blood from obstructing; I think the reason is that in these cases in which you have excessive membrane the tube becomes clogged from the loosened membrane and therefore it is better to do tracheotomy first and not as a last resort. When I am called in time and am satisfied that enough antitoxin has been given the child I never use any kind of local treatment. If the nerve centers are not affected the child will recover if a sufficient amount of antitoxin is administered. I have seen a case of chronic diphtheria lasting six months and the child died at the end of that time.

Dr. E. Fletcher Ingals, Chicago: I understood the author to state that the mistake he made was not to have done a tracheotomy in the beginning. On the contrary I think he was quite wise in not doing it. If he had done it and the child had died, as it would have done, he would have attributed the death to the tracheotomy. Certainly it is not wise to do a tracheotomy immediately in these cases. I fear that some one from reading the paper may think that Dr. Roy advises that tracheotomy be done at once, and I should not want that to go out as the opinion of this Section.

Dr. Otto Glogau, New York: I saw a boy aged 15 years with immensely hypertrophied posterior end of the right inferior turbinate, on removal of which there was considerable hemorrhage. I did not know the reason then, as all routine precautions were taken. Ten days later the boy had mastoiditis in both ears and had to be operated on. Before the operation we examined the nasal discharge and found diphtheria bacilli in the discharge from the nose and in that from the ear. No doubt it was a case of chronic diphtheria.

Dr. R. P. Scholz, St. Louis: I believe diphtheria occurs in the nasal cavities much more frequently than is ordinarily supposed. While epistaxis is more or less characteristic of nasal diphtheria, yet if in cases of ordinary diphtheria, or cases in which the membrane is located in the nose, be left without rhinoscopic examination till bleeding sets in, many will be overlooked. Hemorrhage occurs comparatively late in the disease, and at a time when the membrane begins to come away. I believe that hemorrhage occurs much more frequently in those cases in which the membrane is located in the anterior portion of the naris, and is brought on possibly by mechanical disturbances. My experiences with diphtheria in the nasal cavity in the adult is comparatively limited. While working under Prof. Escherich in St. Anna Kinderspital, in Vienna, I made it a matter of routine to examine rhinoscopically every child suffering from diphtheria, and was surprised to find how very frequently membranes existed in the nose, causing few or no symptoms. In my opinion, hemorrhage should be controlled by applying a small compress to the bleeding point, with the addition of styptics when necessary, but if this does not suffice the nose should be tamponed. It is true that after the removal of the dressing there may be bleeding; for this reason great care should be exercised in its removal. In these cases paraffin gauze as described by Williminski, makes a suitable tampon.

Dr. Bryan D. Sheedy, New York: After an experience of about twenty years in which I have treated a large number of cases of diphtheria, both nasal and laryngeal, I would not do a tracheotomy in cases such as Dr. Roy described. I believe that most cases of nasal diphtheria are over treated. Antitoxin is practically our sole anchor in such cases, and I believe a case of nasal diphtheria that manifests marked symptoms should be treated energetically with antitoxin in large doses, the local treatment, other than instillation of mild antiseptics, being practically neglected. Patients suffer more from septic symptoms when the membrane is removed than when it is allowed to go untreated. I would advise strongly against tracheotomy except as a last resort, and in my experience the results have been about the same whether tracheotomy was performed or not.

Dr. C. M. Miller, Richmond, Va.: I have seen several of these cases of chronic diphtheria which have interested me a great deal. All of them were brought to me with the diagnosis of a foreign body in the nose. The other day a physician came to me with such a case. The discharge was in all the cases unilateral; in one child of 2½ years it had persisted five weeks, in another child of 8, for eight weeks, so far as the physician could determine. Each of these patients had an excoriated lip from the discharge. Protests were made when I attempted to take a swab. The physician said they never heard of such a thing as chronic diphtheria of the nose. In one case I had to have the aid of the Board of Health to get the child isolated. The physician would not believe it until the child's father became infected. In another case in a neighboring city, strong protest was made when I wanted to take a culture, and that child infected eighteen others. As to anything else but antitoxin, it seems to me it is out of all reason to use anything else. As long as twenty years ago, when I was a medical student, we were taught that the membrane readily returned after being removed. Now if it returns so readily, why should we remove it?

Dr. C. Jackson, Pittsburg, Pa.: I think we will all have to acknowledge having made the diagnosis of nasal diphtheria too late to save the child's life. I know I have a number of times.

Dr. Dunbar Roy, Atlanta: It is unfortunate that things get so distorted when you read a paper that when you hear the discussion you wonder what kind of a paper you have read. I did not say that antitoxin should not be used in diphtheria or in nasal diphtheria. Of course every one knows that that is the right thing to do. I only mentioned the fact that if I had another case similar to this I would do as I say in my article. After I had tried for one hour to stop that hemorrhage I would have been in a better position if I had had a tracheotomy tube in, and if I had a similar case that is what I would do, but of course as a last resort. I do not advocate doing a tracheotomy as soon as you see a case of nasal diphtheria. But when the case is at such a point that something radical must be done, then I do advocate it. Another point is the fact that there are many patients with this chronic nasal diphtheria going around without any actual symptoms existing, but able to convey the disease in a virulent manner to other children and adults. I have seen a number of such cases in children between the ages of 5 and 10.

The Insanity Dodge. Dr. J. J. Walsh says: 1. The term insanity is so vague that its use as a plea to enable the criminal to escape punishment is not justifiable. 2. Responsibility is never quite eliminated except in the absolute idiot. 3. Punishment is meant to deter the individual criminal and others tempted to criminal acts. 4. Punishment is more needed for those of lowered mentality than for the normal.

TESTS OF VISUAL ACUITY

AND CARDS FOR SUBJECTIVE CORRECTION OF AMETROPIA *

EDWARD JACKSON, M. D.
DENVER

The testing of visual acuity and the measurement of ametropia by the improved vision obtained by test-lenses are two distinct processes, which will be best carried out by different forms of apparatus. In testing visual acuity we need only to determine a single "minimum separabile," which is done most simply by finding the greatest distance at which a test of known visibility can be recognized. In the subjective measurement of ametropia we have to provide for a "minimum separabile" progressively diminishing as the accurate correction of the refractive error is more nearly approximated. This requires a series of test-objects progressively diminishing in size, such as the ordinary test-cards furnish.

STANDARD OF VISUAL ACUITY

The adoption last year at the Naples ophthalmologic congress of the report of the committee appointed at the preceding ophthalmologic congress at Lucerne to propose an international standard of normal visual acuity, with the discussions of the subject that have arisen from that report, make the present an appropriate time to consider this important subject.

The international report fixed normal visual acuity as the ability to recognize two points separated by an angle of one minute; and chose as the test of this ability the so-called "broken ring," a black circle on a white ground, the black line having a width one-fifth its outside diameter, and the break in the black ring having just its width. Such a ring, when placed at such a distance that its total diameter subtends an angle of five minutes, gives a break in the ring that subtends an angle of just one minute; and the ability to tell in what direction the break or gap is placed indicates normal visual acuity.

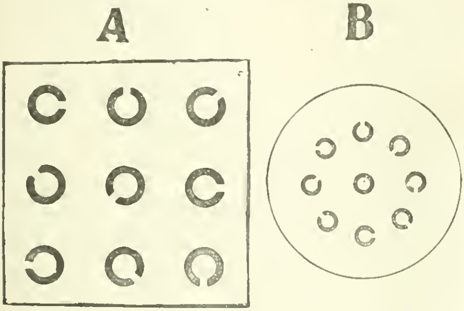
The principle of the "minimum separabile" and its normal value of one minute were announced and pretty well established as the proper theoretic basis for sight testing by Roger Bacon over two hundred years ago. On strict analysis it is found to underlie most of the tests for visual acuity that have been suggested since. At the Nashville meeting of the American Medical Association in 1890, I suggested the use of a black square, each side of which should subtend an angle of three minutes, with a space cut out of one side of the square subtending an angle of one minute, the test being to designate which side of the square was left open. I did not then know of the broken ring advocated by Landolt before the *Société française d'ophtalmologie* in 1888, which has all the advantages of the incomplete square with this distinct superiority: The ring can be turned in twice as many distinct directions. The square is capable of four different positions; the break in the ring can be turned up, down, right, left, or at angles of 45 degrees, midway between those positions.

If a single broken ring, on a circular card, be shown to the person to be tested, there is but one chance in eight for him to guess correctly in which direction the gap is turned. By concealing the card for an instant and turning the ring differently the test can be repeated indefinitely; and a few repetitions will render it certain that the eye possesses the vision claimed. The test is extremely convenient for examining patients away from the office. If the position of the gap is recognized at a certain distance, the same ring can be again shown at a greater distance until the limit of recognition is reached. A single letter or line of letters cannot be used this way. Any testing of acuteness of vision can be done with such a broken ring on a circular card, that can be carried in the vest pocket, with absolute scientific accuracy. All possible errors from the patient learning the sequence of the letters used as a test and the needed precautions to prevent this are avoided.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

For testing the vision of school children, or of men entering a transportation service, a series of broken rings may be used. The sequence of such figures is harder to commit to memory than that of a series of letters or numerals. If the rings are arranged symmetrically on a square card, as in A, either edge of the card can be turned upward. Each way gives a distinct sequence, and it is impossible for the person tested to know which sequence is being used. Or the rings may be arranged in a circle on a circular card, B, and held with either of them at the top.



International tests; A, visible at 5 meters (about 16 2/5 feet); B, visible at 2.5 meters.

With such a test-card the test of visual acuity may be repeated until certainty as to the visual acuteness has been reached. If recognized at one distance, the rings can be moved to a greater distance and tried again; things that cannot be done with test letters or numerals. Then, too, such a test can be furnished on a small card easily transported, a very important advantage where large numbers of cards are to be distributed, as for testing the vision of the school children of a county or a state.

For simply ascertaining the visual acuity the most simple and convenient way is for the person conducting the test to hold the card, and starting from a sufficient distance gradually to approach the person to be tested, noting the distance at which the direction of the break is first recognized in the ring to which attention is directed. Such a test may be explained to a whole row of children at once. Then the teacher, stepping back, can proceed to test each of them while all the others look on. The spirit of imitation and that of rivalry are brought out, to aid in overcoming the inertia, which often makes it difficult to induce a child to do his best with a new exercise of this sort.

TO MEASURE AMETROPIA

For the subjective measurement of ametropia by trials with lenses a very different test-card is necessary. The physician must be near the patient to make the needful changes in the lenses; and test-objects that are easily designated as recognized (pre-eminently letters and numerals) are far superior to any others. When we come to arrange a test-card of this kind we have to take account of the fact that the different letters or numerals are not equally easy to recognize. All who have arranged test-cards of letters have had to meet this difficulty. Snellen chose block letters because with them it was possible to approach nearer to equality of visibility. But he and others who have followed him have had to restrict themselves to the employment of certain letters, and even then they have been far from attaining a full equality.

The unequal visibility of letters, however, may be a distinct advantage in measuring refraction. As one letter after another is brought out by successive improvements in the correcting lens before the eye, the one line of letters serves to test various changes of visual acuity. Only when we attempt to use these letters to test acuteness of vision does their unequal visibility become a disadvantage, and we are compelled either to greatly restrict the number of letters employed for our tests or to introduce serious indefiniteness into our results.

A valuable study of the relative visibility of the different letters in the block-letter alphabet was made in this country by Dennett,[1] and within a few months Gebb and Lohlein[2] have reported a study made with letters, numerals and simple geometric figures of different sizes.

The essential point is that we cannot say that letters of a certain size and formation will be just recognized by the normal-sighted at a certain distance until, empirically, we have determined at just what distance they are so recognized. Wherever such objects are used to test visual acuity, it is essential to compare their visibility with that of the international standard broken ring. This is just what the International Committee did for the few letters and numerals they admitted to their test-chart. This is just what every ophthalmic surgeon can and should do with the test-cards he actually uses. By making such a comparison and numbering the different lines in accord therewith, without any change in the test-charts we use, we can arrive at uniformity in our records of visual acuteness. But in numbering a line that contains any considerable variety of letters it must be understood that to recognize one or two letters on it means one visual acuity, and to recognize all means a higher visual acuity. It would be of practical value to note at one end of the line what vision it means to recognize two of the letters, and also to indicate what vision is necessary to recognize all, as has been done on the cards referred to below.

In the subjective estimation of ametropia by trial lenses and cards we often proceed by asking the patient whether each change in the lens makes the vision better or worse. This is true subjective testing, depending wholly on the patient's honesty and power of accurate discrimination between different visual impressions. But the method may be given much of the value of an objective method by requiring the patient to name the letters or numerals recognized from time to time, the correct naming of one before unrecognized being the best possible evidence of improved vision by a better approximation to the perfect correction.

But for this purpose the test-letters quickly lose their value, when once clearly recognized. They are correctly named from memory when less distinctly seen, and the patient's answers mislead rather than assist in

---

1. Dennett: Tr. Am. Ophth. Soc., iv, 133 and 245.
2. Gebb and Lohlein: Arch. f. Augenh., liv, 69 and 189.

finding the true correction. While the vision is being improved rapidly, and the reading progresses from lines of large letters to those of smaller letters, previously quite unrecognizable, this difficulty does not trouble us. But when nearly the best vision has been reached, when the changes to be made are slight, one line of letters soon ceases to be serviceable, and the only resource left us is to change the test-card.

More series of these smaller letters are needed than of the larger letters. So it seems worth while to multiply the former, without the latter, by having test-cards containing only the smaller rows of letters, for use in the accurate subjective testing of refraction. A series of such test-cards I have had prepared. The small figures at the end of the lines indicate, according to the international standard, the visual acuteness required to recognize the letters. The figure at the right gives the distance at which the letters subtend the angle of five minutes. The figures at the left give the visual acuity required to name two letters on that line, and the visual acuity required for the recognition of all the letters on the line. The size of the letters is such that their heights subtend the angle of five minutes, at the distances of 6, 5, 4 and 3 meters, respectively (about 19 2/5, 16 3/5, 13 1/10 and 9 4/5 feet). These are the distances at which they are supposed to be read according to the Snellen scale.

1434 Glenarm Street.

ABSTRACT OF DISCUSSION

Dr. C. H. Williams, Boston: In Dr. Jackson's paper two tests are proposed, one for the acuteness of vision, using the broken ring of Landolt based on the "minimum separabile;" the other for the improved acuteness of vision due to correcting the ametropia with glasses, and using cards with graded letters and numerals. If a doctor had an unlimited amount of time and patience, and if the patient had more accurate powers of observation and the ability to describe what he saw, it might be possible to use both these tests and get satisfactory results.

The principle of the "minimum separabile" was first proposed by Hooke a little over 200 years ago. He found that with a number of persons (taken without any refractive examination of their eyes) the minimum distance at which they could distinguish two stars was one minute. Donders in his book on "The Accommodation and Refraction of the Eye" (1864, p. 195) refers to this as the first exact appreciation of this physiologic question; and, after quoting other authorities in confirmation of this minimum distance, he goes on to say: "For practical use in those laboring under affections of the eyes, the method here laid down for physiologic objects is not applicable. In practice it is absolutely required that the person examined should give proof that he actually distinguishes, as is done by the naming of known figures, letters, numbers, etc."

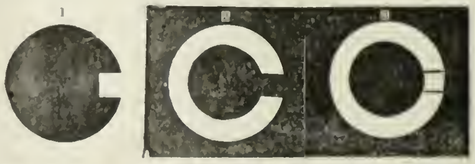
In 1862 Snellen published the first edition of his test types made up of square capital letters of such a size that at the distance printed above each line the letters subtended a visual angle of five minutes and the component lines of each letter an angle of one minute. He also introduced the formula V = d/D, in which V is the acuteness of vision, d is the greatest distance at which the letters are read correctly, and D is the distance at which the letters subtend the standard visual angle of five minutes and should be named correctly by the average normal eye. It seems very desirable that Snellen's standards and method of notation, which have proved so satisfactory for the past forty-eight years and have been so generally adopted, should be retained. Without changing Snellen's standards, it is possible to improve his test types in two respects, as has been done by Dr. John Green. In Snellen's types the gradation of letters is not uniform and there are not enough lines of letters of the smaller sizes, where most of the refraction work is done.

Green was the first to propose a regular gradation in geometrical progression (*Tr. Am. Ophth. Soc.*, 1867, 1868, 1903, 1905) and to publish sets of test-letters engraved in this way, and Javal, in a paper before the Ophthal. Section of the International Medical Congress in Paris in 1900, says: "Je ne doute pas qu'avec le temps les échelles à progression géométrique proposées par Green dès 1868, ne soient universellement adoptées." This geometric series, with the common ratio of $\sqrt[3]{2} = 1.26$, was adopted by the American Opthalmological Society in 1903, and, with the ratio of 1.259, it was adopted by the Société française d'Ophthalmologie in 1904.

It seems to me that Snellen's letters, especially in a geometrical ratio, can be used to determine the acuteness of vision for all purposes better than any other test yet proposed. With the broken ring there is trouble with irradiation at the gap, which interferes with the clearness of definition and the location of the gap. For examinations of men in railway service the broken ring is not well designed, and unnecessary trouble would be caused by rejecting men as the result of a test with such a series of figures with which they were not familiar. The memorizing of the letters can be easily overcome by using the cards with one size of letters on each card, each size being printed in triplicate with a different arrangement of letters on each card, and such a set of letters, which I arranged according to the Snellen standard, has been used with good results on a number of the railway lines of this country for the past fifteen years.

In addition to the test types for distant vision, we need a more accurate series of printed matter for the reading test. Few of the many series of reading test-types published from time to time will compare with the "Schrift-Scalen" of Jaeger, published in 1854, for fulness and even grading, and which, from Nos. 1 to 9, practically give a paragraph of reading matter for each visual angle of one minute from 4′ to 12′, as measured by the short lower-case letters. In 1904 a committee of the American Ophthalmological Society prepared a set of reading-test cards, which follow Jaeger's types, and give a carefully prepared series which can be noted by a slight modification of the Snellen formula, viz.: L = d / D, in which L (lectio) represents the reading power, d the distance (in decimeters) at which the print is read, and D the distance (also in decimeters) at which the short lower-case letters, such as c, n, o, etc., subtend the visual angle of five minutes.

Dr. F. Park Lewis, Buffalo, N. Y.: I wish to illustrate a method of determining, at the same time, the acuity of vision and refraction. My test is founded on the broken ring test, objections to which have been raised by Dr. Williams. It consists of a broken ring which by rotation may be made a completed ring. One of the chief difficulties of getting an accurate estimate of ametropia is the inability of the patient to indicate the character of the test, especially when a symbol is used, or the direction of the intercepted arc when the test is the broken ring.



Test of acuity of vision and refraction: 1, black disk with white parallelogram on edge; 2, ring with intercepted segment, which may be placed at any angle to be placed over 1; 3, intercepted segment closed by revolving 2 over 1.

The ring with the intercepted arc made after the plan of the Committee of the Naples Congress is rotated by a cog-wheel arrangement connected with a button in the hand of the patient. It consists of a white ring with an intercepted segment on a black background. The opening may be turned in any direction and is closed by rotating it over a white band of the same size which is placed under it, so that by the closure of the ring, accomplished by the patient, the acuity of vision is determined. Instead of a number of rings having broken arcs turned in various directions, one ring of each of ten sizes is sufficient, and by its rotation an infinite number of directions may be secured and an absolute determination made of the acuity of vision.

The diameter of the circle is 100 mm. and the width of the band 20 mm., leaving the desired segment a parallelogram, the measurement in each direction of which is 20 mm. Ten broken rings are employed, each of which is one-tenth less in size than the next preceding it. A duplicate of these rings is placed facing the examiner and rotated at the same time, so that he is immediately able to recognize the exact visual acuity of the patient. If there are test-colors on the outer ring and matched shades on the inner circle, the same test can be used for the determination of color-blindness.

Dr. W. H. Luedde, St. Louis: For use outside the office this device of Landolt, which I found in use at his clinic in Paris four years ago, answers the purpose very well. It is made of two cards arranged to turn one on the other. A space in each card enables the physician to bring into successive view rings of different size on the other card. If the patient recognizes one, without changing the distance, the physician can change the disc and thus dispose of one size of ring after the other until vision is determined. The larger rings on the back of each card are for very low degrees of vision. I present this as an additional convenience in this very excellent method of accurately determining the vision.

Dr. Edward Jackson, Denver: It is not proposed that this standard shall supersede our card of test letters arranged according to the Snellen standard. In so far as the Snellen standard is a standard we continue it without change. But in order to use the metric system, we do not have to confine ourselves to the whole-length meter stick. We can divide the meter into millimeters. So without departing from the Snellen general plan, we can adopt a test that is very much more accurate than any card of test letters that was ever printed. There has never been a set of test letters, no matter how carefully selected, that meets all the requirements for a standard. The different men who get out different test-cards have made different selections of letters. Whether they conform to the five-degree scale, each letter subtending an angle of five degrees, or whether they depart from it, there never was a set of test letters that was an exact test. Now, an exact science, such as ophthalmology is, should adopt an exact test. This has been offered. With reference to familiarity with the forms, that obtains with the test letters, which renders them unreliable for comparing those who are accustomed to read much of the time with those who are not; the international standard is an important advance. The broken ring also has a distinct superiority in requiring the persons tested to give positive evidence that they do see it, by designating the direction of the break in the ring. To give this evidence does not require that the patient shall know the right hand from the left. Young children, whom we cannot get to answer the question, will indicate the direction by pointing with the hand. The particular forms of test cards shown here are more simple than either of the modifications proposed of using a single test ring. I cannot conceive of anything more simple than the little round card. You can test with perfect accuracy a person in any position, lying in bed or otherwise, where you can get a good light on the card.

The Liver and Pancreas in Twelve Cases of Diabetes.—E. Parmentier compares the clinical manifestations of the diabetes and the conditions in regard to the liver and pancreas functioning and findings with the autopsy report. His work is published in the *Bull. de la Soc. Méd. des Hôp. de Paris*, 1910, xxvii, 532. The details of the cases are tabulated for comparison; they show the remarkable frequency of changes in the pancreas in all the clinical forms of diabetes. The hyperplasia in the connective tissue, sclerous lesions in the excreting passages and the angiomatous aspect were most striking in both liver and pancreas, paralleling each other in these two organs. The findings show further that the lesions in diabetes are by no means confined to the islands of Langerhans. The article is illustrated.

THE USELESSNESS OF LOCAL TREATMENT IN PUERPERAL SEPSIS *

J. H. CARSTENS, M.D.

Professor of Surgical Gynecology and Obstetrics, Detroit College of Medicine

DETROIT

When I was in active obstetric practice, twenty-five or thirty years ago, I saw many cases of puerperal sepsis, especially in consultation and coming from the hands of midwives. We were then just beginning to practice antiseptic midwifery and our great object was to kill the germs. Hence, we began to use various remedies that we supposed would destroy micro-organisms, such as phenol and mercuric chlorid, and I used these faithfully as vaginal douches and by intra-uterine irrigation. Then the fad of iodoform started, and I plead guilty of even introducing the stinking suppositories into the uterine cavity and letting them melt there.

But it soon was clear to me that there was not much difference in the ultimate result, no matter what kind of local treatment we made use of—that the real aim was asepsis, the prevention of puerperal fever.

I then found the best result by cleaning out the uterus gently with a little absorbent cotton or gauze on a swab, carefully wiping it dry, and then swabbing it out with pure phenol. My idea was that by curetting the lymph-channels were opened and raw surfaces were made, and thus better chance was given for absorption, while by simply mopping the uterus out any little detritus and secretion which might contain bacteria were rubbed away, and if any small raw surfaces existed, by cauterization with pure phenol they were closed and covered, thus preventing absorption and at the same time perhaps destroying all the micro-organisms that existed there. But even this mode of treatment I doubted, and finally stopped that also, depending altogether on constitutional treatment.

I have always had unbounded faith in the use of quinin, holding that it inhibits or checks the ravages of micro-organisms and toxins in the blood, but in our present light it seems to me that it probably supplies some opsonin. Then I believed in elimination, and kept the bowels free, and gave the patients large quantities of water to flush the kidneys constantly. This mode of treatment seemed to give as good results as the heroic local treatment which was all the rage, if not better.

In connection with puerperal sepsis there is another thing to be considered, and that is the kind of micro-organism which causes the trouble. In most cases it is the streptococcus, pneumonia, diphtheria, grip or colon bacillus—sometimes a mixture of two or more. These all seem to cause more or less local disturbance, with a good deal of pain, but I saw a number of cases of puerperal sepsis in the course of my practice which absolutely produced no symptoms. The patient, when asked how she felt, replied, "Very well." Asked if she had any pain, she would say "No." The abdomen would be perfectly flat; no localized tenderness or pain anywhere; patient was feeling all right, taking nourishment, bowels moving perfectly; in fact, all the bodily functions apparently in good condition. The only thing she might complain of was a nervousness, lack of sleep. On looking at a patient like that and talking with her one would say that there was nothing the matter with her, but on putting a thermometer in her mouth one would find the temperature 105, 106 or 107, and over, with a pulse of 120 to 140, and it would be clear that she was seriously sick.

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910

Now this peculiar type of puerperal sepsis, I hold, is due to a special micro-organism that has not yet been isolated or discovered. One may find the streptococcus in the secretion, but one finds the same in other cases, with no such symptoms. In this peculiar type of puerperal sepsis the patients will drag along for four, six or eight weeks, and finally recover, although some will die —I should say 25 to 30 per cent.

As far as the local symptoms and manifestations are concerned, in the general run of cases, I find them of two varieties: one in which the infection travels up the uterus into the tubes, causing septic peritonitis, generally of a severe grade; and another variety in which the infection travels along the lymphatics as the result of an abrasion, especially a tear in the cervix, and the whole symptoms of the disease seem to develop in the broad ligament and in the cellular tissues of the pelvis, from there spreading in the direction of least resistance, sometimes behind into the cul-de-sac of Douglas, and breaking into the rectum spontaneously in fortunate cases, or working up toward Poupart's ligament, where it can be readily opened. Cases of the latter kind last for weeks and sometimes months, and the patient generally recovers.

The point I want to make is simply this, that by local treatment more harm is often done than good. Douches given by ignorant persons often implant new and virulent micro-organisms within the genital tract, while scraping and curetting and injuring the delicate mucous membrane opens new channels for absorption.

When a localized abscess is formed which can be opened into the cul-de-sac of Douglas or somewhere else, I certainly believe it should be promptly opened, but as we see the disease generally several days after its onset, I think no local treatment will be of any avail. Experiments made on mice with anthrax bacillus have shown that if the bacilli are applied to a raw surface and removed ten minutes later and the parts cauterized the treatment will have no effect, but the animal dies of anthrax. The human system may have a greater resisting power; still, after twenty-four hours or more such an amount of absorption has taken place that the removal of the discharge can do little if any good. Continued irrigation, it has been shown, cannot keep the parts clean, nor can douches or irrigation twice a day have any effect.

I have been all the more desirous of bringing this view before our section since reading the proceedings of the last German Association of Obstetricians, where Winter, in an exhaustive article, shows this most clearly, coming to the conclusion that simple absorption ceases as soon as the necrotic tissue is cast off; that simple local infection and endometritis stops soon without any treatment; that no local treatment will prevent deep or general infection, and that when absorption takes place and there are remnants of tissue still in the uterus, one should be tardy about removing them, as these are generally quickly cast off and the patient gets along just as well as with the most vigorous treatment.

In the present state of our knowledge it seems to me that we should discourage as much as possible the indiscriminate local treatment made use of during the last decade or two; that any remnants of tissue should be very gently removed, that local abscesses should be opened at the right time, that is, in a week or two, and that intra-uterine and vaginal douches should not be made use of. With a clearer knowledge of bacteria, and especially the development of antibodies in the system, we should encourage as much as possible the development of antibodies and the elimination of toxins, by flushing the kidneys, keeping the bowels open and favoring diaphoresis. At the same time we should try to get a culture of the infecting micro-organism so as to know what we have to deal with, and by the use of antitoxins increase the opsonic index sufficiently to carry our patient to a successful issue.

SUMMARY

1. In puerperal sepsis, local treatment is of no benefit.
2. Douches and intra-uterine irrigation often do harm.
3. Local abscesses should be opened and allowed to drain without irrigation.
4. Constitutional treatment, on general principles, should be instituted, quinin and opium being the sheet anchor.
5. Elimination in every direction should be assisted.
6. The infecting organism should be identified and the opsonic index increased by antitoxins.
7. And, after all, prevention should be our constant endeavor, a clean patient and clean doctors, and midwives; this is most often secured by wearing rubber gloves.

620 Woodward Avenue.

ABSTRACT OF DISCUSSION

Dr. E. Gustave Zinke, Cincinnati: The local treatment of puerperal sepsis is never to be discarded; it is of great importance, and should be better understood. Before we proceed with the treatment of puerperal sepsis, however, we must first determine with what form of sepsis we are dealing. There are two distinct varieties of puerperal infection and a sharp line must be drawn between the two. In one instance, the most frequent, we deal with the saprophytes; in the other, with the streptococci. In the former, if the infection is recognized early and the uterine cavity promptly cleaned, the temperature at once subsides and the trouble is at an end, as a rule. The cases of so-called sapremic infection, or wound-intoxication as the Germans call it, begin in a very mild manner. The pulse remains normal for sometime and the temperature rises very slowly If the case is not recognized promptly and the necrosis, produced by the saprophytes, becomes extensive, there results, in time, a so-called putrescent endometritis and then the symptoms gradually become more severe and the evidence of systemic infection is much more profound. In these cases local treatment is of prime importance. The gentle cleaning out of the uterine cavity, followed by a copious antiseptic uterine irrigation (ten or twenty quarts) is often sufficient to cause a prompt recovery Should the temperature rise again, the irrigation may be repeated within twenty-four or forty-eight hours, but this will rarely be necessary.

It is different when the streptococcus has invaded the parturient tract, which is the so-called wound-infection of the Germans the true septic infection. When the streptococcus gets into the birth canal, especially within the cervical lacerations or, which is worse, within the placental site, a profound systemic disturbance manifests itself at once and the temperature runs up quickly to 106 F. and more after a chill of some duration. The pulse, too, goes up promptly to 120 and over. In these cases the germs immediately pass through the wounds into the blood or lymph-vessels, or both, beyond reach. But even here the entire parturient canal must be kept clean in connection with the constitutional treatment The serum treatment, if resorted to early, will give the best results.

Dr. Horace G. Wetherill, Denver: As usual Dr Carstens has stated his opinions forcefully and, as usual, he is, in the main, correct. I think we shall all agree that, on the whole, intrauterine treatment following septic infections, particularly the use of the curette, has been injurious. Dr. Carstens' treatment seems to me to be much too broad, however, and it ignores one of the most important of the accepted surgical principles; —the drainage of an infected cavity. Many times each of us has found a large amount of septic putrid material bottled up within the uterine cavity. The principle of drainage which we apply to infected cavities everywhere should be applied to the uterine cavity under these conditions. If we use drainage, and if it can be used without the risk of a retrograde infection, why not use irrigation as well? A drainage device which I have used for this purpose for several years is a double tube so constructed that it is possible to irrigate through one leg of the tube and get the drainage from the other. With a tube of this kind connected with a fountain syringe continuous irrigation may be employed, if it is desired. If this is done with a permanganate of potassium solution, or better still, with alcohol (30 to 50 per cent.) there is absolutely no danger of poisoning.

Dr. H. J. Boldt, New York City: The whole matter resolves itself into a question of diagnosis, and I believe that is what Dr. Carstens really meant. We realize that when we have to treat bacteriemia, local treatment as such, if the system is overburdened with streptococci, becomes absolutely useless. He has also told us, and it is absolutely correct, that purulent material, such as decidua, or perhaps a piece of retained placenta, left in the uterus, is, as a rule, spontaneously cast off in a short time without in all probability causing a very serious disturbance, except temporarily. Dr. Carstens has particularly advised against the use of a curette: that is the chief point which he brought out. To abstain from local treatment, when a septic infection is local, it is not our purpose to confirm such an idea, but whenever we have a severe local septic infection, as for instance from the external genitalia, it is our duty to look after that. If we have reason to believe that there is foreign material in the uterus which is not soon cast off from the uterus spontaneously, and if the cervical canal is patulous, which is usually the case, then we should enter the uterine cavity and remove the pathologic material as far as possible with care; but the point is, not to cause traumatism, because traumatism on the puerperal tract will open the avenues for septic infection.

Dr. Henry Schwarz, St. Louis: I agree with Dr. Carstens in the conviction that prophylaxis is the main thing. I want to emphasize what he said about the use of rubber gloves, clean hands and clean instruments as the greatest factors in preventing loss of life by septicemia. I agree with Dr. Boldt, that diagnosis of the nature of the infection is of the utmost importance, and I insist on a bacteriologic diagnosis in all cases which are used for statistical purposes. The only variety of septicemia which I wish to discuss here, are the cases of general bacteriemia in which the streptococci are found in the blood. When you can get a culture of streptococci from the blood, it is my experience that, as a rule, nothing in the world can save that woman; these fatal cases of streptococcus infection are all cases in which the germs are brought to the patient by the doctor or by the nurse, or by the instruments; these cases can be prevented and they must be prevented.

I want to warn against the use of bacterial vaccines in these cases of puerperal septicemia; I mean against the injection of killed cultures of streptococci into the system of a woman, whose blood contains already billions of living streptococci. You can not hope to increase the formation of antibodies by so doing, for the living streptococci have already caused the formation of all the specific antibodies which the blood of this respective patient can form; the use of anti-streptococcic serum in these cases is logical; it should be given in large doses frequently repeated; it can do no harm.

The brilliant results obtained with bacterial vaccines in furunculosis and other chronic conditions make it likely that in the localized form of septic infection good results may likewise be obtained from the careful use of streptococcic vaccine, but I protest against the indiscriminate administration of this vaccine by the general practitioner, because by temporarily lowering the resisting power of the body, that may enable streptococci causing a local infection, such as a pelvic cellulitis, to overthrow the natural defenseworks of the body, and thereby change a local infection, which is curable, into a general one, which may prove fatal.

Dr. J. H. Carstens, Detroit: If the uterus is flexed and retains septic material I would expect any one to straighten it out and establish drainage. What do we do in appendicitis? We open the abscess, put in a little drainage tube, and that is all. We do not irrigate. The abscess is filled with microorganisms of all kinds. Why should we dissect and wash and douche, and so on? I have taken intestines and put them under a faucet and let the water run on them for twenty-four hours, and still the micro-organisms were there. The nurse may clean the uterus out two or three times a day, but I do not believe that it does any good. Many patients have died who would have lived if they had been let alone. I plead for the constitutional treatment by the elimination of the micro-organisms. If they are eliminated from the system then the patient will have a chance to get well.

CHRONIC INFLUENZAL BRONCHITIS*

J. D. MADISON, M.D.
MILWAUKEE, WIS.

The following cases were selected as illustrating different phases of chronic influenzal bronchitis, so far as possible, and are presented with the hope that they will prove interesting and instructive to others. To me the recognition of these cases and the variety of clinical forms they may assume has been very helpful.

REPORTS OF CASES

Case 1.—*Summary.*—Cough of four years' duration and for several years previous frequent attacks of influenza when patient would cough and expectorate for a time; chills and fever for several days at one period; diagnosis of tuberculosis; mild asthmatic attacks; diffuse bronchitis. There were no tubercle bacilli in sputum; in smears and cultures the influenza bacillus found to be the predominant organism.

History.—The patient, M. K., servant girl, single, aged 28, was first seen Sept. 11, 1906. Two cousins on father's side had died of consumption. One brother died with symptoms of miliary tuberculosis of the lungs during the summer of 1908. The patient had measles and diptheria as a child and pneumonia at the age of 13.

Present Illness.—For several years patient has had frequent attacks of influenza, during which she would be feverish and would cough and expectorate for a time. During the early fall of 1905 she began to cough, with an attack much like those in the past. Since then her cough and expectoration have been continuous. During the spring of 1906 the condition became decidedly worse. She developed a fever, and during May had several chills and sharp pleuritic pains on both sides. There were no night sweats. About this time a diagnosis of pulmonary tuberculosis was made. The fever disappeared, but the cough and expectoration have continued. At times she has experienced a tight sensation in the chest and on several occasions she has had mild attacks of shortness of breath, somewhat resembling asthmatic attacks.

Physical Examination.—Patient was well nourished. The chest was fairly well formed, expansion fair and about equal on the two sides. The percussion note was perhaps slightly hyperresonant. At the right apex the breath sounds were relatively suppressed and expiration was a little prolonged. Coarse sonorous and some fine crepitant râles were heard at this apex. A few coarse râles were also heard throughout the chest. There was no friction rub. Heart seemed about normal; pulse 80; temperature 99.2. The sputum was tenacious and mucopurulent in character. A great many examinations revealed no tubercle bacilli. About 0.3 c.c. of sputum was injected into a guinea pig subcutaneously and at the end of several weeks autopsy showed no tuberculosis. In smears the influenza bacillus was seen to be the predominant organism, and these were isolated in cultures in the usual way. A good many other organisms were present, but the influenza bacillus distinctly predominated.

---

* Read before the Milwaukee Medical Society Jan. 25, 1910, and by invitation before the Racine County (Wis.) Medical Society, March 31, 1910.

Course of Disease.—Patient has been seen at intervals during the past three years. Cough and expectoration continue, but as a rule both become much better during the summer months when she is out of doors a good deal. She feels well and on the whole has maintained her weight. Examination of the chest still shows evidences of a diffuse bronchitis.

Case 2.—*Summary.*—Recurring attacks resembling influenza with asthmatic seizures during the past six years; present illness three weeks' duration; onset resembling influenza and followed a severe drenching; sputum somewhat resembling that of true asthma; influenza bacillus the predominating organism, obtained in culture.

History.—The patient, E. J. E., female, married, aged 27, works in a grocery store. She was first seen Oct. 8, 1906. The family history is good; no asthma or tuberculosis. The patient was healthy as a child; had pleurisy at 14 years of age; cystic ovary removed six years ago. Patient's first attack of asthma came at 20 years of age. This attack began with tonsillitis and was followed by bronchitis and a slight pleurisy. Since then she has had five other attacks. They usually began as ordinary influenza with first a coryza followed by bronchitis with cough and expectoration, and then the asthmatic seizures.

Present Illness.—This began about three weeks before the patient was first seen and followed a severe drenching. The next morning she had coryza and very soon there developed a bronchitis with much coughing at night and some shortness of breath, but not so much as in previous attacks. The patient was expectorating a tenacious sputum.

Physical Examination.—The patient was well nourished. The cervical glands on the right side were distinctly enlarged. The chest was well formed, not emphysematous, and examination revealed nothing beyond some coarse, wheezy râles heard on both sides of the chest. The heart was negative; pulse 76; temperature 99. The sputum was tenacious and mucopurulent in character. A good many grayish or opaque streaks and threads, some 1 or 2 cm. long were seen. Under the microscope these grayish streaks were found to be made up largely of cells, but in some of them there was a core of fibrin. No definite spirals were seen. A majority of the cells were found to be mononuclear eosinophils. In smears and cultures a practically pure culture of the influenza bacillus was found. It seems probable that this was an influenzal infection, associated with true asthma. This attack continued through most of the following winter. During the ensuing two years she is known to have had other attacks.

Case 3.—*Summary.*—Duration of bronchitis eighteen years; began as an acute attack of influenza; several severe exacerbations since, bronchopneumonia two years ago; no hemoptysis; mild attacks of shortness of breath; expectoration rather profuse; bad odor of late; influenza bacillus the predominating organism.

History.—The patient, C. S., a married woman, aged 48, was first seen Sept 11, 1908. The family history was good; no tuberculosis. The patient was healthy as a child; had inflammatory rheumatism at twenty years of age. At present she is quite nervous and is probably undergoing the menopause.

Present Illness.—This began with a severe attack of influenza eighteen years ago which confined her to bed for several days. Bronchitis has never disappeared since this attack. Since that time she has had several similar attacks with chills, fever and increasing bronchial symptoms. The most severe attack occurred during the winter of 1906. The patient was in bed for some time and it was several weeks before she regained her usual health. The attack was accompanied by pleurisy on the left side, and she almost certainly suffered from bronchopneumonia. The sputum is quite abundant, the amount usually ranging between half an ounce and 3 ounces in 24 hours. Frequently in the morning she coughs up dry crusts and during the past two years the sputum has had a bad odor. She has at times had rather mild attacks of shortness of breath from which she gets relief on coughing up sputum which may be tenacious or dry and crusty. Of late there has been some shortness of breath on exertion. She has gained 25 pounds in weight during the last two years.

Physical Examination.—The chest was large and fleshy, somewhat emphysematous. Nothing was made out except occasional râles scattered throughout the chest. The heart was a little enlarged, with a short systolic murmur at the apex. The pulse was slightly irregular, 80 per minute. The sputum was thick, mucoid, showing many grayish streaks and areas. One or two specimens showed crust formations, and with these there was a bad odor. There was no blood. On microscopic examination, many organisms were seen to be present, but they were made up almost entirely of two kinds of bacilli, both non-Gram-staining. One form had the morphology of the influenza bacillus; these were numerous and mostly extracellular. The other bacillus was larger and most numerous in the older specimens, especially where the sputum had assumed a greenish tinge. This was proved on culture to be the *Bacillus pyocyaneus*. The influenza bacillus, which was the most numerous organism present, was isolated in cultures. No tubercle bacilli were found.

Case 4.—*Summary.*—Bronchitis for seventeen years; two attacks of pneumonia; bronchiectasis; often profuse expectoration; not foul; apparently slight hypertrophic osteo-arthropathy; marked clubbing of fingers; no tubercle bacilli in sputum; Moro tuberculin test negative; influenza bacillus the predominant organism.

History.—The patient, E. W., single, aged 18, clerk, was first seen March, 1907. The family history was good; no tuberculosis. A sister (Case 5 of those here reported) has had bronchitis for ten years. The patient was feeble as a child, and during his first year had several abscesses. He had measles, scarlet fever and diphtheria.

Present Illness.—The patient first began to cough when about one year of age and this had practically been continuous to the time of examination, with the exception of one summer when the patient was about 5 years of age. Cough was usually worse during the winter and spring months, and for several years the expectoration had been most profuse in the morning. There were no asthmatic attacks and no hemoptysis. Some fever had been occasionally present. Night sweats had been noted at times.

Physical Examination.—The patient was a slim, poorly nourished boy, with sandy hair and very distinct clubbing of the fingers. The chest was spare, rather long and narrow and somewhat emphysematous. At the left apex the breath sounds were a little louder and harsher and higher-pitched than on the right side. Over the back the breath sounds were rather feeble. A good many coarse râles were heard, scattered through the chest. No signs of cavity formation were made out. The heart was about normal; temperature normal. The sputum usually profuse, tenacious, greenish or yellowish in color; mucopurulent; odor not foul. Many examinations for tubercle bacilli have proved negative. In smears and cultures the influenza bacillus was readily demonstrated and was the predominant organism. There were also many pneumococci.

Course of Disease.—Jan. 2, 1910: During last winter patient had pneumonia on right side. He was sick for four weeks. For a time he spat up distinctly blood-stained sputum. Examination of chest this day revealed a condition much the same as when first seen. There was marked clubbing of the fingers, and the finger bones and bones of the forearms were possibly now a little enlarged, suggesting a slight condition of hypertrophic osteo-arthropathy. On the whole the patient's general condition seemed to have improved somewhat. The sputum remained the same. No tubercle bacilli were found. The Moro tuberculin test was negative. A great many influenza bacilli with a few pneumococci and other organisms were still readily found in the sputum.

Case 5.—*Summary.*—Cough of ten years' standing; onset with symptoms of an attack of influenza; continuous cough with gradually developing profuse expectoration; temperature at times; no hemoptysis; two attacks of pneumonia, the last attack unresolved and probably organizing, with abscess formation; elastic tissue in sputum; bronchiectasis probable; distinct clubbing of fingers; no tubercle bacilli; mixed infection, with the influenza bacillus predominating.

History.—The patient, O. W., a schoolgirl, aged 14, was first seen in March, 1907. The family history was good; no history of tuberculosis. One brother (Case 4 of those here reported) has bronchitis of seventeen years' duration. The patient was healthy and fat as a child; had chicken-pox and measles only, of the contagious diseases.

Present Illness.—Bronchitis began when the patient was 4 years old and dates from an acute influenzal attack during which she had cough, fever, general malaise and was confined to bed for several days. Following this attack, cough and expectoration persisted and were continuous up to the present time, usually somewhat better during the summer and worse during the winter and spring. Not infrequently during the winter and spring the patient would have attacks in which symptoms of bronchitis would be worse and she would have headaches, fever and general malaise. No sweating at night or bloody expectoration had been noted. After the onset of bronchitis, she was thin and poorly nourished. Expectoration was not marked at first, but gradually grew profuse. It was somewhat more abundant in the morning, but it was also profuse during the day. The sputum was usually greenish, but during exacerbations became more tenacious and mucopurulent. There was no bad odor.

First Physical Examination.—The chest was thin, long and narrow; somewhat emphysematous. There was general bronchitis as was made evident by coarse râles scattered throughout the chest. There were no signs of cavity formation. The heart seemed about normal. There was distinct clubbing of fingers. The sputum was examined many times for tubercle bacilli, but always proved negative. In smears and cultures the influenza bacillus was found to be the predominant organism. There were also a good many pneumococci.

Course of Disease.—Jan. 2, 1910: During the winter of 1909 patient had an attack of pneumonia on the right side, and was sick for about five weeks. The following summer she improved much in health and gained in weight. About six weeks before the date above she suffered another attack of pneumonia, this time on the left side. The process seems to have started at the apex and extended to the lower lobe. Some time after the onset, signs of a pleural effusion appeared but these have subsided almost entirely. The fever gradually disappeared but the consolidation had failed to resolve.

Second Physical Examination.—The patient now was weak and emaciated. The left apex and front appeared somewhat shrunken and the expansion was markedly deficient. Vocal fremitus was less marked than on the right side. Over the left apex the resonance was deficient, and from the third rib down became very distinctly dull. Dulness was also present over the whole back, but especially from the midscapular region down. At the left apex the breath sounds were suppressed while over the axillary region and from the midscapular region down there was distinct though distant tubular breathing. On coughing a good many fine and coarse râles were heard. Râles were heard also throughout the right side, though they were not nearly so numerous. Over the left base there was a small area where the percussion note was flat and the breath sounds practically absent. A soft systolic murmur was heard over the body of the heart, and the second pulmonic sound was accentuated. Pulse was 100, regular, of small volume; temperature, normal. The sputum was now abundant, tenacious, mucopurulent; no blood; no foul odor; small quantity of elastic tissue; no tubercle bacilli. In smears two organisms were especially to be noted, the influenza bacillus and the pneumococcus, and of these the influenza bacillus was the more numerous. There was perhaps a mixed infection.

I think it is impossible to say whether the pneumonic process was due to the influenza bacillus or the pneumococcus, though the character of the pneumonia points rather to the influenza bacillus. The presence of elastic tissue and the physical signs would indicate that there has been at least some abscess formation, with perhaps other portions which are unresolved, and very likely there is more or less organization going on.

Case 6.—*Summary.*—Chronic cough for over twenty-two years; probable bronchiectasis; profuse recurrent hemorrhages for over twenty years; many members of the family suffered from chronic bronchitis; no tubercle bacilli; Moro tuberculin test negative; influenza bacilli in sputum in great numbers and in almost pure culture.

History.—The patient, Mrs. S., aged 53, housewife, has been under observation for two years. There is no tuberculosis in the family history but in the patient's immediate family chronic bronchitis has been prevalent. Both father and mother suffered for years from a chronic bronchitis, and of her seven brothers and two sisters all were troubled much in the same way. Patient has had ten children, and among these three or four have had frequent attacks of bronchitis. One child died at 19 months of some form of respiratory infection not tuberculous. The patient had most of the diseases of childhood. For a number of years she has been troubled somewhat with chronic rheumatism.

Present Illness.—This began over twenty-two years ago. there is no history of onset with a definite acute attack. Not long after the onset she was severely frightened which started her to cough, and this was soon followed by a brisk hemorrhage from the lungs. At rather frequent intervals she has continued to spit up blood, sometimes as much as a tumblerful. Cough and expectoration have been continuous since the onset but better during the summer and worse during the winter and spring months. The expectoration for a long time has been profuse and of late years has rather tended to increase than diminish. She often spits up four to eight ounces in twenty-four hours. As a rule she expectorates most in the morning. During the past two years patient has never been found with an elevation of temperature. There are no night sweats. She is fairly strong and active.

Physical Examination.—The patient is a thin, spare woman. The chest is emaciated and distinctly emphysematous. The breath sounds were well heard over the upper part of the chest, but somewhat deficient over the bases, particularly on the right side where there were also a good many coarse râles. Some coarse râles were heard throughout the chest. There were no definite signs of cavity formation. The heart sounds were clear and regular, pulse 90 to the minute, temperature normal. The sputum was tenacious, mucopurulent, yellowish or greenish in color, not infrequently streaked with blood. The odor was not particularly offensive. A great many examinations for tubercle bacilli have been made; all were negative. Smears and cultures showed practically a pure culture of influenza bacilli, usually in vast numbers. A few colonies of pneumococci also grew. The Moro tuberculin test was negative.

NATURE OF THE INFECTION

It will be noted that all the cases reported show other organisms than the influenza bacillus in the sputum. In some of the cases the influenza bacillus was so much more numerous than other pathogenic organisms that they could be considered a practically pure infection, while in others, though the influenza bacillus predominated, other pathogenic organisms were present in considerable numbers and it would be scarcely fair to consider these other than mixed infections. A mixture of organisms occurs practically in all cases of respiratory infection. The mixture usually occurs soon and may take place in the mouth, in the upper passages, or in the lesion itself. Later it may be difficult or impossible to determine the primary invader. When the infection maintains itself practically pure, however, there can be little doubt as to the responsible organism and in the mixed cases where one organism predominates it is easily possible that this germ was the primary invader, but in certain cases there may have been a mixed infection from the onset. It is well known that the influenza bacillus thrives particularly well in association with a good many other organisms.

It will be interesting in this connection to refer to the results obtained by Lord[1] in an examination of the sputum of 186 patients. Of these, 120, or 64 per cent., were classified as mixed infections; that is, two or more organisms were noted in each specimen. Among the more important organisms identified were the influenza bacillus, *Micrococcus catarrhalis*, the pyogenic cocci, pneumococci and the *Bacillus mucosus capsulatus*. In 110 cases, or 59 per cent., influenza bacilli were present in varying numbers. In 66 cases one organism so far predominated that it could fairly be classed as a pure infection. Of these 66 cases of comparatively pure infection, the influenza bacillus was the infecting organism in 47 instances, the pneumococcus in 8, the *Micrococcus catarrhalis* in 5, and the *Bacillus mucosus capsulatus* and the pseudopneumococcus were each represented as a pure infection in 3 cases. It is well to remember that actinomyces and other members of the streptothrix group may in rare instances cause a chronic bronchitis.

---

[1] Lord, F. T.: Eleven Acute and Eighteen Chronic Cases of Influenza, Boston Med. and Surg. Jour., 1902, cxlvii, 662. Infections of the Respiratory Tract with Influenza Bacilli and other Organisms. Their Clinical and Pathological Similarity and Confusion with Tuberculosis, Ibid., 1905, clii, 537.

These cases of chronic respiratory infection are undoubtedly important as sources of infection not only to themselves, as manifested by acute exacerbations, but also to those about them, as is well illustrated in Case 6, in which instance so many members of the family seem to have suffered from a like infection. The influenza bacillus is very easily killed outside of the body, and it must be in just such cases as these that the stock of these organisms is preserved, especially during inter-epidemic periods.

It is perhaps disappointing to know that the symptomatology of influenzal bronchitis, so far as present studies indicate, does not differ materially from that of chronic bronchitis, produced by other organisms. In Cases 1, 2, 3 and 5 the onset was with an acute attack of influenza. In the others the onset was, so far as we know, more insidious. This is the usual history in these cases. Doubtless in many of them a bronchopneumonia, more or less evident, is present at onset, and in this fact one may find an explanation for the persistence of the cough with localized or diffused bronchitis. In not a few of these cases, as is made evident at autopsy, the bronchopneumonia does not fully resolve. There has been perhaps a small abscess with destruction of tissue, and thus a pocket is left communicating with the bronchus, offering a favorable place for bacteria to persist and develop. These small cavities might or might not give physical signs. But a persistence of localized signs would suggest such a condition. There is frequently damage to the wall of the bronchus, and this may result in a condition of diffuse or localized bronchiectasis, which, as we know from autopsy-findings, is so often present in these cases, even though there have been no physical signs of such a condition. One may quite safely infer that all or nearly all of the six patients whose cases are reported would show at autopsy this condition, either diffuse or localized. Bronchiectasis may be very acute in its onset, and Lichtenstern believed that even after lasting weeks and months it may end in recovery.

Attacks resembling asthma were present in three cases. In Case 2 the asthmatic attacks were marked and the sputum resembled quite closely that of true asthma. It it quite certain that influenza may simulate closely or actually co-exist with true asthma.

The not infrequent occurrence of hemoptysis with these cases of bronchitis is worthy of note. The bleeding may be slight or profuse, and profuse recurrent hemorrhages may be present for over twenty years as in Case 6. The hemorrhage usually comes from a rupture of vessels in the hyperemic bronchial mucous membrane; doubtless, as in tuberculous cavities, fairly large exposed vessels may rupture spontaneously or on exertion or coughing.

Acute exacerbations, which often represent a bronchopneumonia or larger areas of consolidation, are not uncommon in these cases and are undoubtedly a constant source of danger. It may be difficult or impossible to determine accurately what organism has been the cause of the consolidation, but it is quite certain that the influenza bacillus is not infrequently responsible.

DIAGNOSIS

The question of diagnosis is perhaps the most interesting one that arises in connection with these cases, and it is their frequent resemblance to tuberculosis that makes it so important. It is not so much the case which has lasted for many years but rather the case that has persisted for from six months to two years, such as the first case reported, that suggests most this disease. The cough, the persistence of fever, night sweats, loss of weight, hemoptysis, elastic tissue in the sputum, local or diffuse signs of bronchitis or of consolidation or cavity formation, all, or any of which may occur, often strongly suggest the presence of tuberculosis. Yet such cases may be absolutely non-tuberculous, and we know that they are not so very infrequent. It cannot be doubted that many such cases have found their way to tuberculous institutions and have considerably swelled the percentage of recoveries. Several such cases have been observed and followed by Lord.

This should not happen so frequently in the future, as the majority of them can be differentiated, I believe, when it is possible to make careful and complete studies.

Knowing as we do that the above signs so often mean tuberculosis, however, it is frequently safer to give the patient the benefit of the doubt and treat them for that condition. But in view of the impossibility of making a positive diagnosis without finding tubercle bacilli, their presence should be considered the only infallible indication of tuberculosis. On the other hand, it is well not to be too eager to exclude it on the finding of influenza bacilli and no tubercle bacilli at first, as I have in several cases later found them. We know how very common it is for tuberculous patients to have attacks of influenza. Tuberculin may be used as a method of diagnosis and is particularly valuable when negative. A positive reaction might be due to a very slight tuberculous lesion, while the essential process was non-tuberculous.

PROGNOSIS

The prognosis in cases of bronchitis of years' standing, usually with bronchiectasis, is, as a rule, bad. Some of the patients, however, do recover, even after the condition has persisted for many years; but such cases are rare. Many patients, however, enjoy very good health and are apparently quite well with the exception of the bronchitis. It is not uncommon for them to show improvement for a time; usually they are better during the summer, and worse during the winter and spring months. With the cases of only a few weeks' or months' duration the matter is different, as the majority of the patients recover with proper management.

TREATMENT

The results of treatment in these cases vary much. In those of but a few weeks' or months' duration the patients usually recover more or less promptly if placed in a suitable environment. A change of occupation, if dusty or causing continued exposure, may be necessary. Usually a few weeks of out-of-door life in a warm, genial climate, if possible, is sufficient to remove the condition.

As a rule it is not necessary, and certainly one would not from choice, place these patients, when recognized, among the tuberculous. They could easily contract the disease and to associate or be classed with these patients would be in itself depressing and deleterious.

With the cases of many years' standing the treatment is often unsatisfactory and of little avail. An out-of-door life and other methods calculated to improve the general health are undoubtedly of more value than anything else. Inhalations and intratracheal injections have been used by some with distinct benefit. Boggs[2] refers to a case in which the patient was very much benefited by tracheal injections of 10 per cent. iodoform suspension in olive oil. Still the majority of these chronic cases continue their course, the patients being better in summer and worse in the winter and spring, regardless of what one is able to do in the way of medication.

14 Wisconsin Street.

CONCOMITANT SQUINT WITH SOME REMARKS ON ITS ETIOLOGY AND TREATMENT [*]

A. EDWARD DAVIS, A.M., M.D.
Professor of Diseases of the Eye, New York Post-Graduate Medical School and Hospital
NEW YORK

The etiology of concomitant squint was but ill understood until Donders' masterly work on accommodation and refraction of the eye was published in 1864. Many fanciful theories and guesses were advanced to account for the "evil eye," as the Italians called it, some even attributing the affection to the agency of the evil one, as the name "evil eye" implies; while others gave such causes as sucking of fingers, looking at the tip of the nose, or at a curl at the side of the head, imitating the cross-eye of a companion, etc. Such etiologic factors as the above were advanced by the laity, who then, as now, were only too ready to give explanations of things not understood. It must be admitted, however, that the members of the "learned profession" were able to give but little better explanation as to the cause of squint; hence the professional advice as to treatment so often given; for example, to let the child alone to grow out of the squint.

In a survey of the literature of strabismus up to Donders' time one is struck perhaps more by the depth of ignorance than by the extent of knowledge shown in matters pertaining to the pathology of squint. Indeed, until Donders' day but one plausible theory resulting in a rational method of treatment of the deformity had been advanced—the muscle theory.

I. THE MUSCLE THEORY

This theory considered the cause of squint as a strictly local one and as a defect in the muscle itself. The squint was considered as affecting but one eye. In convergent squint there was shortening of the internal rectus muscle; in divergent squint shortening of the external rectus muscle. The logical treatment, of course, was to cut the shortened muscle. Unfortunately the muscle was cut through the fleshy part and the good results expected did not follow the operation, the eye often squinting after the operation in the opposite direction to the previous one, and frequently to a greater extent. The muscle theory was faulty in two respects: first, in considering strabismus a local affection; second, in treating it as affecting but one eye; furthermore the refraction of the eye and the fusion sense were practically disregarded.

II. ACCOMMODATION THEORY

In 1864 Donders advanced his well-known theory of hypermetropia as a cause of convergent squint, and myopia as a cause of insufficiency of the internal recti muscles and divergent squint, owing to a disturbance in the relation between accommodation and convergence. This theory may be stated briefly as follows: accommodation and convergence are intimately associated in the act of binocular single vision. For example, the emmetrope, in order to see well in the distance, exercises neither accommodation nor convergence, the eyes being in a state of rest, the rays of light properly focused on the retina and the visual lines parallel. Such eyes, to see an object plainly at nearer distances, however, must exercise both accommodation and convergence. For instance, to see an object plainly at 1 meter, 1 D of accommodation must be used and at the same time 1 meter angle of convergence in each eye; to see an object at 0.5 meter, 2 D of accommodation and 2 meter angles of convergence must be used, the two functions increasing and decreasing in an equal ratio. In this way objects are seen distinctly and singly, the object being properly focused, the visual lines being directed to the object looked at, whether it be in the distance or near; that is, up to the normal punctum proximum or the near point of binocular single vision.

In hypermetropia, on the other hand, the accommodation must act in excess of the convergence in order that the subject may see objects distinctly and singly, even in the distance; for example, with hypermetropia of 2 D the patient must exercise 2 D of accommodation to correct the static refraction of the eye to see well in the distance, while the convergence remains in a state of rest, that is, with the visual lines parallel. For such eyes to see an object distinctly and singly at 1 meter the patient exercises 3 D of accommodation (2 D to correct the static refraction and 1 D for the dynamic) while only 1 meter angle of convergence is used; for such eyes to see distinctly at 0.5 meter 4 D of accommodation must be used while only 2 meter angles of convergence are required.

Owing to the intimate association between accomodation and convergence this excess of accommodation over convergence has a tendency to increase the convergence of the eye more than is necessary—in other words, to cause a convergent squint. As a strong contributing cause to convergent squint in these cases, Donders, following Buffon, mentions an inequality in the refraction of the two eyes. Especially if there is astigmatism in one eye, or opacities in the cornea, in the lens or in the vitreous, or lesions of the fundus of the eye, in fact, anything tending to reduce the vision of the eye more than its fellow, convergent strabismus is liable to result. As other contributing causes Donders gave the widening of the angle alpha in cases of hypermetropia, paresis of accommodation, etc. As regards the angle alpha and its influence in the production of squint, in the last two years I have given the subject special attention. In hypermetropia of like amounts. I have found the angle alpha as great in the non-squinting patient as in the subjects who squinted; or the difference was so little in favor of the non-squinters as not to be considered. In myopia, however, the angle alpha was relatively considerably less in the eyes of the patients who squinted than in those who did not squint, and may have borne some relation to the squint.

---

[2] Boggs, T. R.: The Influenza Bacillus in Bronchiectasis, Am. Jour. Med. Sc., cxxx, 902.

[*] Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[*] For considerations of space, a portion of this article is omitted from The Journal. The complete article appears in the Transactions of the Section and in the author's reprints.

Why it is that not all hypermetropes have convergent strabismus I shall discuss later and compare and contrast Donders' accommodation theory with the fusion theory of Worth.

III. FUSION THEORY

In 1903, Worth, in his book on squint, advanced the theory of a defect in the fusion faculty as the essential cause of squint (convergent). Worth states that the eyes are controlled at birth and a few months thereafter by the motor coordination alone, which serves to keep the eyes approximately straight in the absence of any disturbing influence. By the sixth month the fusion center begins to develop and by the end of the sixth year is fairly developed. Worth says further that "when the fusion faculty is fairly well developed neither hypermetropia or anisometropia or heterophoria can cause squint. In fact, then nothing but an actual muscular paralysis can cause an eye to deviate."

In support of his theory Worth cites many cases of squint in which he was able to get the patient early enough, in both years and time of onset; by training the fusion faculty he prevented amblyopia and brought about a cure of squint. In contrast to this class of cases he cites the cases coming under observation late in years as to the onset of the squint, in which the vision in the squinting eye was practically lost and the fusion faculty but very poorly developed, or quite lost, and in which no amount of exclusion of the fixing eye and training of the fusion faculty could prevent or cure the squint. As still further evidence and support of his theory he reports the cases, in the family of a squinter, of younger brothers and sisters whom he had the opportunity to examine as to their fusion faculty. In all cases in which the fusion faculty was well developed (106 cases) not a single case of squint occurred, but in those cases with "doubtful" fusion sense (thirty-seven) six squinted later, while in fourteen cases with fusion faculty very deficient eight afterward squinted constantly, and one other occasionally.

As contributing causes of squint Worth gives first rank to hypermetropia, and fully recognizes the influence it exerts in causing squint, but mostly as a contributing cause.

Other factors as contributing causes are mentioned as anisometropia, congenital amblyopia, esophoria, specific fevers, violent mental disturbances, hereditary influences and, in divergent squint, exophoria.

COMPARISON OF DONDERS' ACCOMMODATION THEORY WITH WORTH'S FUSION THEORY

It may be stated at the outset that neither theory accounts satisfactorily for all cases of concomitant squint (manifest and latent); in fact, both theories combined fail to solve the question in some cases, when some of the contributing factors as above enumerated may be called into play as accessory to it.

In passing it may be said that the muscle theory has been almost universally abandoned, hence I shall not refer to it further.

DONDERS' THEORY

That excessive action of the ciliary muscle can produce dynamic convergence even in the emmetropic eye was long since demonstrated by Donders. By placing a negative lens in front of one eye and screening the other, and having the patient look at a distant object, the hidden eye was shown to converge when the open eye looked through the negative glass, the tension of accommodation in the uncovered eye looking through the negative glass being manifest through an excessive action of convergence in the eye that was screened. Also in hypermetropia, which requires an excess of accommodation relative to the convergence, there is produced a tendency to convergence in such eyes. Especially is this tendency to converge liable to be manifested if one eye is more hypermetropic than the other and for any reason the visual acuity is reduced more than in the fellow eye, because in such instances the secondary image can be very easily suppressed and the eye converged without causing annoying diplopia. Not only may it be demonstrated that tension of the accommodation, even by a negative glass, in cases of emmetropia, may cause convergence, but we have it proved in clinical experience now and then. For instance in cases of anisometropia in which there is a high degree of myopia in one eye and hypermetropia in the other, the myopic eye converges at times, and this convergence may be entirely relieved by placing the proper correction on the hypermetropic eye. I have had this occur in two instances. Krusius[1] in a recent paper on divergent strabismus in hypermetropia and the effect of mydriasis on it strikingly showed the effect of changes in the accommodation in producing or relieving squint. In one case he found, on instilling atropin into the left eye, that the squint in the right eye was relieved, but again became manifest when correction of the hypermetropia in the left eye was made. He attributed the effect of the correction of the squint in the right eye by atropin in the left to a strong impulse in the left eye to overcome the hypermetropia, which was transferred to the right eye as an associated motor movement, thus correcting the squint. This seemed to be borne out by the fact that when the use of atropin was discontinued in the left eye and the ciliary muscle could act, the right eye again diverged. Another case along the same line is that reported by W. Wesselberg.[2]

> A man of 25 showed voluntary inward rotation of the left eye while the other remained in the primary position; the right eye + 1 D., vision = 5/5. Left eye + 1.25 D., vision = 5/12. The voluntary squint was associated with accommodation of 4 to 5 D. and a — 4 D. was required for clear distinct vision of the right eye at such times, while squint did not take place in the right eye when it was used for reading, with + 4 D. glass.

It is often asked (and Worth dwells on this point) if hypermetropia causes squint why it is that not all hypermetropes squint? The reason is, as Donders pointed out, that, while the association between the accommodation and convergence is a close one, it is not a cast-iron fixed one. There is a certain latitude or amplitude, a dissociation, if you please, between the two; for example, a hypermetrope of 2 D. can exercise 2 D. of accommodation to correct static refraction when looking at a distant object and yet see it singly, though exercising no convergence whatever, or again when looking at an object 0.25 meter (10 inches) away can exercise 6 D.

---

1. Krusius: Arch. f. Augenh., lx, 272.
2. Wesselberg, W.: Abstr. in Arch. f. Augenh. (Knapp's), 1908, p. 166.

of accommodation and only 4 meter angles of convergence, and yet see the object distinctly and singly. If this were not so, everyone, except emmetropes, would be doomed either to squint or to see indistinctly. The extent to which accommodation and convergence can dissociate themselves in cases of ametropia has its limits, however, and, sooner or later, the subject must choose either indistinct but single vision in both eyes or distinct vision in one eye and convergence or divergence of the other.

The fact that the average degree of hyermetropia furnishes the highest number of cases of squint is not surprising either, for, as explained by many observers, the striving for both distinct and single vision is greater in such cases than in the cases of very high degrees of hypermetropia in which no amount of striving serves to secure enough accommodation to maintain distinct vision, so that the effort is abandoned and hence follows no excess of convergence or squint. Worth and others deny this and Worth gives statistics and tables to prove that the degree of refractive error has very little to do with the question of whether the patient shall or shall not squint in the first instance. He admits, however, that when the squint is once established the refractive error becomes a very important factor. Worth further states that moderate degrees of hypermetropia are more common than high, which of course is well known, but the same thing obtains in both squinters and nonsquinters, and in fact is about the same; but he admits that most of the non-squinters who sought advice did so on account of headaches or visual defects. Why not admit, then, that those with moderate degrees of hypermetropia who did squint did so in order to escape headaches and indistinct vision by the act of squinting; that is, they sacrificed indistinct single binocular vision to comfortable clear vision with one eye? In fact, that is what really happens, as Donders asserts. We in America long ago realized the fact that patients with moderate degrees of error of refraction, especially when astigmatism is complicating, show more asthenopic symptoms than patients with very high degrees of error. The vast majority of hypermetropes who neither squint nor seek aid on account of asthenopic symptoms or faulty vision, have learned to associate their eyes in single binocular vision with comfort, though there is a disproportion in the accommodation and convergence. Another point often overlooked or forgotten is that, as Donders pointed out long ago, the amplitude of accommodation is greater for the same degree of convergence in hypermetropia than it is in emmetropia, and that this amplitude of accommodation is less in myopia than in emmetropia; and this again may account for some of these hypermetropes not squinting so readily, as the amplitude of accommodation comes in to save them from it. As Landolt[3] remarks:

> It would be putting a slight on Nature to assume that, incapable of creating only emmetropies, she had coupled accommodation and convergence in such a way that, instead of rendering the vision more perfect they would act only to disturb it. It may therefore be taken for granted, that in considering their intimate association the two functions must be independent of one another to a certain degree.

In turn, relative to the fusion theory of squint, it might be asked why every human being does not squint, soon after birth, if the straightness of the eyes depends on the fusion sense, since no fusion center then exists? Worth answers this question by stating that motor coordination powers of the ocular muscles serve to keep the eyes approximately straight until the fusion center begins to develop, and when this is fairly well-developed, he asserts, that nothing short of a paralysis can cause an eye to squint. Why may we not invoke the same agency, the motor coordination power, to account for the vast majority of hypermetropic eyes remaining straight?

In my opinion, for lack of a better explanation, we must give the inherent desire for single binocular vision in the human being as the stimulating force over the muscular coordinating powers, as a strong contributing factor in keeping the eyes parallel, certainly until the child is six months to one year of age, when there is no marked association between accommodation and convergence or any fusion center developed.

DIVERGENT SQUINT

As to the cause of divergent squint, invoking the accommodation and fusion theories to account for it, I shall give first Donders' own words on this subject:

> It is commonly the custom to apply the term squint exclusively to the absolute form. In this sense it is less frequent than strabismus convergens. And if, nevertheless, a certain number of cases, about equal to that in strabismus convergens, is to be explained by primary disturbance of the muscles (paralysis, inflammation, spasm, complicating congenital anomalies, etc., a blind eye also often deviates outward), myopia cannot occupy the same prominent position as an etiological element, that hypermetropia does in reference to strabismus convergens; nevertheless, in about two thirds of the cases of *absolute* diverging strabismus, myopia was met with. But, if, on the other hand, we take relative diverging strabismus also into account, the diverging form is as frequent, if not more frequent than the converging; and now, moreover, the extraordinary causes, originally proceeding from the muscles or from blindness in one eye, fall into the background; therefore in at least 90 per cent. of the cases of *relative* diverging strabismus we find myopia.[4]

We see here that Donders takes into account not only the absolute (static) divergent cases which form a minority of the cases in myopia, but the relative (dynamic) cases of divergent squint, in which myopia is found in at least 90 per cent. of the cases. Furthermore, including the relative (dynamic) form of divergence with the absolute (static) form, they are more frequent than convergent squint. In myopia the accommodation is relaxed and indirectly the convergence is relaxed, and a tendency to divergence is established, dynamic or relative at first, but in the cases of progressive myopia this divergence often becomes absolute or static.

As is well recognized, other factors than that of accommodation enter into the etiology of divergent squint and Donders called attention to these; first, an original preponderance of the external recti muscles; second, smallness of the angle alpha; third the favorable form of the eye for outward movement.

Worth's fusion theory fails utterly to explain divergent strabismus, because divergent squint in myopia, as a rule, does not develop until between the seventh and twelfth years, when the fusion sense has been developed fully. Hence the divergent squint develops in spite of and in the presence of a fully developed fusion center. Worth gives such cases as apparent exceptions to his rule. If we take into account, however, the relative cases of divergent squint, they are very numerous, as Donders long since pointed out. In fact, this is the weak point in Worth's theory of a defect of the fusion sense as the fundamental cause of squint.

---

[3] Landolt: Refraction and Accommodation of the Eye, p. 199.

[4] Donders: Accommodation and Refraction of the Eye, p. 409.

ALTERNATING SQUINT

Although Donders did not attempt to account for alternating squint by the accommodation theory, this theory, in my opinion, may have some bearing on the squint, as will be shown later. Worth asserts that the fusion theory is the only one to explain these cases, and that in these cases there is a congenital absence of the fusion center. He states that the muscle theory can not explain it at all as there is no motor defect; and that hypermetropia can not cause it, as there is usually little refractive error.

I am aware of the fact that many of these cases have but little refractive error, the eyes being almost emmetropic or even, in some cases, myopic. The question, however, of what we call a little refractive error is a relative one. Worth[5] considers a hypermetropia of 1.75 D as insignificant, and a case in which glasses could be dispensed with. He also considers 0.5 D of astigmatism as normal. We, in America, correct much smaller errors of refraction than 1.75 D hypermetropia; also less than 0.50 D of astigmatism. It is significant, too, the number of cases of alternating squint that have hypermetropia in smaller or greater amount. In 229 cases reported by Worth himself, 196 had more than 1 D in the lowest meridian of one eye; and 176 of these 196 cases had 2 to 6 D, and the remaining 20 even higher degrees of hypermetropia up to 10 D. In looking over my case-books I find the vast majority of these alternating squinters had hypermetropia and that the squint was almost without exception convergent. May it not be that, in a certain number of these cases at least, the convergence and accommodation stood in a causal relation? If not, why should the eyes so often converge rather than diverge in alternating squint.

INSUFFICIENCIES, HETEROPHORIA AND LATENT SQUINT

Donders' accommodation theory accounts in a logical way for these. Worth's theory of fusion accounts for them not at all; in fact he asserts that latent squint and manifest deviations have an entirely different pathology, and that, while manifest deviations are due to a faulty fusion center, latent deviation, heterophoria, is essentially a motor anomaly. I do not subscribe to this doctrine at all. In my opinion latent muscular insufficiencies, in the main, have the same underlying cause as the manifest and in fact often become manifest. It is begging the question to say that where the latent divergence becomes manifest it is due to a defect in the fusion faculty, but not otherwise.

In order to reconcile and harmonize the two theories of squint, "accommodation" and "fusion," and to show that they are necessary one to the other in accounting for the complex of symptoms—loss of binocular vision, more or less complete; amblyopia, greater or lesser in the deviating eye; deviation of the visual axes; and suppression of the image in one eye—it is well to look at squint from a double viewpoint—the psychical and the physical.

The accommodation theory, while it gives to the fusion sense a secondary position, emphasizes the physical side of the squint; for example, (1) errors of refraction, especially in cases in which that error is greater in one eye than in the other, (2) opacities in the refractive media or lesions of the fundus enfeebling the sight in one eye, (3) the variation in the angle of the visual line to the corneal optic axis of the eye—the angle alpha of Donders, or gamma of Landolt and later writers; (4) paresis of accommodation; (5) length of the eyeball; (6) anatomic defects in the structure or insertion of the straight muscles, etc.

The fusion theory emphasizes the psychic phase of squint; for example, (1) faulty development of the fusion sense, or the power to fuse the images of the two eyes into one, with the resultant loss of binocular vision; (2) the psychic phenomenon of suppression of the image of one eye, especially liable to occur when the vision in said eye is reduced from any cause, (this, however, may occur when the vision is perfect in each eye, when the fusion sense is supposed to be congenitally absent).

Since Donders' time the physical phase of squint has been well understood and treatment has been applied in a more or less rational way to relieve the symptoms. For example, the error of refraction has been corrected; cycloplegics have been used, though unfortunately most of them in an incorrect way (that is, in both eyes at the same time, for a long period); and operations have been performed for placing the visual axes parallel. Furthermore, for a great number of years the absence of binocular vision has been recognized as a great factor in causing and maintaining squint, and various methods to remove the cause were devised and used in a more or less satisfactory way. We owe much to Landolt, Priestly Smith, Javal and others for their work on strabismus; especially are we indebted to Javal for his teachings on the value of orthoptic exercises; that is, the use of the occlusion pad and the various stereoscopic exercises. In later years great credit must be given to Worth for his recognition of the great part the fusion sense played in the production of squint, and the importance he gave to it in treatment. He asserts, and justly so, that it is of supreme importance to treat such patients very early and during the development period of the fusion sense, between the ages of 3 and 5 years, if we are to prevent amblyopia in the squinting eye and maintain the eyes parallel. His advice is to begin the treatment of squint as soon as it appears; to use atropin in one eye only, the fixing eye, after the glasses have been prescribed, and to operate for the squint at any age, when the angle of deviation ceases to improve under orthoptic treatment. This is eminently sound advice and has done much to clear up this difficult question.

TREATMENT

The methods and measures used in the treatment of squint may be best considered under two general headings; first, non-operative or orthoptic treatment; second, surgical treatment.

NON-OPERATIVE OR ORTHOPTIC TREATMENT

The different measures of this line of treatment may be considered under the following headings: (1) correction of the error of refraction; (2) use of the occlusion pad; (3) the use of cycloplegics in the fixing eye; (4) stereoscopic exercises for training the fusion sense.

Correction of the Refractive Error

In all cases of squint the refractive error should be corrected under the influence of cycloplegics. If hypermetropia or hypermetropic astigmatism is present, as is most frequently the case in convergent squint, the astigmatism should be corrected in full, but not the hypermetropia. With very few exceptions, I have made a reduction of 25 to 1 D from the total of hypermetropia, depending on the amount of the total hypermetropia. In small degrees I reduce only 25 D; in the higher a larger amount up to 1 D.

---

[5] Worth, Squint, 1903, p. 114.

Most text-books direct that full correction be given in these cases. Worth's book is the one exception. Like Worth, I have found that full correction of the hypermetropia, by dimming the vision for the distance, exerts a bad influence on the squint itself, in fact, simply serves to increase the defect; for this reason I have long since ceased giving full correction of the hypermetropia in squint cases.

In cases of antimetropia the hyperopic eye should be corrected as in the cases in which both eyes are hyperopic, while the myopic eye should have full correction, if there is a small or moderate degree of myopia, and almost full in high amounts. If the vision in the myopic eye is very poor, not owing to refractive errors, a plain glass should be given for this eye. By simply correcting the hyperopia a convergent squint in the myopic eye is sometimes relieved. I have some such cases in my case-books.

The questions, first as to the age of the patient when glasses should be given, and second, the length of time after the onset of the squint, are still matters of much discussion among the profession. Worth asserts that no infant is too young to wear glasses should they be required, and he reports cases in which he has fitted spectacles on patients of the tender age of 4 and 5 months. I have never prescribed a pair of glasses for a child under 18 months of age. Like the great majority of my confrères I have deferred giving glasses to infants, depending on the use of the occlusion pad, and atropin in the fixing eye only, to hold the vision in the deviating eye until the patient was old enough, say 2 years old, to have glasses. In private practice parents strongly object to having glasses placed on an infant's eyes, and I have found it difficult to have glasses ordered at 2 years of age. In hospital practice patients are rarely ever brought to us before that age, and even here the American parents refuse to have glasses placed on infants. When glasses are ordered they should be for constant wear.

Use of the Occlusion Pad and Cycloplegics

In infants the occlusion pad may be applied to the fixing eye and held in position by a bandage. This is kept on during the day and removed at night. In older children the pad may be held in place by adhesive tape. This treatment is kept up for three or four weeks, when it should be discontinued and atropin 0.5 per cent. solution, instilled into the eye every morning. By paralyzing the accommodation in this eye, often the other eye will be used to fix with, first for near objects, then for distant, after a few days or weeks treatment. Then the atropin should be left out of the better eye for a week or two to see if the child will not use the eyes together. If the squint returns in the original eye, atropin must be instilled again into the fixing eye, until the other eye is used. This alternating of the squint from one eye to the other can be kept up by the use of the atropin in the fixing eye only until the patient is old enough to have glasses. In older children, whose vision can be tested by some method, as the ivory balls recommended by Worth, the occlusion pad is kept on the fixing eye from two to six weeks, when it is removed. If the vision in the originally squinting eye is not too poor, not less than 20/100, atropin may be used in the fixing eye. This is kept up until the patient can fix with the squinting eye. At first the patient fixes with the originally squinting eye for the near point, and with the atropinized (original fixing) eye for the distant point. After a few weeks the patient will fix both for the near and the distant point with the originally squinting eye, and squint all the while with the originally fixing eye. The patient, of course, is wearing glasses which correct the refractive error. After we have succeeded in making the patient fix for all distances with the squinting eye for some weeks, the atropin should be left out of the originally fixing eye. If the originally fixing eye continues to squint after the atropin has been removed from it, it may be necessary even to put atropin for a few days in the originally squinting eye, which now is the fixing one. We thus keep up the alternation of squint, by the use of the atropin, first in one eye and then in the other, in order to develop the vision and fixation in each eye and to place the patient in condition for the fusion treatment

Stereoscopic Exercises

Once we are able to use the stereoscope and to develop binocular vision in these little patients, especially to develop the fusion sense to the second or third degree—that is dimensions in the third degree—we have brought to bear a most powerful influence, the fusion sense, to correct the deviation and also to maintain the eyes parallel.

We are indebted to Javal for the first minute directions in stereoscopic exercises. Since his day there have been many others who have written much on this subject and devised many stereoscopes. Worth lays great stress on these exercises and asserts with Landolt and others, and justly so, I think—that they are of supreme importance in the cure of squint. The earlier begun the more efficacious they are, because the fusion sense is developed by the end of the sixth year, and to be of the best service these exercises must be begun and practiced between the age of 3 and 5, when the result is both satisfactory and brilliant. When undertaken after this age the result is slow to come and not very satisfactory, as the fusion sense is never able to be restored fully and binocular single vision seldom develops in the highest degree. There have been a few cases reported, however, in which binocular vision has been obtained long after 6 years of age. In cases of essential alternating squint these exercises are of little or no value, as the patient cannot be made to fuse the images, although in alternating squint the vision is perfect in each eye. Hence it is useless to waste time in trying stereoscopic exercises on such patients. Nor are these stereoscopic exercises of much value in cases of neuropathic squint.

In congenital squint stereoscopic exercises are of no use whatsoever. And, as pointed by our Chairman, Dr. Posey, in a paper[8] read before this Section three years ago, from the standpoint of treatment, the necessity of an early differential diagnosis between congenital and concommitant squint cannot be insisted on too strongly, for each manifestly demands different measures for its correction. Nothing but operative measures are of avail in congenital squint, hence the folly of subjecting these cases to amblyopic exercises.

OPERATIVE TREATMENT

Convergent Squint

In half to two thirds of the cases, convergent squint is not relieved by orthoptic or non-operative measures. The time to operate, both as regards the age of the patient and the onset of the squint, has been and always will be, I suppose, a matter of opinion of each surgeon.

---

[8] Posey, W. A.: Congenital Squint, The Journal A. M. A., Oct. 26, 1907, xlix, 1128.

The general consensus of opinion is, I believe, toward early operative interference.

1. As to the length of time after the onset, I believe it is a good plan to operate just as soon as the angle of the squint ceases to improve with the orthoptic measures. Nothing is to be gained by waiting after this; in fact, much is to be lost. By surgical interference the eyes can be put relatively straight, when stereoscopic exercises can be used to greater advantage and often a complete cure results.

2. As to the age of the patient, rarely indeed will one be called on to operate on a child under 2 years of age, and seldom at that tender age. Orthoptic exercises as a rule suffice, up to the age of 3, at which time, or shortly after, stereoscopic exercises for fusion training can be brought into use, being followed by the operation when that shall be necessary. Occasionally in constant unilateral squint which does not improve, where there is false fixation, operation should be performed at 2 years of age, or even younger.

What shall the operation be, advancement or tenotomy? Here again opinion varies widely. Landolt for many years has advocated and practiced advancement almost to the exclusion of tenotomy, and he has many followers. He asserts that, (1) by advancement he strengthens the muscles operated on, while by tenotomy the muscles operated on are weakened; (2) the eye is thereby placed in a better position—that is deeper in the muscle funnel and for that reason the muscles can act more powerfully; and that the fields of fixation are actually widened in each direction, while in tenotomy just the opposite conditions prevail because of the weakening of the muscles and the unfavorable position by the dropping forward of the eye following the tenotomy; (3) in advancement no sinking of the caruncle occurs as in the case of tenotomy; (4) in advancement there is no overeffect with deformity, as often happens after tenotomy; (5) by advancement the check ligament assists the action of the muscle operated on, while in tenotomy the muscle is liable to retract far back on the globe of the eye, and the check ligament actually diminishes the action of the muscle itself.

Only in certain cases of insufficiency of the convergence and vertical deviations and in combination with the advancement operation in high degrees of squint, does he sanction or perform a tenotomy.

Tenotomy, however, has many advocates; in the first place, perhaps, because of the ease with which it can be performed; secondly, because it usually can be performed under local anesthesia; thirdly, because the patient does not have to remain in the hospital but a day or two; fourthly, if properly performed, there is but little danger of overcorrection and no sinking of the caruncle to speak of, or noticeable proptosis; fifthly, if an overcorrection does obtain the graver operation (advancement) can be done last and not first.

There are three classes of advancement operation: (1) freeing the tendon of the muscle and advancing same near the margin of the cornea, with or without resection of the tendon; (2) freeing the tendon, resecting it and reattaching it to the original insertion; (3) folding or tucking the tendon without freeing it.

Of these three operations I prefer the first, especially in high degrees of squint. I practice what is termed the capsular advancement operation. The conjunctiva and capsule of Tenon are advanced with the muscle and loop sutures are used to prevent cutting and slipping from the tendon of the muscle. The sutures near the cornea are deep enough in the sclera to hold firmly.

I never resect the tendon of the muscle as far back as the belly of the muscle. In other words, I leave part of the tendon to secure the muscle fibers together. Once the muscle tissue proper is cut into the muscle fibers pull apart into inequal bunches and atrophy to a certain extent and lack uniform action as a whole. It is the same as if we cut the end of a rope which had been plaited together and turned all the fibers loose, when we cut back into the belly of the muscle. It is bad surgery and very undesirable in my opinion. If enough effect cannot be obtained by double advancement without cutting into the belly of the muscle, then tenotomy of the opposite muscles should be performed. In the resection operation with reattachment at the original insertion to secure enough effect, resection must be made into the belly of the muscle, which, as just stated, is objectionable, and, besides, in these operations, we too often have under-effect and must resort to a tenotomy finally to get sufficient results.

The knuckling, or pseudo-advancement operation, in my opinion should be abolished altogether, except for insufficiencies. It is unsightly, not effective, and, without exception, tenotomies of the opposing muscles must be performed later, to secure sufficient effect.

Of all the methods of tenotomy I prefer that performed by Panas in which the muscle is stretched before the tendon is cut. By this simple procedure several of the objections to tenotomy have been removed. First, by stretching the muscle it is lengthened and temporarily paralyzed. This serves a double purpose. It prevents the retraction of the muscle too far back on the globe and accelerates healing by allowing the muscle to lie quiet against the globe through the temporary paralysis of the muscle. Furthermore, by its attachment further forward on the globe it indirectly decreases the liability of an over-effect which sometimes follows a simple tenotomy. No tenotomy should, in my opinion, be performed without the muscle having first been stretched. This stretching can be performed under a local anesthesia and with but slight pain. Following this stretching operation the converging power, in my experience, has not been greatly weakened. In those cases in which there is excessive weakness or there is an over-effect, advancement of the same muscle may be performed later, but this is very exceptional in my practice.

As to the sinking of the caruncle, this does not follow at all if the incision in the conjunctiva and capsule is made properly, that is horizontally with the tendon of the muscle. What wonder that there is sinking of the caruncle when we have the incision made according to the following directions in a recent leading text-book on squint!

> With the forceps pick up the conjunctiva over the insertion of the tendon, then, with the scissors, make an incision about one third of an inch long in a direction at *right angles* to that of the tendon. It is not *necessary* or *advisable* to suture the conjunctiva unless the conjunctival incision is unusually long. [Italics mine.—A. E. D.]

It is unnecessary to state, I suppose, that after any operative procedure for squint, stereoscopic exercises should be practiced for a while to complete the cure and to reestablish single binocular vision, if that be possible.

As to our choice in the nature of the operation to be performed, advancement or tenotomy, we should be guided by the character of the squint and the effect to be obtained. Undoubtedly in the last few years the pendulum has been slowly swinging in the direction of the advancement operation in preference to tenotomy. I do not think, however, that we should be wedded to one operation alone, either advancement or tenotomy, but should practice that operation which promises to give the best result. In convergent squint of low degree, advancement should be performed in most cases, while in moderate and high degrees the stretching (Panas) operation is preferable. If enough effect is not secured advancement can be performed subsequently. In divergent squint of myopia I now invariably perform an advancement operation on the low and medium degrees; and combine it with tenotomy in the high degrees.

Some operators[9] advise that operative measures should be directed to the internal recti muscles alone, as convergence is the function at fault in all cases of lateral squint. But this I do not consider a good practice, since, in my opinion, it is founded on a mistaken etiology of squint.

One authority, Bettremieux,[10] asserts that the fixing eye should be operated on first, and the deviating eye later, if necessary. This is bad advice in two ways; first, but one eye at a time is operated on; second, most patients, especially private, would seriously object to it.

Since, squint is a binocular affection, with very few exceptions, the two eyes should be operated on at the same time.

50 West Thirty-seventh Street.

ABSTRACT OF DISCUSSION

Dr. Nelson M. Black, Milwaukee, Wis.: It would seem from the foregoing papers that none of the theories advanced can alone completely cover the etiology of squint, and that there is a marked interdependence of the Donders theory of associated hypermetropia and convergence with the Worth theory of non-development of the fusion faculty. The return of a squint in patients who have recovered perfect fusion with parallelism of the visual axes the instant their glasses are removed would tend further to indicate the relationship of one theory with another. My own experience in stimulating accommodation by use of excessive converging power, and, *vice versa*, the effect on convergence by using accommodation is that with a — 6.00 D lens before each eye, a card 10 by 20 cm., having a 6/VI line on it, is an oval white blur against a black velvet background at 6 m. distance. By strongly exerting my converging power, I can easily read the letters with either eye. When fixing with the right eye (in which vision is a little the better), there is a suppression of the vision of the left eye, and *vice versa*. The instant an effort to include both cards in the field is made there is an almost irresistible desire to fuse them. Repeating the process with one eye closed, the card appears as the same oval blur, then gradually the letters appear sharp and clear. On opening the closed eye, the cards are practically the same distance apart as in the first experiment. With the first test, however, there is a decided physical effort, probably that of convergence; while with the latter there is no appreciable effort, the eye gradually accommodates for the letters, and on opening the fellow eye the effect of the convergence is there. It is impossible in the first experiment with both eyes open to obtain any improvement in vision without making the effort to converge. From these experiments it seems to me that both the accommodation-convergence theory and the fusion theory have to be taken into consideration in the production of squint.

In these experiments clear vision was not obtained until either convergence or accommodation was exerted, resulting in a loss of fusion with a marked homonomous diplopia, and an almost complete suppression of the vision of the non fixing eye. So, if there exists in a given case a certain degree of hypermetropia, and especially if one eye has better vision than the other, there is no chance for the fusion faculty to develop until the vision is corrected. The fusion faculty would have developed in all probability and have kept the visual axes parallel had it not been for the burden of accommodation it was necessary to exert.

We must give credit to Worth for having at least, through his fusion theory, developed the most rational method for treatment of concomitant internal strabismus. It is useless to attempt development of the fusion without the eyes under a cycloplegic, or the error of refraction corrected so that each eye will as nearly as possible send similar impulses to the fusion center. Again, the clinical results obtained by the various methods of developing the fusion faculty after correcting the errors of retraction have been such that no one at the present time would attempt to operate on the eyes of a child under 6 or 7 years of age with concomitant squint, without first finding out what change, if any, would be brought about by attempts to develop the fusion faculty—this, of course, together with the use of atropin in, or occlusion of, the fixing eye.

That it is futile to attempt orthoptic exercises in true alternating squint and in the squint of congenital amblyopia is absolutely true. We should, however, endeavor to be positive that we are dealing with these varieties before giving up orthoptic treatment. In the use of the amblyoscope and the different stereoscopic exercises it has been my experience that too frequent use of these exercises has not given the best results, for the reason that the child becomes tired of them if it has to go through them daily, and will not give its cooperation, which is very essential. Children soon learn what is required and will say that they see what is wanted of them as a result of suggestion. The best results have been obtained by having the little patients come to the office once or twice a month, or less frequently, as their interest in the game wanes, stopping immediately for a longer period if they show a lack of interest. While not by any means corrective in the sense of a cure of squint in older individuals, it has been my experience that binocular single vision and fusion has been obtained much more easily and quickly after operative measures by first teaching the patient what binocular single vision and fusion really are by means of exercises with the amblyoscope before operation.

Dr. W. Reber, Philadelphia: If Worth had insisted on our general acceptation of the dictum of a fusion faculty he would have had most of us with him all the way through; for that there is a fusion faculty in the majority of human individuals no one can deny; but whether there is or is not a fusion center is a presumption; it cannot be an assumption. Nevertheless, Worth's theory is the only theory that remains to us for any kind of an explanation of those cases (of which I have three) in children under six with very low myopic astigmatism and convergent strabismus. Donders' theory in the majority of cases is a good working theory, but it fails utterly in alternating ametropes who squint, and in myopic children who show convergent strabismus. There is something not yet explained in that complex automatic function which we so loosely call binocular vision. I believe with Dr Posey that there is much in anatomic peculiarities, whether of the build of the muscle, of the insertion of the muscle or of orbital build in children with alternating strabismus. I believe that the combined theory, which will take account of Donders' theory, of Worth's fusion faculty and of the anatomic possibilities, will account for practically all cases except congenital palsies. I am convinced more and more every day that these last named cases are more frequent than we have supposed. Heredity counts; it was traceable in 50 per cent. of a series of cases which I presented to the Pennsylvania State Medical Society six years ago. Amblyopia is a loose term. What is amblyopia? Shall it mean 5/40 or 5/15 or 5/20? As to obstetric injuries, Wolf and von Sicherer showed that of 100 children examined, 40 per cent. revealed some grade of retinal hemorrhage within three to ten days after birth. Consider the possibility of interruption to the development of binocular vision from this cause.

Dr. G. C. Savage, Nashville, Tenn.: Eyes with common brain-cell connection, and endowed with muscle equilibrium will never squint. Eyes with common brain cell connection, but wanting in muscle equilibrium, will squint whenever op portunity offers. I thoroughly believe in Donders' theory as to hyperopia being a cause of internal squint. Put the glasses on in some cases and the eyes swing straight; raise them, and they cross.

---

[9] Ferri, L.: Ann. di Ott., 1909, xxxviii, No. 5; Ophthalmoscope, January, 1910.

[10] Bettremieux: Clin. Ophth., Oct. 10, 1907.

Dr. Davis has given credit to foreigners for practically everything he has said. To Americans the credit is due for the operative procedures that are worth while in the treatment of squint. Much credit to Worth for his teachings concerning the orthoptic treatment! All credit to Donders for bringing out his theory, which is correct, but only one factor. But all the operative procedures worth while have been carried out first in America and by Americans. The only advancement operation that is worth considering—the flat advancement operations, without cutting the tendon—was devised by an American, Lagleize, whom no one here has ever seen. All others pale into insignificance. To Stevens, of New York, is due the credit of turning men by degrees from complete tenotomy. Partial tenotomy associated with the Lagleize operation, if the latter does not straighten the eye, is the ideal tenotomy. The shortening operation, condemned by Dr. Davis, because he doesn't know it better, is the best operation. I am proud of it, because so many men in the United States want to claim it. The shortening operation is the ideal operation, and is safer and better than the Lagleize operation in the degrees of squint that do not demand the advancement operation. Do you want to know who devised it? "Ask the wild waves," and the answer will come back, "Savage."

Dr. Lucien Howe, Buffalo, N. Y.: We misunderstand each other and have such widely divergent views because of the terms we use. The first thing we need to appreciate is the vagueness of the term "squint." That may mean simply a deviation inward or outward. We also use the word "strabismus" without qualification and only understand that the eye turns in or out. Suppose we say convergent or divergent strabismus, or esotropia or exotropia. What does that mean? It indicates the direction in which the eye turns, but that is all. I think that the time is not far distant when we must go a step further and ask whether the eye turns in because of excessive action of the adductors, or because of insufficient action of the abductors; whether it is an active or a passive esotropia. I used to think that every case of turning in was simply excessive action of the abductors. But I have learned to take more time to study the cases before making a diagnosis. We should study such cases, not simply under atropin to obtain the refraction, but as to the excursion which the eye makes as seen by some form of the tropometer, or, still better, to ascertain the lifting power with an arrangement I showed last year; or, in difficult and important cases, it may even be worth while to photograph the swing of the globe. When we take the time to study our cases patiently and carefully and to make exact diagnoses, then and not till then shall you and I know what we are talking about. We shall know then whether, in a given case, for example, we are dealing with an active esotropia or a passive esotropia. That will also answer the question whether in that case we should make tenotomy or advancement.

Dr. W. Zentmayer, Philadelphia: Dr. Black spoke of the fusion faculty in his own experiments. It seems to me we must make a distinction between the motor fusion faculty and the cerebral fusion faculty, and I have taken it for granted, although Worth is not entirely clear in this matter, that he intended to convey that a cerebral fusion faculty is at fault. In regard to Dr. Reber's cases of heredity, I would like to ask him whether the heredity factor was not the high degree of hyperopia. I also do not believe that Worth refers to a fusion center, but to a fusion sense. In regard to [illegible] having convergent squint I believe the other causes of squint will clear this up without referring them to the [illegible] of fusion faculty failure.

Dr. A. E. Davis, New York: In my paper I have said that it requires both theories (Donders' and Worth's) to account for all cases of squint, and I think it does without any question. Perhaps that is why Worth was looking around to find some of these exceptional cases that his theory would fit, as Dr. Zentmayer has just said. I wanted to give a reason to [illegible] for the general mass of cases. We have had all the other contributing causes in our experience which I have mentioned in my paper—false attachment of the muscles and other causes. As to giving credit to any nation or man or set of men, I think that science should be wide as the universe itself. I certainly did not want to quote foreigners exclusively—to be pedantic—but we cannot go back on our master, Donders. It is amazing how few advances in refraction we have had since Donders. He even used the ophthalmometer and made accurate measurements. We have advanced very little, so far as refraction is concerned, since his time. As to alternating squints, it is significant that a great number of cases can be accounted for by the accommodation theory; that is, if one will take the trouble to look over one's case book, one will find that perhaps 90 per cent. are hypermetropic. The tests in alternating squint show almost without exception that it is a convergent squint. Worth insists that this form of squint is due to the fusion faculty being at fault. I think he is mistaken in that. I do wish, however, to give Worth credit for his insistence on the early treatment of squint, the use of atropin in one eye alone, and not giving full correction of the spherical part of the error of refraction in such cases. I think he is right in all three instances.

CLASSIFICATION OF APPENDICITIS

AND THE RELATION OF CHRONIC APPENDICITIS TO OBLITERATION OF THE LUMEN, CARCINOMA AND DISTURBANCES IN THE GASTRO-HEPATICO-DUODENO-PANCREATIC PHYSIOLOGIC SYSTEM *

WILLIAM CARPENTER MacCARTY, M.D.
Associate Pathologist, St. Mary's Hospital
ROCHESTER, MINN.

The enormous amount of literature and the unsatisfactory discussions which have been evoked by the appendix, the numerous and varied classifications of inflammation in this anatomic vestige, the attempt to fit pathologic classifications of the subject to the clinical groups of cases and the varying opinions as to whether or not obliteration occurs as a physiologic involution or as the result of inflammatory reaction, and whether or not there is any etiologic relationship between the appendix and conditions in the stomach, duodenum and bile passages, have been the stimuli for this extensive investigation of such a common subject.

The object was not to combat any pathologic or clinical classification of the condition or theory of obliteration, but to confirm or disprove; to consider the subject in such a manner that the clinician and pathologist might better understand each other, and to bring to both a more intimate consideration of processes in nature rather than dogmatic ideas of pathology and clinical medicine.

The material consists of the appendices removed by Drs. W. J. and C. H. Mayo and E. S. Judd in St. Mary's Hospital, Rochester, Minn. The cases were taken in order of removal during the years 1906, 1907, 1908 and 1909. They were studied in three groups, namely: (1) appendices removed for appendicitis alone, (2) appendices removed during operation for other conditions in the abdomen, and (3) appendices removed from patients operated on for cholecystitis and cholelithiasis.

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

* A report on the pathologic examination of 5,000 specimens with a comparative study of the pathology and the clinical histories in 2,000 cases. The monograph of which this is an abstract will appear later.

In only 2,000 of the cases were the histories examined and compared with the pathologic findings. Of these 1,005 specimens were removed for appendicitis alone and 995 in conjunction with other conditions, such as fibroids of the uterus, carcinoma of the uterus, ovarian cysts, retroverted uteri, hernia, cholecystitis, "pyloric spasm," duodenal and gastric ulcers, etc.

In 5,000 cases, including the 2,000 with the histories, the specimens were examined especially with the idea of studying the reaction to infection of an organ which varies so broadly anatomically and is exposed to such a great variety of pathogenic organisms. During this examination notes, diagrams and photographs were made of the general inflammatory pictures found and the occurrence of obliteration, carcinoma, diverticula and foreign bodies.

The specimens, which had been preserved in 3.7 per cent. formaldehyd solution, were cut in gross series, the blocks ranging from 2 mm. to 4 mm. in thickness. The series was made from the tip to the base and each layer of the wall was studied grossly. All cases not showing definite gross lesions were examined microscopically by means of frozen and celloidin sections.

OBLITERATION OF LUMEN

The examination of this series of cases has shown that obliteration[1] of the lumen of the appendix may begin as early as the fifth year of life and be complete at the tenth year of life. The wide variation in the age during which the process of obliteration occurs may be seen from these facts, and that at the age of 67 the tip alone may be obliterated. Ribbert,[2] who has been the chief exponent of the physiologic involution-idea of the process of obliteration and the authority most commonly quoted, found that the percentage of obliterated appendices increased with the increase of the decades. This observation was made on autopsy material and is correct when one considers all stages of obliteration, including complete obliteration. From this standpoint his observations are confirmed by this series. The error, however, into which he and others have fallen is in taking all cases, partial and complete. It is impossible to determine at what age the process ceased to act in an appendix, the lumen of which is completely obliterated, because the individual may have carried it completely obliterated since the age of 10 years. Therefore it is only fair to consider cases in which the process of obliteration is not complete. If this is done it will be seen that the process does not increase gradually with the decades.

TABLE SHOWING PERCENTAGE OF APPENDICES WITH PARTIALLY OR COMPLETELY OBLITERATED LUMINA AT VARIOUS AGES

	RIBBERT.	MACCARTY.	
Age.	Partial and Complete Percentage	Complete Percentage.	Partial Percentage.
1-10 years..........	4	0	11
10-20 years..........	11	3	17
20-30 years..........	17	8	16
30-40 years..........	25	15	22
40-50 years..........	27	16	17
50-60 years..........	36	17	21
60-70 years..........	53	50	50
70-80 years..........	58	0	0

The variation in the percentage of partially obliterated cases is greatest between the fifth year and the fortieth year. The percentage then decreases and rises again to the seventieth year. The same sudden rise is seen when one examines the totally obliterated specimens but the percentages between the fifth and fortieth years gradually increase instead of decrease. This seems to me to be strong evidence which may be added to the histologic picture of inflammation in obliteration.

The time at which the examination of the appendix is made greatly modifies the conception of the age at which obliteration occurs. The average age at which the tip is found to be obliterated in cases of appendicitis is 29.8 years and the average in the appendices which were removed at the time of operation for cholecystitis is 39.1 years. This is a wide variation and is parallel with the average ages at which operations for appendicitis and cholecystitis occur, namely, respectively 25.5 years and 39.9 years.

An examination of the average ages at which the different degrees of obliteration occur shows that the average ages of the increasing amounts of obliteration increases gradualy from 29.8 years—which is the average age for tip obliteration—to 31.6 years, which is the average age for total obliteration. The difference of four years between these two gives the approximate duration of the process of obliteration. This is exceedingly short for a natural physiologic involutionary process, especially when one considers that it may occur at a very early age and at any time from 5 years to old age.

It is fair, from these figures and others which time does not permit giving, to state that the process of obliteration is not a physiologic involution which begins at the tip and gradually involves the entire appendix, but a pathologic process, resulting from chronic inflammation.

CARCINOMA

The occurrence of carcinoma in such a large series is of interest. During this examination twenty two cases of carcinoma were found. In seventeen of the specimens (77 per cent.) the diagnosis was not possible from the external appearance. In one of the seventeen the growth had made its way through to the serosa and was visible as a small orange-colored speck about 0.5 mm. in diameter. This on gross external examination was thought to be fat in the subserosa. Microscopic examination revealed it to be carcinoma which had reached this point through the lymphatics.

In none of the seventeen specimens was there any definite enlargement to indicate the presence of a neoplasm.

Ninety per cent. occurred in partially obliterated appendices and all were associated with marked chronic inflammation.

The growth itself on gross section appears as an orange-colored, homogeneous or finely granular mass occupying the center of the section, a quadrant or all of the coats excepting the muscularis, subserosa and serosa.

The color is characteristic in specimens preserved in formaldehyd solution. In all cases there was the same orange color. This is very important in distinguishing the neoplasm from lemon-yellow fat, which occurs in the submucosa and subserosa, especially in chronically inflamed or obliterated specimens.

Microscopically the growth consists of alveoli filled with epithelial cells, the nuclei of which are in general oval or round and present fewer irregularities than one usually sees in carcinoma in other portions of the alimentary canal. The size and lack of marked irregularity on the part of the nuclei, as well as the alveolar arrangement and staining quality, have been the cause of some observers calling the neoplasms endotheliomata and basal-cell carcinomata.

---

[1] In describing total obliteration of the lumen of the appendix in this paper it must be considered that a small part of the appendix was inverted at operation, and that "total" means the whole specimen in the laboratory.

[2] Ribbert: Virchows Arch. f. path. Anat., cxxxii, 66.

If one, however, examines with the high power the nuclei of remaining glands in appendices the lumina of which are being obliterated it will be seen that there are gradations from simple hyperplasia to carcinoma.

There was nothing in the clinical histories to suggest carcinoma; in fact, one specimen was found accidentally in a man aged 80 years, who died after removal of a stone from the bladder.

Carcinoma occurred in this series as early as 5 years and as late as 80 years. Thirty-one per cent. of the carcinomata were found in appendices removed in association with other abdominal conditions. It occurred in females in 73 per cent. The longest duration of the symptom was fifteen years and the shortest duration was three weeks.

In the first 2,000 specimens examined it occurred in 2.2 per cent. of the partially or completely obliterated appendices and in 0.6 per cent. of all appendices.

In the complete series of 5,000 specimens it occurred in 1.6 per cent. of partially or completely obliterated appendices and 0.44 per cent. of all specimens.

DIVERTICULA

Diverticula of the appendix occurred, usually as a multiple condition, in seventeen cases. They are grossly visible but vary greatly in size, the largest in the series being about 0.5 cm. in diameter and projecting beyond the surface about 0.5 cm. They are covered by serosa and vary in color according to their contents. They consist of an evagination of the submucosa, muscularis mucosæ and mucosa through a hole in the muscular coats. The edges of this hole are rounded off and permit the tissue of the submucosa, which fuses with the subserosa, to pass around it in a well-defined manner. The wall of the diverticula consists only of the mucosa, muscularis mucosæ, submucosa, subserosa and serosa. These coats are thinner than normal.

The condition was found in a wide range of ages, the oldest 64 years and the youngest 18 years.

Fifty-six per cent. of the cases occurred in acute appendicitis; 56 per cent. occurred in females. The only cases that were found in association with other conditions were removed with gall-stones. Of these there were two, or 12 per cent. of the cases, which occurred with gall-stones. In one of these the appendicitis was subacute and in the other acute. The average duration of the symptoms was seven years and the average age at operation was 34 years. None of these patients gave a history of jaundice. Two complained of pain in the epigastrium and one in the right hypochondrium. The condition does not seem to bring about symptoms as early in life as appendicitis ordinarily does, but a higher percentage seem to be acute.

In regard to the question which has been raised in articles made by me on gastric ulcer[3] and cholecystitis,[4] that is, whether or not there is any etiologic relationship between the chronic inflammatory process in the appendix and disturbances in the stomach, duodenum and bile-passages, the following observations are of interest:

In the previous studies it was found that 23.2 per cent. of 365 cases in which cholecystectomy was performed showed symptoms which began at or under 25 years of age, and that 13 per cent. of the cases gave definite histories of pain or soreness in the region of the appendix. In 59 of these cases of cholecystitis the appendices were removed and 69 per cent. showed undoubted gross or microscopic evidence of inflammation varying from a chronic catarrhal condition to complete obliteration and periappendicitis.

In the present report of cases 52 per cent. of 175 cases of cholecystitis with or without stones gave histories of pain in the region of the appendix.

In 1,117 histories which include all the cases of appendicitis and appendices removed during operation for conditions other than cholecystitis with or without stones, there was a history of pain in the epigastrium or right hypochondrium in 13 per cent. In 9.4 per cent. there was pain in the abdomen and in 11.6 per cent. pain in the abdomen which radiated to and became localized in the appendix region.

A consideration of the average duration from the onset of symptoms to operation in appendicitis, cholecystitis and cholelithiasis reveals respectively 2 years, 4.9 years, and 6.5 years. It may be seen that the average duration in cases of cholecystitis lies between the average in appendicitis and cholelithiasis.

The questions arise: Is this a mere coincidence, especially when we know that simple cholecystitis precedes gall-stones? Is there any relationship between these conditions? Are we dealing with a process which manifests itself in three stages, namely, appendicitis, simple cholecystitis and cholecystitis with stones?

The average age of patients at onset of the symptoms in these three conditions is also of interest, although there is not the same parallel. In appendicitis it is 23.5 years, in cholecystitis 34.7 years, while in cholelithiasis it is 33.8 years. There is one thing to be considered, however, and that is the fact that the symptoms in cholelithiasis are likely to be very much more sudden and severe and therefore demand earlier attention than in simple cholecystitis.

There is a very marked contrast between the percentage of appendices with partially or completely obliterated lumina at autopsy and at operation for appendicitis and that of appendices which have been removed in association with cholecystitis and cholelithiasis: 23.5 per cent. at operation; 12 per cent. (Nowicki), 16.6 per cent. (Toft), 25 per cent. (Ribbert), 14 per cent. (Zuckerkandl), 22.6 per cent. (Sudsuki), 20 per cent. (Sprenzel), 11 per cent. (Ciechanowski and Gliniski)[5] at autopsy, and 52 per cent. in association with inflammatory conditions in the gall-bladder have partially or completely obliterated lumina.

Eight and seven-tenths per cent. of 2,000 appendices were associated with cholecystitis.

In spite of the fact that the male patients operated on for appendicitis formed a higher percentage than did the females (55.5 per cent. males and 44.5 per cent. females), partial obliteration of the lumen occurred more often in females (55.2 per cent. females and 44.8 per cent. males). This may be one of the coincidences which lead to false deductions in all statistics, but the figures are sufficiently significant to keep in mind as possible evidence of the probable fact that the inflammatory process in the appendix causes disturbances in the bile passages directly or indirectly and may have some relation to the fact that cholecystitis is decidedly more frequent in females than in males.

---

[3] MacCarty: Surg., Gynec. and Obst., May, 1910.

[4] MacCarty: Ann. Surg., May, 1910.

[5] MacCarty: Virchows Arch. f. path. Anat., 1906, clxxxv, 501; Nowicki: Virchows Arch. f. path. Anat., cxcv, 197.

Foreign bodies and hard fecoliths occurred in 57 specimens in the complete series. The foreign bodies consisted of short hairs, tooth-brush bristles, shot, gallstones, fruit-seeds, pins and worms.

CLASSIFICATION

An examination of the literature on the subject of appendicitis reveals a great variety of classifications of the condition. Many of these are based on pathology and clinical histories; some have been made by the clinician, some by the surgeon and some by the pathologist. In the literature these have been used indiscriminately to describe clinical, surgical and pathologic pictures, resulting in a confusion of ideas of the condition, especially on the part of the clinician and surgeon.

Intimacy with a large series of cases clinically, surgically and pathologically brings about a conception of appendicitis which is devoid of sharp clinical, surgical and pathological entities. The conditions are apparently the results of a process dependent on the peculiar structure of an anatomic vestige, its precarious situation and exposure to many pathogenic organisms and trauma.

The results of these and perhaps other obscurer and less defined etiologic factors group themselves according to the point of view. To the clinician who sees only the exterior of his patient and studies the reaction of the whole organism to the local condition from the standpoint of fever, chills, pain, nausea, vomiting and onset of the symptoms, the condition is one which confines itself either definitely to the appendix or to possibilities of which the appendix is but one. If confined to the appendix four conditions are possible, namely, acute, chronic and subacute appendicitis or periappendicitis, the latter being the result of one or more of the other three.

To the surgeon, who is interested in the real pathologic condition secondarily to his immediate mission, the removal of a condition detrimental to life, the appendix on exposure may reveal its exact pathology on a careful study of its exterior. To him the most important conditions in their order of importance are: acute periappendicitis, peritonitis, acute appendicitis, chronic periappendicitis, subacute appendicitis, chronic catarrhal appendicitis, complete or partial obliteration and carcinoma.

To the pathologist the classification of the conditions found is similar to that made for the surgeon, but includes the acute catarrhal condition, which is rarely if ever seen in the strictest sense. It is difficult to obtain a specimen in which the term "acute catarrhal" can be correctly used unless the term be extended beyond its real meaning and be allowed to include the extension of the process in the mucosa to the underlying submucosa, lymph follicles, and even through the lymphatics to the subserosa. The extension of the condition is so rapid when the process in the mucosa is acute that it is difficult to conceive of it being confined to the mucosa, which the name signifies.

It may be well, however, since the term has become so well established in our nomenclature to continue its usage with the modification that although the process has its origin in the mucosa, the submucosa and follicles share very early in the reaction. Indeed, the serosa may be congested without the wall showing enough leucocytes to cause the condition to be called purulent or necrotic.

With this broad idea of the term catarrhal the specimens in this series group themselves under the following terms:[6]

1. *Appendicitis Catarrhalis Acuta.*—A condition in which the mucosa is infiltrated with leukocytes and is congested; there is a reaction in the lymph follicles and lymphatic tissue of the submucosa. The lymph spaces or vessels in all the other coats may also contain leukocytes.

2. *Appendicitis Catarrhalis Chronica.*—Arises as a result of repeated mild or severe acute catarrhal conditions and is marked by an increase of scar-tissue and distortion of the normal regularity of the coats and the glands. Blood pigment is very frequently present in the mucosa.

3. *Appendicitis Purulenta Necrotica.*—An advanced stage of the acute catarrhal condition, plus the formation of intramural abscesses and necrosis.

4. *Periappendicitis Acuta.*—Merely describes an extension of the conditions just described to the peritoneum. The subserosa and serosa become congested, purulent or necrotic. The scar-tissue remains of such a condition may be described as *periappendicitis chronica.*

5. *Obliteration.*—A condition of the lumen of the appendix which occurs as the result of destruction of the mucosa and formation of scar-tissue in the submucosa and other coats. It occurs in any portion of the lumen.

CONCLUSIONS

1. Of all appendices removed at operation 23.5 per cent. are partially or completely obliterated.

2. The shortest duration of the process of obliteration when it is continuous is less than ten years.

3. The process may be complete at 10 years of age.

4. Obliteration does not occur as a physiologic involutionary process, but is dependent on a definite inflammatory reaction.

5. In a series of 2,000 specimens 0.6 per cent., or about 1 in every 175 appendices removed at operation are malignant.

6. In a series of 5,000 specimens 0.44 per cent., or about 1 in every 225 appendices removed at operation are malignant.

7. In a series of 2,000 specimens 2.2 per cent., or about 1 in every 40 partially or completely obliterated appendices are malignant.

8. In a series of 5,000 specimens 1.6 per cent., or about 1 in every 53 partially or completely obliterated appendices are malignant.

9. Carcinoma of the appendix may occur as early as 5 years of age and as late as 80 years of age.

10. Of the carcinomata of the appendix found in this series 77 per cent. were not capable of being diagnosed from the gross external appearance.

11. All appendices with partially or completely obliterated lumina should be removed during operation for other abdominal conditions when it can be done without materially endangering the life of the patient.

I wish to express my appreciation of the valuable assistance rendered me by Bernard Francis McGrath, M.D., laboratory assistant.

ABSTRACT OF DISCUSSION

Dr. H. G. Wells, Chicago: I should like to ask Dr. MacCarty what are his views as to the histologic type of carcinoma present in such cases.

Dr. J. F. Hultgen, Chicago: Dr. MacCarty's paper suggests to me strongly the anatomic bases of the biology of infection of the gall-bladder and appendix. The question of appendicitis is not merely of bacteriologic, but also of biologic interest. I should like to know whether Dr. MacCarty means that this atrophy of the lymphoid tissue is accompanied by atrophy of the muscular tissue and by destruction of the agminated lymph-follicles and Peyer's patches? Does this very atrophy of the glandular elements not rather suggest the natural tendency toward healing of appendicitis?

---

[6] MacCarty: Virchows Arch. f. path. Anat., 1906, clxxxv, 515.

DR. W. C. MACCARTY, Rochester, Minn.: In the very early neoplasms which are reported here the growth extends only to the musculature, and in these specimens there is an alveolar arrangement of the cells. There is a marked resemblance of the tumor to an endothelioma. The nuclei do not take the stain well, the protoplasm is clear and the cells have been described as endothelium.

If one examines the epithelial rests in appendices the lumina of which are being obliterated, it will be seen that there are all stages of hyperplasia and that these tumor cells really are the outgrowth of the normal epithelium of the mucosa. They differ greatly from the epithelium in other portions of the alimentary tract. Just how malignant they are I cannot say.

I think that most pathologists and physiologists to-day agree that there is no such thing as a physiologic disappearance of the appendix. The men we should be anxious to reach are the surgeons who are constantly dealing with the appendix, and who are leaving partially and completely obliterated appendices because they think them physiologic and not pathologic. The condition, however, is the result of an inflammatory process and is apparently a forerunner of carcinoma, as may be seen from the fact that 90 per cent. of the carcinomas occur in partially or completely obliterated appendices.

I have had twenty-two specimens of carcinoma of the cecum, and they did not, apparently, arise in the appendix. This is to be expected when we realize that the majority of the carcinomas of the appendix occur in the tip and give rise to symptoms of appendicitis before the cecum becomes involved. Some carcinomas of the cecum, however, may arise in the appendix. Elting has reported cases in which carcinoma of the cecum followed carcinoma of the appendix. All of the cases of carcinoma of the appendix in my series were very early and recognizable only after gross section of otherwise apparently normal appendices or subacute appendicitis.

THE TEETH AS AN IMPORTANT FACTOR IN PATHOGENESIS *

H. A. POTTS, D.D.S., M.D.
Associate in Surgery, Rush Medical College, in Affiliation with University of Chicago.
CHICAGO

My object is to call the attention of physicians and dentists alike to the importance of further study and preparation for work in a field which has no hard and fast boundaries but which is widely overlapped by both medicine and dentistry. Because of the diverse relations of medicine to dentistry and dentistry to medicine it is important that the dentist be versed in general medicine, also that the physician be conversant with more of the general conditions which make up the specialty called dentistry, which has been known as a profession apart from and unconnected with medicine. It is necessary that the practitioner, whether he be dentist or physician, should understand the etiology and pathology as it pertains to the case in hand, a living pathology, as it were. Only this condition permits of the practice of logical therapeutics.

The teeth, during the entire life of the individual, play an important rôle, both directly and indirectly, in the maintenance of health and in the production of disease, and any deviation from the physiologic may give rise to pathologic conditions affecting the general economy.

The chief functions of the teeth are, first, mastication of food in order that the digestive juices may properly effect the changes necessary to absorption and assimilation; second, molding and maintenance of facial contour.

Pathologic conditions, due directly or indirectly to the teeth, occur before the eruption of the temporary teeth, during their eruption and after eruption, and also during their loss, in giving place to the erupting permanent teeth. The immediate pathologic conditions caused by unerupted temporary teeth are very few, but the remains of the primary tooth germ may give rise to cyst formation before the development of the follicles of the permanent teeth. Congenital epulis has been observed, the microscopic examination showing the tumor to be of dental origin. The diseases, the cause of which has been attributed to the eruption of the temporary teeth, are legion, but their number is being steadily reduced by the scientific work of skilled pediatricians. There are, however, some conditions which may be traced directly to difficult dentition and others in which it occurs as a coincidence. Nevertheless, the erupting teeth do modify the course of the disease, rendering the primary condition much more difficult to cope with. The chief danger lies in the fact that, because the child is "teething," no further search is made for pathologic conditions which may exist in brain, kidneys, gastro-intestinal tract, lungs, etc. Without doubt, difficult dentition gives rise to reflex symptoms, some of which may become alarming, especially in undernourished or rachitic children.

The fully erupted temporary teeth are subject to the same conditions as those which affect the permanent teeth, and give rise to a long chain of pathologic conditions. Normal teeth, with live pulps, rarely give rise to symptoms referable to the pulps themselves, but when caries attack them the pulps are irritated by chemicals, sweets, changes of temperature and pressure from the food substances, with resulting toothache, which may cause reflex earache. Many a child has spent a sleepless night on account of an irritated tooth-pulp. As the result of carious teeth and exposed pulps the child becomes ill-nourished, because he will not masticate his food, thereby laying the foundation for gastro-intestinal trouble in the future.

Of more importance is the retention within carious cavities of decomposing foodstuffs, and bacteria which are not of the disease-producing types, namely, bacteria of putrefaction. The final products of such bacterial activity are absorbed by the buccal and pharyngeal mucous membranes, as well as swallowed, and the dire results are seen in gastro-intestinal disease, malnutrition and lack of physical and mental growth.

Cervical and general lymphadenopathy are undoubtedly due many times to absorption of toxins, which may be found anywhere within the body. Not only do carious cavities harbor non-pathogenic bacteria, but pathogenic ones as well, and from this depot they are disseminated, gaining entrance into the organism through the apices of the roots, abraded mucous membranes, tonsils, gastro-intestinal tract and lungs. Arthritis, affecting any or all joints of the body, may be caused by infection harbored by the teeth or caused by pathologic diseases of the teeth.

The blind abscess, or carious process affecting the bone at the apices of the roots, or the chronic one with a fistula, or pyorrhea, is not benign, even though the patient suffers little from it, because a complete or par-

---

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

tial ankylosis of any joint, especially the larger ones, may result from it.

There are many complications and sequelæ following the death of a tooth-pulp. Foremost is the formation of an alveolar abscess, which is essentially an osteomyelitis, and which requires exactly the same surgical treatment as osteomyelitis in other parts of the body. Alveolar abscess without death of the pulp is extremely rare, although at times root abscesses are seen. Alveolar abscesses may be acute or chronic. With the acute form we have pain, swelling, more or less trismus, with cervical adenitis, which may or may not go on to suppuration. After the pus has broken through the periosteum it burrows in the direction of least resistance and may make its appearance anywhere on the lower part of the face, or neck, and at times at the clavicle. Not infrequently a secondary infection with streptococcus gives the clinical picture of a Ludwig's angina. If the periosteum of the jaw is elevated from the bone for a sufficient length of time, necrosis, with loss even of the whole jaw, results.

Without doubt the extraction of a tooth which gives rise to an alveolar abscess it at times contraindicated, and extraction only intensifies the result of the infection. The reason is given by the conditions requiring surgical interference which exist in other parts of the body, namely, abscess formation which cannot be aborted. By that is meant that the infection may be overcome by the vital forces of the body in destroying the bacteria and rendering their poisonous properties inactive; but that when this cannot be done the indications are that the source of infection be eradicated and drainage established. Very little absorption takes place without pressure. If, in the effort to eradicate the source and establish drainage, the operation is improperly done, the process continues and is more wide-spread because of the traumatism to the parts. This is what happens when a tooth is extracted at the height of infection and before the formation of pus. The source of infection may be removed, but drainage is not facilitated, and the traumatized tissues are more susceptible. After the formation of pus, extraction facilitates drainage through the socket because of the destruction of tissue at the apex, and this cavity communicates with the socket.

The chronic form of abscess may result from an acute one, or it may never exhibit acute symptoms. Either the organisms have become attenuated or are of the very mild type. The process ends in a fistula, which may open within the mouth or on the surface. Chronic intoxication, with anemia, gastro-intestinal disturbances and chronic cervical adenitis or rheumatism, may result. This condition continues until the source of infection is eradicated.

After the crowns of temporary teeth have been destroyed by caries the roots form receptacles for retention of putrefactive substances. Their rough surfaces often abrade the tongue and soft parts, thereby causing infection atria, not only for the pus cocci, but for tuberculosis and other infective granulomata as well. Microscopic examinations of the tongues and mouths of cattle frequently show abrasions, especially at the base of the tongue, which contain the ray fungus. Normally the temporary teeth retain their live pulps until they are replaced by permanent ones. The roots of temporary teeth whose pulps have died are not as readily absorbed, and such unabsorbed teeth deflect the permanent teeth from their normal course, with the resulting irregularity which is so disastrous. Not only should the pulps of temporary teeth be kept alive, but the crowns should be retained. If caries occur the normal contour of the crown should be restored. Otherwise, when the permanent teeth make their appearance, the arch is so contracted that there is no room for them, and the result is irregularity and malocclusion, with perverted facial contour, high or saddle arches, with coexisting adenoids, mouth-breathing, lack of mental and physical development. The loss of temporary teeth, whether from caries or by extraction by the ignorant or unscrupulous, results most certainly in the foregoing conditions. So much for the temporary teeth.

Much which has been said regarding the temporary teeth applies as well to the permanent teeth, but there are other conditions which should be recognized by physicians and dentists as having their origin in the permanent teeth. Before eruption the teeth give rise to cysts and tumors, the part of the tooth from which it springs determining the character of the growth. Follicular cysts may contain any or all of the anatomic parts of the teeth. Follicular cysts usually make their appearance between the twelfth and the sixteenth years, corresponding to the tooth development, although they may occur in infancy, having developed from the follicles of the temporary teeth, or, later in life, not infrequently from the third molar. The most frequently occurring cysts of the jaws are the root cysts. These develop from the granulomata at the ends of the roots, whose pulps have been destroyed through caries and exposures. The cystic formation is due to epithelial development, which is stimulated by the chronic infection about the apices of such roots, the epithelial development having its origin in the remains of the epithelium which dips down from the mucous membrane of the gums to form the tooth germs, the epithelial debris of the French. It is these cysts, usually of slow growth and without symptoms, which, by pressure-atrophy of the bone, advance and encroach on the facial sinuses and on the nasal fossæ, even occurring in the roof of the mouth or filling out the maxillary sinus, and known as hydrops of the antrum of Highmore. At times pressure on nerve-trunks causes neuralgia, but this is rare, neuralgia being caused more frequently from hard growths. They never contain tooth elements.

Multilocular cysts and the benign solid epitheliomata belong in the same class, the multilocular form springing from the enamel organ, the others being a development of one or all of the individual elements of the tooth follicle. They present the following forms: embryoplastic, odontoplastic, coronary, radicular, compound and heteroplastic odontomata. Further, we have, at times, hard tumors of the tooth substance which are attached to the other teeth. All of these cysts and tumors produce symptoms and signs relative to the site of their development and interference with normal function. But, aside from these, any of them may become infected. In such a case it may be difficult to arrive at an exact diagnosis, which is the key to surgical relief. Non-erupted teeth may or may not give rise to symptoms referable to local conditions or to remote parts. Not infrequently fully formed teeth lie in cystic cavities whose whole walls are of connective tissue instead of epithelium. They may occur near the normal arch or in parts somewhat remote, as entirely within the antrum of Highmore, or high up within the ramus, or they may be projected through the mandible. When near the arch the roots of other teeth are frequently eroded and their vessels and nerves encroached on, causing neuralgic poses. Often the larger nerve-trunks are pressed on by them, giving rise to severe neuralgia.

Non-erupted teeth cause other troubles the importance of which cannot be overestimated, namely, reflex disturbances referable to almost any of the cranial nerves, also taking in a much wider scope, namely, that of impaired mental conditions. Given a patient of a neurotic family, with poorly balanced nervous mechanism, having epilepsy, chorea, habit spasm, etc., it is plain that irritation, even of a mild but continuous character, will exaggerate the symptoms of the primary trouble. Further, the irritation of unerupted or impacted teeth at the changes in the cycle of life will produce more of an effect on the organism than when no great changes are taking place. Upson, of Cleveland, has recently made a study of fifty-eight cases, including manic-depressive insanity, dementia praecox, psychosis, insomnia and neurasthenia, thirty of the patients having impacted teeth. Forty-two patients were operated on: fourteen recovered; seven are convalescent; twelve improved; three unimproved; six, no data. This work opens up a rich field for research and promises great benefit to the sadly afflicted patients. I might add, in this connection, that my experience in operating on insane patients at the Illinois Central Hospital for the Insane, especially those who had been insane for a long time, seems to warrant a belief that any operation on them results in a temporary brightening of their mental faculties.

Sapremia, as the term is used in surgery, is the absorption of poisonous products from bacteria in wounds of the body. It matters not how these poisons are absorbed, whether from a wound, by the mucous membrane of the mouth, or alimentary canal. The bacteria of putrefaction act on nitrogenous substances which lodge in tooth cavities, and their toxins are liberated in the mouth and are either absorbed or swallowed. Thus the patient is a victim of slow ptomain poisoning or, if you please, leucomain poisoning.

Of the myriads of bacteria found in the mouth, only a few can be said to be indigenous. Professor Black has reduced their number to about fifteen different varieties, all practically non-pathogenic. All others have been introduced with food and drink or have been aspirated and, as a rule, are not long retained within the mouth. This speaks for the practicability of prophylaxis and cleanliness. The colon bacillus, paratyphoid, *Micrococcus* [illegible] with the putrefactive bacteria, are productive of most of the toxins which are injurious to the organism. The pathogenic bacteria are also retained in an unclean and carious mouth and are a constant source of danger.

Atrophy of the teeth occurring in the central incisors, in which there is a lack of development of the middle lobe and a closing in of the other lobes, possibly an effort of Nature to fill in the space, was first pointed out by Hutchinson, of London, but he unfortunately ascribed the cause to congenital syphilis alone. This theory was taken up by clinicians and medical writers and has been handed down in one text-book after another until it has become so rooted in medicine as to be well nigh impossible of change. Congenital syphilis may be the cause of Hutchinson's teeth, but it is not the sole cause, as they may be caused by any condition which seriously impairs metabolism at the time when this part of the tooth is in the process of calcification.

Normally shaped teeth appearing normally in a normal arch, unaffected by caries, give rise to no pathologic conditions. When they are affected by caries they give rise to the same conditions as described under caries of the temporary teeth. Malocclusion gives rise to many deplorable conditions which could have been avoided had the mouth been in the care of a competent dentist, especially at the time of eruption of the sixth-year molars. The cusps of these four teeth when in proper relation with each other retain the jaws in normal relation with each other, being reenforced by the other teeth as they appear. But when these cusps are not in proper relation with each other malposition and malocclusion are exaggerated as time goes on, with resulting prognathism, agnathism and faulty facial contour due to lack of development of the bones of the face and nose. These teeth, coming in before the child has lost any of the temporary teeth, are often mistaken for temporary teeth and, through deplorable ignorance, are allowed to be destroyed by caries, the popular opinion being that they are temporary teeth and will soon be lost, and there is no necessity for having them filled.

Malocclusion interferes with normal function of the teeth, and when that function is interfered with, the teeth, the interdental spaces, peridental membranes and all the tissues, hard and soft, in relation with them, become a prey to pathologic processes, namely, caries, loss of contact with impaction of food, pyorrhea alveolaris, calcareous deposits, recession of the gums, and absorption of the alveolar septum.

Impaction and complications following occur frequently in connection with the third molars below. Above, the third molars are often inclined outward and backward and, in consequence, the mucous membrane becomes abraded, food is also retained behind such teeth and fermentation or putrefaction follows. Impaction of the third molars may be of various degrees. It may occur entirely beneath the gum, or the tooth may be only slightly wedged behind the largest diameter of the crown anterior to it. When it is entirely beneath the gum, the roots of the second molar are often absorbed and pressure on the pulp causes pain. Even before this the pressure from crowding may cause severe neuralgia or grave reflex disturbances, resulting, as has been seen, even in dementia praecox and psychosis. If the third molar breaks through the mucous membrane during eruption, being still covered by the gum tissue, infection is prone to occur, with fever, swelling and abscess formation, which may discharge either in the mouth or on the neck and become chronic. If the pus be not retained the condition may be entirely local and the suppurating condition may exist indefinitely, being a continual source of toxemia.

Neuralgia, the ordinary facial type or tic douloureux, is at times caused by pathologic conditions of the teeth. Focal calcification of the pulps, at times, gives rise to neuralgic pains.

While the etiology of carcinoma is still in the dark, it is certain that carcinomata do develop on the tongue and mucous membrane of the mouth at the site of abrasions and traumatisms due to sharp teeth or roots.

Tuberculosis can be implanted on an abraded mucous membrane; hence it is imperative that the mucous membrane of the mouth and lips be kept intact. The dentist should be able to cope with any pathologic condition in the mouth, thereby attacking disease many times in its inception, when it is often easy of eradication.

103 State Street.

THE TEETH AND ALVEOLAR PROCESSES AS POINTS OF ENTRANCE FOR THE TUBERCLE BACILLUS*

FREDERICK B. MOOREHEAD, A.B., D.D.S., M.D.
CHICAGO

Tuberculosis is probably the most discussed problem in medical science to-day. The internist, surgeon, gynecologist, ophthalmologist, dermatologist, laryngologist, orthopedist and dentist—all have a common interest in the problem. The tubercle bacillus is a free lance, defying and challenging all tissues. It invades the territory of every medical specialist without apology. No one can gainsay the statement that it is ubiquitous. It is looked on by the layman as man's greatest physical foe. More money, thought and skill have been contributed to conquer it than any other enemy of the physical man. All this is sufficient reason for discussing the question, even in a very limited way, and yet, the mouth is probably the most serious factor in the matter of infection from this organism.

The tonsil as a gateway of invasion is fully appreciated. It has been carefully studied and discussed. Medical literature in the past five years bears eloquent testimony to the splendid work which both the specialist and internists have done in the premises. Dmochowski found tubercle bacilli in lymph-vessels of tuberculous tonsils which led to involvement of the cervical glands. Hanan, Schlenker and Krueckmann demonstrated similar results by exact pathologic-anatomic demonstrations.

While many statements have been made concerning the mouth in its relation to the tubercle bacillus, not much has been done in the way of scientific study. This statement is a more or less severe indictment on the mouth specialists. Although mechanical dentistry has made splendid progress and has contributed in splendid fashion to the weal of society, nevertheless the most serious question which the mouth specialist faces is that of disease, its recognition and treatment. Diseased conditions of the mouth must always be studied and interpreted in their relation to the whole organism. This indicates very clearly the nature of the training needed by the one who is to occupy the field of stomatology.

In a rather comprehensive study Odenthal[1] found that 70 per cent. of all children were affected with enlarged lymphatic glands. It is a well-known fact that the lymph-glands in children are more easily irritated and involved than in adults. This is particularly true of tuberculosis of the cervical lymph-glands. The reason is obvious—the root canals render the invasion of the tubercule bacillus more likely and easy in children than in adults.

A simple statement here, concerning the cervical lymphatic glands, will be of interest and service. The body of the mouth, the submaxillary and sublingual glands and gums are drained by the vasa efferentia of the submaxillary lymph-glands. There are about a dozen of these, of various sizes, found on the inner surface of the mandible beneath the platysma. A number of small glands may be found on the lower margin and external surface of the mandible. Their vasa efferentia accompany the anterior facial vein. The relation of the roots of the teeth and alveolar process to these lymph-channels is an important consideration and concerns not only this phase but the entire field of medicine. "The superficial cervical glands are placed in the course of the external jugular vein, between the platysma and deep cervical fascia. They are most numerous at the root of the neck, in the triangular interval between the clavicle, the sternomastoid and trapezius, where they are continuous with the axillary glands. A few small glands are also found on the front and sides of the larynx. The deep cervical glands are numerous and of large size, forming an uninterrupted chain along the sheath of the carotid artery and internal jugular vein, lying by the side of the pharynx, esophagus and trachea, and extending from the base of the skull to the thorax, where they communicate with the lymphatic glands in that cavity" (Gray's Anatomy).

A route which is direct and brief in extent thus leads at once from the mouth through the tissues of the neck to the thorax. One is very apt to think of the mouth as brought into relation with the body by way of the esophagus and trachea. Here, however, in this lymphatic system is a nexus which, in many respects, from a pathologic standpoint is more vital than that afforded by the esophagus and trachea combined, vital as they are. It is a fact familiar even to laymen, and one which I need not discuss at length, that the tubercle bacillus, along with other pathogenic micro-organisms, enters the body freely through the esophagus and trachea. Here the invading organism is confronted, under normal conditions, by a "foeman worthy of his steel," a healthy epithelium. The same organism, gaining entrance through the lymphatics, finds a much more fertile field with a limited defense.

In 978 children (between the ages of 1 and 13) examined by Odenthal, 429 had progressive caries of the teeth. Of the 429 all except 4 had cervical lymphadenitis. In 237 of the 429 the teeth were badly broken down and the glandular enlargement was more pronounced. In 79 of the cases there were other pathologic lesions which could be assigned as responsible for the lymphadenitis. In 359 cases no cause could be assigned save carious teeth. In 131 cases caries were found on one side only, and in all of these the glandular enlargement was on the same side. Pedley examined 3,145 children and found that 77.5 per cent. had carious teeth with more or less pronounced cervical lymphadenitis. Ungaware examined 100 children and reports 87.2 per cent. with carious teeth. Felschel examined 335 orphans in Hamburg and found carious teeth in 96.4 per cent. Reese examined 13,167 children in Thuringen and Baden and found that 79 to 99 per cent. had carious teeth. The above children were between 6 and 14 years of age. Out of the 100 recruits examined by Cunningham 96 had carious teeth.

Unfortunately the authors quoted do not give data covering the percentage of glandular enlargements, clinical or microscopic diagnosis. The figures are, nevertheless, very interesting, as they indicate the great opportunity for the tubercle bacillus to gain entrance.

Of the children with enlarged cervical glands examined by Starck[2] 80 per cent. had carious teeth. After obtaining a careful history and making a thorough examination of each case he accepted 16 per cent. of the

---

* Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

[1] Odenthal: Cariöse Zähne als Eingangspforte infectiösen Materials und Ursache chronischer Lymphdrüsenschwellungen am Halse, Inaug. Diss., Bonn, 1897.

[2] Starck, Hugo: Der Zusammenhang von einfachen chronischen und tuberkulösen Halsdrüsenschwellungen mit cariösen Zähnen, Beitr. z. klin. Chir., xvi.

80 per cent. as having a hereditary predisposition to tuberculosis. In 41 per cent. of the 80 per cent. no other cause could be assigned except carious teeth. The average age of the children examined was 8½ years. Starck made an observation which is in keeping with my own experience, namely, that the extent of the glandular involvement corresponds with the number of carious teeth, and the extent of the carious process.

Cornet demonstrated before the tenth meeting of the German Surgical Society that he could produce tuberculosis of the cervical lymph-glands by inoculating pulps of teeth through artificial cavities. In animals he got the same results by rubbing cultures of tuberculosis between the lower incisor teeth, clearly demonstrating that the bacillus may enter either by way of the pulp chamber and root canal or the alveolar process. Baumgarten fed animals on tuberculous material, and in every case produced tuberculosis of cervical lymph-glands. In all of the animals the tonsils also were affected. Morelli and Jaruntowski[3] have clearly demonstrated the presence of the tubercle bacillus in carious teeth of patients suffering from phthisis. In this connection Hoppe has tried to prove that the presence of the tubercle bacillus is as frequent in the carious teeth of healthy as of tuberculous subjects. He examined decayed material from thirty-one carious teeth and found the tubercle bacillus in twenty-three. These were from healthy subjects in which the decay had reached the pulp.

Israel has conclusively demonstrated the infection of cervical lymph-glands by actinomycosis through the teeth.

Ruehle reports the case of a boy with *Spitzenaffektion* of the left side. The cervical lymph-glands on the same side were extensively involved. The process began by the enlargement of a single gland beneath the first molar. He demonstrated that the gland was tuberculous, but it is not certain from the record whether he found the bacillus in the molar tooth, which was badly decayed, though one would infer that he did.

Starck reports the following interesting cases:

Case 1.—A healthy girl of 7 complained of toothache on the left side of the lower jaw. The teeth were badly decayed. Soon after the toothache had ceased, two glands under the cuspid and first molar on the left side became enlarged. Both the cuspid and first molar were carious. The glands soon enlarged and the overlying integument became discolored. The glands were extirpated. Microscopic examination revealed tuberculosis.

Case 2.—A girl, aged 9, fairly strong and healthy, gave a clinical history of toothache on left side followed by gradual enlargement of cervical glands. At the time of the examination the glands were quite large and the overlying skin was red. There was a fistula under the jaw discharging a serous fluid. Two large, partly caseous lymph-glands were excised, showing a tuberculous process on microscopic examination. In this case the lower second premolar and first permanent molar were badly decayed on the affected side.

Case 3.—A girl aged 10 years, with no disease in the family, had large cervical lymph-glands on right side second molar (probably six-year molar), badly broken down. The glands were extirpated. The microscope revealed a tuberculous process.

Here we have three perfectly healthy children with tuberculous heredity excluded. The tonsils and tissues of all three mouths were healthy. The teeth were badly decayed. In two of these cases he found the tubercle bacillus in the teeth, using Ziehl-Gabett's method.

Professor Ungar of Bonn reports the case of a boy 5 years of age with a badly decayed lower cuspid tooth. The gum tissue surrounding this tooth became involved in a pathologic process which was diagnosed as tuberculosis. Later on the gum tissues on the upper jaw became involved, probably by contact infection. Professor Trendelenburg extracted the teeth and carefully removed the diseased tissue together with the alveolar process. Some time later the submaxillary lymph-glands became involved and had to be removed. Later on the deep cervical lymph-glands became involved, necessitating an extensive dissection. All glands removed were tuberculous.

Zanby[4] has collected forty cases of tuberculosis of the alveolar process, in which he claims the bacillus gained entrance either through the pulp canals or "spaces between the teeth." He pertinently suggests that wounds following the extraction of teeth may permit the bacillus to enter, particularly in patients suffering from phthisis.

A valuable contribution to the study of the subject has been made by Cook,[5] who reports the following cases:

Case 1.—Girl, aged 13. Tubercle bacillus found in twelve-year molar. No other evidence of tuberculosis.

Case 2.—Colored boy, aged 18. Bacillus found in debris on posterior teeth. Molars badly decayed.

Case 3.—Girl, aged 9. Tubercle bacillus found in scrapings around roots of teeth.

Case 4.—Girl, aged 17. Tubercle bacillus found in lower second molar. Tooth extracted. Five weeks later a small nodule appeared under jaw directly beneath extracted tooth. Later other glands became involved; no operation made.

Case 5.—Boy, aged 11 years. Badly decayed lower left first molar. Fistula opening on lower border of jaw. Bacillus found in tooth cavity and in necrotic tissue scraped from fistula.

Case 6.—Girl, aged 11. Swelling under left lower first molar. Tooth badly decayed. Tubercle bacillus found in pulp chamber. Later on an abscess formed and tooth was removed. Numerous bacilli found in pus.

Cook reports three other similar cases.

In my own series of ten cases I shall merely mention six of them, as they differ but little from the cases recorded above. These six cases have been studied only in part, but I hope later to complete the study and report them in detail. In four cases of my series I have succeeded in making a satisfactory study.

Case 1.—A boy of 9 years, strong and healthy. Family history negative. Two other children in the family in good health. Thorough physical examination revealed no other lesion than the one to be cited. Three months previously the boy complained of toothache on the left lower jaw. The parents being poor people, he went to a drug store and purchased a tube of "toothache paste," which was used regularly for a month or more, when the trouble ceased. The little patient suffered from pain intermittently during the period. About a month after the pain subsided the mother noticed a nodule under the lower jaw, for which she came to me for advice. The mouth was in good condition, the teeth free from caries, except the lower left six-year-old molar which had a large occlusive cavity. The enlarged lymph-gland was immediately under the tooth. Its character and appearance led to an examination which revealed the tubercle bacillus in the cavity. The pulp at this time was dead and putrescent. The tooth was at once extracted and a so-called "abscess sac" was found on the distal root. The contents of this sac were expressed on a slide, and the tubercle bacillus again discovered. After some weeks' hesitation the parents consented to an operation. A mass of six glands varying from the size of a filbert to that of an English walnut were excised. Careful microscopic examination showed a typical tuberculous process. The patient had an uneventful recovery and four months after the operation was in perfect health, with parts normal. No evidence of recurrence.

---

[3] [illegible]: Ueber Tuberkulose des Zahnfleisches, Zahnarztl. W[illegible], vol. [illegible], No. [illegible]70.

[4] Zanby: Von Bergmann's Surgery, i, 677.

[5] Cook, G. W.: Bacterial Investigation of 220 Mouths with Special Reference to Tuberculosis, Dental Rev., 1899, xiii, 97.

CASE 2.—Girl, aged 10. This case gives a clinical history almost identical with Case 1. The findings were the same except on the opposite side of the mouth. Family history negative. Physical diagnosis negative, barring enlarged cervical lymph-glands on right side. The child had toothache located in the lower right first molar for several weeks, which finally disappeared. This was followed by an enlargement of the glands on the same side. After several examinations we finally discovered the tubercle bacillus in the decayed molar. The tooth was extracted, and a week later the enlarged lymph-glands were dissected out. One of the glands was distinctly caseous, and a diagnosis of tuberculosis, made from the gross specimen, was confirmed by the microscope.

CASE 3.—Boy, aged 8. This case was referred to me by Dr. Maser, who had extracted the lower left first molar a few days previous, following a history of toothache. The little patient had a mass under the lower border of the mandible on the left side which was rather diffuse in character. A mass of granulated tissue filled the socket occupied by the mesial root of the extracted tooth. This was curetted and the tubercle bacillus found in the scrapings. At the bottom of the socket there was a sinus which led directly into the mass under the jaw. When the integument was incised at the time of the operation, a large broken-down lymph-gland was exposed, which was accidentally ruptured by process of dissection. Beneath this were four or five smaller glands. In this, as in the other cases, there seemed to be a distinct limitation to the process, the glands involved being walled off.

CASE 4.—Married woman, aged 32. Family history and physical findings negative. Extensive enlargement of cervical lymph-glands on left side. General condition of mouth poor. Salivary deposits on teeth marked. Gums congested and sensitive. Piece of bridgework on left lower jaw, extending from first bicuspid to second molar. Roots of these teeth very loose with pus in their sockets. Apex could be reached on almost every surface with a fine probe. The bridge was removed altogether with the roots which served as abutments. The sockets were carefully curetted and examined microscopically. The tubercle bacillus was found on two different slides. The patient refused to have the glands excised, but consented to have us remove one under a local anesthetic for purpose of diagnosis. The microscope confirmed our clinical diagnosis of tuberculous lymph-glands.

In studying the tubercle bacillus one has constantly to bear in mind the ease with which mistakes may be made; the difficulties encountered, first, in finding the organism, and second, in staining it successfully; and also the smegma and lepra bacilli, Moeller's grass bacillus, the Petri Rabinowitsch butter bacillus and their staining characteristics. Metchnikoff, Malfucci and Lubarsch have pointed out the aberrant forms, the recognition of which constitutes still another difficulty. Starck saw some bacilli, shorter and thicker, which were contained in a peculiar white cell. In these he noticed a point at one pole which took the stain poorly. He regarded these as endogenous spores. Despite all the difficulties, however, there is an abundance of clinical material for study and observation. While the amount of work done in the premises is limited, the case has been won, and proof is at hand that the tubercle bacillus does gain entrance to the body through diseased teeth and alveolar processes, and that the cervical lymphatics are directly infected by this route. The full significance of all this will be revealed by further study. Suffice it to state in passing that when the facts are all understood an exceedingly important contribution to modern medical science will have been made.

72 Madison Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. POTTS AND MOOREHEAD

DR. JAMES E. POWER, Providence, R. I.: In regard to the finding of tuberculous glands, there is no question in my mind that hygienic conditions are influenced by the mouth condition, but Dr. Moorehead failed to state the physical condition of these patients. There is no question about tuberculosis being all that we believe it to be. On the other hand, we must not forget that there are many people affected with tuberculosis, which is only discovered after death. The record of autopsies show that the majority of cases have evidence of healed tuberculous processes in their lungs.

DR. M. H. FLETCHER, Cincinnati: Dr. Potts mentioned tic douloureux as one of the results or as a symptom. Our surgeons assume that tic douloureux is central—in the Gasserian ganglion or brain; but, ten years ago, in order to bring attention to the subject and to put before the association cases which I had observed, I assumed that it was peripheral. Since then I have had a number of cases which have strengthened this hypothesis.

It is a well-known fact that diseases of the periosteum about the face or teeth, or in the accessory cavities and air-passages produce these continuous pains. I have had a number of cases sent to me with these symptoms. These patients were examined by some of our best men, and before being operated on were sent to me for my diagnosis. I found one case in which the pain was in the zygoma and under the right eye, and was due to an exposed pulp in the first molar below. Paroxysms of pain were drawing up the face—pain coming on suddenly and lasting for an hour or two. Sometimes it would be shorter. Before I found the trouble I had removed the second molar on the right above. After it and the pulp in the lower first molar were removed, the pain disappeared completely. The patient went home and came back in a few days suffering just as much as ever. I found that the gutta-percha filling which I had inserted for temporary purposes was pressing on the gum between the teeth and forcing it down against the bone. On relieving the pressure the pain disappeared. I have given a good deal of attention to these conditions and the possibility of their being tuberculous, and that necrotic alveolitis where there are deep-seated pockets in cancellous bone and no pus is sometimes accompanied by acute pains approaching tic douloureux. I believe that the bones of the face, like the spine or other bones, are frequently infected by tubercle bacilli.

DR. EUGENE S. TALBOT, Chicago: More than twenty years ago I commenced the use of iodin for interstitial gingivitis, and in the treatment of that disease found the mouth cleared up beautifully, but it was not until later I understood why I was getting such results. I know now that if we would take those patients that come to us for the first time, even for the extraction of teeth in children's mouths, if the mouths were painted with iodin for a few minutes—fifteen minutes or half an hour before—the germs in the mouth would be destroyed. The difficulty with the official preparation of iodin is that when it is mixed with alcohol it irritates the mucous membrane which, after one or two applications, will peel off. To overcome this tendency I have compounded a preparation without the alcohol. It is necessary to use only a 10 to 15 per cent solution. I usually in my regular practice make application when I get through the operation for the day. Every patient that comes to me gets a dose of that before he leaves the office. In cases of sepsis, the tissue between the teeth and around the gums should be thoroughly saturated. If I were to perform operations on the throat, I should paint the tonsils with a preparation composed of zinc iodid, 15 parts, water 10 parts, iodin 25 parts and glycerin 50 parts. This preparation, which I have named iodoglycerole, is coming generally into use, for the reason that it penetrates the deeper tissues and destroys the germs embedded there.

I am confident that if the mouths of all school children were treated with iodoglycerole it would entirely prevent mouth infection in the public schools. I would recommend school authorities to treat the mouths of the children once a week, especially when there are epidemics.

Dr. V. P. Blair, St. Louis: Of course, we know that the tubercle does not arise in the gland, and that it does come from the points that the glands guard. There is no doubt that the tonsil is the greatest source of infection. It has been worked out in certain clinics in Chicago and Rochester, and they tell me in Rochester that 8 per cent. of the tonsils removed are tuberculous. In a certain number of cases of tuberculous glands of the neck, the tonsil does not look as if it were probably the site of infection. Of course it may be; we cannot always tell from mere inspection. Tuberculous ear infection is rather rare. A few of these cases come from the nasal tonsil. But I believe from clinical observation that a certain percentage of cases of tuberculous glands of the neck come either through a tooth or around it. This being the case, it is important for the surgeon who is operating on a tuberculous gland of the neck to have the teeth attended to. It is my custom to use an antiseptic wash every two hours. It seems to me rather doubtful, unless it were put in with the greatest care, whether a single application of iodin would reach all the spaces between and around the necks of the teeth; but if it could be made to reach every part, it would certainly be a good thing. It is not an uncommon thing to see enlarged glands in the neck, which are probably not tuberculous, subside on a nose and throat wash, which seems to indicate that washing does some good.

Dr. T. W. Brophy, Chicago: The late Dr. Senn thought iodin the most potent of all germicides. His favorite preparation was 1 per cent. iodin crystals and 1 per cent. potassium iodid with 98 per cent. of water. This he used freely, flushing the abdominal cavity, especially in cases of infection. He declared that many of his patients who recovered with the use of this treatment would have been lost without it.

Dr. Stewart L. McCurdy, Pittsburg: I read a paper a few years ago in relation to the use of iodin in cases of bone infection in which I reported a hundred or more cases. I have used iodin in all cases of osteomyelitis. Three weeks ago I chiseled open a tibia having central disease, and found that the cancellous structure of the medullary canal was entirely dissolved away, and that the bone was perfectly white inside, showing that the disease had existed for a long time. After opening the canal I used a syringe with a nozzle about three inches long and injected tincture of iodin in both directions, closed the cavity, and the patient walked out of the hospital in two weeks without any of the old pain. I could report probably fifty cases of this type. We inject everything which has pus in it with iodin. A case of a child with a tuberculous foot in which I removed the cuboid and cuneiform bones, it was immersed in a 10 per cent. solution of iodin for two hours every day for three weeks. I have been doing this in all such cases. If desired, compound solution of iodin may be used in place of the commercial tincture of iodin.

Dr. H. A. Potts, Chicago: I think that tic douloureux undoubtedly may be of dental origin, and therefore peripheral, as Dr. Fletcher said. Following hemorrhage of the brain, we at times find symptoms which are identical with tic douloureux which are central, and all operations, either ganglionic or peripheral, have no effect on it. I have known of cases undoubtedly of peripheral origin. Then, too, I think a close diagnosis should be made between tic and ordinary neuralgic pains, which are peripheral. The cases which are epileptiform and extend over a number of years are known as tic douloureux. I should also be interested to know if his patient is cured two months from now; because many of these cases of tic douloureux fall into unfortunate hands and have one tooth extracted after another, get temporary but not permanent relief.

It seems to me that tuberculosis of the bones of the face as a primary disease is exceedingly rare. I doubt also whether it follows an implantation or an extension from glandular tuberculosis. I think that the only tuberculosis of the bones of the face which may be considered primary is that which we most frequently see of the zygoma. This may be explained by the rich blood supply; it does not have a chance to become infected; the opposite condition explains the presence of tuberculosis in the epiphyses of the long bones or digits or small bones of the hands.

Dr. F. B. Moorehead, Chicago: In answer to Dr. Powers, I reported the physical examination of all the cases and excluded every possibility of tuberculous infection from every other source in the body. I do not believe that tuberculosis was present in any of the cases Dr. Fletcher has cited. Tuberculosis of the bones of the mouth and face is exceedingly rare, except through extension from lupus vulgaris. The blood and lymph supply of the parts is so great that the tubercle bacillus will find lodgment elsewhere, particularly in the cervical lymphatic glands.

If I have any hobby it is diagnosis. By that I mean the analysis of every element entering into the pathologic process. It is a thing which a man must train himself to do in every case which he meets. It is the crux of every problem. If a man will train himself to that sort of thing he becomes more expert as a diagnostician and clinician.

GONORRHEAL ARTHRITIS OF WRIST AND KNEE

IN A CHILD THREE WEEKS OLD

G. FRANK LYDSTON, M.D.
Professor of Genito-Urinary Surgery in the Medical Department of the University of Illinois
CHICAGO

The following case is reported because of its rarity. It is especially rare because of the relation of the arthritis to gonorrheal conjunctivitis.

History. Baby X., aged 3 weeks, was seen in consultation with Dr. Benjamin N. Novy. Through ignorance of the mother's condition the infant's eyes had been permitted to become infected at birth. Subsequent investigation showed that the mother had gonorrhea. Within forty-eight hours after birth the child developed gonorrheal conjunctivitis, which proved to be of moderate severity and was under control at the time of my examination. On the fourteenth day the left wrist became greatly swollen, painful and slightly reddened. Three days later the right knee became involved in extensive swelling of a character similar to that of the swelling of the wrist. The immunity of infants from ordinary rheumatic arthritis, taken in connection with the typical physical characteristics of the involved joints, and the moderate temperature—ranging from 100 to 101 F.—and the clear history of gonorrheal infection established the diagnosis.

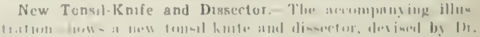
Treatment.—Antigonococcal serum was administered hypodermatically, beginning with three minims every other day and gradually increasing until fifteen minims were given. The reaction was slight and improvement prompt. At present, about four weeks since beginning the serum treatment, the joints are almost normal. There is some impairment of motion of the knee, for which I have recommended passive motion. Ankylosis, I think, will not result. The wrist requires no further attention. The local treatment consisted in constant application of the following anodyne ointment:

℞		gm. or c.c.		
Ol. gaultheriæ		8		ʒii
Ext. aconite rad				
Ext. belladonnæ rad	āā	3	or	gr. v
Mentholis		6		gr. x
Adipis lanæ hydrosi	q.s. ad	30		℥i

Sig.—Apply on sheet lint and surround by cotton and oiled silk.

100 State Street.

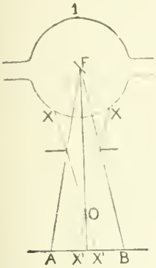
New Tonsil-Knife and Dissector.—The accompanying illustration shows a new tonsil knife and dissector, devised by Dr. E. R. Carpenter, El Paso, Tex., which has been found satisfactory by a number who have used it. It is the only instrument needed, besides the grasping forceps, in enucleating tonsils, he says. With it, adhesions are freed, and an opening is made behind the capsule with ease. In the illustration the left end has a sharp edge and the right is semisharp.

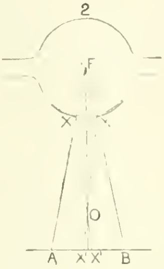


A FLEXIBLE CONTACT DIAPHRAGM AND PROTECTIVE SHIELD FOR X-RAY TUBES

SINCLAIR TOUSEY, A.M., M.D.
NEW YORK

A diaphragm or an opaque barrier of some kind with an opening of appropriate size is useful in *x*-ray treatment by limiting the application to the desired region, while protecting other parts of the patient and also the operator from the influence of the rays. Its value in radiography depends not only on the above factors, but also on its exclusion of vagabond rays arising from various parts of the *x*-ray tube and blurring the clean-cut shadows which would be produced by the direct rays emanating from the focus point on the anticathode. An example of blurring, due to light radiating from a large area instead of from a single point, is seen if the fingers are held against a piece of paper a few feet from a window. The shadow seen on the further side of the paper has a much blurred margin. The shadow of a coin held against the paper is much more sharply cut, although the finger is just as opaque to ordinary light.





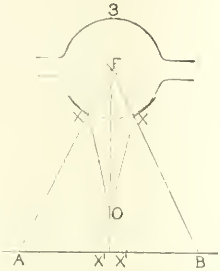


Fig. 1.—X-ray tube with 2-inch diaphragm, 6 inches from anticathode. *A-B*, 6-inch field at 18 inches. *X-X*, area of tube from which vagabond rays pass through an object at *O*. *X′-X′*, amount of blurring of the image of *O*.

Fig. 2.—Contact diaphragm with 1 inch orifice in contact with the wall of the tube. *A-B*, same area of illumination; but *X-X*, smaller area for origin of vagabond rays and *X′-X′*, reduced blurring of image of object *O*.

Fig. 3.—Contact diaphragm with larger orifice giving no larger area for origin of vagabond rays *X-X*, and no greater blurring, *X′-X′* than in Figure 1, but an increased field of illumination.

There are factors operative in determining the definition in a radiograph, namely, the area from which rays originate and the distance of different parts of the patient from the surface of the photographic plate. With the plate directly in contact, the distance from different portions depends on the thickness. A good antero-posterior radiograph of pneumatic sinuses through the entire thickness of the head is an impossibility without a diaphragm.

The smaller the orifice of the diaphragm, of course, the clearer becomes the image, but the area embraced in the picture becomes correspondingly smaller.

My contact diaphragm[1] is designed to secure the best possible definition with a wide field by having the orifice in contact with the wall of the *x*-ray tube. An orifice 2 inches in diameter, at a distance of 3 inches from the wall of the tube and say 6 inches from the focus point on the anticathode, will permit of making a radiograph only 6 inches in diameter on a plate 18 inches from the anticathode.

It greatly reduces the amount of blurring as compared with that produced without a diaphragm, but still permits of some blurring as shown in Figure 1. A diaphragm, in contact with the wall of the tube and with an orifice only 1 inch in diameter will give the same 6-inch radiograph at a distance of 18 inches with much less blurring, because rays from a much smaller part of the *x*-ray tube can pass through a given part of the object and produce a shadow, as in Figure 2. A contact diaphragm of this size is correct for the radiography of the pneumatic sinuses of the face.

Sufficient definition for studying the condition of the spine or the lungs or the entire urinary tract in the search for calculi, may be obtained with a contact diaphragm whose orifice is $2\frac{1}{2}$ inches in diameter. Figure 3, drawn to the same scale as the others, shows that this greater field is secured with less blurring than the smaller field with the 2-inch diaphragm 3 inches from the wall of the tube. This fact has been actually demonstrated in my own practice.

The flexible contact diaphragm (Fig. 4), is of flexible rubber composition containing a lead compound which is opaque to the *x*-ray but which is not a conductor of electricity. It is flexible enough to be changed from one tube to another but fits so closely that there is no danger of its shifting during use. It covers about $\frac{7}{8}$ of the bulb, the uncovered part being at the back and affording sufficient surface to prevent overheating. In actual use I have found that it gives the desired increase in definition without any drawbacks, such as inverse discharge or rapid hardening of the tube. Its orifice is directly in contact with the glass and can be made

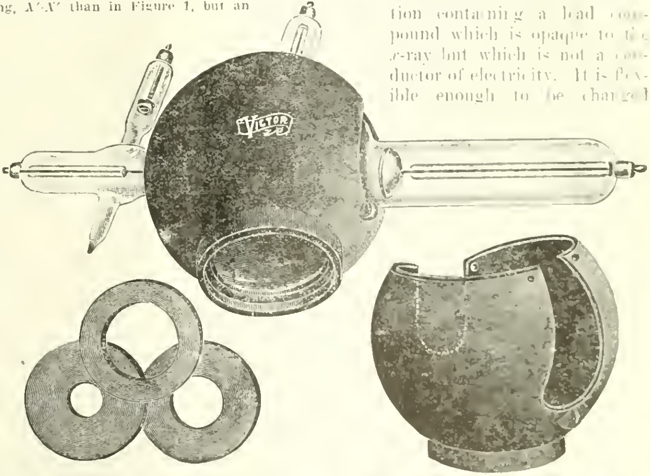


Fig. 4.—Flexible contact diaphragm forming protective shield with orifices of different sizes.

---

[1] Tousey: Medical Electricity and the Roentgen Ray, W. B. Saunders Company.

smaller by inserting three different rings of an opaque rigid material. For occasional use in radiography or in Roentgenotherapy, it affords all necessary protection, but for constant use, I place the tube and contact diaphragm inside the opaque box known as Ripperger's shield,[1] and use lead-glass spectacles and opaque apron, gloves and cap. A simple expedient would consist in remaining outside the room while the *x*-ray was in operation.

140 West Fifty-seventh Street.

LIVER ABSCESS

A REPORT OF TWO CASES OF ABSCESS OF THE LEFT LOBE

ROBERT M. CULLER, A.M., M.D.
Captain, Medical Corps, U. S. Army
FORT ONTARIO, N. Y.

The tropical or amebic abscess of the liver concomitant with or a sequel of dysentery presents enough diagnostic difficulties to make any discussion of it acceptable to those who are initiated. In this brief paper no attempt is made to discuss this great subject in general, but these few suggestive ideas occurred to me in the study of this disease.

The clinical picture of liver abscess given in text-books seems clear and plain enough, but the text-book descriptions are often really of little help to the surgeon in his work, because they appear to be largely based on far advanced cases in which the pathologic process has extended to involvement of neighboring structures and the abscess has reached such great proportions that the patient is in a desperate situation. It is remarkable also, that many text-book descriptions indicate that the authors in their discussion of differential diagnosis have in mind abscess situated in the right lobe of the liver, excluding the possibility of its occurrence elsewhere in the organ.

Roux gives the relative incidence of abscess in the several lobes of the liver, based on 639 cases, as follows: right lobe 70.85 per cent., left lobe 3 per cent., the remaining percentage includes abscess in all other lobes and those that are multiple. It can be seen therefore that although the preponderant number of abscesses do occur in the right hepatic lobe, yet the location of the disease is variable enough to make the average text-book description, fitted to abscess in right lobe, not sufficiently comprehensive, and indeed inadequate.

During the past year I have operated in two cases of abscess located in the left lobe of the liver and the purpose in briefly reporting them is to reiterate what is commonly known, that of all the grave tropical disorders, liver abscess is the most insidious and circumventive.

These cases have several common points in their history. Both patients are soldiers who contracted mild dysentery in the Philippine Islands about 7 years ago, which was followed by abscess of the right lobe of the liver. Both were successfully operated on at the time followed by recovery and return to the full duties of a soldier. Both have served a two-year tour in the tropics since that time, and are now serving in the third year since last return. Both men are harboring *Amœba dysenteriæ* but have had no dysenteric symptoms since the liver abscess trouble seven years ago. Their health has been good from that time until the illness reported herewith.

Case 1.—Artificer L. reported sick and was admitted to Post Hospital, Fort Ontario, N. Y., April 12, 1909. He said he had been feeling "a little off" for several days and that he had lost some weight but did not know how much. He said he had a night sweat several days previous to admission but no chill.

Symptoms.—The patient complained of mild digestive disturbance, loss of appetite and some weakness; had no pain of any kind but had general discomfort over abdomen which he attributed to indigestion.

Physical Examination.—The abdomen was slightly distended with gas, which was promptly relieved by enema; tongue coated but not foul; patient appears to be not very sick. There was a point of slight tenderness on deep pressure at the epigastrium slightly to the left of the median line. Liver dulness was not increased on either side and the liver was not palpable. Heart, lungs and kidneys were normal, stools were positive for *Amœba dysenteriæ* but there was no diarrhea. Temperature ranged between normal and 99.4 F. in an irregular curve. He had moderate night sweats between April 12, the date of admission, and April 17. The point of tenderness in the epigastrium during this time extended more to the left and became general along the left costal margin. On April 16 he had pain for the first time which he could not definitely locate, but stated that it occurred only after each bolus of food had been swallowed, and lasted but a few seconds.

Diagnosis.—The diagnosis of abscess of the left lobe of the liver was based on the history of previous abscess and ameba in the stools, the night sweats, moderate irregular fever, pain after swallowing and slight tenderness over left costal border.

Operation.—April 17, 1909, under ether anesthesia a left intracostal incision was made, revealing an abscess the size of hen's egg near the upper surface of the left lobe, which was evacuated and drained. Uneventful convalescence ensued and the patient returned to full soldier's duty June 25, 1909.

Case 2.—Sergeant M. reported sick and was admitted to Post Hospital, Fort Ontario, N. Y., March 17, 1910. Patient stated that he had a chill the night before admission and pain in chest so that he thought he was going to have pneumonia. He said he was feeling well until the night before admission but that he was not quite so strong and robust as he had been several months before.

Symptoms.—Patient had distaste for food but no nausea, general soreness over chest and an annoying cough. There were no abdominal symptoms.

Physical Examination.—Auscultation revealed mild bronchitis; no tenderness in abdomen anywhere. His temperature rose to 102 F. the first day in hospital and the same night he had a drenching sweat which required the changing of the bed linen. These sweats continued nightly, occurring about 3 a. m.; also an irregular fever ranging between 99 F. and 102 F. The bronchial irritation cleared up in a few days, pain ceased and cough disappeared. Pain or tenderness suggestive of any abdominal trouble did not appear until March 25, eight days after admission, when tenderness was elicited over lower ribs of left side in an area as large as a man's palm. This tenderness increased from day to day and increased in area until it became general along left costal margin and in epigastrium. Finally pain appeared which was only present on deep inspiration, but this increased so that the respiratory excursion was quite limited. Heart, lungs and kidneys were normal. The line of liver dullness over left lobe extended towards splenic area and left lobe was palpable below costal margin. Palpation of the liver gave little discomfort.

Diagnosis.—As in the previous case it was based on history of dysentery and former liver abscess, pain on deep inspiration, local tenderness, fever and night sweats.

Operation.—March 28, 1910, under ether anesthesia a left infracostal incision was made, revealing the left lobe adherent to the diaphragm which separated with difficulty. An abscess in the left lobe opened, hourglass in shape, which discharged 100 c.c. pus. Drainage was employed and recovery was uneventful. Patient returned to soldier's duty May 5, 1910.

The distribution of the portal circulation to the various hepatic lobes explains in a measure why abscesses occur most frequently in the right lobe. The portal branch passing to the right lobe is the largest and is the most direct and swiftest route for amœbæ, bacteria or infective emboli to enter the liver substance.

It will be noticed in the two cases cited that each had had abscess in the right lobe previously, and at operation I found that in both cases there was reduction in size of the right lobe with adhesions to the diaphragm and neighboring structures and that there appeared to be wide-spread fibrous infiltration throughout the right lobe, indicating that the abscesses had been quite large and destructive to the liver substance. This fibrous shrinking of the right lobe would operate to reduce the volume of the portal circulation to that portion of the liver. Also compensatory hypertrophy of the left lobe would make its portal circulation swifter and more direct for the entrance of infective material.

On the other hand, it would appear that abscesses occurring subsequent to those in the right lobe would have selected again the damaged right lobe as a point of least resistance.

The interesting points in these cases are:

1. Both men had liver abscess in right lobe previously.
2. Both were in excellent health in spite of their being the hosts of *Amœbæ dysenteriæ*.
3. Rapid onset of the disease.
4. Mild symptomatology, which was less defined than the descriptions indicate.
5. Absence of many of the "classical" signs of liver abscess as given in text-books.
6. Difficulties in early diagnosis which would have been encountered in absence of history of dysentery and previous abscess.
7. Rapid convalescence and return to normal health in spite of amebism.

THE VALUE OF EHRLICH'S TRIACID STAIN IN BLOOD WORK

ROGER S. MORRIS, M.D.
Associate in Medicine in Charge of the Clinical Laboratory, Johns Hopkins University
BALTIMORE

Within recent years the development of numerous modifications of the Romanowsky stain, by which blood smears may be fixed and stained in a few minutes, has limited the use of Ehrlich's triacid stain in many laboratories. The former, it is true, are far preferable in the study of pathologic changes in the erythrocytes, as cell nuclei, nuclear particles, polychromatophilia, basophilic granules, and Cabot's ring bodies, as well as certain parasites, are demonstrated to better advantage than with any other single stain. With Ehrlich's triacid, ring bodies and basophilic granules are not revealed, and polychromatophilia is shown very imperfectly. In studying the leukocytes, however, the Romanowsky stains are not to be compared with Ehrlich's triacid, and it seems unfortunate that they are so widely used at the present time in differential leukocyte counting.

CLASSIFICATION OF LEUKOCYTES

The generally accepted classification of the leukocytes is that suggested by Ehrlich, based on the staining reactions of these cells to his triacid staining mixture. By means of it the normal and, what is more important, the pathologic leukocytes are clearly separated into definite groups or classes, and this is particularly well illustrated in the staining of the myelocytes. In the majority of instances it is impossible to obtain a satisfactory stain of them with the Romanowsky stain. It happens either that the granules do not take the stain at all or, more frequently, that they are not specifically stained. In fact, it is characteristic of young granular cells (myelocytes) with a Romanowsky stain that the granules take a purplish color (i. e., basophilic), whether they are in reality neutrophilic, eosinophilic or basophilic myelocytes. It is only necessary to stain such a blood with the triacid stain to verify this statement. The differentiation at once becomes evident, the myelocytes (and polymorphonuclears as well) appear more numerous, and the "unclassified cells" are less conspicuous. Furthermore, in a specimen stained with a Romanowsky stain it is at times extremely difficult, if not impossible, to distinguish between some of the large mononuclear cells containing azure granules on the one hand and myelocytes on the other. With the triacid stain this problem, of course, does not exist. While it is usually possible for one experienced in blood work to interpret, with a certain degree of accuracy, a specimen stained by the Romanowsky method in terms of the triacid stain (in other words, to make a fairly satisfactory guess as to the classification of pathologic cells), still it holds good that for the average worker who does not specialize in hematology, and for the medical student this is an almost impossible task. Nor is there any apparent way of avoiding this pitfall so long as the present classification of leukocytes is used, except by a return to the use of the triacid stain.

FIXATION OF FILM

One of the chief difficulties in applying the triacid stain, indeed, the chief difficulty, is the fixation of the blood film, which must be done by heat. Two methods of heat fixation are commonly employed, (1) the quick method, by the use of the copper bar, and (2) the slow method, by means of a hot-air oven. The latter is the one used in teaching laboratories, where it is necessary to fix a hundred or more blood films for class work; the films are heated at a temperature of about 110 C. for one to two or more hours. In order to determine the optimum fixation four or five films are placed in the oven, one being removed at the end of an hour or an hour and a quarter, and then one at an interval of fifteen minutes thereafter. The specimens are stained and examined and the proper fixation time noted. The remaining specimens are then fixed the required length of time, and may be stained at once or at any time within the next few months. This method is, of course, out of the question for the practitioner, as it consumes altogether too much time, when a single specimen is all that is required. For him the copper bar method is far preferable. The bar, resting on a tripod, is placed so that its tip is in a Bunsen flame; a constant temperature is soon acquired. Water is now dropped on the bar and the point noted at which the drop remains spheroidal. The blood film, with the specimen side up, is placed just inside the "spheroidal point" (i. e., toward the flame) and allowed to remain from five to one hundred and twenty seconds, ordinarily about thirty to forty-five seconds. It takes only a moment to fix several films for various periods of time. All may be stained at once, and the best specimen selected for study. In a properly fixed specimen the erythrocytes have a buff color; overfixation causes them to be stained yellow, while in an underfixed film they are red. The final criterion by which a specimen should be judged is, however, a clear-cut differentiation of the leukocytic granules.

STAINING TECHNIC

The staining technic is very simple. The specimen is covered with the stain for from five to ten minutes (overstaining is impossible), washed, blotted dry, and mounted. With a little experience a satisfactory preparation should usually be obtained in fifteen minutes at the most, often in half this time. When the method has been mastered the time-consuming qualities of the triacid stain are not much greater than are those of the Romanowsky stains—certainly not enough to warrant the apparent disuse into which the stain has fallen.

PREPARATION OF THE STAIN

When it is necessary to prepare one's own staining mixture, another drawback to the triacid stain of Ehrlich may be encountered. (Fortunately very satisfactory preparations of the stain are on the market, notably Grübler's.) The formula given in text-books frequently fails utterly and it becomes necessary often to waste numerous batches of stain before a suitable mixture is obtained. As is well known, the staining ingredients of Ehrlich's triacid are a basic stain, methyl green, and two acid stains, orange G. and acid fuchsin. The three basic radicles of the methyl green are neutralized by the acid stains, hence the name triacid, which Ehrlich selected. Determining the proper quantity of each stain in the mixture is the usual source of trouble in its preparation. While experiencing this difficulty, a slight modification of the original formula was found, which has proved very helpful. The formula as modified is:

	c.c.
Saturated aqueous solution of orange G	13.0
Saturated aqueous solution of acid fuchsin	7.0
Distilled water	15.0
Absolute alcohol	15.0
Saturated aqueous solution of methyl green	17.5
Absolute alcohol	10.0
Glycerin	10.0

The fluids are measured in the same graduated cylinder, which should not be rinsed. The receiving flask should be shaken vigorously after the addition of each constituent, which is added in the order given in the formula. It is essential to add the methyl green, second portion of alcohol, and glycerin slowly, shaking well after each portion is added. The mixture is ready for use immediately and does not deteriorate with age.[1] During the last three years I have had frequent occasion to prepare large quantities of the triacid stain for class and ward work, and the mixture, made according to the formula given above, has been uniformly satisfactory, not a single failure having been recorded.

SUMMARY

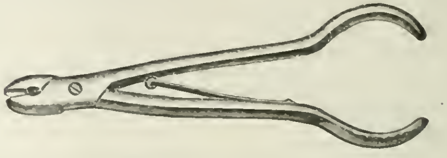
In summary it may be said that the difficulties in the use of the triacid stain of Ehrlich are largely magnified as a rule. Fixation by means of the copper bar may be completed in a few seconds; by the formula given above the preparation of the staining mixture is apparently certain and simple. Its advantages are so great in the differentiation of the leukocytes that it should be employed as a matter of routine in making differential counts. For the study of pathologic erythrocytes, blood platelets, and certain parasites, on the other hand, resort should be had to one of the modifications of the Romanowsky stain.

311 Cathedral Street.

AN IMPROVED RONGEUR FOR MASTOID OPERATIONS

W. SOHIER BRYANT, A.M., M.D.
NEW YORK

This large powerful rongeur saves a great deal of time in the mastoid operation, since it will morsel hard bone very rapidly. The tip of the mastoid process and the outer table of the mastoid are quickly bitten off. When it is necessary to remove a part of the calvarium entire, this instrument will morsel it with great rapidity and with very little jar. The leverage of the instrument permits the exertion of a tremendous force. The rongeur is strong enough to take out the bone rapidly with a minimum of muscular exertion.



41 East Thirty-third Street.

THE UVULA AND ITS SINS

ADRIAN F. BURKARD, M.D.
OMAHA

The uvula is so inconspicuous and innocent looking that its importance as a trouble maker is too often overlooked.

Case 1.—One night about 11:30 o'clock a man, aged 50, came into my office complaining that a large piece of hot potato, which he had tried to swallow without sufficient mastication at supper time, had lodged in his throat. An examination revealed no potato, but did reveal an elongated uvula, which hung down on his epiglottis, causing, I judged, the disagreeable sensation. One snip of a tonsillotome removed the uvula, and with it the hot potato sensation, immediately and forever.

Case 2.—Another patient, a clergyman, aged 40, came, complaining that he would have intermittent dyspnea, which sometimes got so bad that he feared he would die any moment. These severe attacks came and went rather suddenly. He would have them sometimes in the middle of a sermon, to his great embarrassment. Amputation of the uvula cured him immediately and permanently.

Case 3.—A third patient had what his friends termed a "graveyard cough." He would have attacks of violent, barking cough—had had them for thirty years. Uvulectomy entirely relieved him.

Self-Defense Against Disease.—Stengel (*Proc. Path. Soc.*, Philadelphia, February, 1910) points out that the variations observed in the severity of the symptoms of typhoid fever and other infectious diseases may be due to some temporary pathologic or even physiologic cause rather than to varying grades of virulence of the infection. The tendency is to attribute undue severity to undue virulence or dosage of the infectious cause. A young man suffering from typhoid developed pronounced symptoms, including excessive fever, marked twitchings, delirium, cyanosis, abdominal distention, etc. Two hypodermic injections of morphin changed the whole character of the case. The intensity of the symptoms was due to lack of resistance dependent on want of sleep. Similar phenomena have been noted in the case of young women with typhoid in whom the onset occurred near or at the menstrual epoch. The severe symptoms subsided when the period had passed. Stengel has reported some striking instances of this.

---

[1] A bottle of the triacid stain which has been in the Clinical Laboratory of the Johns Hopkins Hospital for about ten years still gives perfect results. In preparing the mixture it is convenient to keep a large quantity of saturated aqueous solution of each of the three stains on hand, replenishing immediately after using. The powdered stain should be present in excess and allowed to settle to the [illegible] [illegible] bottle. After the mixture is prepared [illegible] amount of precipitate will form. Care should be taken that this is not disturbed when using the stain, otherwise the blood film may be spotted or unevenly stained.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 1869, Vol. LIV)

NUCLEIN, NUCLEIC ACID AND NUCLEATES

Nucleins are modified nucleoproteins obtained by peptic digestion or by treatment with dilute acids. They are split up by the action of alkalies or by tryptic digestion into a protein constituent and a nucleic acid. The exact composition of the protein and of the nucleic acid varies somewhat with the source of the nucleoprotein from which it is derived. The nucleic acids of commerce are apt to contain some protein in combination. They are most commonly made from yeast cells, but have been made, also, from the wheat embryo, the sperm of certain fishes and from the thymus and pancreas glands. In composition they approximate the formula: $C_{40}H_{52}N_{14}O_{25}P_4$. From the wheat embryo products with relatively more nitrogen have been obtained.

Nucleins are colorless, amorphous, insoluble in alcohol and ether and insoluble or slightly soluble in water. They are more or less readily dissolved by dilute alkalies. They give the biuret test and Millon's reaction. They show a great affinity for many dyes, taking them up from aqueous or alcoholic solutions. The term nuclein is sometimes used to designate an impure nucleic acid, which usage has led to confusion as the nucleic acids are bodies of definite composition.

Nucleic acids are amorphous, white, and have an acid reaction. They are readily soluble in ammoniacal or alkaline water with the formation of water-soluble salts. From these solutions they are precipitated by slight excess of hydrochloric acid but not by acetic acid (except guanylic acid). They are insoluble in alcohol and ether. When chemically pure they do not give the biuret test or Millon's reaction. They are dextrorotatory. Nucleic acids are decomposed by boiling with acids, or by the action of nuclease, yielding nuclein bases. These nuclein or purin bases are characterized by forming silver salts insoluble in ammonia.

Both nucleins and nucleic acids yield metaphosphoric acid on incineration. On fusion with potassium nitrate and sodium carbonate they yield alkali phosphates.

Actions and Uses.—Nuclein and nucleic acid and nucleates are said to increase the number of white corpuscles, and it has been claimed that this increases the resistance to infections. These results have been obtained by intravenous or hypodermic injection, and on this basis therapeutic deductions have been made; it is doubtful whether we are warranted in applying these conclusions to the administration of the remedy by the mouth.

Nuclein and nucleic acid and nucleates have been used in tuberculosis and various infections, but their true value is undetermined.

They are transformed in the organism into purin compounds and may cause the amount of uric acid in the urine to be increased.

NUCLEIN—Nucleinum.—Nuclein is a modified nucleoprotein obtained by peptic digestion or by treatment with dilute acids.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—0.5 to 1 Gm. (8 to 15 grains) three times a day.

NUCLEIC ACID Acidum Nucleicum. Nucleinic Acid.—Nucleic acid is an organic acid obtained from proteids by the action of alkalies or by tryptic digestion.

It should contain phosphorus and nitrogen in the relative proportion of 4 atoms of P to 14 or 16 atoms of N.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—0.06 to 0.3 Gm. (1 to 5 grains) three times a day.

SODIUM NUCLEATE. Sodii Nucleas. Sodium Nucleinate.—Sodium Nucleate is the sodium salt of nucleic acid.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—Practically the same as that of Nucleic Acid.

Proprietary Preparations:

NUCLEIN, Abbott. Sodium Tritico-Nucleinate Abbott.—A sodium nucleate derived from the wheat germ.

It is a grayish white powder soluble in water and insoluble in alcohol. On incineration it yields approximately 26 per cent. of ash, which is slightly alkaline and readily soluble in water. It contains phosphorus and nitrogen in the ratio of 1 atom of P to 3.66 N. When the aqueous solution is decomposed by weak hydrochloric acid, a voluminous precipitate of the free nucleic acid is formed.

Actions and Uses.—See Nuclein, Nucleic Acid and Nucleates.

Dosage.—See Nucleic Acid.

Manufactured by the Abbott Alkaloidal Co., Chicago. Not patented or trademarked.

Nuclein Solution, Abbott. Liquor Sodii Tritico-Nucleinatis Abbott.—A solution of Nuclein Abbott containing approximately 10 Gm. of the salt in 100 Cc. (6 grains in one fluidram) of a menstruum containing 15 per cent. of alcohol. The solution is standardized to contain 1 mg. phosphorus in 1 Cc.

The aqueous extract of the wheat germ is treated with sodium chloride and acid, the precipitate digested with pepsin, neutralized with sodium hydroxide and purified by precipitation with alcohol. The resulting sodium tritico-nucleinate is dissolved in distilled water and 15 per cent. of alcohol as a preservative.

Nuclein Tablets, Abbott.—Each tablet is said to contain 0.12 Cc. (2 minims) of Nuclein Solution Abbott.

PITUITARY BODY, DESICCATED—Armour.—Desiccated pituitary body, Armour, consists of the dried substance of the entire pituitary body of the ox, including the infundibulum and the anterior and posterior lobes without the addition of preservative or diluent. It is said to contain all the active principles naturally existing in the gland.

A light yellowish-gray powder, practically odorless and tasteless. One part represents approximately 4 parts of fresh gland.

Actions and Uses.—See pituitary gland.

Dosage.—0.06 to 0.2 Gm. (1 to 3 grains) three times a day.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

Pituitary Tablets, Armour.—Each tablet contains desiccated pituitary body 0.06 Gm. (1 grain).

DESICCATED CORPUS LUTEUM Armour.—Desiccated corpus luteum, Armour, consists of the fresh substance from the corpora lutea from cow's ovaries, removed, dried and powdered without the addition of preservative or diluent.

A yellowish powder, having a peculiar odor. Partly soluble in water.

One part represents approximately [illegible] parts of the fresh corpus luteum substance. It contains a [illegible] which may be extracted by alcohol, ether or chloroform. On incineration, it should yield not more than 6 per cent. of ash.

Actions and Uses.—See Corpus Luteum.

Dosage.—0.03 to 0.06 Gm. (½ to 1 grain) twice a day.

Manufactured by Armour & Co., Chicago. Not patented or trademarked.

PHARMACEUTICAL PREPARATION ACCEPTED FOR N. N. R.

The following dosage form of an accepted proprietary article has also been accepted for N. N. R.:

Parathyroid Tablets, Armour.—Each tablet contains desiccated parathyroid gland 0.003 Gm. (1/20 grain).

(To be continued)

Therapeutics

INFANTILE DIARRHEA

Dr. Joseph E. Winters, New York, professor of diseases of children in Cornell University Medical College—according to a pamphlet recently received—read a paper on this subject before the Cleveland Academy of Medicine (April 15, 1910) in which he expresses his views in his usual terse and impressive manner. He reminds us that gastroenteritis and its associated diseases forms one-half of the whole number of infantile disorders and its mortality exceeds that of all of the zymotic diseases. The age at which death is likely to occur from these diarrheas is graphically shown by his statement that of 22,476 cases of infantile diarrhea, 88.8 per cent. were under 1 year of age. Of 19,886 fatal cases in the first year, nearly 70 per cent. were under 6 months, and 90 per cent. under 9 months. Of this entire number of deaths, less than 2 per cent. were breast-fed. This positively shows that fatal diarrhea occurs almost always in the nursing period, and almost always in bottle-fed or artificially fed infants. The cause, then, of infantile diarrhea is demonstrated to be germs that enter the child with its artificial food. As milk properly modified is generally the only proper food for the artificially fed child, it is to the milk that we must look for the cause of diarrhea.

It has been shown that milk cooled immediately after milking to 40 F. and kept at that temperature does not grow bacteria. The advantage of the upper classes in caring for milk as compared with the lower classes is shown by the fact that of fatal diarrheas only 1.2 per cent. belong to the so-called higher class. Economically, then, and of enormous social value is the necessity for cities, especially, to provide properly cooled milk for its infants. Pasteurization of milk may destroy germs, but not necessarily their spores and not the toxins that are produced by germs previously alive in the milk, all of which act to the disadvantage of the child, to say nothing of the fact that Pasteurized milk is not as easily digested as milk that has not been so treated. As pointed out by Winters, it is quite probable that many of the symptoms of toxemia shown by children who are suffering from diarrhea such as prostration, delirium, convulsions, and even coma, to say nothing of incessant vomiting, may be due to the toxins contained in milk which are not destroyed by Pasteurization. In fact, Winters quotes an investigation of the Berlin Charité Hospital in which at this hospital it was found that "no amount of Pasteurization or sterilization had the slightest effect in preventing or controlling diarrhea."

To show the action of these bacterial toxins in the infant Winters quotes statistics of 631 fatal cases of infantile diarrhea. Of those who died during the first week (58 per cent.), one-half had bronchial pneumonia, and of those who died after the first week, not only bronchitis and bronchopneumonia were added causes of death, but there were found exudates into the pleura, peritonitis and middle-ear catarrh.

It is generally recognized that a child with diarrhea cannot be made well until the intestines are thoroughly cleaned; in other words, surgical cleanliness as near as it can possibly be carried is a positive necessity. Intestinal mucous membrane folds, which are of necessity existing there, for the retardation of intestinal contents for proper digestion and proper absorption and nutriment, are anatomic obstructions that become pathologic dangers when the mucous pockets retain putrefactive food products and abnormal bacteria and toxins. Therefore, as just stated, a thorough, complete and often repeated cleansing of the intestines with the best cathartics for this purpose, and then thorough washing with water from stomach to rectum, is the only proper etiologic treatment of the disease.

Winters thinks the most perfect cleansing cathartic is castor oil, and long years, almost ages, of experience has certainly demonstrated this drug to be the best for this purpose. To a child from 3 to 6 months old he advises a dose of a teaspoonful; from 9 months to a year, a dessertspoonful; and to a child from $1\frac{1}{2}$ to 2 years, a tablespoonful. He administers the oil ice cold as a preventive of nausea, and repeats the dose in an hour if it is vomited. The oil must be given on an empty stomach; in other words, there must have been no nutriment given for two hours before, and nothing for two hours after, Winters thinks, not even water. For the next twenty-four hours certainly, and often much longer, he administers nothing but water to the child, and generally hot water. If there is much vomiting he would give a few drops of hot water on the tongue every ten minutes, and states that sometimes this quickly and completely checks the vomiting.

As a stimulant to the gastrointestinal secretions he advises the administration of $\frac{1}{4}$ grain of rhubarb with 10 grains of bicarbonate of sodium in a teaspoonful of water every two hours.

R	Gm.		
Rhei	|30		gr. v
Sodii bicarbonatis	10	or	ʒiiss

M. et fac chartulas 20.

Sig.: Dissolve a powder in a spoonful of hot water and administer every two hours.

It is interesting to note in Winters' treatment of diarrhea the entire absence of stimulants, antipyretics, and astringents; in other words, the absence of drugging. While sometimes such treatment seems to do some good, probably in the majority of instances they do more harm than good, and the disturbance in the child is a disturbance of nutrition.

The cause having been eradicated, the subject for discussion is how and when to feed the child. Winters decries all of the various substitutes for milk, except in rare instances condensed milk, disapproves of the various meat juices and names almost the whole list of artificial nutriments as coming under his disapproval. He recalls to our mind the necessity of fat for the growing babe, reminding us that one-half of the dried residue of the body of the infant at birth is fat, and "the expenditure of heat in an infant 5 months old is 130 calories per kilogram of body weight," which seems to demonstrate the physiologic absurdity of attempting to feed a child with egg albumin and barley water, "which contain .25 and .02 per cent. of fat respectively," and which is a frequent substitute food during diarrhea. He also reminds us that the lymph of the intestinal exudate contains from 4 to 6 per cent. of proteid, almost as much as blood plasma, and this loss must be returned to the child, soon, if the child is to be saved, and he believes that only animal proteid will satisfy the need of the child; that vegetable proteid is not well handled by the child. The top half ounce from a quart bottle of milk contains 3 per cent. of proteid besides containing the proper amount of fat, and this is the nutriment that he believes the child should receive after 24, 36 or 48 hours of water treatment, especially in a child under 6 months of age.

For a child from 3 to 6 months of age suffering with diarrhea Winters' food prescription is to take the top half ounce from each of two quart glass jars of milk sixteen hours after milking, these bottles to have stood upright on ice for six hours before taking the top cream. It is, of course, as above stated, presumed that the milk should have been iced from the time of milking. Mix a teaspoonful of this cream with an ounce of cold, unboiled, filtered water, to which two teaspoonfuls of lime water have been added, heat to the feeding temperature, and give one ounce every four hours. Throw the rest away and prepare fresh at each feeding. He does not use milk sugar when there is diarrhea. Between the four-hour intervals of feeding, viz., on the alternate four hours, he would give, from the bottle, hot or cold water, one or two ounces, as deemed best. At this period, then, the nutriment and water alternate every two hours.

After two days, if the child is doing well, with no digestive disturbance, one ounce of the above food is given every three hours and the water discontinued. If the child is still improving in another twenty-four hours, one and one-half ounces of the same food is given every three hours. At the end of the next twenty-four hours the strength of the food is increased by taking the top half ounce from each of three or four quart bottles of milk sixteen hours after milking. Mix two teaspoonfuls of this cream with one and one-half ounces of cold, unboiled, filtered water and add three teaspoonfuls of lime water. Give two ounces of this every three hours. In five days the food is again strengthened.

The feeding for a child from 6 to 12 months of age who has diarrhea is as follows: Take the upper ounce from each of two quart bottles of milk sixteen hours after milking, which means six hours after the milk is delivered in the city. Mix two teaspoonfuls of this cream with one and one-half ounces of cold, unboiled, filtered water, and add three teaspoonfuls of lime water. Give one and one-half ounces of this every four hours, and water in between the feedings, as above. After two days, if the child improves, give one and one-half ounces of this food every three hours and discontinue the water. Gradually increase the amount first and later the strength of the food as the child improves.

If a child of 2 years of age has diarrhea he has reached the age when he needs more protein and can digest starch; in fact, at most any time from a little more than a year to several years of age Winters thinks that a complete change of food to proper, well cooked cereal will aid in curing the diarrhea, and sometimes acts almost as a specific.

If mucus persists in the stools, or the diarrhea has been going on for a long time before coming under treatment, Winters believes that irrigation properly done may be of value. Prolonged irrigation he thinks pernicious and large amounts of fluid injected he believes to be vicious. Enough injection to cause pain or frighten the child does harm even if it does not actually cause shock. Such continued inflammation may be improved by the injection of an ounce of glycerin and an ounce of warm water thoroughly mixed and injected by means of a small syringe, slowly and gradually, just beyond the internal sphincter. High injections Winters does not approve of at all.

When intestinal irritation or inflammation becomes subacute or almost chronic, neglected and mismanaged cases, as Winters terms them, he advises the use of condensed milk for a period, and believes that this is the best nutriment that can be given under these conditions, unless a wet nurse can be procured. If the child is much over 6 months of age and has been bottle-fed it is often difficult to make it take milk from the breast. These patients then should receive condensed milk for a time until the inflammation is cured. It should not be used after the patient has recovered.

For a babe 3 months of age with this subacute or chronic diarrhea Winters prepares the food as follows: One teaspoonful of canned sweetened condensed milk is dissolved in twenty-four teaspoonfuls of water which is actually boiling. One ounce of this mixture should be used for each feeding and the rest should be thrown away, as this food should be prepared fresh for each feeding. To the ounce prepared and cooled from the boiling point to the temperature for feeding add two teaspoonfuls of lime water, and this quantity of nutriment should be given every four hours, alternating with an ounce of hot water and two teaspoonfuls of lime water; in other words, the food every four hours and the water every four hours, alternating at two hour periods. In forty-eight hours, if there is improvement, he increases the quantity of the nutriment to two ounces, to which has been added one-half ounce of lime water, and this is alternated with two ounces of hot water and one-half ounce of lime water. In another forty-eight hours, with improvement, he increases the frequency of the nutriment to two ounces of the condensed milk mixture with one-half ounce of lime water every two hours, and the water is discontinued. A week later, the inflammation being apparently cured, he increases the strength of the food to a teaspoonful of the condensed milk to sixteen of boiling water, and gives three ounces of such a strength mixture, with one-half ounce of lime water, every three hours. As soon as the weather is cooler and the condition of the child seems favorable, the condensed milk treatment should be changed to modified cows' milk.

In another article by Winters, which was read before the Brooklyn Pediatric Society, he gives formulas for the bottle feeding of delicate infants during the summer months, of which the following are a few samples:

FOR A CHILD THREE MONTHS OLD

Take the upper 3½ ounces from each of three quart bottles of milk at 2 p. m., viz., about six to eight hours after the milk is delivered to a family in the city. To this add 4 teaspoonfuls of milk sugar, 12 ounces of filtered water and 6 ounces of lime water. This will furnish seven bottles of 4 ounces each, and 4 ounces should be the nutriment administered every three hours.

FOR A CHILD SIX MONTHS OLD

Take the upper 6½ ounces from each of two quart bottles of milk at 2 p. m., as before. Add 4 teaspoonfuls of milk sugar, 14 ounces of filtered water and 6 ounces of lime water. This will furnish six bottles of 5½ ounces each, and feed this amount (5½ ounces) every three and one-half hours for six feedings in twenty-four hours.

FOR A CHILD NINE MONTHS OLD

Take the upper 9½ ounces from each of two quart bottles of milk at the same hour as above. Add 12½ ounces of filtered water and 6 ounces of lime water. This will furnish five bottles of 7½ ounces. To each 7½-ounce bottle, just before feeding, add one ounce of barley gruel and administer this amount every four hours.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, AUGUST 6, 1910

THE PHYSIOLOGY AND PATHOLOGY OF THE PINEAL BODY

Of all the "ductless glands" the pineal body has disclosed the least concerning its reason for existence, not enough having yet been learned by the physiologists to afford a basis for even a working hypothesis. Because of its inaccessible location experimental investigation in the living animal has been unsatisfactory or impossible, and practically nothing has been learned by experimental feeding or by injection of extracts. While clinical and pathologic observations have added much to our knowledge concerning the functions of other organs of this class, these sources of information have not been of service in the problem of the pineal gland, for the simple reason that pathologic changes are almost unknown in this organ. About the only lesions described, except for a few instances of tubercle and gumma, are tumors, and in a review of the literature Pappenheimer[1] was able to collect in all but thirty-eight cases of pineal tumor.

On account of their rarity, and the possibility that through these tumors some light may be thrown on the mystery of the pineal body, Pappenheimer's review possesses considerable interest. Structurally the tumors described vary greatly, three main classes being differentiated by Marburg: first, cystic tumors, which represent either ependymal cysts or simple softening of neuroglia; second, teratomas, which seem to be relatively quite frequent; third, tumors composed of several different cell-types representing one embryonal layer only, these types being usually glia cells, ependyma cells, and pineal gland tissue.

With few exceptions the tumors have been observed in the first three decades of life, only three patients being over 40 years of age, and two between 30 and 40. In this connection there develops an interesting observation which is highly suggestive as to the function of the pineal body, and this is that in three cases in which the pineal tumor occurred in children under 8 years of age there was associated precocious sexual development, while in a fourth case a boy of 9 years showed excessive obesity.

This fact is of particular significance when we recall that tumors of the adrenal have also been found associated with precocious sexual development, and that all the evidence indicates a close interrelation of the ductless glands. Concerning this last point it may be remarked that in some of the cases of pineal tumor there was also found a persistent thymus. It is not so simple, however, to deduce from these three cases the influence that the pineal body may have on the generative organs, for a tumor of a ductless gland may mean either an exaltation or an impairment of functional activity. If the former, then it may be assumed that the pineal body has a part to play in sexual development, similar to that which has been ascribed to the cortex of the adrenal; but if the tumor has destroyed the gland, then the associated sexual changes must be ascribed to removal of some hypothetic inhibitory action possessed by the pineal body. As in two of the three cases the histologic structure of the tumor indicated that the growth consisted of a hyperplasia of the essential cells of the pineal body, Pappenheimer believes the evidence to favor the view that in these cases the sexual precocity is the result of an augmented function of the pineal body in the developing organism.

Taken all together, the evidence is not very abundant or very satisfactory, but it is perhaps the best indication that we have yet obtained concerning the function of this little outgrowth from the brain, and it represents the first contribution made by pathology to our knowledge concerning the physiology of the pineal body. As pathology furnished the first fruitful information concerning the physiology of the adrenal, the thyroid and the hypophysis, its suggestions concerning the pineal body are entitled to particular consideration.

SUN-BATHS AND COMMON SENSE

That too much exposure to the sun's rays may be not beneficial, but distinctly deleterious, has been asserted by various writers on the subject. At this season it may be relevant to call attention to a custom that is said to prevail in certain parts of Germany of lying naked for hours on the bank of some stream, entering the water from time to time, and then returning to the bank to lie in the sun, the purpose being to obtain therapeutic benefit from the sunlight by this return to nature.

Grawitz[1] has studied the effects of these prolonged sun-baths, and his conclusions are averse to the teachings of these apostles of the "natural life." He says that this prolonged exposure of the uncovered body is prejudicial to the human organism, producing irritability and nervousness, cardiac and circulatory disturbances, in addition to various more or less serious dermal lesions. He also says that children taken to the seashore for the benefit of the air and the sunshine return brown and ruddy, but with unstable nervous systems, and thus lose the benefit of the summer outing, while if taken to the mountains, where most of the time is spent in the shade, they do well.

---

[1] Pappenheimer, A. M.: Ueber Geschwülste des Corpus pineale, Virchows Arch. f. path. Anat., 1910, cc, 122; Brief abstract in The Journal, June 4, 1910, p. 1913.

[1] Grawitz, E.: Injurious Action of Sun Baths, Deutsch. med. Wchnschr., Aug. 19, 1909, No. 33; abstr. in The Journal A. M. A., Sept. 25, 1909, p. 1066.

Woodruff[2] and O'Malley[3] in this country have also studied the question, the latter calling attention to the fact that people from northern Europe, as the Swedes, find the climate of the United States very trying, and that the excessive sunlight is a detrimental factor. He also calls attention to the fact that people who are inclined to be nervous do badly at the seashore; their vacations should be spent in the woods, where they may have the advantages of the open air without excessive sunshine.

Woodruff has made some larger deductions, and attempts to show by figures that blonds and the people from the northern countries with less sunshine, and of less intensity, when living in areas with much sunshine, develop criminal tendencies, insanities and other pathologic phenomena associated with the nervous system, and that tuberculous patients do not do well when subjected to too much direct sunlight. He asserts that man instinctively avoids the sun, and that primitive peoples have been shade-dwellers, even in those countries where selection has developed a protective excessive skin pigmentation. It is also asserted that the blond type deteriorates in this country, and but for the immigration from regions of less sunshine would disappear, only the pigmented types by selection and survival remaining.

The races in the temperate zone have for centuries accustomed themselves to the protection afforded by clothing; the practice of going without is only another of the foolish unscientific fads or so-called cures which are too extreme to be of benefit, or are even injurious. Moderation in the use of sunlight, as in the use of every other good thing, is the sensible rule to follow.

VITAL STATISTICS AND PREVENTIVE MEDICINE

Notwithstanding the grievous lack of adequate laws concerning vital statistics in many of our states, an increasing amount of valuable statistical work concerning public health is being published every year. We are led to this observation by examination of the annual reports of health departments of cities and towns throughout the country received here from time to time. They come not only from the large cities, but also from some of the smaller cities, many of which have well-organized health departments, with physicians, sanitarians, bacteriologists, inspectors, laboratories and systematic methods of conducting their affairs. Unfortunately, the lack of uniformity in the preparation of many local reports renders instructive comparison impossible. In almost every instance, however, the reports show that those in authority have a most gratifying grasp of the essential features of public health and sanitary problems—water, milk and other foods, waste and its disposal, drainage, and the problems of quarantine and the infectious diseases. It is a matter of regret that there still remain so many cities and communities that have not yet awakened to the vital importance of this work.

Characteristic of all these reports are the statements, made with evident satisfaction by the health officers, that the incidence and mortality of infections and preventable diseases have been reduced in their communities. This sort of statement is well-nigh universal and shows that efforts at sanitation and prevention, though often expensive and tedious to carry out, are rewarded by tangible results.

The report of 1909 of Augusta, Georgia, a city of fifty thousand inhabitants, is an instance of such a report and such results. The figures in this report show that the death-rate in that city has fallen from 26.78 per cent. in 1880 to 12.78 per cent. in 1909. In addition to the mortality tables, it contains other comparative statistical tables concerning infections and contagious diseases in the white and colored races, a record of births, reports on social conditions, laboratory reports, inspections, hospitals, and reports on work done in the prevention of malaria, typhoid, tuberculosis, etc. It is an example of the systematic and valuable work being done in numerous other cities and towns.

These reports show that the work they represent is beginning to be recognized, as it must be some day, as the most important work in the government of any municipality, and that it must receive in future a greater share of financial support and cooperation to give it the greatest measure of effectiveness. When this recognition and support are extended in all communities, urban and interurban, when the states enact and enforce adequate vital statistics laws, and the national department of health is established, directing and assisting public sanitary work and collecting and collating vital and contagious and preventable disease statistics, then the problems of public health and the prevention of disease will be an open book, and conclusions that will point to their solution may be readily drawn.

In the meantime the efforts of isolated cities and towns, like those reported from Augusta, are most valuable as indications of what can be accomplished in the larger way by wider and more concerted effort. The most immediate desideratum is greater uniformity in the preparation of reports from various communities. It is to be hoped that concerted action on the part of local health authorities will soon attain this end and make this material available for purposes of study and comparison.

---

[2] Woodruff, C. E.: Dangers of Excessive Sunlight in Tuberculosis, New York Med. Jour., Sept. 12, 1908; abstr. in THE JOURNAL A. M. A., Sept. 26, 1908, p. 1106; A Study in Anthropology, New York Med. Jour., May 22, 1909; abstr. in THE JOURNAL A. M. A., June 5, 1909, p. 1884.

[3] O'Malley, A.: The American Climate and the Northern European, Am. Med., November, 1909; abstr. in THE JOURNAL A. M. A., Jan. 2, 1909, p. 75.

CEREBELLO-RUBRO-SPINAL POLIENCEPHALITIS

It has been shown that the toxic-inflammatory effects of the ultramicroscopic causative factor of acute poliomyelitis are not expended exclusively on the ganglion-cells of the anterior horns of the spinal cord, but that contiguous portions of the cord suffer also. Likewise, the morbid process is not always confined to the cord alone, but it may attack also the medulla and the encephalon. We may, therefore, have varying combinations of symptoms, in accordance with the distribution of the lesions.

The classic picture of acute anterior poliomyelitis—the spinal paralysis of infancy and childhood—with its sudden onset, vomiting, diarrhea, fever, flaccid paralysis and slow improvement, is but too familiar, while the symptomatology of polioencephalitis is less constant and less well known. Involvement of the cortex may cause convulsions, hemiplegia, mental deficiency, and even epilepsy; involvement of the midbrain, disturbance in the functions of the third and fourth nerves; involvement of the pons, disturbance in the functions of the fifth, sixth and other nerves; involvement of the cerebellum, a coarse ataxia, with muscular hypotonus and possibly nystagmus.

When the disease attacks the so-called cerebello-rubrospinal system, the nerve-tract comprised between the dentate nucleus of the cerebellum and the red nucleus of the opposite side, by way of the superior cerebellar peduncle, for the one part, and the rubrospinal tract, or bundle of Monakaw, in its course to the opposite side of the spinal cord, for the other part, there results a well-defined group of symptoms, which are brought out in a report by Leonard Pearson[1] of four illustrative cases. The distinctive feature is a coarse, regular, intention-tremor exhibiting from three to five oscillations in the second. The movement is involuntary and can be restrained only for a brief period. Volitional movement of the affected part is attended with an irregularity in the tremor such as is seen in cases of multiple sclerosis. In addition, there is a certain measure of paresis and rigidity, so that, at times, a clinical picture suggestive of paralysis agitans may be presented. The tremor sets in suddenly and may be widely distributed, affecting head, tongue, trunk, abdomen and limbs. It is associated with increased muscular tonus, rendering movement slow, stiff and awkward.

The disorder has certain points in common with poliomyelitis, namely, the fact that the patients are strong, robust and well nourished; the prevalence in summer and autumn; occurrence in early childhood; the varying degree of constitutional disturbance; the acute onset of the disease; the subsequent improvement, and the negative results from examination of cerebrospinal fluid.

Current Comment

PHARMACOLOGIC NONENTITIES

It is probably a fact that if an enterprising pharmaceutical house should put a milk-sugar tablet on the market under a fancy name, endow it with the marvelous properties that so many proprietary products are wont to have, and spend a small fortune in advertising it through medical journals—milk-sugar would become (under its proprietary name) one of the most popular of the "newer remedies." As a corollary we should read learned (?) articles gravely detailing the wonderful results from the use of milk-sugar, appearing in those medical journals which either carried advertisements of it or hoped to carry advertisements of it. Furthermore, should investigators publish the results of scientific investigations of the product, showing that the therapeutic potency of milk-sugar was zero, such investigators would unquestionably be referred to as "theorists," "therapeutic nihilists" and "mere impractical faddists." That this hypothetical case is not overdrawn is proven by conditions that actually exist. A product, which has been variously called a "glucosid," a "concentration," and "the active principle" of *Cactus grandiflorus*, has been proved by practical tests and by scientific experiments—repeated over and over again by competent observers—to have no more therapeutic value than milk-sugar. Yet it is advertised, in one or two different forms, with a lavishness that indicates a very general use. Another series of scientific experiments and their results dealing with the same product or products are given in this issue of THE JOURNAL;[1] they merely corroborate previous researches along the same line and are published because of the widespread use of this pharmacologic nonentity. As a central theme for a treatise on the "Psychology of Advertising," cactina pillets and cactin may have their uses; as medicaments they should be relegated to the therapeutic scrap-heap. Some day the popularity of these inert products with physicians will be looked on as an example of the credulity of our profession—and rightly so.

FOREIGN APPRECIATION OF THE COUNCIL ON MEDICAL EDUCATION

It is interesting to look back over the last few years and see the change in the references to America in the medical press abroad. Formerly most of the references made were to the "adventuresomeness" of certain American surgeons, to the "diploma-mills," to the pushing into prominence of "half baked ideas," and other references equally uncomplimentary. But a marked change has taken place. The improved organization of the American medical profession, bringing with it the creation and work of such permanent committees as the Council on Pharmacy and Chemistry and the Council on Medical Education are resulting in an appreciation abroad far greater than Americans realize; and, in some respects, the work is appreciated even more across the Atlantic than by the rank and file at home. A recent instance of this is the recognition now given to the work of the Council on Medical Education. This Council has been listed among the international organizations of the world in a pamphlet, "L'Internationalisme Médical,"[1] compiled partly to facilitate the work of the new permanent bureau for the organization of international medical congresses. The author, Dr. P. J. Eijkman, of The Hague, has the reputation in Europe of being a talented and indefatigable leader in the campaign against quacks, and all matters affecting the welfare of the profession. He refers in this pamphlet to 192 different international organizations already under way which are medical or connected more or less loosely with medicine, and among these is mentioned the Council on Medical Education. He says: "There is one association whose efforts deserve special mention, namely, the Council on Medical Education of the American Medical Association. It is incessantly striving to bring about greater uniformity in the preparation of physicians; unfortunately limiting its efforts to America, its work is not strictly international. However, if its efforts bear fruit and its example is followed, the time is not far distant when an international standard of requirements for the practice of medicine will be reached. . . . It is certain, however, that opinions will differ in regard to the requirements for the uniform standard, but all those who have read Schwalbe's pamphlet summarizing the laws in regard to practice of foreigners in the various countries cannot fail to acknowledge that the laws in vogue put altogether too many obstacles in the way of the practice of medicine outside of one's own country."

---

[1] Pearson, L.: Birmingham Med. Rev., April, 1910, p. 148.

[1] Lyon, E. P., and Qualls, G. L.: Experiments with Cactina and Cactin, p. 455.

CONSUMPTION-CURE FAKES

It is probable that in no other organic disease does the psychic element play the important part that it does in consumption. No other class of patients is so easily influenced for better or worse than that suffering from pulmonary tuberculosis. How great a factor the mental one is was strikingly shown by the experiments of Albert Mathieu. This physician gave his tuberculous patients to understand that a wonderful cure for tuberculosis had been discovered in the shape of a serum to which he gave the name "Antiphymose." To these patients he gave injections of what they supposed to be this hypothetical serum but what actually was a small quantity of physiologic salt solution, and carefully noted their condition. A remarkable change was seen; the appetite improved, the temperature diminished, the cough, expectoration and night-sweats were mitigated and the patients began to gain in weight. With the discontinuance of the injections the old symptoms returned. Mathieu's experiment was merely a scientific proof of a fact that is familiar to every physician who has treated phthisical patients. Any change in treatment, or in the individual giving the treatment, results in a temporary improvement of the patient. It is this curious psychologic fact that makes the tuberculous patient a pitifully easy victim of those unconscionable villains who advertise to cure consumption. The speciously worded advertisement, the exaggerated claims, the favorable testimonials—all conspire to convince the consumptive that here at last is the long-hoped-for "cure." Hence the profitableness of this most despicable branch of quackery. In the Pharmacology Department of this issue another of the almost innumerable "consumption-cure" fakes is described and the methods of its exploiter detailed. As the viciousness and cruelty of this form of fraud is borne in on one, it seems unbelievable that a civilized community should tolerate it. To the disgrace of our laws be it said, the consumption curer and the cancer quack are allowed to ply their nefarious trade practically unmolested by state or municipal authorities. Generally speaking, the only time these ghouls are interfered with is when the federal authorities take action for some infraction of the postal laws, for so long as the scoundrels keep within the somewhat broad requirements of these laws they are apparently immune from arrest. Will the time not come when an enlightened public opinion will either demand laws which will make the existence of such frauds legally impossible, or will demand that a construction be given to existing laws so that the necessary protection may be afforded the sick and helpless?

AN APPRECIATION OF MEDICAL INVESTIGATORS

In the British House of Commons, June 29, Colonel Seeley, under-secretary for the colonies, mentioned appreciatively the heroism of the investigators of sleeping-sickness, especially of Sir David Bruce, who had gone with his wife into the heart of the disease-ridden section where nearly every one was sick and no patient recovered. There were many other investigators, some of whom had succumbed in their efforts to find out the causes and remedy for the plague. Colonel Seeley said that when the history should be written of what had been done by these brave men it would perhaps be considered "as giving more striking proof of the ability of men to overcome natural fear than almost anything else in the annals of mankind." It is pleasing to see such recognition of the heroism of medical men from high official sources. Such deeds are not done under the excitement of battle. The risks are deliberately taken for human good and the danger fully appreciated, but too seldom are they thus publicly honored.

WHO PAYS

An interesting question connected with the proprietary medicine business, worthy of just a moment's consideration, is "Who pays the freight?" So far as "patent medicines" are concerned, it is evident enough that the burden falls directly on the consumer. But what about the "ethical proprietaries?" Here the taxation is less direct. We refer elsewhere to a product—cactina pillets—that for over a third of a century has been advertised to and used by the medical profession and from the sale of which its exploiter is reported to have made millions.

---

[1] This pamphlet is published in French and is issued by the Bureau Préliminaire de la Fondation pour l'Internationalisme, 6 Van Lennepweg, La Haye, Pays-Bas. (The Hague, Netherlands.) Price 2 francs (40 cents).

Therapeutically it appears to be worthless; commercially it has been a gold mine. Even now, in spite of what has been published regarding it, it must be having a profitable existence, for we find it advertised in over fifty medical journals. The amount of money that such a use of advertising space represents only publishers of medical journals can realize. Who pays for it all? It certainly is not the manufacturer nor the medical journals, since both profit by the exploitation of this therapeutic unreality. It must then be either the physician or the patient. Which is it? If the patient, the question becomes a moral one which is respectfully referred to the medical journals which advertise it and to doctors who prescribe it.

CRIPPEN

Last week we commented on the quackish career of Dr. Crippen, just arrested as a wife-slayer, and incidentally mentioned that he was for a while a resident of Philadelphia. It now appears that when in that city he was in the employ of "Professor" Munyon, whose picture, as he stands pointing heavenward past an aggressive pompadour, is as well-known to newspaper readers as is that of Lydia Pinkham. According to the *Medical Press and Circular*, Crippen went to England to manage the Munyon "remedies" in that country. There is a certain element of poetic justice in the case; if Great Britain were not the fertile field for quackery that it has become, Crippen probably would have remained on this side of the Atlantic, and that country would have been saved the expense of catching and prosecuting him.

LEPROSY

Press despatches from Honolulu announce that Dr. Walter Brinckerhoff has expressed the opinion, based on his observations for the last four years at the leprosy experiment hospital at Molokai, that the use of alcohol by the natives is largely responsible for the leprosy occurring among them. This opinion is published on the eve of an election in which the license or no license of liquor sales is a question for decision, and it is therefore the subject of general discussion, not only by medical men, but by the public at large.

PREVENTION OF ACCIDENTS TO DEFECTIVES

An interesting discussion before the American Association for Study of the Feeble-Minded is recorded in the *Journal of Psycho-Asthenics*. The subject was the means of avoiding trouble from accidents to patients in institutions for the feeble-minded and epileptics. This discussion brought out the fact that in some institutions the details of every trivial injury are immediately written in the daily records. Then, if a visitor inquires about a bruise visible on a patient, it is possible to show just when and how it was received, without depending on mere verbal explanations which may or may not be believed. The official record usually satisfies the inquirer. The idea is a good one. It is impossible to prevent occasional injury to such patients, either from restraint or from their own violent actions, and every measure that tends to allay public apprehension on the subject should be adopted.

Medical News

CALIFORNIA

School of Tropical Medicine.—Plans have been formed by the health department of San Francisco for the formation of a school of tropical medicine for the study and treatment of tropical diseases in the port of San Francisco.

Few Fourth of July Accidents.—According to official report of the chief surgeon of the Emergency Hospital, San Francisco, only five cases of injury were reported in San Francisco on the Fourth of July. Last year the number was forty-five and the year before more than seventy.

Advertising Doctor Goes to Prison.—The appellate court in San Francisco has affirmed the judgment of the superior court against J. J. Arberry, who was charged with obtaining money under false pretenses. It was shown that he practiced medicine under the name of Dr. Taylor & Co. and accepted money from a patient whom he claimed had heart disease when there was nothing the matter with the patient. Arberry is now in prison.

Plague Conditions.—No case of plague has occurred in San Francisco in the last twenty-eight months, but a campaign against rats has been kept up. Thirty laborers are still employed exclusively as rat trappers. During May over 8,000 rats were trapped and many more poisoned by material placed within the sewers. The work has been under the supervision of Acting-Assistant Surgeon George M. Converse, U. S. P. H. and M. H. Service.

Meeting of Milk Association.—The officers of the California Association of Medical Milk Commissions met in connection with the Santa Clara County Medical Society, at San José, July 20, the object being to arouse interest in the organization of local milk commissions. The meeting was addressed by Dr. George F. Barker, inspector in charge of the Bureau of Animal Industry of the United States Department of Agriculture. A number of dairymen attended the meeting. Other addresses were made on allied subjects. At the meeting Dr. Charles M. Richards, San José, was elected editor for Santa Clara county of the state medical society journal.

Personal.—Dr. Bert J. Lasswell has resigned as health officer of Quincy and has been succeeded by Dr. F. D. Walsh.——Dr. C. S. Allen has been made physician at the county farm at Los Angeles, to succeed Dr. Dumont Dwire, resigned.——Dr. Charles A. Tillotson, Culbertson, Mont., is now physician at the emergency hospital of a large oil company at Coalinga.——Dr. Harold S. Warren, Coalinga, city health officer, has received an appointment as deputy county health officer for Fresno County, thus giving him jurisdiction outside the corporate limits of Coalinga.——Dr. H. B. Graham, San Francisco, formerly a member of the faculty of the University of Vienna, has returned to California.

Hospitals and Charities.—The staff of doctors for the clinic conducted by the Catholic Humane Bureau, 597 Oak Street, San Francisco, has been appointed, with Dr. Gerald J. Fitzgibbon at its head.——Mrs. Whitelaw Reid, founder of the Red Cross Guild Hospital at San Mateo, will erect two additional buildings for the use of the hospital, to cost $100,000.——The Emergency Hospital at San Francisco treated over 25,000 cases during the year, the ambulance calls reaching over 1,000.——The New Harbor Hospital, San Francisco, opened Aug. 1.——Land has been purchased at Bakersfield by the Catholic diocese for the erection of a $50,000 hospital to be called the New St. Francis Hospital, taking the place of the old St. Clair Hospital.——The Masonic Home at Niles is building a new $10,000 hospital.——Berkeley dispensary and Berkeley charity organizations have joined their forces and will be established in new quarters at 1910 Kittridge Street.——The state board of health has established a substation of the state hygienic laboratory at Fresno, which is to have charge of all examinations in the counties from the Tehachapi mountains as far north as Stockton. A substation was also established at Los Angeles a year ago. The plan has been found to work admir ably.——A $35,000 addition to Clara Barton Hospital, Los Angeles, is now under construction.——The San Joaquin Hospital Association has been formed at Stockton with a capital stock of $200,000. A non-sectarian hospital costing $125,000 will be erected at once.

ILLINOIS

Aurora Health Order.—Dr. Augustus R. Reder, health officer of Aurora, has issued to householders and property owners of the city a set of eleven rules in regard to personal hygiene and public sanitation which have attracted attention throughout the country. Rule eight requests all persons to bathe at least once a week.

Hospitals.—The great need of a public hospital in Sterling has been brought to the attention of the city council and the institution already in the city will probably be taken over by the city government.——The new Monmouth Hospital at Monmouth is now under construction. Dr. Edward L. Mitchell is a member of the building committee.——The new hospital for consumptives at the State Hospital for the Insane, Bartonville, is nearing completion.

Personal. Dr. Francis E. Melugin, Thomson, recently underwent a surgical operation at the Clinton Hospital.——Dr. Clinton Helm, a practitioner of Rockford for thirty years, was recently stricken with paralysis.——Dr. Hiram T. Hardy, Kaneville, is in Wesley Hospital, Chicago, on account of an operation for gall-stones.——Dr. Charles True, Kankakee, is in a serious condition from a stroke of paralysis.——Dr. William J. Cheany, Petersburg, has been appointed county poor physician.——Dr. Elbert E. Clark, Danville, sails August 6 to attend clinics in Germany.

Chicago

Personal.—Dr. Stephen W. Cox has been appointed United States Pension Examining Surgeon in place of the late Dr. John W. Tope, Oak Park, and has been assigned to duty on the first pension board of Chicago.——Among the Chicago members of the American Society of Clinical Surgery who recently visited England as the guests of the English surgeons, Drs. A. D. Bevan, Frank Billings, M. L. Harris and L. L. McArthur have returned.

Care for Knights.—Elaborate preparations are being made to care for the health of the Knights Templar, who hold a conclave in Chicago next week. The Bulletin of the Department of Health for the present week contains much advice to the conclave. Among the healthgrams, presumably for their benefit, is the following: "Alcohol has hammered hob nails into many a man's liver." The knights are advised to drink lemonade and buttermilk and Lake Michigan water, which latter is declared to be harmless when not mixed with whiskey.

Chicago Medical Colleges and the Licensing Board.—Some time ago the Illinois State Board of Health declared the National Medical University—one of the Chicago "night" medical schools—not in good standing. The dean of this school now charges that he paid a fee to a Chicago lawyer legislator for the apparent purpose of influencing the State Board of Health to reinstate the school. This dean further charges that five or six other medical colleges in Chicago are paying money to keep in the good graces of the State Board of Health. All of the charges are denied, both generally and specifically, by the board, and the governor and the state's attorney have each started investigations of the whole matter.

IOWA

Infantile Paralysis. At the instance of Dr. Thomas U. McManus, Waterloo, of the State University of Iowa, the state board of health has taken up the investigation of infantile paralysis. An expert will be sent from Washington by Surg.-Gen. Walter Wyman, U. S. P. H. and M. H. Service, to aid in the investigation.

Board Adopts Higher Requirements. It is reported that at a meeting of the Iowa State Board of Medical Examiners, held last week, it was decided to raise the minimum of preliminary education to be required after Jan. 1, 1911, to two years of collegiate work. This is in support of the three medical schools of Iowa, all of which have adopted a similar requirement to be enforced this fall and thereafter.

Personal.—Dr. Benjamin R. McAllaster, for many years head physician at the Cherokee State Hospital, has been appointed superintendent of the State Hospital at Jamestown, N. D.——Dr. Albert C. Moerke, Burlington, has been elected president of the state board of health.——Dr. George E. Decker, Davenport, has been elected chairman of the state board of medical examiners. Dr. Guilford H. Sumner, Waterloo, has been elected secretary of the above organization.——Prof. Henry Albert, Iowa City, was elected director of the state laboratory, and Prof. Charles M. Kinney, Des Moines, state chemist.

MARYLAND

Baltimore

Improvement to Be Made.—The Union Protestant Infirmary is about to undergo improvements at a cost of about $5,000.

State Board. The Board of Medical Examiners of Maryland announces that ninety-three of the candidates who took the June examinations were successful and will obtain the license to practice. The board elected the following: President, Dr. Herbert Harlan, Baltimore; vice-president, Dr. B. W. Goldsborough, Cambridge; secretary-treasurer, Dr. J. McPherson Scott, Hagerstown.

Personal.—Among those sailing for Europe July 30 were Drs. J. B. Schwattra and Jennie N. Browne, and Dr. W. C. Lyle, Augusta, Ga.——Dr. Gideon Timberlake has been made associate professor of genitourinary diseases and Drs. Nathan Winslow, William H. Smith, William D. Scott, Jr., and G. C. Lockhard have been made associates in various departments at the University of Maryland.

MASSACHUSETTS

Infantile Paralysis.—Springfield has an epidemic of infantile paralysis, more than fifty cases having been reported within six weeks. Surrounding towns also report a number of cases.

Summer Medical Lectures.—Harvard University, medical department, is giving a series of lectures to students of the summer school and to the medical profession twice weekly at 5 o'clock. A schedule of interesting subjects has been arranged.

Floating Hospital.—The Boston Floating Hospital has opened for the season. The boat leaves the pier at North End Park, Commercial Street, daily at 9 a. m. and returns at 5 p. m. Age limit is 5 years. Mothers are permitted to accompany their children.

Prendergast Camp.—The Prendergast Camp, near Mattapan, conducted by the Boston Association for the Relief and Control of Tuberculosis, will hereafter admit cases of unarrested and incipient tuberculosis. Formerly only arrested cases were admitted.

Extension for City Hospital.—The trustees have purchased land at Harrison Avenue and Northampton Street, Boston, for $67,000, on which will be erected an extension to the City Hospital at a cost of $165,000. This extension is rendered necessary by the overcrowding of the hospital.

State Hospital for Nervous Troubles. Under a recent law of the legislature the governor has appointed a commission, consisting of Dr. Owen Copp, Brookline; Dr. Burnham R. Benner, Lowell, and Dr. William N. Bullard, Boston, to investigate and report on the establishment of a state hospital for treating cases of nervous breakdown.

Personal. Dr. Theobald Smith, bacteriologist to Harvard Medical School, has been given the degree of doctor of science by Harvard.——Dr. and Mrs. Alfred Saenger, Hamburg, Germany, are the guests of Dr. and Mrs. L. Vernon Briggs at Manchester-by-the-Sea.——Dr. Thomas F. Harrington, Boston, and Dr. George S. Mathews, Providence, R. I., have sailed for Europe.

MISSISSIPPI

Clinical Department Discontinued. Owing to the failure of the last Mississippi legislature to make an appropriation for the support of the medical department of the University of Mississippi, which was established last year at Vicksburg, the trustees of the university have decided to discontinue that portion of the medical course, retaining only the work of the first two years at Oxford.

Reporting Tuberculosis. Secretary Samuel H. McLean of the State Board of Health, is sending out blanks to physicians for reporting cases of tuberculosis as provided for in the recent act of the legislature. The law in regard to reporting these cases will be enforced rigidly.——Dr. Walter S. Leathers, recently appointed as agent of the Rockefeller Foundation, director of the campaign of sanitation and hygiene being waged by the state board, has commenced the publication of a series of bulletins on tuberculosis, endeavoring to make the people of Mississippi fully acquainted with the methods of fighting tuberculosis.

MISSOURI

Personal.—Dr. Louis W. Luscher has been appointed superintendent of the General Hospital, Kansas City, to succeed Dr. G. Wilse Robinson, resigned.——Dr. Milton P. Overholser, Harrisonville, and Dr. Ira W. Upshaw, St. Louis, have been appointed on the State Board of Health. Dr. Overholser succeeds Dr. Albert H. Hamel.——Dr. B. S. McGinniss, St. Louis, has been appointed to succeed Dr. Albert J. Campbell as surgeon of the Missouri Pacific shops at Sedalia, taking effect August 1.

Heads Association.—Governor Herbert S. Hadley has been elected president of the Missouri Association for the Relief and Control of Tuberculosis, to succeed Dr. William Porter, St. Louis. An aggressive campaign against tuberculosis has been planned, and Dr. James Stewart, head of the department of hygiene of the St. Louis Board of Education, accompanied by several prominent physicians, began a tour of the state August 1 in a special car furnished by the Frisco Railroad. Miss Winnifred Doyle will precede the car by about a week and form local committees to assist with the work in the various towns.

NEW JERSEY

Personal.—Dr. Walter Reynolds, a member of the board of education, of Atlantic City, was given the degree of LL.D. by Villanova College at this year's commencement.

School Age Limit.—The recent session of the New Jersey Medical Society in a resolution declared that the minimum age for the children to be admitted to the public school should be raised from 5 to 7 years.

School Medical Inspection.—Boards of education of the state are finding great difficulty in obtaining medical inspectors for the schools under the law recently passed by the legislature. The physicians of the state have fixed the price of $1 for each pupil inspected and opposition is raised to the inspection by parents, who object to public inspectors and who say that they have their own family physicians.

The Health Officers As Police.—The Department of Health of Camden decided on July 25 to appoint the inspectors of the board as special policemen to arrest all violators of the anti-spitting ordinance. It is planned to station these men at the ferries and to arrest all who spit on the sidewalks. The Board of Health proposes to see that the ordinance forbidding the keeping of poultry, swine or goats within the city limits is enforced.

NEW YORK

Society Election.—The eleventh annual session of the Lake Keuka Medical and Surgical Association was held at Grove Springs July 21 and 22. The following officers were elected: President, Dr. Ralph R. Fitch, Rochester; vice-president, Dr. Charles L. Stiles, Oswego, and secretary-treasurer, Dr. H. B. Nichols, Syracuse. The next annual meeting will be held at the same place.

Personal.—Dr. Charles W. Pilgrim, superintendent of the State Hospital at Poughkeepsie, has gone to Europe.——Dr. Albert Warren Ferris, president of the State Lunacy Commission, has sailed for Scotland to secure information regarding the construction by the state hospital commission of a hospital in Yorktown on Mohansic Lake.——Dr. Robert E. Doran, first assistant superintendent at Willard State Hospital for the Insane, has been selected as state medical inspector for the State Lunacy Commission.

Laws Against Stream Pollution.—Two legislatures having failed to strengthen the laws against pollution of public waters, application has been made to the governor for executive action under existing laws as indicated in the official report of the state commissioner of health. It was found that legislators who privately favor the recent bill voted against it out of "courtesy" to associate legislators. Sanitarians are much aroused and declare that there is no valid reason for opposition to the bill and characterize the action of the legislature as "misrepresentative government."

New York City

Care for Many Poor.—The New York Association for Improving the Condition of the Poor announces that on July 26 1,000 mothers and babies were sent to the seashore for the day. During the recent hot weather the number has ranged from 600 up to the high figure of the twenty-sixth. One feature of the work of the association this summer is the talk on the preparation of food, with a view to health and economy, which is given daily on different recreation piers.

City Death Rate Decreases.—There was a decrease of 11 per cent. in the death rate among infants for the week ending July 23. However, the total number of deaths of infants under one year was 76 more than for the corresponding week of last year and for children under five from diarrheal diseases 69 more than for the same week of 1909. The death rate for the week was 17.18 per 1,000 population compared with 16.17 for the corresponding week of last year. There were 674 deaths in tenements and 582 in institutions out of a total of 1,552 deaths.

Personal.—Dr. Alonzo S. Tredwell, Brooklyn, sustained rather severe injuries in an automobile accident recently.——Dr. Edwin A. Spies, ambulance surgeon of the Williamsburg Hospital, sustained a dislocated shoulder in a collision between his ambulance and a trolley car.——Dr. John B. Byrne, Jr., Brooklyn, has been appointed private clerk to Coroner Rooney of that borough.——Dr. Michael J. Thornton has been appointed assistant alienist at Bellevue Hospital. He has been mental examiner at Ellis Island for the past four years.——Dr. W. Gill Wylie and Dr. and Mrs. D. Hunter McAlpin have sailed for Europe.——Dr. Glentworth Reeve Butler, Brooklyn, has been appointed a member for three years of the State Board of Medical Examiners.

NORTH CAROLINA

Hookworm in Soldiers.—Dr. Samuel Westray Battle, surgeon-general of the national guard of North Carolina, has arranged for a critical study of the excreta of every soldier attending the annual encampment this year with a view to ascertaining the prevalence of hookworm disease. The state board of health will cooperate by affording laboratory facilities.

Personal.—Dr. D. A. Stanton, High Point, secretary of the state society, has been nominated by the Republican party to represent Guilford County in the house of representatives for the ensuing two years.——Dr. Armisted K. Tayloe, Washington, N. C., has been commisioned assistant surgeon in the North Carolina national guard with the rank of first lieutenant.

OHIO

Abolishing the Drinking Cup.—Director Orr of the Cleveland public schools has announced that the drinking cup has been abolished in all the schools of Cleveland and that the sanitary drinking fountains will be used in the future.

Taking Care of the Babies.—On account of the fact that every hospital in the City of Cleveland has been filled with sick babies, open-air wards have been established on the Andrews lawn, Euclid Avenue and Thirtieth Street, at the babies' dispensary, where twenty-six sick babies can be cared for.

Decisions Regarding Medical Examination.—By a recent decision of the Ohio courts the state board cannot compel applicants for medical certificates to go to Columbus, the state capital, for examination, but the board must conduct them in all large cities. The board held an examination in Cincinnati July 19, the first held outside of the state capital, when twenty-two applicants took the examination.

Personal.—Dr. Thomas P. Johnston of the Protestant Episcopal Hospital, Columbus, has been appointed lieutenant in the O. N. G. and assigned to duty with the Second ambulance company, which will go into camp at Marietta.——By order of the adjutant general's department of the Ohio national guard the following appointments of officers of the medical corps have been made: Maj. Joseph A. Hall, Cincinnati, acting assistant surgeon-general; Maj. Frederick C. Weaver, Dayton, director of field hospitals; Maj. Sterling B. Taylor, Columbus, sanitary inspector, and Maj. Harry H. Snively, Columbus, director of ambulance companies, and to continue in command of the Second ambulance company.

PENNSYLVANIA

To Care for Insane at Home.—The court of Pottsville on July 25 ordered the erection of a new insane asylum for Schuylkill County to accommodate 650 patients. The action renders possible the withdrawal of the county's 400 patients from the state institutions by providing a home for them in their own county.

Typhoid at Harrisburg.—Thirteen cases of typhoid fever reported by physicians a few days ago have caused an investigation to be made on Harrisburg's milk supply. The city water is filtered and this has reduced the typhoid rate below that of any other city in the state. As the examination of the water shows good results, the state and city authorities are looking into the surroundings of all dairies.

Infantile Paralysis. Infantile paralysis continues to prevail throughout the state and it is estimated that between 50 and 100 cases are present. The malady is not limited to any one section, but seems to be more or less general; however, the most cases have been reported from the counties of eastern Pennsylvania. The disease is being investigated by State Commissioner of Health, Dr. Dixon, and his assistants.

Tetanus Antitoxin Results. The State Department of Health has furnished tetanus antitoxin for the treatment of twenty-nine patients who were injured in accidents with explosives July 4. The reports received from the physicians using the state's antitoxin up to date show that not one of these patients developed lockjaw. The department feels, therefore, that the plan of distributing antitoxin was well worth the money appropriated by the state.

Department of Abnormal Psychology. As announced last week, the University of Pittsburg will establish in connection with its medical department a laboratory of abnormal psychology, under the direction of Prof. J. H. White and Dr. Edward E. Mayer. The hospital school for backward children, under the medical direction of Dr. E. Bosworth McCready, is an entirely separate institution, but was erroneously mentioned in the news item in connection with the department of abnormal psychology.

Campers Have Scarlet Fever. The local health authorities at Norristown are much concerned over two boys who returned home ill from a camp at Betterdon, Md., and were found to be suffering from scarlet fever. They were members of a large camping party and were only in camp a few days when many of the boys were taken sick. Inspector Whitcomb notified the State Board of Health of Maryland and the Pennsylvania Board of Health of the many coming from the camp and going into various parts of the state, in the hope of preventing the spread of the disease.

Personal.—A state tuberculosis exhibit has been opened under Medical Inspector John A. Bouse in the Jefferson Avenue School at Bristol. —Dr. H. H. Wilford, Bangor, narrowly escaped death in the Delaware River at Foul Rift while attempting to shoot the rapids. He was rescued in a spectacular manner by friends. —Dr. George S. Criswell, Franklin, has been made a member of the board of examiners of the state institution for feeble-minded at Polks, to replace Dr. S. M. Jackson, deceased, and Dr. Marshall Phipps, Franklin, to replace Dr. W. W. Echols, deceased.

Philadelphia

City to Make Malaria Blood Tests. Dr. Joseph S. Neff, director of the Department of Health and Charities, announced July 25 that Dr. C. Y. White, Jr., chief of the bacteriologic department, will hereafter make official blood tests for diagnosing malaria at the request of physicians. The department has been giving its aid for several years by making tests of typhoid fever, diphtheria and tuberculosis. Milk is also tested to determine whether it is infected.

Infantile Paralysis Reported. As a result of the request, recently sent out by the Department of Health and Charities to physicians, two cases of infantile paralysis have been reported in Philadelphia. One is a child of two years old in West Philadelphia, and the other a child in Roxborough. These cases will not be quarantined, but other children will be kept away and the progress of cases, with all the surrounding facts of environment, will be carefully watched and reported.

Sudden Increase in Typhoid. Fifty two cases of enteric fever were reported for the month of July and gave rise to the suspicion of a possible defect in the city filtration system. This uneasiness was set at rest, however, by the investigation of the cases by the board of health, who have shown that the majority of the cases were contracted outside of Philadelphia. All of the patients were absent from the city for a week or more before the disease made its appearance, and had been contracted by the patients during their vacation in places where the drinking water was impure.

Nursery on Recreation Pier. Under the auspices of the Department of Public Health and Charities and the Bureau of Municipal Research the Chestnut Street recreation pier nursery was opened July 27. Mothers can take their infants there and receive medical attention, while the nurse in charge will show them how to bathe and care for the young babies during the mid-summer weather. Within a few days a modified milk station will be opened on the pier, with complete appliances for heating milk, sterilizing bottles and nipples. Further improvements are contemplated chief among them being various amusements for the youngsters such as sand piles, hammocks, swings and cots.

Gift to Jefferson.—Mr. Daniel Baugh has purchased a large building at Eleventh and Clinton Streets and presented it to Jefferson Medical College. The building, formerly occupied by the Pennsylvania College of Dental Surgery, and valued at $50,000, contains two commodious lecture rooms and three large floors adapted for laboratory purposes. This addition will give the faculty an opportunity to transfer the anatomic and physiologic laboratories to the new quarters and the extension of the clinical laboratories in the college building at Tenth and Walnut Streets, which are readily accessible from the dispensaries and wards of the hospital. The enlarged laboratories will be devoted to the instruction of advanced students in the junior and senior years.

Personal.—Dr. John Funke, demonstrator of morbid anatomy at Jefferson Medical College, resigned to take a position in the department of pathology at the Atlanta (Ga.) College of Physicians and Surgeons. —A testimonial reception was tendered to Dr. M. F. Mossel of the Douglas Memorial Hospital, at Musical Fund Hall, July 28. —Dr Edward A. Leonard was advanced to the position of assistant physician to the insane department of the Philadelphia General Hospital, which was recently made vacant by the resignation of Dr Samuel Stern. —Drs. Charles H. Frazier and Edward Martin have returned from abroad. —Dr. Frances R. Packard sailed for Europe July 28. —Dr. Elmer E. Funk has been appointed chief resident physician of Jefferson Hospital. —Dr. Harry Hudson has been appointed professor of orthopedic surgery in Temple University. —Dr. E. L. Klopp has been made chief of the new surgical dispensary of Jefferson Hospital and Dr. Arthur Davidson has been made chief of the orthopedic dispensary. —Dr. I. Franklin Cohn, U. S. N., has returned to the U. S. Naval Hospital, Philadelphia, from Washington, after having been promoted to the rank of passed assistant surgeon.

TEXAS

Hookworm Meeting. At a recent conference of the members of the state board of health with Dr. Wickliffe Rose, of the Rockefeller Hookworm Commission, the action of the state board in refusing to participate in the Rockefeller hookworm fund was reconsidered, and it is now probable that a portion of the fund will be expended in Texas.

Death Rate Too High.—The bulletin of the Texas State Board of Health for June shows that while the average death rate from tuberculosis in the United States is 173 for each 100,000 population, the rate for Texas is 186. The board declares there is no justification for such a high rate in Texas and makes an appeal to the health authorities and people of the state to reduce this mortality. In comparing the six largest cities of the state the mortality rate per 1,000 is found to be as follows: Galveston, 11.8; Houston, 16.5; Dallas, 17; Fort Worth, 20; San Antonio, 21.6, and El Paso, 37, the high death rate in San Antonio and El Paso being accounted for by the fact that they are health resorts with many imported cases of tuberculosis and other diseases. San Antonio protests against this finding of the state board and says that their local records show no such death rate.

GENERAL NEWS

Tuberculosis in Cuba. There have been 39,081 deaths from tuberculosis in Cuba during the last ten years and 10,000 in the city of Havana alone. President Gomez has submitted a message to congress urgently recommending an immediate campaign against the rapid spread of the disease.

New Director of Hygienic Laboratory.—Dr. M. J. Rosenau formerly director of the Hygienic Laboratory of the U. S. Public Health and Marine Hospital Service having resigned June 30 to accept a position in the department of pathology of the Harvard Medical School, Dr John F. Anderson has been permanently detailed as director.

Hospital at Cebu. The government authorities in the Philippines have purchased from the Presbyterian Mission in Cebu a site for a hospital, which will supply the wants of over 1,000,000 people in that portion of the Philippines. The building will be an entirely new departure in hospital construction, being octagonal and built in such a manner that additions to any side can be made.

Physician Not a Prisoner.—Reports that Dr. Lawrence Burgheim, an American physician in Nicaragua, was being forcibly detained by the Madriz forces, has been denied in a report to the State Department. Dr. Burgheim was physician to General Irias, the Madriz commissioner in Eastern Nicaragua, but recently quit the Madriz service and is reported to be in charge of one of Estrada's hospitals in Bluefields.

School for Army Surgeons.—A Field Service School has been established at the army post at Fort Leavenworth in connection with the Army Service School already there, to be in charge of an officer of the Medical Corps with a grade not lower than major, to prepare officers of the Medical Corps and medical officers of the organized militia for the better performance of their duties as administrative and staff officers on field service, and to make research into such subjects as concern medical officers under field conditions. The course will cover a period of six weeks, beginning about April 1 of each year.

Mosquito War in Italy.—In his report to the Department of Agriculture Dr. L. O. Howard, of the Bureau of Entomology, who has recently returned from the Italian Campagna, states that as a result of the war on mosquitoes in certain parts of Italy a healthy, cheerful-looking race and fat, rosy children have succeeded the miserable peasants, with yellow skins and bodies bent with disease and suffering. The Campagna, which was almost uninhabitable on account of mosquitoes and malaria, has now been drained by the government and is extensively farmed, and is beginning to support what will eventually be a large population. The government furnishes to the malarial population of the country "official quinin" at a cheap rate, and free to those unable to pay for it. The fight against malaria was inaugurated and pushed successfully by Dr. Angelo Celli, who is held in reverence by the common people of the country.

FOREIGN NEWS

New Hospitals.—Arrangements have been made to construct a new hospital at Vera Cruz, Mexico, to cost $100,000, to be called Melchor Ocampo, to take the place of the old San Sebastian Hospital which has fallen into decay.——The new hospital at Guadalajara is being furnished and will be opened shortly.

Cholera in Russia.—The report of the government sanitary commission, made public at St. Petersburg July 28, shows that cholera is prevalent in 42 provinces and territories in European Russia, and since the outbreak of the disease in May there has been a total of 37,652 cases with 16,651 deaths. Recently there has been a startling increase in the number of cases. During the week ended July 23 no less than 13,374 cases were reported and of these 5,979 terminated fatally. For two weeks prior to the report there was an average of 40 new cases daily in St. Petersburg.

Medals at Ophthalmic Congress.—During the last International Ophthalmologic Congress, held last year at Naples, eight gold and three silver medals were offered for the best articles in honor of the late Professor de Vicentiis. The decision of the international committee in charge of the awarding of the medals was published last week in the last part of the transactions of the congress. The gold medals were awarded to A. Birch-Hirschfeld, A. de Lieto Vollaro, A. del Monte, L. Guglianetti, T. Henderson, G. Samperi, R. Seefelder and H. Villard. The recipients of the silver medals were W. Clausen, R. Parco and K. Wessely. The representative for the United States on the committee was Dr. E. E. Blaauw, Buffalo, N. Y.

CANADA

Naval Physicians Wanted.—The Dominion Civil Service Commission is advertising for surgeons for the Canadian navy. Three will be engaged at first, not over 30 years of age, who will receive $4 per day for three years, and then $5 per day up to five years. After their term of service they will be granted gratuities of $1,000 to $1,500 each.

Protective Association.—The ninth annual report of the Canadian Medical Protective Association has been issued. The membership has been steadily growing until it now reaches the 700 mark. During the past year only two legal cases have been before the courts for alleged malpractice against members. One was successfully defended, and the other in Alberta is still before the courts. The association now has a bank balance of nearly $7,000. The annual fee is $4.00.

Typhoid in Montreal.—Typhoid fever is again becoming alarming in Montreal. In 1909 in a population of 400,000 there were 1,892 cases with 212 deaths, considerably the largest in the past ten years. At the present time (July 27) there are over fifty cases in the hospitals and nearly all hospitals are refusing further admissions. Up to the date mentioned this year there have been over 700 cases with 150 deaths.

Society News.—Dr. James Ross, Halifax, N. S., has been elected president of the Nova Scotia Medical Society. Dr. J. R. Corston, Halifax, was reelected secretary.——The Maritime Medical Association met in St. John, N. B., July 21 and 22, and elected the following officers: President, Dr. E. A. Kirkpatrick, Halifax; vice-president for Nova Scotia, Dr. G. E. DeWitt, Wolfville; vice-president for New Brunswick, Dr. G. G. Melville, St. John; vice-president for Prince Edward Island, Dr. H. E. McEwen, O'Leary; secretary, Dr. D. C. T. Watson, Halifax; treasurer, Dr. G. G. Corbet, St. John.——The Saskatchewan Medical Society, which was to hold its annual meeting on July 6, will meet at a later date, to be decided on.——The Academy of Medicine, Toronto, has issued its third annual report. The number of volumes in the library is 5,375. The society now numbers 301 members. The annual resident fee is $10.

Hospital News.—Regina, Sask., is to have an isolation hospital at a cost of $16,000.——Edmonton, Alta., has voted $175,000 for hospital construction.——Victoria, B. C., will endeavor to raise $45,000 for a new isolation hospital.——The Daughters of the Empire of Vancouver, will build a hospital for convalescents and incurables as a memorial to King Edward VII.——Prince Albert, Sask., has taken over the Victoria Hospital of that place for a civic hospital.——A cottage hospital is being built for Estevan, Sask.——Fredericton, N. B., is contemplating enlarging the Victoria Hospital of that place.——The new wing for the Toronto Isolation Hospital is to be finished by June 1, 1911, at a cost of $102,000.——Charges of mismanagement of the Toronto Isolation Hospital having been made on different occasions recently, the authorities of Toronto will conduct an official enquiry early in September.——Construction of the out-patient building and the emergency department of the new Toronto General Hospital will be commenced early this fall, and it is expected these will be ready for patients by the spring of 1912.

Personal.—Dr. Labrecque, Prince Albert, Sask., has returned from Europe.——Dr. H. G. McKid, Calgary, is visiting eastern Canada.——Dr. Mertha, Beroda, India, is visiting in Vancouver.——Dr. Charles J. Doherty, superintendent of the Hospital for the Insane at New Westminister, B. C., has returned from visiting similar institutions in eastern Canada.——Dr. Mackenzie, Winnipeg, has been appointed medical superintendent of the Canadian Northern Railway between Fort William and Vancouver. He will reside in Victoria, B. C., in future.——Dr. J. T. White, Winnipeg, has returned from visiting the hospitals in Chicago and St. Louis.——Dr. A. H. Beaton, for thirty-four years superintendent of the Provincial Hospital for Feeble Minded at Orillia, Ont., has resigned.——Dr. D. Fuller McKenzie, Hespeler, Ont., has given up practice to become a missionary to China.——Dr. T. G. Roddick, Montreal, has sailed for England.——Drs. A. J. Fraleigh and Don. McGillivray, Toronto, are spending the summer in British Columbia.——Dr. J. W. S. McCullough, Alliston, Ont., a member of the Ontario Board of Health for four years, has been appointed secretary.——Professor J. George Adami, Montreal, will represent the Canadian Association for the Prevention of Tuberculosis at the meeting in Rome.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, July 23, 1910

Prevention of Street Hawking by Children

The present government has distinguished itself above all governments by its humanitarian legislation, as has been shown in previous letters to THE JOURNAL, and especially by legislation for the protection of children. Drastic recommendations have now been made by a committee of the house of commons appointed to enquire into the employment of children, which is regulated by an act of 1903. Among the principal recommendations is that street trading by boys should be prohibited up to the age of 17 years and by girls up to the age of 18. After hearing many witnesses the committee came to the conclusion that the youthful street trader is exposed to many of the worst moral risks; he associates with, and acquires the habits of, the frequenters of the curbstone and the gutter. If a matchseller, he is likely to become a beggar; if a newspaper seller a gambler. Street trading tends to produce a dislike for more regular employment. The child finds that for a few years money is easily earned without discipline or special skill, the occupation sharpens the wits without developing the intelligence. It leads to nothing permanent and is of no help to a future career. In the case of girls there is the further danger that such a life often leads to immorality. Evidence was also given that street hawking is attended with physical evils. The money easily earned is badly spent.

The Deadly Motor Car

In the year 1909 there were 1,151 fatal accidents caused by vehicles in the streets of the United Kingdom. Of these, motor cars were responsible for 311, motor omnibuses for 75, motor tramcars for 122, horse tramcars for 5, horse omnibuses for 16 and other horse-drawn vehicles for 622. Thus motor vehicles were responsible for 44 per cent. of the total fatal accidents. There were 26,872 non-fatal accidents, of which 7,149 (26 per cent.) were due to motor cars, 1,346 to motor omnibuses, 4,642 to motor tramcars, 111 to horse tramcars, 383 to horse omnibuses and 13,241 to other horse vehicles. In London 287 fatal and 11,731 non fatal accidents occurred. Of the former 84 (29 per cent.) were caused by motor cars, 9 by horse-drawn omnibuses, 113 by other horse vehicles, 3 by horse tramcars, 26 by motor tramcars and 52 by motor omnibuses.

Fifty-two Hours Between the Birth of Twins

A South African practitioner, Dr. C. J. Hill-Aitken, has reported in the *Transvaal Medical Journal* a remarkable case in which a delay of fifty-two hours took place between the birth of twins. A native woman was delivered at noon. After the birth the pains ceased and did not return. Her friends waited patiently until the following afternoon and then sought European medical advice. The doctor was summoned and was told that while active interference was, if possible, to be avoided, his advice would be welcomed. He saw the patient about 7:30 p. m. and found that, while no labor pains were complained of, the uterus could be felt to contract at intervals and contained another child, which displayed active movements. There was no hemorrhage from the uterus or from the cord of the first child. The bag of membrane was unbroken and the head of the child was lying at the pelvic brim, which was wide and unobstructed. The doctor did not like to apply high forceps or to perform version in a native hut with a scanty hot-water supply and no table on which to place the patient. He also preferred not to take the risk of rupturing the membranes, though this might have hastened matters. On the following morning labor set in at 4.30 and the second child was born at 4 p. m. There was thus an interval of fifty-two hours between the births of the first and second child. Both the mother and the children did well.

Instruction to Girls in the Care of Infants

A medical member of parliament, Dr. Addison, lecturer on anatomy at St. Bartholomew's Hospital, has introduced a very useful bill requiring instruction in hygiene to be given in the public elementary schools and in the case of girls in the care and feeding of infants. He pointed out that 120,000 children die in this country under the age of 1 year, a proportion of 1 in 4. A large part of this waste is due to improper feeding and want of proper care on the part of those who nurse children. As stated in a previous letter to The Journal, the Notification of Births act, with its attendant "health visitors," has brought about improvement in infant mortality, but more is possible. The instruction of the girls is to be quite simple and not to take up much of the school time.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 20, 1910.

The Causes of Sleep

In the Hamburg Medical Society, the neurologist, Dr. Trömner, delivered a short time ago an interesting address on the origin of sleep, distinguishing between the favoring, exciting and essential causes of sleep. The favoring circumstances are absence of sensory stimuli and lack of excitement; the exciting factors which set in action the function of sleep include fatigue, habit (the accustomed time and place for sleep), narcotics in part, and the idea of sleep, on which rests the suggestibility of this function. As to the actual cause of sleep, Trömner regards all theories incriminating fatigue as finally exploded because, (1) infants, although they have no occasion for fatigue, sleep nearly all the time, which Trömner attributes to a connection between sleep and growth; (2) because in later life sleep occurs habitually in the absence of any fatiguing activity, and (3) because excessive fatigue often causes insomnia in weak and irritable persons. Sleep is rather an active process of inhibition, acting in the first place on the sensory functions, as the measurements of the depth of sleep by Michelsohn and Czerny show, and in the second place acting on the motor and secretory functions. The question of the vasomotor changes of the brain in sleep has been settled by Czerny and Brodmann in favor of a moderate hyperemia, which is, however, to be regarded only as a secondary process. The biologic form of sleep is that of an instinct which, like other instincts in the human race exhibits itself usually according to habit and is regulated by mental conceptions. Trömner assumes on various grounds that the thalamus opticus is the organ of this instinctive action.

The Effect of the Alcohol Boycott

The alcohol boycott instituted by the social democrats last year has had unexpectedly remarkable results according to the social democratic press. Since the boycott was enforced the use of alcohol has markedly diminished. In the year ending May, 1909, 195,944 hectoliters (about 5,000,000 gallons) were consumed, while in 1910 only 157,976 hectoliters (about 4,000,000 gallons), or 19.4 per cent. less were used than in the previous year. Whether this favorable effect will continue will be awaited with interest.

Personal

As successor of Professor Verworn, Professor Jensen of Breslau has been called to Göttingen as professor of physiology. —— Professor Filehne, the Breslau pharmacologist, has been elected as a foreign member of the Paris Academy of Medicine. —— Professor Payr of Greifswald, as predicted in a previous letter, has declined the call to Tübingen as successor of Professor Bruns. —— Professor Kretz of Prague has accepted the call to Würzburg as successor of Professor Borst.

Debate on Social Insurance Bill

The new imperial insurance bill is before the Reichstag and has been as usual referred to a committee selected for the purpose of examining it. This committee is composed of representatives of all the parties and its report will give expression essentially to the views of all parties. In order to make the process of legislation as thorough as possible and to guard against errors, every bill passes through two discussions in committee. After these two readings, the bill is brought before the full house and is here subjected to a threefold reading before it is finally disposed of. In all these phases of the discussion, marked changes in the individual paragraphs may be made and therefore it is never safe to prophesy, especially in the case of important laws, whether the law will pass the Reichstag or what its final form will be. It is on this fact that the physicians at present base their hopes; for if the law is passed in the form in which it has been placed before the committee, none of the demands will be accepted which medical men have formulated in the journals and in the society meetings. The view of the medical profession is expressed in the following very clear statement which the Krankenkassen committee of the German medical association (*Aerztevereinsbund*) has published:

"The report of the transactions of the sixteenth Reichstag committee regarding the paragraphs of the second bill of an imperial insurance law which refer to physicians shows a complete misunderstanding of the most elementary facts respecting medical questions, on the part of the government and of the representatives of most of the parties, and an unconcealed hostility to the medical profession which cannot but arouse the indignation of German physicians in general. The conclusions of the committee signify a marked impairment of the bill which was already impracticable, its enactment into law would necessitate the inflexible opposition of the organized medical profession. In view of the opinions expressed by the secretary of state in the imperial department of the interior and by the representatives of all the parties that the clauses regulating the relations of the Krankenkassen to the physicians are untenable and must undergo a complete revision on the second reading, it is to be expected that the demands of medical men will be finally accepted in their full extent. However, after what has happened, the medical profession can look forward to the next report only with the most serious misgivings."

I fear that neither the Reichstag nor the government will be much influenced by the indignation expressed in this statement, which is rather exaggerated, and that the mistrust expressed in the last sentence will be found only too well justified. However, it is a long way yet to the final decision. The committee interrupted its deliberations a few days ago and went on a summer vacation. It will not resume its labors again until the middle of September and finish them in November. In the course of the winter, the law should be discussed before the full house. There is still time for physicians to continue their efforts to influence the members of the Reichstag and the government in their favor.

Abstinence from Alcohol Among the Berlin Municipal Employees

The mayor has reminded the city officials that the use of alcoholic drinks during office hours will only be permitted in case of exceptional physical constitution of the individual and in these exceptional cases must be restricted as much as possible. At the same time the officials in general are informed that the regular use of beer and other alcoholic drinks in any considerable amounts during labor is injurious to health, especially to the nerves, and therefore should be given up in the interest of the officials themselves.

Marriages

A. Bayne Grubb, M.D., to Miss Hal Porter, both of Cripple Creek, Va., July 13.

Rudolph G. Andres, M.D., Cheney, Wash., to Miss Nellie M. Fisher, of Spokane, July 20.

George Chambers Woodson, M.D., to Miss Lillian A. Burger both of Richmond, Va., July 19.

Leslie George Taylor, M.D., Perryville, Md., to Miss Jessie Rebecca Arthur, at Baltimore, July 20.

Alfred Joseph Toulon, M.D., U. S. Navy, to Miss Mabel Estelle Goodier, of Manila, P. I., June 11.

Reuben H. Hunt, M.D., San Francisco, to Miss Elaine Aimee Berthe Matignon, of Berkeley, Cal., July 21.

Otto Darwin Diehl, M.D., Centralia, Ill., to Miss Marjorie Nies, of Virginia, Minn., at Chicago, July 16.

Charles Brigham Chedel, M.D., Portland, Conn., to Miss Emma L. Foster, of Hanover, N. H., July 1.

Louis Grayson Harney, M.D., East St. Louis, Ill., to Miss Leila Elinor Workman, of St. Louis, June 14.

Frank N. Cochems, M.D., Salida, Colo., to Miss Myra Halstead Nugent, of South Haven, Mich., July 15.

Deaths

George M. D. Cantrell, M.D. Medical Department of the University of Nashville, Tenn., 1875; Vanderbilt University, Medical Department, Nashville, 1876; a member of the American Medical Association; professor of theory and practice of medicine in the College of Physicians and Surgeons, Little Rock; physician to the Arkansas State Penitentiary from 1887 to 1891; at one time president of the Arkansas State Board of Health; died in Denver, July 21, from tuberculosis, aged 58.

David W. Henderson, M.D. Starling Medical College, Columbus, Ohio, 1852; a member of the Ohio State Medical Association; a veteran of the Mexican War and a surgeon in the Ninety-sixth Ohio Volunteer Infantry throughout the Civil War; a resident of Marysville, Ohio, for seventy-three years, a practitioner of medicine there for sixty, and thought to have been the oldest practicing physician in the state; died at his home in Marysville, July 23, from paralysis, aged 87.

William James McAdams, M.D. Western Pennsylvania Medical College, Pittsburg, 1900; a member of the American Medical Association; a member of the staffs of the Southside Hospital, the Rosalia Foundling Asylum and the Pittsburg Free Dispensary; professor of bacteriology and microscopy at the Pittsburg College of Pharmacy; died at his home in Pittsburg, July 2, aged 39.

Henry Louis Hammond, M.D. Harvard Medical School, 1866; a member of the American Medical Association; acting assistant surgeon in the Civil War; secretary of the United States Pension Examiners in Norwich, Conn., from 1888 to 1890; formerly of Killingly, Conn.; died on a railroad train in Texas, while en route from California to his home in Niles, Mich., July 17, from paralysis, aged 67.

William Edwin Wilson, M.D. University of Virginia, Department of Medicine, Charlottesville, 1873; Bellevue Hospital Medical College, New York City, 1874; a member of the Tennessee State Medical Association; of Pulaski, Tenn.; was drowned, July 17, while attempting to cross a swollen stream in returning from a professional call, aged 60.

Reuben C. Griffitt, M.D. University of Louisville (Ky.) Medical Department, 1870; Bellevue Hospital Medical College, New York City, 1876; a veteran of the Civil War; died at his home in Morgantown, Ind., July 22, from injuries received in a fall from the second story window of his house on the night of July 4, aged 75.

Frederick Chauncey Graves, M.D. New York University Medical College, New York City, 1888; a member of the American Medical Association; a well-known practitioner of Bridgeport, Conn.; died at the Galen Hospital, July 26, from the effects of poison, taken, it is believed, with suicidal intent, aged 47.

William L. C. Forrester, M.D. New York University Medical College, New York City, 1881; a member of the Board of Directors of the Medico-Chirurgical Hospital and visiting physician to the Masonic Home; died at his office in Philadelphia, July 19, from cerebral hemorrhage, aged 49.

Daison D. Drake, M.D. Albany (N. Y.) Medical College, 1864; for a number of years a member of the Board of Pension Examining Surgeons; for several years a member of the Johnstown, N. Y., Board of Education; died at his home in that city, July 20, from paralysis, aged 72.

Horace S. Lamson, M.D. Harvard Medical School, 1863; surgeon in the Third Rhode Island Heavy Artillery during the Civil War; died at his home in Providence, R. I., July 17, from nervous shock resulting from an automobile accident several weeks before, aged 72.

Horace F. Hanson, M.D. Berkshire Medical College, Pittsfield, Mass., 1866; a member of the American Medical Association; a Grand Army veteran; United States pension examining surgeon; died at his home in Bangor, Maine, July 17, from paralysis, aged 72.

Wellington John Smith (license, Pa., 1881); a member of the National Association of Railway Surgeons; Pennsylvania Railroad surgeon at Lykens for twenty-one years; died at his home in that place, July 13, from sarcoma of the neck, aged 73.

Leslie Dodd Ward, M.D. College of Physicians and Surgeons, New York City, 1868; of Newark, N. J.; vice-president of the Prudential Life Insurance Company; died in London, July 13, from nephritis complicated with pneumonia, aged 65.

Louis Richard Brown, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1864; a member of the Board of Health of Elizabeth, N. J., for several terms; died at his home in that city, July 18, from nephritis, aged 70.

Homer C. Shaw, M.D. Starling Medical College, Columbus, Ohio, 1852; army surgeon during the Civil War, belonging to the Tenth Ohio Volunteer Infantry; died at his home in Homer, Ill., July 23, from paralysis, aged 82.

Kenneth A. Blue, M.D. University of Maryland, School of Medicine, Baltimore, 1889; a member of the Medical Society of the State of North Carolina; died at his home in Laurinburg, N. C., July 16, from nephritis, aged 43.

John I. Bailey (license, Iowa, 1886); a veteran of the Civil War; for twelve years a member of the Pension Examining Board of Cedar County; died at his home in West Branch, July 12, from hemiplegia, aged 61.

Mark S. Leavy, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1888; a member of the Medical Society of the State of New York; died at his home in Albany, July 19, from heart disease.

Henry Hastings Seargeant, M.D. Jefferson Medical College, 1861; a surgeon in the First Virginia Regiment during the Civil War; died at Gordonsville, Va., June 7, from paralysis, aged 69.

James Robert Roe, M.D. Eclectic Medical Institute, Cincinnati, 1854; of Canon City, Colo., was found dead at his ranch near Galley, Colo., April 28, from heart disease, aged 78.

Charles E. Bainbridge, M.D. California Eclectic Medical College, Los Angeles, 1886; for a number of years a prac ticing physician of Sacramento, Cal.; died at that place July 9, from myocarditis.

William C. Bruns, M.D., University of California, Medical Department, San Francisco, 1878; of Portland, Ore.; died at the Good Samaritan Hospital in that city, July 16, from heart disease, aged 52.

Edwin Amsden, M.D. University of Buffalo (N. Y.) Medical Department, 1853; a veteran of the Civil War; formerly of Allegan, Mich.; died at San Diego, Cal., July 13, from senile debility, aged 84.

James O. Wilkerson, M.D. Missouri Medical College, St. Louis, 1882; a member of the Missouri State Medical Association; died at Cowgill, Mo., June 20, from cerebral hemorrhage, aged 58.

Jefferson Floyd Fuller, M.D. New Orleans School of Medicine, 1862; a surgeon in the Confederate Army during the Civil War; died at Jacksonville, Fla., June 18, from nephritis, aged 80.

Lester M. Currier, M.D. Hahnemann Medical College, Chicago, 1873; a member of the Illinois State Medical Society; died at his office in Freeport, Ill., July 6, from gall stones, aged 63.

William Lorelle Duffin, M.D. Rush Medical College, 1873; a member of the American Medical Association; died at his home in Guttenberg, Iowa, July 24, from heart disease, aged 60.

Edwin S. Cave, M.D. Missouri Medical College, St. Louis, 1884; a member of the American Medical Association; died at his home in Mexico, Mo., July 10, from nephritis, aged 54.

Lawrence Edward Manley, M.D. New York University Medical College, New York City, 1883; died at Canton, Pa., April 10, from pulmonary tuberculosis, aged 54.

William Leaming Matthews, M.D. University of Pennsylvania, Department of Medicine, 1871; died at his home in Philadelphia, July 10, from paralysis, aged 61.

Joseph W. Crowley, M.D. University of Pennsylvania Department of Medicine, 1895; died at his home in Philadelphia, July 22, from pneumonia, aged 43.

Morey L. Reed, M.D. Rush Medical College, Chicago, 1892; of Lemmon, S. D.; died in Samaritan Hospital, Aberdeen, July 22, from Bright's disease, aged 51.

George Ferguson, M.D. University of Michigan, Department of Medicine and Surgery, 1854; a pioneer of Coldwater, Mich.; died at that city, July 23, aged 83.

James H. Kelly (license, Pa., 1894); of Monessen, Pa.; died at Hotchkiss, Colo., July 8, following an operation for the removal of gall-stones, aged 76.

John White Martin, M.D. University of Pennsylvania, Philadelphia, 1853; died at his home in Canonsburg, Pa., July 11, from paralysis, aged 82.

Jonathan Tullis Hall, M.D. Indiana Medical College, Indianapolis, 1876; died at his home in Sidell, Ill., July 10, from meningitis, aged 58.

Franklin R. Madison, M.D. Missouri Medical College, St. Louis, 1858; died at the home of his daughter in Portland, Ore., July 17, aged 76.

Pharmacology

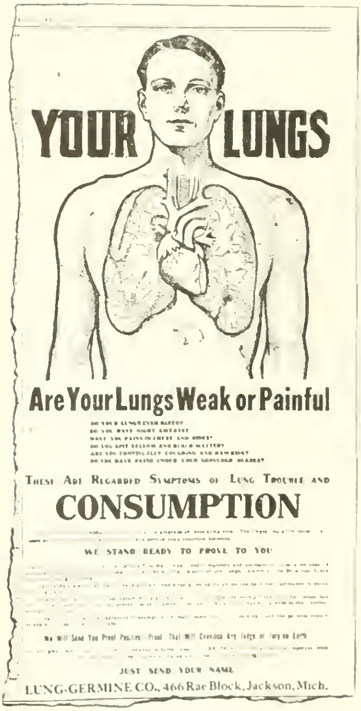
LUNG GERMINE *

A Consumption Cure With a "Guarantee" as a Bait

Lung Germine, which is advertised as having cured "severe and advanced cases of consumption," is put on the market by the Lung Germine Company of Jackson, Mich.—a town, by the way, that for its population has more than its share of quacks and charlatans who advertise on a national scale. The "medical director" of this concern is one C. R. Wendt, M.D., who claims to be a graduate of Leipsic University of Germany. The necessary air of mystery is given to Lung Germine by advertising it as having been discovered by "an old German Doctor Scientist." The method of reaching the public is the usual one—*via* those newspapers or magazines whose advertising conscience is atrophied or unborn (see Fig. 1).

HOW VICTIMS ARE CAUGHT

The victim who answers one of these advertisements receives a form letter gotten up to represent a personal communication; he also gets a "free trial treatment" of the "cure." It is carefully explained that the regular size treatment costs $5.00 and will be sent on receipt of price. Ten days later if the prospective victim still fails to bite, he gets another form letter in which he is again urged to send for the "cure." Should even this fail to cause him to send in an order, a third form letter follows in two weeks' time in which the reduced price of $3.00 is made. Eleven days later if the money is still not enticed out of the victim's pocket comes form letter No. 4 in which he is urged to deposit $5.00 with his local banker to be held in trust for one month and to be returned at the end of that time if he has not received "benefit or favorable changes" in that time. In three more weeks the last attempt to get the patient's money is made by means of form letter No. 5. In this the company states that it is "going to do something which is absolutely against our business principles, in one more effort to introduce Lung Germine in your locality." The "something" is an offer to accept a mere $2.00 for 'one full month's treatment of Lung Germine, the regular price of which would otherwise be $5.00.' If this doesn't bring the money the Lung Germine Company charges the form letters, postage and "free trial treatment" up to profit and loss and closes the account.


YOUR LUNGS

Are Your Lungs Weak or Painful

These Are Regarded Symptoms of Lung Trouble and

CONSUMPTION

WE STAND READY TO PROVE TO YOU

We Will Send You Proof Positive Proof That Will Convince Any Judge or Jury on Earth

JUST SEND YOUR NAME

LUNG-GERMINE CO., 466 Rae Block, Jackson, Mich.

Fig. 1.—Photographic reproduction—much reduced—of one of a series of Lung Germine advertisements which have appeared in the past few months. This advertisement, which in the original measured 9 by 15 inches, is from the *Nashville American*.

---

* This article, like similar ones that have appeared in The Journal, is reprinted in pamphlet form (4 cents in stamps) so that physicians may put in the hands of their patients information that is unobtainable elsewhere.

THE WORTHLESS GUARANTEE

With the first letter and trial treatment a "positive guarantee" blank is sent, of which the company makes much (see Fig. 2). Briefly, it guarantees that the company will return the money paid "for the first month's treatment" provided that "no benefit or favorable changes are made in the patient's condition *during that time*." [Italics ours.—Ed.] The following rules, however, must be complied with:

> "The patient must use all of this first month's treatment in order to make use of this guarantee.
>
> "The patient must carefully follow directions and the instructions of the Medical Director of the Company, and report the exact condition and changes the treatment has made, not less than four times during the first thirty days' treatment."

From what every physician knows of consumptives it is easy to see that the Lung Germine Company runs about one chance in ten thousand of having to return the five dollars paid for the first month's "treatment." If the nostrum consisted of dish-water colored pink the "guarantee" described above would be an equally safe commercial proposition—for the dispenser of the dish-water.

LUNG GERMINE COMPANY

JACKSON, MICH.

POSITIVE GUARANTEE

Fig. 2.—A photographic reproduction of the "guarantee" which, while legally is probably valid, is actually worthless and but an added bait for the unwary and easily gulled consumptive. The same guarantee would be an equally safe commercial proposition to the exploiter of mere hydrant water, if such water were sold under the same specious promises that this nostrum is.

If the guarantee promised to return all money paid in to the concern for a "treatment" providing there was "no benefit or favorable changes" at the *end* of the "course" instead of *during* it, the Lung Germine Company would be bankrupt in six months—if it honestly carried out the terms of its guaranty. The "guarantee" may legally be all that these nostrum exploiters claim for it; morally and practically it isn't worth the paper it is printed on.

TESTIMONIALS FROM BEGINNERS

As an accessory to its form letters and booklets, etc., the Lung Germine Company sends out each month what it calls the *Lung Germine Monthly Bulletin*. This consists of testimonials from victims who have just started the "treatment" and who naturally enough write favorably of it. The company states that:

> "The *Bulletin* does not publish letters or reports from cured patients."

The reason is obvious though commercially speaking making a virtue of a very evident necessity is clever even though conscienceless. Should the Lung Germine Company attempt to keep track of their victims and publish a monthly bulletin detailing the condition of the unfortunates two or three years after taking the "treatment," such a publication would be composed largely of obituary notices. Not entirely, of course, because there is always a goodly number of neurotic individuals who are convinced that they have some one or more fatal diseases of their own diagnosing—and who after taking a course of self-prescribed "treatment" are with equal facility able to declare themselves "cured." It is from this class of hypochondriacs that the most dangerous of "testimonials" come—whether they be for a "patent medicine" or for Christian Science.

WHAT THE TESTIMONIALS ARE WORTH

This is indicated by the replies received from physicians in regard to some of the "cases" reported in the Lung Germine *Bulletin*. The Journal sent letters of inquiry to physicians regarding the condition of "patients" whose names appeared in some of the older *Bulletins*. In each case the poor victim had written telling of the wonderful improvement that Lung Germine had wrought; here are facts as given by the local physicians:

Regarding C. V. N. of W. Va.: "The enclosed clipping from a local paper, I think, will answer your questions." [The clipping referred to, was the obituary notice of C. V. N.—Ed.]

Regarding A. M. of La.: "Replying to yours of the 23rd inst. relative to A. M., will say this party died about 2 years ago."

Regarding A. W. M. of Ark.: "There is no such individual here."

Regarding Mrs. E. E. of Ala.: "I am confident Mrs. E. had no tuberculosis."

Regarding Mrs. L. M. of Ala.: "Mrs. L. M. has always been afraid she would develop tuberculosis but she has never had it."

Regarding T. B. of Okla.: "He did not have tuberculosis."

Regarding Mrs. M. G. of La.: "Positively she has never had any trace of tuberculous trouble."

Regarding A. M. T. of La.: "Did not have tuberculosis."

Regarding Mrs. L. C. of Tenn.: "Never heard of such a person."

WHAT IT DID IN ONE CASE

A physician in Texas who wrote for information about this fake stated that he had a patient who has persisted in taking Lung Germine. The condition of the patient before and after a two month's "course" of "treatment" with this nostrum is thus described by the physician:

> "The tuberculous patch in the upper lobe of the left lung was about the size of, or possibly a little larger, than a silver dollar when I examined her about two weeks before she began the wonderful 'cure,' and the case had been stationary about six months. Two weeks after the cessation of the two month's treatment with Lung Germine I found the disease had advanced about 50 per cent. The whole of the upper lobe of the left lung was involved and the process had extended to the lower portion of the upper lobe and the upper portion of the middle lobe of the right lung.
>
> "It will be but a short time before this poor woman is dead."

That the stuff not only has no value but is absolutely harmful, as the above report indicates, is not surprising in the light of the analysis made by the Association laboratory which follows:

REPORT OF THE LABORATORY

A bottle of Lung Germine, which had been purchased directly from the Lung Germine Company was submitted to the Association laboratory for examination. The bottle holding 2 ounces of a light brown liquid is labeled as follows:

LUNG GERMINE

GERMAN TREATMENT FOR

CONSUMPTION

And Diseases of The Lungs and Bronchial Tubes

CONTAINS 14% ALCOHOL

Guaranteed by the Lung Germine Co. to conform with the U. S. Pure Food and Drugs Act of June 30, 1906. Serial No. 1355

Lung Germine is a light brown, transparent liquid possessing an alcoholic odor, resembling sherry wine, and a sharp acid taste. Qualitative examination of the preparation indicated the presence of alcohol, sulphuric acid and a trace of ash, containing iron, phosphates, sodium and potassium. Further tests indicated the absence of alkaloids, iodids, bromids, chlorids, nitrates, phosphates and metals, other than those present in minute traces in the ash. From the results of the quantitative examination[1] it is concluded that Lung Germine is essentially a mixture of sulphuric acid, wine, fortified by alcohol, and water, in approximately the following quantities:

Alcohol (absolute)	44 per cent
Sulphuric acid (H_2SO_4)	4 per cent.
Water	52 per cent.

MISBRANDED UNDER THE LAW

From this it appears that at least some specimens of this nostrum are misbranded under the Food and Drugs Act in that it contains over 40 per cent. of alcohol while admitting on the label the presence of only 14 per cent. The directions state that 5 drops should be taken in water three times a day and this is increased up to 15 or 17 drops within a week or so. As a five-dollar bottle of the stuff only holds two ounces it is evident that the so-called "month's treatment" really amounts only to a little more than two week's treatment.

The viciousness of the traffic in health and even life in which the exploiters of "consumption cures" are engaged, has time and again been referred to in these pages. Yet to the physician the facts are as old as his practice. He knows the tragedy of hope deferred and precious time wasted in the cases of the poor dupes who fall into the clutches of these ghouls. He knows, as none other than the victim himself knows, how difficult it is to get the consumptive to live the only life that holds out hope for him. It is almost impossible to convince the layman suffering from tuberculosis that there is no specific drug remedy for his ailment. Add to this inbred belief the specious claims and honeyed lies of the quack and the temptation to squander money on the worse than worthless nostrums becomes well nigh irresistible.

The consumptive must be protected against himself and against those moral outcasts who would batten on the despair and weakness of the mortally ill. There is but one way to do this effectively and that is for physicians to enlighten the public on the possibilities and the limitations of modern therapeutics. When this has been thoroughly done the mail-order medicine concern will cease to exist, because then every intelligent lay jury would take the attitude that they were fraudulent—an attitude which at present, unfortunately, is by no means universal.

THE INTERNATIONAL ENCYCLOPEDIA OF ETHICAL NON-OFFICIAL PHARMACEUTICALS

The commercial possibilities of a book like New and Nonofficial Remedies published by the Council on Pharmacy and Chemistry have evidently never been realized. As physicians know, products cannot get into N. N. R. unless they possess value and are advertised honestly; when they conform to the rules of the Council, however, it costs nothing for them to appear in that useful publication. Therein apparently N. N. R. differs from another compilation that may be expected to appear some time in the future—known by the sonorous and high-sounding title, "International Encyclopedia of Ethical Non-official Pharmaceuticals." This stupendous work is to be published by a New York concern known as the Medical Research Corporation and has for its editor Virgil Coblentz, A.M., Phar. M., Ph.D., and for its associate editors George C. Dickman, Ph.G., M.D., and Albert A. Ripperger, M.D. The president of the "corporation" is Henry E. Fanshaw who, we understand, was formerly with the exploiters of "Fluid Hygenique" the Ilef Chemical Company, of New York City.

The method of "compiling" the list of "ethical non-official pharmaceuticals" which is to make up the "international encyclopedia" seems to be about as follows: A letter is sent to a pharmaceutical house asking the concern to send descriptive matter regarding such of its products as are of special interest to physicians. Should this be sent, its receipt is acknowledged and an interview is requested. The interview makes clear the vast possibilities that still lie in the proprietary medicine business—for a virile advertising concern. To make it more plain: The following contract is submitted to the pharmaceutical manufacturer who may have deluded himself into believing that he was doing a favor in telling the "International Encyclopedia" people all about his "ethical non-official pharmaceuticals:"

> PROPRIETARIES
>
> *The Parties in this agreement incur no obligation other than those within mentioned*
>
> $........ New York, ... 191 .
>
> Medical Research Corporation, Publishers, 2 Rector Street, New York City.
>
> In consideration of the services rendered by you to members of the medical and pharmaceutical professions, in the publication of the International Encyclopedia of Ethical Non-Official Pharmaceuticals, wherein proper representation of our product .... is made to the extent of one half page, and in consideration of your printing and delivering, at your expense, copies of the said "Encyclopedia" to the individual members of the medical profession in the United States and Canada (approximating 135,000), we hereby agree and bind ourselves to contribute the sum of Five Hundred ($500) Dollars, which shall be paid to you in the following instalments: One Hundred and Fifty ($150) Dollars at the signing hereof; One Hundred ($100) Dollars upon our being provided with a copy of the matter devoted to our product ...., and the remaining Two Hundred and Fifty ($250) Dollars at the time that the said International Encyclopedia of Ethical Non-Official Pharmaceuticals shall have been distributed to the practicing members of the medical profession as hereinbefore mentioned, through the United States mail or otherwise.
>
> Name ....
> Signed by.............. ....
> Address ....
>
> Accepted subject to approval of Board of Editors, Medical Research Corporation,
> By ....

This contract, it will be noticed, pertains to "proprietaries." there is a different one for "synthetics." That is to say the figures on the latter are different, the words are practically the same. Whereas the manufacturer must pay $500 for a half page notice of his "proprietary," he need only pay $200 for the same amount of space devoted to his "synthetics." What subtle scientific distinction is drawn between "synthetics" and "proprietaries" is not clear; of course, the other distinction is quite evident—$300.

It is probable that the makers of proprietaries that are debarred from "New and Non-official Remedies" will welcome the opportunity to "put one over" on the Council on Pharmacy and Chemistry by having their preparations appear in all the glory of a half-page reading notice in the "International Encyclopedia of Ethical Non-official Pharmaceuticals."

As the "encyclopedia" is to be "international" in scope, we may expect to find our German friends, who are long on "synthetics," well represented in the $200 section of this extensive compilation. The book will doubtless fill a long felt want—of many manufacturers—and apparently the medical profession is to get it for nothing.

---

[1] Qualitative examination having indicated the presence of alcohol, hydrogen ions, sulphate ions and traces of iron, phosphates, sodium and potassium, the following quantitative estimations were made:

Alcohol: Alcohol was estimated according to the method of the Bureau of Chemistry, Department of Agriculture, Bulletin No. 107 (Revised), 1908, p. 83. The results of the estimations indicated the presence of 44.10 per cent. alcohol.

Sulphuric acid: The acidity of the preparation was determined by direct titration with tenth-normal potassium hydroxid solution using methyl orange as an indicator. The following results were obtained: (a) 10 c.c. of a 1 to 10 dilution of Lung Germine with water required 7.91 c.c. tenth-normal potassium hydroxid and (b) required 7.99 c.c. of the alkali; an average of 7.95 c.c.. This is equivalent to 0.0385 gm. sulphuric acid (H_2SO_4). As a check the sulphate (SO_4) content was estimated in the finished titrations by precipitation with barium chlorid and weighing as barium sulphate. The following results were obtained: (a) yielded 0.0902 gm. barium sulphate and (b) yielded 0.0905 gm. barium sulphate; average 0.09035 gm. equivalent to 0.0380 gm. sulphuric acid (H_2SO_4). This agrees sufficiently with the result obtained by titration, *i. e.*, 0.0385 gm., to demonstrate that the latter is correct. The sulphuric acid found by the above method is equivalent to 3.98 per cent. by weight.

Ash: The ash was determined in the usual way by evaporation of the preparation and ignition of the residue. 10 c.c. of Lung Germine yielded (a) 0.0039 and (b) 0.0041 gm. ash, an average of 0.0040 gm. or 0.041 per cent.

Correspondence

Registration of Foreign Physicians

To the Editor: There was a time when foreign medical schools, especially those of Germany and England, were considered superior to ours. At the same time there were nongraduate practitioners in all of our states, with no registration laws, and many localities were not supplied with competent physicians. At that time it was expedient to invite foreign graduates to locate here. To-day conditions have changed. Our colleges rank with the best schools in the world; foreigners come to our shores to learn our advanced methods, but our graduates are not recognized in those countries. Our states are now well-supplied with graduate and registered physicians; many of our cities are overcrowded, and yet foreigners, who cannot make a living in their own country throng in. The profession in Germany is overcrowded. Canadian physicians are pouring into our country and American graduates are crowded out, and have no recourse of protection in their own country. The laborer, as well as the American artisan and manufacturer, is protected by our protective tariff; the price of commodities and cost of living are thereby raised, but the American physician has no protection; his charges are not higher than they were years ago, and he must compete with imported men.

We hope for reciprocal relations with other countries that will give the American physician a chance to enter those countries. Why should these countries accept such relations so long as our country is open to their graduates without reciprocity on their part? It is a poor rule that does not work both ways. Shut out the foreigner as we are shut out from other countries, and reciprocal relations will soon be established.

A. J. Hoenes, Denison, Iowa.

Pharmacologic Fetishisms—A Demand Made on the Iconoclast

To the Editor: It would be hard to express one's sensation after reading Dr. Barton's articles on this subject (May 15, 1909, p. 1557, and July 23, 1910, p. 284). I venture the assertion that every drug or combination of drugs mentioned in the two papers has been and is being used daily by physicians with real or fancied results.

As there should be no tearing down without building up, it would be interesting to know what Dr. Barton considers effective treatment in the conditions mentioned. Our patients are not greatly impressed with hot water compresses in sprains. When they employ us they usually look for a more elaborate treatment than they are capable of administering to themselves. If the time-honored lead and opium lotion (and I presume all applications of the same character) has no virtue pray what are we to use? I think Dr. Barton owes the profession a debt, in that in taking away our confidence in these preparations heretofore considered valuable he does not at the same time suggest effective substitutes.

C. N. Branin, M.D., Baltimore.

Error in Brooks' Article on the Action of Alcohol

To the Editor: Through an error which I failed to notice on the proof you sent me one paragraph is out of place in my article on "The Action of Alcohol on the Normal Intact Unanesthetized Animal" in The Journal, July 30. On page 371, in the second column, the paragraph commencing "On several successive days" refers to the first method by a cannula and not to the third method, which is described immediately preceding this paragraph.

Clyde Brooks, Chicago.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LICENSE AND PRACTICE IN GUATEMALA

To the Editor:—What are the requirements for registration by an American physician in Guatemala, Central America?

D. C. R., Fort Worth, Texas.

Answer.—A foreign physician cannot practice in Guatemala without first passing a general medical examination in the Spanish language, before the Faculty of Medicine of Guatemala City.

SCARLET RED IN OIL FOR ULCERS

To the Editor:—Kindly give me the particulars of the subcutaneous treatment of ulcers with scarlet red in olive oil, as to the strength of solution, required amount of each injection, frequency of administration, how near the diseased area the injections should be made, what untoward symptoms, if any, to guard against, etc.; or refer me to the literature on the subject.

B. Schwartz, Philadelphia.

Answer.—Hypodermic injections of scarlet red in oil were made experimentally by Fischer, Schmieden and others with the result of causing atypical proliferation of epithelium, resembling somewhat the process in carcinoma. It was found by Helmholz that the scarlet red oil must be in close contact with the epithelium in order to cause it to proliferate. Consequently for therapeutic purposes it must be applied directly to the wounded surface to be stimulated. The technic of the application of scarlet red ointment to granulating surfaces is described by J. S. Davis (*Bull. Johns Hopkins Hospital*, June, 1909), and an abstract of his article appeared in The Journal (July 10, 1909, p. 146). Davis uses ointments of various strengths with a simple petrolatum base and also ointments made antiseptic by the addition of various agents, such as boric acid, zinc, iodoform, blue ointment and balsam of Peru. He usually employs an 8 per cent. ointment, which is also the strength recommended by Krajca, Morawitz and others. The ointment is applied over the whole surface if the ulcer is small, otherwise to the granulating border. It must not be left on more than twenty-four hours, as marked irritation and even gangrene may occur. It is well to warn patients that the ointment may stain the dressing as otherwise they may think that the wound has been bleeding. The following articles may be consulted:

Kaehler: *Med. Klinik*, May 31, 1908, p. 836.

Krajca: *Munchen. med. Wchnschr.*, Sept. 22, 1908, p. 1969.

Schmieden: *Zentralbl. f. Chir.*, 1908, xxxv, 153.

Morawitz: Erfahrungen über die Behandlung granulierender Wundflächen mit Scharlachrotsalbe, *Therap. Monatsh.*, September, 1909, p. 479.

Davis, J. S.: *Ann. Surg.*, January, 1910, p. 40.

DETERMINATION OF COAGULATION TIME OF BLOOD

To the Editor:—Kindly publish a reliable method for determining the coagulation time of blood. What materials are necessary? What may be considered the normal time for human blood to clot outside of the body?

H. Trossbach, M.D., Colorado Springs, Colo.

Answer.—The older methods, such as Hayem's, have been discarded because they did not give uniform results. Wright's method consists in drawing a certain amount of blood into each of a dozen capillary tubes, which are immediately placed in a small vessel containing water at a temperature of 37 C. The time at which the blood is drawn into each tube is noted, the tubes examined at minute intervals by blowing slightly into them and the time when coagulation has occurred is determined by the readiness with which the drop will move. If it cannot be expelled, coagulation is complete. If, when expelled, it shows a slight clot, coagulation has begun and if it is expelled without any evidence of clot, it is noted that coagulation has not begun. The method of Russell and Brodie is considered the best by many. A truncated cone of glass is fitted so as to project downward into a moist chamber; the lower surface of this cone is about 4 mm. in diameter and on it is placed a drop of blood which it must just cover. The glass is then quickly fitted into the moist chamber. A gentle stream of air is directed against the blood by means of a bulb attached to a fine tube, projecting through the side of the moist chamber, and the behavior of the corpuscles in the drop is watched with the low power of the microscope. The corpuscles will at first move freely and independently of one another, but will afterward form clumps on the periphery. As the process of coagulation continues, the corpuscles can no longer move in the drop but the drop changes in shape and mass, the corpuscles showing first an elastic concentric motion and finally an elastic radial motion, i. e., the current of air will cause the corpuscles to move toward the center and to spring quickly back to their original position when the current of air ceases. This is taken as the final point; the result can be confirmed by the demonstration of a clot if the disk be quickly removed and the drop touched to a piece of filter-paper.

Various figures have been given as the normal coagulation time, which varies with the instrument used; but with the method described, an average of five minutes has been found. Above nine minutes means delay in coagulation.

SANITOL AND OTHER MOUTH WASHES

To the Editor: What is the formula of "Sanitol?" Cannot a similar mouth-wash be prescribed by the physician instead of using the proprietary preparation? W. H. W.

ANSWER.—Sanitol is advertised to contain salitrol, limocine, formol, *Plantago major*, menthol and spirits of cologne. Different formulas appear to have been given, one of which contains boracic acid and the other does not. We have no positive information as to the present composition of sanitol, since the composition of nostrums is subject to change without notice, but can refer to an analysis made some time ago. This showed that it contained phenyl salicylate (salol), formaldehyd, menthol and alcohol. Whether it contained *Plantago major* (common plantain) could not be determined as specific tests for this plant are unknown. The names "salitrol" and "limocine" represent substances which, if they exist at all, are known by those names only to the manufacturers of sanitol. It seems evident that whatever virtues sanitol possesses reside in the formaldehyd, the menthol and the alcohol. What virtue is to be attributed to the salol is uncertain.

A superior preparation of known composition could easily be devised by mixing appropriate quantities of menthol, liquor formaldehydi, and cologne (spiritus odoratus, N. F., page 228) or ordinary alcohol, adding salol if desired. Most formulas for such mouth washes contain thymol instead of menthol. Liquor Antisepticus Alkalinus N. F. may be recommended. The following is given by the British Pharmaceutical Codex:

Salol	2.50
Thymol	0.25
Spirit of anise	1.00
Oil of peppermint	0.50
Elixir of gluside (saccharin)	2.50
Alcohol, sufficient to produce	100.00

Dissolve the salol and the oil of peppermint in 50 of alcohol, add the spirit of anise and the elixir of gluside, make up the required volume by the addition of alcohol, and filter.

Elixir of gluside (Brit. Pharm. Codex, p. 329) contains benzo sulphinide (saccharin) 5 parts, sodium bicarbonate 3 parts, alcohol 12.50 parts, and water to make 100 parts.

P. Caldwell in the *Druggists Circular*, November, 1908, gives the following formula for a mouth-wash:

Tincture of green soap	1	ounce
Glycerin	1	ounce
Water	6	ounces
Alcohol	6	ounces
Oil of peppermint	7	minims
Oil of wintergreen (synthetic)	7	minims
Oil of cloves	$\frac{2}{3}$	minim
Oil of cassia	$\frac{2}{3}$	minim
Compound tincture of cochineal	to color	

Mix the alcohol and water; add the glycerin and the tincture of green soap; then add the oils, previously mixed; and lastly color with the compound tincture of cochineal. Let the mixture stand twenty-four hours, and then filter.

SUDDEN DEATH FOLLOWING ADMINISTRATION OF DIPHTHERIA ANTITOXIN

To the Editor: Please give references to articles on sudden death following the administration of diphtheria antitoxin.

J. B. GREENE, Asheville, N. C.

ANSWER.—Rosenau, M. J., and Anderson, J. F. (*Bull. 29, Hyg. Lab.* U. S. P. H. and M. H. Service, Washington, p. 79) review the literature of the toxic action of horse serum and refer to Gottstein (Ueber Todesfälle, welche bei der Anwendung des Diphtherieheilserums beobachtet worden sind, *Therap. Monatsh.*, 1896) who collected reports of eight deaths following the injection of serum in those having diphtheria and four in those not sick with diphtheria. Rosenau and Anderson state that they have collected reports of nineteen cases and know of several more which have not been reported.

Since 1906, we find the following articles:

Gillette, H. F.: Diphtheria Antitoxin in Bronchial Asthma, THE JOURNAL, Jan. 4, 1908, p. 40.

Boone, E. L.: Sudden Death Following Use of Diphtheria Antitoxin, THE JOURNAL, Feb. 8, 1908, p. 453.

Patterson, F. J.: An Attempted Explanation of Sudden Death Subsequent to Injection of Antitoxin, *Carolina Med. Jour.*, March, 1908.

Stephens, L. C.: Have the Recently Reported Deaths from Diphtheria Antitoxin Been Satisfactorily Explained? *Jour. South Carolina Med. Assn.*, December, 1909.

Miller, E. C. L., and Root, W. W.: Serum Sickness and Sudden Death Following Hypodermic Administration of Antitoxin, *Therap. Gaz.*, February, 1910; abst. in THE JOURNAL, March 19, 1910, p. 1006.

References may also be made to *Bulletins* [illegible] *and 64, Hyg. Lab.*, U. S. P. H. and M. H. Service, Washington.

It should be noted that the sudden deaths from the administration of diphtheria antitoxin have been shown by Rosenau and Anderson to be due to the action of horse serum and not to the antitoxin. These accidents are extraordinarily rare and the risk is too slight to deter any one from the use of this beneficent remedy when indicated.

The Public Service

Medical Department, U. S. Army

Changes for the week ended July 23, 1910.

Ekwurzel, George M., major, left Fort Mackenzie, Wyo., en route to Camp of Instruction, Fort D. A. Russell Target and Maneuver Reservations.

Hill, Felix R., lieut., left Fort George Wright, Washington, en route to American Lake, Wash.

Ford, Clyde S., major, left Fort William H. Harrison, Montana, en route to American Lake, Wash.

Pierson, Robert H., capt., and De Voe, Ralph G., lieut., detailed to duty with troops, military tournament, Tacoma, Wash., July 24 to 31, 1910.

Hess, Louis T., major, assigned to duty as inspector-instructor, Medical and Hospital Corps, First and Fifth New Jersey Infantry, at Sea Girt, N. J., from July 25 to 31, 1910.

Weed, Frank W., capt., assigned to duty as inspector-instructor, Medical and Hospital Corps, Fourth New Jersey Infantry, at Sea Girt, N. J., from Aug. 1 to 6, 1910.

Hendricks, C. M., contract surgeon, July 13, reported for duty at Fort Bliss, Texas.

Carpenter, Alden, dental surgeon, left West Point, N. Y., on 30 days' leave of absence.

Talbott, E. M., capt., and Haverkampf, C. W., lieut., left Camp Dickinson, Chicago, en route to Camp Upton, Sparta, Wis.

Halloran, Paul S., capt., left Walter Reed General Hospital, Takoma Park, D. C., on 10 days' leave of absence.

Brechemin, Louis, Jr., capt., granted 30 days' leave of absence.

Kelly, John P., M.R.C., granted two months and twenty-eight days' leave of absence.

Pascoe, James B., M.R.C., ordered to Fort Wood, N. Y., for duty.

Reynolds, Charles R., major, in addition to his duties as instructor in Hospital Corps drill and first aid at the Army Medical School in this city, is detailed as instructor at that school in Medical Department administration, customs of the service and duties of medical officers, vice Lieutenant-Colonel William H. Arthur, Medical Corps, hereby relieved.

Hathaway, Levy M., capt., granted leave of absence for one month.

La Grange, Louis A., colonel, Crosby, Wm. D., lieut. colonel, and McCaw, Walter D., lieut. colonel, appointed members of a board of review to meet in this city for the purpose of reviewing the proceedings and findings of medical examining boards in the cases of medical officers found to be disqualified for promotion for reasons other than physical disability contracted in line of duty.

Tefft, William H., capt., granted leave of absence for one month and ten days.

Stuckey, H. W., M.R.C., relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Greble, R. I., for duty.

Reasoner, M. A., capt., granted leave of absence for one month and fifteen days.

Kean, Jefferson A., lieut. colonel, and Russell, F. F., major, detailed to represent the Medical Department of the Army at the thirty-eighth annual meeting of the American Public Health Association, to be held at Milwaukee, Wis., Sept. 5 to 9, 1910.

Kierulff, H. N., M.R.C., left Fort Missoula, Mont., with the Fourteenth Infantry en route to camp at American Lake, Wash.

Hartnett, E. H., major, is assigned to duty as inspector-instructor of Medical and Hospital Corps detachment, organized militia, State of Delaware, at Rehoboth, Del., July 27 to 30, 1910.

Woodson, Thomas D., lieut., and Duncan, William A., capt., left Vancouver Barracks, Wash., for Camp of Instruction at American Lake, Wash.

Cutliffe, W. O., M.R.C., left Fort McIntosh, Texas, with troops, en route to maneuver camp at Leon Springs, Texas.

Manly, C. J., major, June 25, left Fort Douglas, Utah, on detached service with the Fifteenth Infantry en route to Dale Creek, Wyo.

Grubbs, Robert B., major, left Fort McIntosh, Texas, en route to maneuver camp at Leon Springs, Texas.

Holland, J. H., M.R.C., June 25, left Fort Douglas, Utah, en route to Dale Creek, Wyo., with troops.

Appel, A. H., colonel, left Fort D. A. Russell, Wyo., en route to Camp E. S. Otis, Fort D. A. Russell Target and Maneuver Reservation, Wyo., for duty as chief surgeon.

Hughes, Leonard S., M.R.C., reports arrival at Camp E. S. Otis, near Dale Creek, Wyo.

Long, Charles J., dental surgeon, left from temporary duty at Fort Andrews, Mass., en route to Fort Rodman, Mass., for temporary duty.

Hutton, Paul C., major, left Fort Snelling, Minn., en route to Camp Upton, Sparta, Wis.

Bevans, James L., capt., and Reynolds, Royal, lieut., ordered to proceed from Army General Hospital, San Francisco, with one-half of Company B, Hospital Corps, to American Lake, Wash. On completion of this duty to proceed to Atascadero, Cal.

Heywood, I. L., capt., and Austin, Thomas C., lieut., July 11, ordered to proceed from Fort Lawton, Wash., to the Camp of Instruction, American Lake, Wash., for duty.

Scott, Minot E., dental surgeon. On completion of temporary duty at Fort Worden, Wash., will return to station at Vancouver Barracks, Wash.

Truby, Willard F., major, ordered to proceed from Fort Worden, Wash., to Camp of Instruction, American Lake, Wash.

Fisk, Owen C., lieut., ordered to proceed from Fort Crook, Neb., to Camp of Instruction at Fort Riley, Kan.

McKnight, John B., M.R.C., ordered to proceed from Plattsburg Barracks to Fort Ontario, N. Y., for temporary duty.

Myers, William H., M.R.C., reports arrival at Camp Gilchrist, Fla., left Fort Screven, Ga., on July 17, 1910.

Barney, Fred M., M.R.C., left Fort Clark, Texas, for duty at Camp of Instruction, Leon Springs, Texas.

Gibson, Franklin J., contract surgeon, reported for duty at Fort Clark, Texas.

Wertenbaker, C. I., M.R.C., granted 30 days' leave of absence.

Winn, Robert N., major, granted 3 months' and 21 days' leave of absence to take effect about Oct. 1, 1910.

Changes for the week ended July 30, 1910:

The following named medical officers are detailed for duty at the Camp of Instruction, Pine Camp, Jefferson County, N. Y., and will proceed to the camp so as to arrive not later than July 28, 1910: Majors Willcox, Charles; Reynolds, F. P.; Wilson, James S.; Reno, William F.; Patterson, R. U., and Lieutenants Davis, William C., and Casper, Joseph.

Culler, Robert M., capt., granted 30 days' leave of absence.

Barney, Charles N., major, ordered to Fort Monroe, Va., for temporary duty.

Vose, William E., major, ordered to proceed to Fort Riley, Kan., about August 15, for duty at Camp of Instruction until Sept. 15, 1910.

Ferenbaugh, Thomas L., lieut., will be relieved from duty at Camp of Instruction, Fort D. A. Russell, Maneuver Reservation, August 10, and will return to Fort Des Moines, Iowa.

Gapen, Nelson, capt., now on leave of absence, will proceed to Pine Camp, N. Y., for duty, and on completition of this duty will return to leave status.

Boyer, Perry L., capt., sick leave of absence extended 15 days.

McMillan, C. W., M. R. C.; Murtagh, John A., major; Fuller, Leigh A., major; Jenkins, Frederic E., M. R. C.; Van Dusen, James W., major; Burket, John A., lieut.; Ford, Joseph H., major, will proceed from their respective stations to the Camp of Instruction, Fort Riley, Kan., reporting not later than Aug. 13, 1910, for duty.

Hartsock, F. M., major, and Newlove, George, M. R. C., ordered to duty with troops from station to Camp Perry, Ohio.

Scott, Minot E., dental surgeon, left Vancouver Barracks, Wash., en route to San Francisco, for transportation to Manila, P. I.

Pulver, Arthur L., M. R. C., ordered to proceed from temporary duty at Fort Wood to Fort Jay, N. Y., for temporary duty.

Stallman, George P., M. R. C., ordered to proceed from Fort Douglas, Utah, to Fort Wingate, N. M., for temporary duty.

Reynolds, F. P., major, left Fort Monroe, Va., en route to Pine Camp, N. Y., for duty.

Allen, John H., major, left camp at Gettysburg, Pa., with troops en route to station, Fort Myer, Va.

Willcox, Charles, major., left Fort Totten, N. Y., en route to Pine Camp, N. Y., for duty.

Hoff, John Van R., col., will proceed, at the proper time, to the Camp of Instruction, Pine Camp, Jefferson County, N. Y.

Grissinger, Jay W., capt., on arrival at Seattle, Wash., will proceed to Fort Des Moines, Iowa, for duty.

Cowles, Calvin D., Jr., lieut., on his relief from duty as surgeon of the transport *Logan*, will proceed to West Point, N. Y., for duty.

Gandy, Charles M., lieut.-col., granted leave of absence for 3 months, effective on being relieved from duty at West Point, N. Y.

Norris, H. C. R., M. R. C., orders directing him to proceed to the Philippine Islands, for duty, revoked.

Lyster, William J. L., major, granted leave of absence for 4 months, to take effect about Oct. 1, 1910.

Whitney, Walter, M. R. C., orders directing him to proceed to Fort Egbert, Alaska, for duty, revoked.

Suggs, Frank, M. R. C., relieved from duty at Fort Hamilton, N. Y., and ordered to Fort Egbert, Alaska, for duty.

Owen, L. J., capt., detailed for duty as inspector-instructor of the Hospital Corps, Organized Militia of Michigan, to be held at Ludington, Mich., Aug. 9-18, 1910.

Scott, George H., capt., granted leave of absence for 2 months, with permission to go beyond the sea.

Reed, George P., capt., on completion of duty at Camp of Instruction, Gettysburg, Pa., directed to proceed to Fort Bayard, N. Mex., for temporary duty at General Hospital.

Bispham, William N., capt., granted 20 days' leave of absence.

Long, Charles J., dental surgeon, returned to Fort Adams, R. I., from temporary duty at Fort Rodman, Mass.

Gunckel, George I., dental surgeon, returned to Fort McPherson, Ga., from leave of absence.

Medical Corps, U. S. Navy

Changes for the week ended July 30, 1910.

Rhoades, G. C., asst. surgeon, ordered to duty at Naval Hospital, Norfolk, Va.

Downey, J. O., asst. surgeon, detached from Naval Hospital, Norfolk, Va., and ordered to duty at Naval Hospital, Philadelphia.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended July 20, 1910.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from July 22, 1910, on account of sickness.

Eager, J. M., surgeon, granted 7 days' leave of absence from July 21, 1910.

Nydegger, J. A., surgeon, leave of absence for 7 days from July [illegible] 1910, amended to read on account of sickness, in accordance with Paragraph [illegible], Service Regulations.

Wickes, H. W., P. A. surgeon, directed to proceed to Washington, D. C., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Surgeon, July 20, 1910.

Holt, John M., P. A. surgeon, granted 17 days' leave of absence from Aug. 11, 1910, and 19 days' leave of absence from Sept. 1, 1910.

Glover, M. W., P. A. surgeon, granted 10 days' leave of absence from July 25, 1910.

Lloyd, B. J., P. A. surgeon, granted 1 month's leave of absence from July 20, 1910, on account of sickness.

Roberts, Norman, P. A. surgeon, granted 1 day's leave of absence July 21, 1910, under Paragraph 191, Service Regulations.

Pettyjohn, Joseph, P. A. surgeon, granted 1 month's leave of absence from Aug. 15, 1910, on account of sickness.

Knight, C. P., asst.-surgeon, granted 7 days' leave of absence from July 18, 1910, under Paragraph 191, Service Regulations.

Gray, E. George, acting asst.-surgeon, granted 7 days' leave of absence from July 25, 1910.

Onuf, B., acting asst.-surgeon, granted 4 days' extension of leave of absence from July 17, 1910, on account of sickness.

Safford, M. Victor, acting asst. surgeon, granted 10 days' leave of absence from July 20, 1910.

Seavey, L. T., acting asst. surgeon, granted 21 days' leave of absence from Aug. 8, 1910.

Walker, Thos. D., Jr., acting asst.-surgeon, leave of absence for 11 days from June 28, 1910, amended to read 8 days from June 28, 1910.

Board of medical officers convened to meet at the Bureau July 30, 1910, for the examination of Passed Assistant Surgeon H. W. Wickes, to determine his fitness for promotion to the grade of surgeon. Detail for the board: Assistant Surgeon General J. D. Long, chairman; Surgeon W. P. McIntosh; Surgeon G. B. Young, recorder.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Optometry Campaign in Wisconsin

The Optical Journal and Review for June 30 says:

"Good ammunition for the opening gun of their new campaign for an optometry law has just been secured by the Wisconsin association. The following postal and reply card was sent to each of the 2,700 physicians in the state:

Dear Doctor: At the next session of the legislature there will be introduced a bill providing that all persons other than physicians who practice optometry, or in other words, who examine eyes and fit glasses must pass a satisfactory examination before a board appointed by the governor for that purpose.

We believe that you favor such a law, and will be thankful to you if you will so state on the attached reply card and mail same. If you do not favor such a law, we will be glad to hear from you and to know your reasons.

Hoping for a prompt reply, I am

Very truly yours,

C. D. Walch, Secretary, Milwaukee.

I do ________ favor the passage of a law requiring all persons, other than physicians, to pass a satisfactory examination before being allowed to practice optometry, or in other words before being allowed to examine eyes and fit glasses in Wisconsin.

.. .. M.D.

If you do not favor the proposed law, fill in the word "not" in the proper place at the top of the card.

"A recent number of the *Wisconsin Medical Journal* contained a reproduction of the card and an article asking physicians not to indorse the proposed law. In spite of this, however, 1,050 of the 1,100 replies received indorsed the proposed law. Coming from physicians, the optometrists think that they have in these replies an excellent weapon to use as soon as the legislature meets. This will not be for seven months yet."

Attention has already been called to the methods used in securing the endorsement of unthinking physicians for the "optometry" bills before presentation before state legislatures. These endorsements are secured through a specious and disingenuous presentation of the objects of the bill, which masks its real import. Almost invariably when the situation is explained to physicians who have endorsed such a measure they are emphatic in their statements of opposition to it. This question should be brought before every county society in every state and the members enlightened in order that their signatures may not be secured for the endorsement of unwise measures.

State Boards of Registration

COMING EXAMINATION

NEBRASKA: State House, Lincoln, August 10-11. Sec., Dr. E. Arthur Carr, 141 S 12th St., Lincoln.

Louisiana May Report

Dr. F. A. LaRue, secretary of the Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, May 19-20, 1910. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 122, of whom 93 passed and 27 failed. Two candidates did not complete the examination. Three candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
University of Alabama	(1910)	75, 82.6
Birmingham Medical College	(1909)	82.6
College of P. & S., Little Rock	(1910)	80.0
Northwestern University Medical School	(1892)	83.8
Kentucky University	(1904)	80.2
Flint Medical College	(1909)	75
Tulane University of Louisiana (1890) 80; (1901) 84; (1909) 80.8; (1910) 75, 75, 75.4, 76.6, 76.6, 76.8, 78, 78.4, 79, 79.6, 79.6, 79.6, 79.6, 80, 80.2, 80.2, 80.4, 80.6, 81, 81, 81, 81.6, 81.6, 82.2, 82.6, 83.8, 83.8, 84.2, 84.4, 84.4, 84.6, 84.8, 85.6, 86.2, 86.2, 86.4, 86.4, 86.4, 86.8, 86.8, 86.8, 86.8, 87, 87.6, 87.6, 87.8, 88.2, 88.2, 88.4, 88.4, 88.6, 88.8, 89, 89.2, 89.4, 89.4, 91.2, 94.		
Saginaw Valley Medical College	(1903)	84.0
Vanderbilt University	(1910)	80.8, 85.4
University of Nashville	(1910)	79.6, 79.8, 80.6, 83.2, 83.2, 84.8
University of the South	(1901)	89.2
Memphis Hospital Medical College	(1910)	75, 75.4, 76, 76.2, 77.6, 79.6, 80, 80.2, 80.2, 81.4, 84.2, 84.6.
College of Physicians and Surgeons, Memphis	(1910)	81.0
Meharry Medical College	(1910)	79.2
Galveston Medical College	(1888)	79.8

FAILED

College	Year Grad	Per Cent.
University of Alabama	(1910)	71.2
University of Arkansas	(1909)	63.4
College of P. & S., Little Rock	(1910)	71
Louisville Medical College (1903) 69.4;	(1906)	56.4
Flint Medical College	(1910)	56.6, 58.8
Tulane University of Louisiana	(1910)	71.4, 73.8
Baltimore Medical College	(1907)	73
Ensworth Medical College	(1892)	49.8
College of P. & S., Kansas City	(1901)	42.2
University of the South	(1903)	67.8
Meharry Medical College	(1909)	60, 66
Memphis Hospital Medical College (1900) 65.2; (1908) 65.2, 63.8; (1909) 47.2; (1910) 65, 68.4, 68.4, 69.6, 69.6, 72, 73.8.		
Dallas Medical College	(1903)	62.6

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Louisville	(1909)	Kentucky
University of Maryland	(1895)	Virginia
University of Virginia	(1909)	Arkansas

Massachusetts May Report

Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, reports the written examination held at Boston, May 10-12, 1910. The number of subjects examined in was 13; total number of questions asked, 70; percentage required to pass, 75. Practical laboratory tests were also required. The total number of candidates examined was 36, of whom 18 passed, including 2 non-graduates and 2 osteopaths, and 18 failed, including 4 non-graduates and one osteopath. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Tulane University of Louisiana	(1908)	76.5
University of Maryland	(1889)	80
Medical School of Maine	(1895)	75
Baltimore Medical College	(1909)	75
Harvard Medical School (1909) 80, 80.5;	(1910).	78.4
Tufts College Medical School	(1909)	79, 80.5
Dartmouth Medical School	(1908)	85
Jefferson Medical College	(1905)	85.1
Hahnemann Medical College, Philadelphia	(1909)	76.2
University of Pennsylvania	(1889)	80
University of Naples, Italy	(1905)	75

FAILED

College	Year Grad.	Per Cent.
Medical College of Georgia	(1901)	49.3
Baltimore University	(1906)	57.4
College of P. & S., Baltimore	(1909)	72
College of Physicians and Surgeons, Boston (1908) 53.5, 59.5, 61.9, (1909) 63, 67		
Tufts College Medical School	(1909)	69.4
Leonard Medical School	(1908)	67.5
University College of Medicine, Richmond	(1907)	61.3
Laval University, Canada	(1909)	62.4
University of Naples, Italy	(1906)	70.3

Book Notices

ALCOHOL A DANGEROUS AND UNNECESSARY MEDICINE. How and Why. What Medical Writers Say. By Mrs. Martha M. Allen, Superintendent of the Department of Medical Temperance for the National Woman's Christian Temperance Union. Cloth. Price, $1.25. Pp. 435. Marcellus, N. Y.: Department of Medical Temperance of the National Woman's Christian Temperance Union [1910].

In this preface to the second edition of her book, Mrs. Allen says that ten years have brought about a great change in the attitude of physicians as regards the use of alcohol as a drug. This is largely true, as anyone following the literature of the day can observe. It is probable also that the work of the society under the auspices of which her book was first published has contributed considerably in an indirect, if not in a direct way, to this result. Physicians are not insensible to influences from any quarter and many of them have possibly been induced to give more particular attention to this subject than they would otherwise have done.

While at the present time the majority of physicians consider alcohol a useful if not an indispensable agent in the treatment of disease at times, they also recognize its dangers as a habit inducing drug, and an increasingly large number of them are making less and less use of it. This is shown in the reports from hospitals as well as from the testimonies of physicians, which Mrs. Allen has collected and added to the testimonies already given in her earlier edition. Without the scientific pretensions of the report of the committee of fifty it is probable that this book is far more influential and that its general conclusions are more acceptable to the profession than those of the other work.

In this edition many additions have been made, notably those in the remarks on "patent medicines" and proprietary foods, and on the recent researches of Laitinen, Reid Hunt and others. It must be remembered that the Woman's Christian Temperance Union was early an active agent in the campaign against nostrums containing alcohol, etc., so that when Mr. Bok began his series of articles in the *Ladies' Home Journal* he was accused of "bowing to the clamor of the W. C. T. U." For this at least the organization deserves the gratitude of the medical profession.

The work of the Council on Pharmacy and Chemistry is referred to by Mrs. Allen and she might have used it even more. She is not always as cautious in her selection of authorities as a physician might desire. This, with some carelessness of proofreading, is the main blemish of the work, which in most respects is excellent in its way and worthy of respectful consideration by physicians, though all may not accept fully its conclusions.

BEITRÄGE ZUR PHOTOGRAPHIE DER BLUTSPEKTRA, unter Berücksichtigung der Toxikologie der Ameisensäure. Von Reg. Rat Dr med. E. Rost, Mitglied d. k. Gsndhsamte. und Dr med. Fr Frantzständ. Mitarbeiter im k. Gsndhtsamte., und Dr. phil R Heise technischem Rat im k. Gsndhtsamte. Paper Pp 304, with 15 illustrations. Price, 9 marks. Reprint from *Arb. a. d. k Gsndhtsamte*, XXXII, No. 2. Berlin. Verlag von Julius Springer, 1909.

This monograph deals with the technic of photographing absorption spectra and the application of spectrum photography to the study of hemoglobin and derivatives thereof. For the purpose of securing photographs of the entire visible spectrum and at the same time a register whereby the exact location of absorption bands may be determined directly from the picture, the authors employ a specially devised apparatus. The feature of this consists in an appropriate helium bulb, the emission spectrum from which is recorded simultaneously on the same plate with the absorption spectrum under study. In the numerous and remarkably beautiful photographic plates with which this work is illustrated the entire spectrum shows with perfect clearness, while the bright line helium grating serves for purposes of orientation. The authors claim for this method a superiority over any in which results must be subjectively recorded. With their technic the authors negative the view that formic acid poisoning causes methemoglobinemia. Perhaps the most valuable part of the work lies in the certainty with which it establishes the characters of normal blood spectra. Since minute traces of a number of abnormal blood pigments (e. g., methemoglobin in alkaline poisoning) can be detected with certainty it is suggested that this method might find practical application in the clinic.

HIGH-FREQUENCY ELECTRIC CURRENTS IN MEDICINE AND DENTISTRY. Their Nature and Actions and Simplified Uses in External Treatments. By S. H. Monell, M.D. Professor of Static Electricity, International Correspondence Schools, 1898-1903. Cloth. Price, $4 net. Pp. 465, with 32 illustrations. New York: William R. Jenkins Co., 851 Sixth Avenue, 1910.

We confess our inability to take this volume seriously. It is one of the many works with which electrotherapeutics is burdened, which commingle fact and fancy (as the workaday man sees things) until the statement of the subject is hopelessly discounted to the mind of the matter-of-fact reader. The author begins with a long fable; and the rest of the work seems to us a mixture of fable, poetry, romance and other products of the imagination. Not that we would imply that the author is insincere. Far from that. He has the sincerity that comes from unbounding enthusiasm and endless confidence in his therapeutic agent—a confidence and enthusiasm that amount to ecstasy. And while ecstasy may produce poetry, it is not the mental state to record or weigh cold physical facts. "As the vision of the resplendent structure [high-frequency electrotherapy we suppose he means] rises before our therapeutic eye we love to dwell on its noble possibilities, its sun-like center from which would radiate the blessings of these greater remedies to mankind, of comforts spread abroad, of mercies scattered, of lengthened lives, and fuller usefulness to myriads of men and women now borne down by the weight of burdens that drugs do not lighten and that surgery does not help." The book can be commended for its Homeric swing and imagery. But, oh, that fewer men who write on electrotherapy would adopt this style, and more would state the really valuable uses of the method in unexaggerated convincing words!

DIE PROCTO-SIGMOSCOPIE UND IHRE BEDEUTUNG FÜR DIE DIAGNOSTIK UND THERAPIE DER KRANKHEITEN DES REKTUM UND DER FLEXURA SIGMOIDEA. Von Dr. H. Strauss in Berlin. Cloth. Price, 7.50 marks. Pp. 149, with illustrations. Leipzig: G. Thieme, 1910.

This work is divided into five sections, the first being devoted to a short historical introduction, and the larger portion to technic. In Part 2 the various instruments are described, and the anatomy is fully elaborated and well illustrated. In Part 3 the pathology of the different regions is carefully described, beginning with the anal region and ending with the sigmoid. Parts 4 and 5 are devoted to treatment, many cases being reported to emphasize the author's methods and results. A number of satisfactory colored illustrations show the normal and diseased appearances of the structures, a particularly useful one being Plate 1, showing a longitudinal section of the lower intestinal canal from the sigmoid to the anus in the normal state, with its various divisions, the external and internal sphincters, Houston's valves, etc. This work can be recommended to readers of German who wish a complete exposition of this modern method of diagnosis.

THERAPEUTISCHE TECHNIK FÜR DIE ÄRZTLICHE PRAXIS. Ein Handbuch für Aerzte und Studierende. Von Dr. Julius Schwalbe. Second Edition. Paper. Price, 22 marks. Pp. 979, with 537 illustrations. Leipzig: Georg Thieme, 1910.

To this addition have been added two entirely new sections—one on the important subjects of dietetics and one on skin and venereal diseases. The article on dietetics occupies nearly 100 pages and constitutes a valuable addition to the work. In addition to general principles, the dietetic treatment of metabolic diseases and diseases of the digestive organs is described in detail. The section on skin diseases and syphilis gives the technic of various local applications to the skin and especially the methods for the mercurial treatment of syphilis. The book is published in one volume of 979 pages and is well illustrated. To the physician who is acquainted with German, this volume cannot fail to be a valuable guide in the application of instruments and methods of treatment.

FIRST PRINCIPLES OF AGRICULTURE. By Emmet S. Goff, Late Professor of Horticulture, University of Wisconsin, and D. D. Mayne, Principal, School of Agriculture, St. Anthony Park, Minn. Introduction by Ex-Governor W. D. Hoard. Cloth. Price, 80 cents. Pp. 262, with illustrations. Chicago: American Book Co., 1910.

This is a "first aid" to the garden, but it also carries the lover of nature not a little way into scientific agriculture. It is a good book to have around the home and the farm. The subject of the hygiene of the dairy is not neglected. Valuable tables are appended and the book is well indexed, illustrated and subdivided, so that it is easy to consult.

Medicolegal

U. S. Supreme Court on Constitutionality of Practice Acts, Especially on Exceptions

The Supreme Court of the United States says, in Watson vs. State of Maryland (30 S. Ct. R., 644), that it is too well settled to require discussion at this day that the police power of the states extends to the regulation of certain trades and callings, particularly those which closely concern the public health. There is perhaps no profession more properly open to such regulation than that which embraces the practitioners of medicine. Dealing, as its followers do, with the lives and health of the people, and requiring for its successful practice general education and technical skill, as well as good character, it is obviously one of those vocations where the power of the state may be exerted to see that only qualified persons shall undertake its responsible and difficult duties. To this end many of the states of the Union have enacted statutes which require the practitioners of medicine to submit to an examination by a competent board of physicians and surgeons, and to receive duly authenticated certificates showing that they are deemed to possess the necessary qualifications of learning, skill and character essential to their calling. In Dent vs. West Virginia, 129 U. S., 114, the subject is elaborately considered, and this view affirmed by Mr. Justice Field, speaking for the court.

In such statutes there are often found exceptions in favor of those who have practiced their calling for a period of years. In the Dent case an exception was made in favor of practitioners of medicine who had continuously practiced their profession for ten years prior to a date shortly before the enactment of the law. Such exception proceeds on the theory that those who have acceptably followed the profession in the community for a period of years may be assumed to have the qualifications which others are required to manifest as a result of an examination before a board of medical experts. In the Maryland statute under consideration, the excepted class were those who had practiced before Jan. 1, 1898, being more than four years before the passage of the law, and who could show, presumably with a view to establishing that they were actively practicing at that time, that they had treated at least twelve persons within one year of that date.

Conceding the power of the legislature to make regulations of this character, and to exempt the experienced and accepted physicians from the requirements of an examination and certificate, the details of such legislation rest primarily within the discretion of the state legislature. It is the lawmaking body, and the federal courts can interfere only when fundamental rights guaranteed by the federal constitution are violated in the enactment of such statutes.

This subject has been so frequently and recently before this court as not to require an extended consideration. The right to regulate occupations was considered by this court at the present term in the case of Williams vs. Arkansas, 217 U. S., 79. It was therein held that regulations of a particular trade or business essential to the public health and safety were within the legislative capacity of the state in the exercise of its police power, and that unless such regulation are so unreasonable and extravagant as to interfere with property and personal rights of citizens, unnecessarily and arbitrarily, they are within the power of the state; and that the classification of the subjects of such legislation, so long as such classification has a reasonable basis, and is not merely arbitrary selection without real difference between the subjects included and those omitted from the law, does not deny to the citizen the equal protection of the laws. Applying these tests, the court sees nothing arbitrary or oppressive in the classification of physicians subject to the provisions of this statute, which excludes from its requirements those who have practiced prior to Jan. 1, 1898, and were able to show that they had treated at least twelve persons in a professional way within a year of that date.

But it was insisted that undue discrimination was shown and equal protection of the law denied in the exceptions of the statute ". . . . but nothing herein contained shall be construed to apply to gratuitous services, nor to any resident or assistant resident physicians or students at hospitals in the discharge of their hospital or dispensary duties, or in the office of physicians, or to any physician or surgeon from another state, territory, or district in which he resides, when in actual consultation with a legal practitioner of this state, or to commissioned surgeons of the United States army or navy or Marine Hospital Service, or to chiropodists, or to midwives, or to masseurs or other manual manipulators, who use no other means; nor shall the provisions of this subtitle apply to physicians or surgeons residing on the borders of a neighboring state, and duly authorized under the laws thereof to practice medicine or surgery therein, whose practice extends into the limits of this state: Provided, that such practitioners shall not open an office or appoint places to meet their patients or receive calls within the limits of this state without complying with the provisions of this subtitle: Provided, that the same privileges be accorded to licensed physicians of this state: Provided, further, that nothing in this subtitle shall annul any of the provisions of article 32, title 'Dentistry,' nor shall apply to any registered graduate of dental surgery now practicing in the said state of Maryland, with the sign titles: Dentist, surgeon dentist, dental surgeon, or stomatologist."

The court will not take occasion to consider each of these exceptions. A reading of them makes it manifest that they are not without reason. Before a law of this kind can be declared violative of the Fourteenth Amendment as an unreasonable classification of the subjects of such legislation because of the omission of certain classes, the court must be able to say that there is "no fair reason for the law that would not require with equal force its extension to others whom it leaves untouched."

The stress of the argument as to these exceptions was put on the exemption of resident physicians, or assistant physicians, at hospitals, and students on hospital and dispensary duties. The selection of the exempted classes was within the legislative power, subject only to the restriction that it be not arbitrary or oppressive, and apply equally to all persons similarly situated. The court cannot say that these exceptions nullify the law. The reason for them may be that hospitals are very often the subject of state or municipal regulation and control, and employment in them may be by boards responsible to public authority under state law or municipal ordinance. Certainly the conduct of such institutions may be regulated by such laws or municipal regulations as might not reach the general practitioner of medicine. In any event, the court cannot say that these exceptions are so wholly arbitrary and have such slight relation to the objects to be attained by the law as to require the courts to strike them down as a denial of the equal protection of the law, within the meaning of the federal constitution.

Another point: The Court of Appeals of Maryland determined that Section 99 of Article 43 of the Maryland Code of 1904, under which the indictment in this case was prosecuted, making it a misdemeanor to attempt to practice medicine in the state of Maryland without registration, was not subject to the limitations of Section 80, relating to the sending of notice, etc. The offense, the Courts of Appeals held, was created solely by Section 99 in broad and general language, without exceptions or qualification, and that for conviction under that section it was not essential to prove the sending of the notice required by Section 80, which provides for the sending of notices to physicians practicing in the state without being legally registered. That construction of the Maryland statute is conclusive on this court (the Supreme Court of the United States). The accused had a trial before a court and jury under the statutes of Maryland, was proceeded against under the forms provided for by the laws of that state, and under a statute which the highest court of the state has held completely defined the offense without resorting to the necessity of notifying unregistered physicians before they became liable for the penalties of the act for practicing without registration. The contention that the conviction in this aspect was without due process of law under the federal constitution cannot be sustained.

Society Proceedings

MEDICAL SOCIETY OF NEW JERSEY

One Hundred and Forty-fourth Annual Meeting held at Atlantic City, June 28-30, 1910

The officers elected were named in THE JOURNAL, July 23, p. 231.

Oration on Surgery: When and By Whom Should Surgery Be Advised?

DR. JOHN B. DEAVER, Philadelphia: Unless a surgeon is very eminent, the most of his practice comes from his colleagues, and not from the outside public. At what point should physician and surgeon first meet to secure the best results? The physician should not delay until he himself has decided that surgery is necessary. Many physicians entertain an exaggerated notion of the risks of certain operations and many operations are deferred to a less convenient season because of an ungrounded fear of the operation itself. The physician alone is not a safe judge of the time or the necessity for surgical treatment. His medical knowledge of the case is invaluable, and should be largely used in the decision. That decision, however, should be arrived at as the product of medical and surgical deliberation together. When this is done early in the progress of the case, the solution of the question that I have propounded will issue easily and naturally, as a result of mutual understanding and agreement; the best interests of the patient will be conserved, and precipitate surgery will be checked, and likewise eleventh-hour operations be relegated to the past.

Empyema

DR. IRWIN H. HANCE, Lakewood: The oft-repeated maxim "Evacuate pus, whenever found," enunciates the only treatment for empyema. Delay is always attended with the danger of general sepsis; and the postponed operation not only increases the chance of a more chronic suppuration, but also materially diminishes the chance of the compressed lung expanding thoroughly. The operation in all acute conditions and almost all chronic ones, should be immediate exsection of one or more ribs. Even in chronic tuberculous cases, the presence of pus will add another toxemia to the one already present. If prolonged suppuration exists after the operation the injection of bismuth paste should be resorted to. This does not, however, seem to be free from danger, since some cases of poisoning have been reported. What the future of serum therapy may be is at present unknown.

DISCUSSION

DR. FRANK D. GRAY, Jersey City: I have been much interested in two probable improvements in the routine treatment of empyema. One is the use of bismuth paste, which I believe will help us out in many of these cases. The other improvement is the injection of two ounces of a 2 per cent solution of formalin in glycerin, the theory being that this will sterilize the pleural fluid and eventually lead to its absorption. Rib resection and thoracotomy are not serious operations, but they almost certainly convert a case of empyema into a more or less purulent septic condition. The entrance of air and the prolonged drainage are often disastrous. If a thoracotomy must be done, an improvement on the old rubber-tube drainage may be employed. There has recently been devised a short metal tube that merely goes through the chest wall, and is provided with flanges to prevent its slipping into the wound. It cannot be compressed between the ribs or between the expanding lung and the chest wall.

DR. HENRY L. COIT, Newark: In the majority of cases of empyema, in children, at least, pus in the pleural cavity should be removed at once. The only way to do this is to make an opening large enough for the pus to run out.

DR. JOHN C. MCCOY, Paterson: The poor results obtained in these cases are, in large measure, due to the fact that the openings are not free enough, and in order to obtain successful results in empyema, the cases must be followed very carefully and methodically after the operation. In eight or nine cases in which bismuth injections were used I have not found it particularly efficient. During the last two or three years, I have made it a cardinal principle, particularly in adults, to start the patient as early as possible with lung-gymnastics supplemented by the Bier hyperemic treatment over the wound, and I have found that the period of convalescence has been greatly shortened and the results have been far more satisfactory.

Organic Disease of the Nervous System

DR. WILLIAM M. LESZYNSKY, New York City: The advantages of the early diagnosis of organic disease of the nervous system, from both a clinical and sociologic standpoint, cannot be overestimated. For instance, the disastrous consequences of failure to recognize brain tumor are at times deplorable. The fundamental principles of neurology are not very difficult to attain. The primary cause of many avoidable errors in diagnosis is the neglect of the large majority of general practitioners to avail themselves of the opportunity to obtain these essential requirements, preliminary working knowledge of the general anatomy and physiology of the nervous system, a familiarity with modern clinical methods of examination, and the habit of accurate observation; hence, the unfortunate tendency that prevails to ascribe many apparently obscure symptoms to hysteria or neurasthenia, while organic disease is unmistakable. Excessive irritability of the nervous system is often a forerunner of general paresis or some developing psychosis. An examination limited to the nervous system is incomplete and inadequate, for many symptoms referable to the nervous system may result from disease of other organs; and, on the other hand, obtrusive symptoms confined to a single organ may be inexplicable to the specialist until some underlying organic nervous disease is discovered.

Acute Pyelitis in Children

DR. GEORGE B. PHILHOWER, Nutley: I believe that the female sex and the colon bacillus, plus some other factor, must work together in order to produce pyelitis. All of my patients were girls; all had colon bacilli in the urine; and five of the six either had had influenza or had been exposed to it. The treatment is the administration of citrate of potash in large doses, sufficient to neutralize the strongly acid urine; hexamethylenamin, combined equally with benzoate of soda every three hours, is even better than the citrate of potash in the cases in which the colon bacilli predominate. The treatment should not, however, be continued too long.

DISCUSSION

DR. HENRY L. COIT, Newark: It is important to recognize the fact that the innocent character of the colon bacillus may be changed into a type which is not only vicious, but virulent. I think that the bulk of the evidence is in favor of the urethra and bladder as the means of access of the pyogenic bacillus to the kidney.

DR. D. J. MILTON MILLER, Atlantic City: I do not think that it is yet recognized by the profession that pyelitis in children is a common cause of unrecognized fever, probably the most common outside of otitis media. When a child has fever that cannot be accounted for it is well to examine the urine. Pyelitis is a very common cause of extreme anemia in children. As to the etiology, I have no doubt that the influenza bacillus is in a measure the cause of the disease.

DR. T. FINLEY BELL, Englewood: I do not believe that it is possible to make a diagnosis of the bacterial contents of the urine by a simple microscopic examination. Cultures must be made. The urine for this purpose must in all cases be taken by catheterization. I doubt that the *Bacillus coli* is the cause of pyelitis in children although it is present in most of the cases. In most of my cases, recognizable chills were not present in young children, but the temperature curve in these cases is characteristic. Anemia is rather frequent in long-continued cases. If the patients are seen early, they will get well promptly under hexamethylenamin.

DR. FRANK W. PINNEO, Newark: If a urinalysis were made more frequently in children with disease of a febrile character, much valuable information might be obtained. It is quite necessary to get the urine by catheter. The differentiation between cystitis and pyelitis is not easily made without the aid of the microscope; but perhaps cystitis apart from pyelitis does not occur in children as in adults.

A Plea for a Higher Standard of Medical Education

DR. BENJAMIN A. WADDINGTON, Salem: The spirit of the age is one of progression, stimulated in all the walks of life by the keener competition. This means that he who would be even measurably successful in the struggle for existence must be armed with all the possible advantages in entering the lists for preferment in his chosen vocation. All the walks of life now demand more and more of the man; and this demand will go forward with herculean bounds. The wisdom of to-day will be the foolishness of to-morrow; the high standard of the now will be the minor height of the then. It is to be regretted that the medical profession does not set a standard for the admission to its body at the very highest possible notch, and then see that those who would be of us measure rightly to gauge. Medical men seem to lack the grit to enforce these views, and to be afraid to speak out manfully and strike from the shoulder at what detracts or will detract from their high calling. The reason that the physician does not occupy the elevated plane in the esteem of the community that he once did is that he does not compel a high respect for his profession from the laity by the prevention of its being attained by incompetents.

The Broader Aspects of the Science of Medicine

DR. W. GILMAN THOMPSON, New York City: During the past two or three years, very distinguished advancement has been made in many of the broader aspects of medical science. Never before have our national and state societies been so efficiently organized and so productive of the highest scientific results. The public, however, is slow to appreciate its debt to medical science, and continues to follow strange gods. There is a misconception on the part of the laymen as to specialism. The public have been taught to regard the human organism as a sort of checker-board, each division requiring an independent specialist to understand it. This lamentable attitude of mind leads to serious, if not fatal, blunders. A factor in the depreciation of medical worth may be found in the estimate which many physicians place on themselves by asking so little for their services; another lies in the lack of firmness on the part of many physicians in denouncing the wiles of the charlatan or the evil that lurks in the nostrum. Still another method of alienation of patients exists in the modern habit of permitting the use of "patent" or proprietary remedies. A medical society should occupy the position of a clearing house or court of appeals in all the broader aspects of medical science, so far as they concern the general public interests; and the public would soon become accustomed to seek its advice and trust its decisions.

The Ethical Aspect of Expert Testimony in Relation to the Plea of Insanity as a Defense to an Indictment for Crime

DR. CARLOS F. MACDONALD, New York City: The present method of presenting expert testimony is by no means perfect, but it is far better and more practical than many of the visionary schemes that have been brought forward from time to time by certain alienists. The most practical solution of the difficulty would be to make statutory provision for the appointment by the court of one to three experts, when occasion arises, the law to provide that every physician of repute in the particular branch of the medical science to which the question of expert opinion may relate shall be appointed; these experts to have full and free access to all the evidence in the case, as well as to the defendant, for the purpose of examination, and then to submit to the court for transmission to the jury a written report setting forth therefrom the evidence and the evidence on which such conclusions were based; the cross-examination of the experts to be restricted to the matters embraced within their direct statement of facts and opinions, and the compensation of the experts to be fixed by the courts. If a physician is to appear as an expert witness, he should keep away from the counsel while in court, and should take no part in the conduct of the case which would put him in an attitude of assistant to the counsel or of a biased or interested party. When insanity is pleaded as a defense, the question of insanity should be kept out of the case entirely during the trial; the jury should pass only on the question of the guilt or innocence of the accused, irrespective of his mental condition; then, if the defendant is convicted, let the court appoint a commission of competent alienists to determine his mental condition. If this were done, it is probable that much of the conflict of opinion in our law courts respecting the question of responsibility in criminal cases where insanity is offered as a defense, would disappear.

Stomach Surgery

Dr. Edward Staehlin, Newark: I wish to make a plea for more frequent and earlier exploratory operations—not exploratory operations made as a last resort, simply to close the wound again with regret for what might have been done earlier; but exploratory operations for the purpose of making a diagnosis and then proceeding in accordance with what is found. Second, let me make a plea for early operations in the particular class of cases in which the diagnosis is made and in which the indication for operation is clear. The operative procedure instituted in all my cases, when it was called for, was the posterior gastrojejunostomy of the no-loop or short-loop variety; and it has given absolute satisfaction. I employ a different procedure from the one invariably recommended and illustrated in the application of the forceps. Instead of having the blades and handles in apposition, I invert them. The blades are in apposition, but the handles are at diagonal opposites. Thus the assistant can control them better. It is not tiresome to hold them; and when he shifts his hands a little there is not the leverage that is found when the forceps are held by the handles.

Stenosis of the Respiratory Vestibule

Dr. Emery Marvel, Atlantic City: I am convinced that vestibular abnormalities have been causal factors in producing many permanent cripples and a large number of premature deaths; and the same factors encourage the implantation of the contagious infections. The prevention of disease is the watchword of the day, and the elimination of adenoids and offending tonsils frees the victim from their mechanical handicap and removes their influence in the increased susceptibility to bacterial invasion. Complete extirpation, nothing less, is the remedy.

The Relation of the Public to and the Obligation of the Physician in the Spread of Communicable Disease

Dr. Philip Marvel, Atlantic City: The attitude of the general public is known to be strongly antagonistic to the establishment of prohibitory restrictions that insure protection against certain communicable diseases. The most important factors involved in promoting the influences that are responsible for this situation are the commercial interests, which too often disregard all the rights and privileges of others; the ignorance of the public concerning the cause and development of disease, and the laws of hygiene and sanitary science; and the indifference and jealousy of most of the profession, whose lack of a proper appreciation of the scope of the work or whose personal indifference to its source prevent them from a hearty cooperation with the prosecution of the great old propaganda. Once the public is sufficiently aroused to comprehend and appreciate its own interest in this great question, little will be required to assist us in the prosecution of this work. At no time in the history of civilization have there been so many proper and well-directed educational measures among professional state and national crafts for the uplifting of the people as exist to-day. Epidemiologic studies of the various communicable diseases have added to our knowledge of the spread of disease. It is my firm belief that these infections will continue with little variation until the public are properly awakened and educated in reference to individual protection.

DISCUSSION

Dr. Alexander Marcy, Jr., Riverton: That there is indifference on the part of the people toward such measures is self-evident; but this indifference is due to ignorance, and one of the highest duties of the medical profession is to educate the public along these lines. That the national government owes something to the people in this respect, is conceded by all fair minded people; therefore, the efforts that are being made to create a national department of health should have the hearty support of every medical man. The state and municipality also owe something to the people along these lines.

Dr. W. Blair Stewart, Atlantic City: One should remember that the public can be led, but never driven. The local medical societies should devote less time to politics and more to studying conditions at home and the betterment of town and people. Local boards of health, usually composed of laymen, should cooperate with the medical profession. A little time and patience would soon create a better understanding and an improved attitude toward each other. More time and care should be devoted by teachers, physicians and nurses to the betterment of the condition of children in the public schools. The good influence of pure-food laws is now apparent. The Medical Society of New Jersey should exert her strongest influence in favor of the movement to establish a national bureau of health.

Dr. Theodore F. Levingood, Elizabeth: It would be well for the county societies, which come into most intimate touch with the individual physicians, who reach the people, to take up this work of prevention, and teach the people that they must have certain laws along this line enacted. When the people have once been instructed, the medical profession will have no further trouble. The people will send suitable men to the legislature and the whole problem will be solved.

Dr. Henry Chavanne, Salem: Conditions in cities at the present day are such as to call for the greatest condemnation. They are hot beds of disease. It is our duty to see that the councilmen and legislators are men who will make good laws on this subject, and the executive officers men who will execute these laws.

Organization in Medicine

Dr. William H. Welch, Baltimore, Md.: There is nothing more remarkable in the development of organized medicine in recent years than the growth of our state societies, due largely to the stimulus given by the improved organization of the American Medical Association. The very best thing that has come out of this plan of organization is the growth of the county society, which comes into closest contact with the individual physician. All our efforts should be directed toward strengthening the county societies. We do not represent any school of medicine, and we have no principles that we regard as universally applicable to the explanation or the treatment of disease. Anyone who attempts to practice the healing art should have some sort of knowledge of the healthy and the diseased body. So long as curative medicine is so far from being able to cure large numbers of diseases the so-called healing cults will doubtless thrive.

Dr. Marvel has called attention to the fact that it requires cooperation of the public with the medical profession, in order to obtain important results in public hygiene. In this field of preventive medicine we have no rivals. Our profession is the only one that interests itself in preventive medicine. There is no school of preventive medicine.

Medical Expert Witness

Dr. William H. Hicks, Newark: Honest and conscientious effort to reach a true diagnosis in cases of alleged insanity is the rule and not the exception; and disagreement in some cases is, in the present imperfect state of knowledge on the subject, inevitable under any system. Until the conflicting systems of psychology and the divers schools of psychiatry shall have been merged into a more uniform and a more exact science of the mind, it is folly to expect agreement in all cases of mental disorder. The alienist of courage and honesty will dare to do his duty in testifying to a condition of insanity; for society's protection against these homicides can be secured, not by executing the insane, but by practical, humane and scientific methods of prevention. Dangerous lunatics should not be allowed at large; but to suggest that a man be tried, convicted and sentenced, when he is incapable of preparing a defense or of understanding the nature of the legal proceedings, is monstrous and worthy of the dark ages.

DISCUSSION

Dr. Edward J. Ill, Newark: The alienist has suffered most as the result of the severe criticism that the profession has received at the hands of the laity, and with right, for they are the ones that have sinned the most. The work of the alienist is the most difficult and the most unsatisfactory in the whole line of medical research, and this is just the reason that the alienist has been as a toy in the hands of the shrewd lawyer. The alienist who wishes to keep his name free from suspicion should refuse to testify as an expert so long as the present anomalous conditions exist. The state cannot demand that he jeopardize his good name. In these circumstances the court, the bar and the laity will soon come to their senses.

Dr. Edward E. Worl, Newark: While the general practitioner does not know the processes and the degree of insanity, he does know when a man is insane; yet if he testifies regarding this point, he is immediately overwhelmed with some expert witness who has a high standing in nervous diseases. The determination of insanity is exceedingly difficult, unless one knows the previous life and peculiarities of the patient.

Dr. Claudius R. P. Fisher, Bound Brook: In most of these cases, there is room for honest differences of opinion. It is the dishonest differences of opinion with which we find fault. I think, however, that it comes with a very bad grace from the legal profession to say that doctors never agree, when the Supreme Court of the United States, in case after case, hands down two different opinions.

Dr. Walter B. Johnson, Paterson: Any doctor who will study the side of the case of the lawyer who employs him, is apt to be honestly biased in favor of that side. While there often seems to the jury and laity to be a difference of opinion among medical experts, a careful analysis of these opinions by a board of physicians might bring out the fact that the opinions were very close together.

The Relation of Water to Malaria

Dr. John Walters, Wharton: Malaria prevailed in Wharton until 1880, when two mining companies drove a tunnel through the center of the town, in order to drain off what they termed the surface water. This suddenly drained all the wells and springs in the town, by taking the water for about 80 feet below the surface. In order to obtain water for domestic purposes, cisterns were now constructed; and within a short time malaria had almost entirely died out. It has not reappeared, although the mosquitoes in season are as vigorous as ever. The facts cited have convinced me that malaria is contracted by drinking water from springs and wells into which drainage from swamps and marshes carries the larvae from the breeding places of mosquitoes, and not from the sting of the insect. In regard to treatment with quinin, this drug is easily dissolved in the normal stomach, but in malaria, the stomach frequently loses its acidity. Therefore, it is useless to give this drug unless it is first rendered soluble and ready for absorption on entering the stomach. The most desirable way in which to do this is to add quinin to tincture of chlorid of iron. The iron dissolves the quinin and improves the depleted blood corpuscles, while the mixture acts directly on the process, correcting the stomach and abating the symptoms with surprising rapidity.

DISCUSSION

Dr. Frank J. Keller, Paterson: I should like to hear some expression of opinion regarding the prevention of malaria by planting eucalyptus trees and other forms of vegetation inimical to the growth of the species of mosquito that propagates malaria. As to the method of introducing quinin into the stomach, I think that is merely a hobby.

Dr. Edward B. Rogers, Collingswood: The good results obtained by Dr. Walters were due to the fact that the tincture of iron contains a fair amount of hydrochloric acid. While the iron helps to overcome the anemia, any other form of it would give that result; but the hydrochloric acid helps to produce absorption.

Dr. Linn Emerson, Orange: The attacks of malaria that I witnessed in soldiers returning from the Spanish-American War made me feel that what I had seen before was not malaria at all. The men simply melted away, as they would in a profound infection with typhoid. The use of quinin by the ordinary method in these cases had no effect whatever; but when 30 grains of it were given at one dose, about an hour before the onset of the chill, together with 30 minims of dilute nitrohydrochloric acid, the dose completely stopped the chill.

THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA

Fifty-seventh Annual Meeting, held at Wrightsville Beach, N. C., June 21-23, 1910

Under the Presidency of Dr. Edward J. Wood, Wilmington

A preliminary report of this meeting was published in The Journal, July 16, p. 227.

The Tonsil

Dr. Joseph White, Richmond, Va.: The tonsil is a physiologic part of the organism because it is always found in the fetus and in children under six or eight years of age, after which it gradually disappears by atrophy in from 85 to 90 per cent. of persons. In consequence it should be let alone at that time of life when it evidently has some function to perform, unless it shows evidences of disease or causes trouble. Occasionally at this period of life, and frequently in later years among those who do not lose the tonsil, it becomes a menace to the organism as a focus of infection, because of certain pathologic changes that present themselves.

That the operation of removal of tonsils is over-done many will admit, for there is no more reason for removing every tonsil than for removing every appendix. Unless diseased or giving trouble directly traceable to the tonsil, it should be let alone, especially under six or eight years of age. When the operation is clearly indicated, however, the best method of doing so is, logically, a radical removal in its capsule if practicable.

Fracture of the Astragalus, with Forward Dislocation of the Foot

Dr. R. L. Gibbon, Charlotte, N. C.: I have seen two cases, occurring in substantially the same way by a fall from the top of a freight car to the ground, the patient alighting on the feet. In the first case there was a dislocation of the astragalus forward, with a fracture of the body of the bone. This case was irreducible by ordinary means, and three weeks after the injury I operated and removed the loose fragment. The patient, some six months after the operation, has very good use of his limb. In the second case, which is quite recent, the x-ray showed a fracture of the astragalus through the anterior portion of the bone near its articulation with the scaphoid and cuboid, with a slight displacement of the fragment upward. This patient walks with a slight limp and suffers no pain, except when bearing his weight on his toes or in over-extension of the foot on the leg.

Cure of a Case of Actinomycosis

Dr. James M. Parrott, Kinston, N. C.: This patient, a woman, had a negative history. In 1906 she developed a lump about the size of a walnut near the knee-joint. This lump ultimately broke down and discharged a thick, odorless serum, in which floated innumerable pin-head yellow particles. Other lumps of the same character followed, which, on breaking down, or being opened, had the same character of discharge. There was no rise of temperature, so far as the patient was aware, at any time. There was no evidence that the patient had been exposed in any unusual way to cattle, horses, etc. Neither she nor her people owned any cattle, nor was there any "lumpy-jawed" stock in her vicinity, and she gave no history of contact with any person similarly affected.

On admission to the hospital the masses were extensively removed and the wounds were dressed antiseptically. The patient was discharged in September, 1907, apparently improved but not well. She returned at various times subsequent to this, when the ulcerations were curetted and every form of treatment and application was tried, in spite of which her leg gradually and persistently grew worse. Pure iodoform was used frequently.

Her family and her doctor were anxious to have the leg amputated, but this was not done, as her general health had not suffered particularly. January 26, 1910, the ulcers were curetted once more and packed with iodoform. A violent reaction followed, the temperature ranging as high as 105.5 F.; the skin became red and swollen, red streaks appeared on the leg, and in spite of the fact that the curetting was done in a most careful manner, we were reluctantly compelled to diagnose the condition as one of erysipelas. After running a severe course the infection subsided, and it was found that the condition of the leg was decidedly improved, and February 14, the actinomycosis was almost well, and when last seen on February 17, she was entirely cured.

Status of Hookworm Disease in North Carolina

Dr. John A. Ferrel, Kenansville, N. C.: The factors favoring the prevalence of hook-worm disease are found in North Carolina. The climate affords the warmth and moisture necessary. In every section soil suited for the existence of the infecting larvae is found. It either holds the moisture near the surface, or is sufficiently porous to allow them to bury themselves deep enough to be beyond the drying action of the sun. Except where sewer systems are found no adequate provision is made to prevent soil pollution. The distribution of the disease is general. Reports from doctors indicate that approximately five thousand cases have already been treated. It is known to prevail in eighty-nine of the ninety-eight counties in the state. In the counties in which so far no cases have been found, no thorough investigations have been made. The examination of six hundred college students representing all sections of the state showed more than one-third of them infected in varying degrees with the disease. The percentage of infection is somewhat higher in the tidewater section than in the mountain section. The disease exists alike in the families of landlords and tenants, but among the latter is more prevalent and the symptoms more severe. "Ground itch" is the usual manifestation of occurring infection. The barefooted age and the ten years following it or the fifth to twenty-fifth years show highest percentage of infection, the number of parasites reaching the maximum about the fourteenth or sixteenth year.

Intestinal Protozoa in North Carolina

Dr. William Allan, Charlotte, N. C.: Amebiasis is endemic and in 1908 caused more deaths than typhoid; as an indirect cause of death it ranks next to the hook-worm. In a series of 70 cases I have had 4 liver abscesses, and 50 per cent. of uncomplicated cases showed an eosinophilia of over 5 per cent. As ameba and monads both produce alkaline stools, and as more cases of amebiasis are accompanied by monads than cases of monads by ameba, it seems that the presence of these monads prepares the way for the implantation of the ameba. *Lamblia intestinalis* has recently been reported from North Carolina, and when *Balantidium coli* is reported, the state may claim as native all of the more important intestinal protozoa parasitic in man.

The Need of New Laws for the Prevention of Typhoid in North Carolina

Dr. A. A. Kent, Lenoir, N. C.: Fully 85 per cent. of all typhoid is preventable, and I suggest that the next legislature be asked to enact laws covering the following points: 1. That any attending physician, when a diagnosis of typhoid fever is made, shall make a careful sanitary inspection of the premises including the adjacent premises where necessary, and that he have made a chemical and bacteriologic examination of the drinking water if it be from a well or spring in order to find the original source of infection. 2. That printed rules of instruction shall be furnished by the State Board of Health to the county superintendent of health; and by the county superintendent of health to every licensed or registered doctor in the county; and that said rules be furnished by the attending physician to the householder and patient, that the attending physician shall be required to state in his monthly report to the county superintendent, whether or not he has used said printed instructions with his typhoid cases; and that the county superintendent in his monthly report to the secretary of the state board, shall state what doctors in his county, if any, fail to use said instructions. 3. That the state legislature shall appropriate one thousand dollars annually, or such sum as may be necessary, for the use of the State Board of Health in order to meet the additional expenses of this work. 4. That said printed rules of instructions shall be a part of the state law, with a penalty on both physician and householder for any failure to carry out said instructions. 5. That said instructions shall direct: (a) How to find and abate the original focus of infection. (b) Compulsory screening of the patient, dining room and kitchen of the house against house flies. (c) Compulsory disinfection of all excreta, unused food, linen, etc., by the householder while the patient is confined and compulsory disinfection of dejecta by patient after out of bed until found free from bacilli—such examination to be provided for by law. (d) Compulsory abatement of breeding-place for flies, especially in towns. (e) Prevention of stream pollution with sewage from municipalities by the use of septic tanks. These rules of instruction—in fact, the entire law—should be so clear and plain that there could be no quibbling or speculation as to its meaning and intent.

The common practice of stream pollution by emptying the sewage of our towns and cities into small streams is a menace to the public health of the state. It is clearly the taking of the fundamental rights of one part of the citizens of a community for the benefit of another part. It is the right of every riparian land-owner to have the water of a stream flow to him undiminished and unchanged. It is more than probable that with the rapid growth of our towns and cities, the installation of modern water works and sewer systems, we are laying the foundation for widespread dissemination of typhoid fever throughout the country. If such be the case, it would be better for the state to enact laws requiring of the municipalities the building and manipulating of septic tanks for the treatment of sewage before disposal. This is the only scientific method, the only just method, and in the end it may be the most economic method. This is becoming a very serious question with the land-owners on many of our streams. It is a question that must be settled by our health authorities, and should be settled on broad lines, looking far into the future.

Gynecologic Operations in the Aged

Dr. J. E. Stokes, Salisbury, N. C.: The term "aged" is arbitrarily applied to patients of 70 years of age or over. Five patients operated on by me made good recoveries after having refused operation for a number of years previously on account of the fear of being too old. This is a frequent occurrence, so that statistics should be valuable in demonstrating to patients thus wavering, how groundless their fears may be relative to age alone in deciding against an indicated operation. The ages of the patients range from 70 years up to [illegible] years of age. The symptoms had been borne for more or less prolonged periods, in one case for over twenty years, even after a favorable prognosis for an operation had been offered in the beginning. Major gynecologic operations in the aged present no essential differences from those operations in younger patients. The indications and contra-indications for operation are essentially the same.

Abuse of the Clinical Laboratory from the Standpoint of the Laboratory-Worker

Dr. Paul H. Ringer, Asheville, N. C.: The laboratory is for the reporting of facts and conditions—not, save in well-defined instances, for the making of diagnoses. Too many physicians wish the latter from laboratory examinations. Specimens are sent to the laboratory in insufficient quantity for satisfactory examination, and often so long a time is required in transit and such faulty methods of packing are resorted to that by the time the specimen reaches the laboratory, decomposition has set in and it is worthless. Many insist on too detailed an examination. Text-books on clinical pathology give such a multitude of substances that can be sought (in the urine for instance), and such an infinite number of tests, that the most practical element of the examination is lost sight of. Physicians do not supervise their own laboratory work sufficiently. They have the work done at a distance from home and thus lose, in a measure, the most important relationship between the laboratory findings and the clinical picture as manifested in the patient. Every physician for an outlay of from $5 to $10 can obtain laboratory equipment (exclusive of microscope) with which he can do ordinary uranalysis, stain sputum for tubercle bacilli and pus for gonococci, examine blood for malaria, stools for eggs of parasites, stomach contents for their various ingredients. None of these tests are difficult, and all that is required is practice. If the physician cannot do his own laboratory work he should have it done where he can be within call, so that any noteworthy finding can be properly interpreted. Interpretation is of as great importance as the proper technic of laboratory work. Faulty interpretation will almost invariably work harm. Above all, the physician should never forget that he is treating a human being, one in whom nothing is exact and nothing absolute, and should not allow the results of the laboratory examination to cloud or warp his judgment based on the clinical findings at the bedside. The laboratory is an aid and a very valuable one—in some cases its very verdict may be accepted as the court of last resort—but in the main it is simply an adjuvant, and will never take the place of careful bedside observation, study and examination.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

June 22

1 The Etiology and Treatment of the Psychoneuroses. J. J. Putnam, Boston.
2 *The Etiology of Actinomycosis: Experimental Production of Actinomycosis in Guinea-Pigs Inoculated with the Contents of Carious Teeth. F. T. Lord, Boston.
3 The Diagnosis of Stone in the Pelvic Portion of the Ureter. H. Cabot and W. J. Dodd, Boston.
4 Pregnancy, Nursing and the Care of Young Babies: An Experiment in Preventive Medicine. W. L. Putnam, Boston.
5 *Lesions of the Major Trunk Viscera in Epileptics. A. L. Taft, Palmer, Mass.
6 Suture of the Faucial Pillars for Hemorrhage Following Tonsillectomy. R. H. Gilpatrick, Boston.

2. **Etiology of Actinomycosis.** Organisms having the morphology and staining reaction of actinomyces have been constantly found by Lord in smear preparations (11 cases) and in serial sections (5 cases) of the contents of carious teeth from individuals without actinomycosis. They are present in such numbers as to suggest that they play a fundamental part in dental caries. Following the intraperitoneal inoculation in guinea-pigs with the contents of carious teeth omental tumors, histologically identical with actinomycotic tissue and containing typical club-bearing actinomyces granules, have been produced in 2 (40 per cent.) of 5 animals. The occurrence of organisms having the morphology and staining reaction of actinomyces are present in carious teeth Lord believes suggests that under certain conditions persons with carious teeth are liable to develop actinomycosis. Lack of free drainage of a tooth cavity, whether arising spontaneously or as the result of filling an incompletely sterilized tooth, may be regarded as favorable to the production of the disease about the jaws or neck. In such cases the root canal of the tooth is the channel of infection. Organisms derived from the teeth may also be implanted in neighboring tissues or find lodgment in more remote parts of the body by way of the respiratory tract or the alimentary canal. Local injury of the tissue may be regarded as an important predisposing factor.

Although actinomycosis is doubtless more common than is generally believed, it cannot be regarded as of frequent occurrence. In explanation of its infrequency compared with the numberless chances for infection, it may be suggested that invasion of the tissues by actinomyces and associated bacteria does not always give rise to actinomycosis. In two negative inoculation experiments with the contents of carious teeth, organisms resembling actinomyces were present in smears from the extracted contents and it may be assumed that actinomyces were also present in the injected material, but failed to multiply in the body of the animal. Here, as in other infections, the varying numbers and vitality of the seed and fertility of the soil are of importance. It is probable that only in a small proportion of cases in which implantation of the organism occurs does it actually take root in the tissue and lead to progressive lesions, with club-bearing actinomyces granules.

5. **Lesions of Major Trunk Viscera in Epileptics.** Taft examined, histologically, the viscera of 50 epileptics with a view to elucidating a possible etiologic relationship between these various conditions. The following summary of his findings is given without any comment:

Heart: 32 (64 per cent.) cases negative, 18 (36 per cent.) cases show lesions, 13 (26 per cent.) cases chronic fibrous myocarditis, 1 (2 per cent.) case multiple abscesses with pericarditis, 1 (2 per cent.) case endocarditis, 1 (2 per cent.) case brown atrophy, 1 (2 per cent.) case hypertrophy of muscle cells, 1 (2 per cent.) case acute fibrous pericarditis. (With one exception the subject was over 50 years of age.) *Lung:* 7 (14 per cent.) cases negative, 43 (86 per cent.) cases show lesions, 9 (18 per cent.) cases active tuberculosis, 5 (10 per cent.) cases healed tuberculosis or tuberculous lymph nodes, 21 (42 per cent.) cases acute pneumonia, 10 (20 per cent.) cases edema, 4 (8 per cent.) cases bronchiectatic abscess, 4 (8 per cent.) cases chronic bronchitis, chronic pleuritis, infarct and slight induration. *Spleen:* 2 (4 per cent.) cases negative, 48 (96 per cent.) cases show lesions, 3 (6 per cent.) cases tuberculosis, 62 (31 per cent.) cases hyaline arteries, 12 (24 per cent.) cases arteriosclerosis, 16 (32 per cent.) cases increase of trabecular tissue, 21 (42 per cent.) cases follicles inactive or only slight activity, 34 (68 per cent.) with varying degrees of congestion, 9 (18 per cent.) cases of small hemorrhages, 8 (16 per cent.) cases secondary acute splenitis, usually with acute pneumonia, 5 (10 per cent.) cases hyaline follicles, 4 (8 per cent.) cases phagocytic cells in follicles. *Pancreas:* 43 (86 per cent.) cases negative, 7 (14 per cent.) cases show lesions, 2 (4 per cent.) cases fat vacuolation, 3 (6 per cent.) cases chronic fibrous pancreatitis, 1 (2 per cent.) case interstitial hemorrhage, 1 (2 per cent.) case lymphoid infiltration. *Liver:* 4 (8 per cent.) cases negative, 46 (92 per cent.) cases show lesions, 1 (2 per cent.) case carcinoma, 20 (40 per cent.) cases fat vacuolation, 12 (24 per cent.) cases central necrosis, 4 (8 per cent.) cases focal necrosis, 26 (52 per cent.) cases central congestion, 10 (20 per cent.) cases diffuse congestion, 5 (10 per cent.) cases increase in periportal tissue, 4 (8 per cent.) cases lymphoid infiltration of periportal tissue, 1 (2 per cent.) case multiple abscesses, 1 (2 per cent.) case conglomerate tubercles. *Kidney:* 8 (16 per cent.) cases negative, 42 (84 per cent.) cases show lesions, 10 (20 per cent.) cases chronic interstitial nephritis, 17 (34 per cent.) cases chronic diffuse nephritis, 31 (62 per cent.) cases arteriosclerosis, 13 (26 per cent.) cases acute parenchymatous nephritis, 1 (2 per cent.) case multiple abscesses, 1 (2 per cent.) case tuberculosis.

Medical Record, New York

July 23

7 *The Ethical Aspects of Expert Testimony in Relation to the Plea of Insanity as a Defense to an Indictment for Crime. C. F. MacDonald, New York.
8 *The Anomalies of Ocular Dominance. G. M. Gould and A. C. Dorand, Ithaca.
9 The Noguchi Method of Serodiagnosis of Syphilis: Its Practical Value. D. M. O. Robinson, New York.
10 Deaf-mutism. E. W. Scripture, New York.
11 The Pathology of Joint Tuberculosis and Practical Deductions Therefrom. L. W. Ely, Denver.
12 Lupus—Its Treatment by the Roentgen Rays. C. L. Leonard, Philadelphia.
13 Obesity: Its Relation to Other Diseases and Its Significance. I. B. Kroneaberg, Pittsburg.

7. Abstracted in Report of the New Jersey State Medical Society, this issue.

8. **Anomalies of Ocular Dominance.**—From histories obtained of perhaps 100 patients, the authors conclude that perhaps 3 per cent. of eyestrain sufferers are troubled with the disorders consequent on the anomalies of ocular dominance. Possibly 8 per cent. of little children are at first left handed. Of these, in about 75 per cent., there has been a mistaken and harmful attempt on the part of the parents, teachers and school-fellows to make the child write, sew or hold a knife with the dextral hand. In the larger portion of this class the attempt has been harmfully, partially and awkwardly successful. In a smaller number of cases this, despite all punishment and suffering, has been unsuccessful, and the child has luckily remained normally left-handed.

Except in so far as it has influenced the primary shapes and sizes of the eyeballs, heredity has no influence in the production of right-handednes and left-handedness. Right-handedness and left-handedness arise in the first year or two of life, and are caused by the dominance respectively of the right or of the left eye. Dominance is dictated and established by the better vision of the right or of the left eye, in the great majority of cases, by the less incapacitating ametropia existing at the time of the beginning of the habits of willed arm-and-hand actions. In relatively 92 per cent. of infants the right eye is the better or easier seeing eye, and in 8 per cent. it is the left.

The attempt to change the establishing or established habit of left-handedness in a child inevitably produces disease of many kinds, awkwardness, liability to accidents, incapacities, and it handicaps in all the subsequent life. The difficulty and partial or complete unsuccess of the attempt shows that something far more than mere "handedness" or handiness, is at work to prevent. This something is the preceding and causal dominance of a single eye. Reversals of dominance in a relatively small number of individuals, as life goes on, are inevitable. A frequent cause of reversals of dominance is the changing of the errors of refraction during youth, so that the visual acuteness of the hitherto dominant eye becomes relatively so poor and unreliable that dominancy must be transferred to the other. These refractional changes account for most of the anomalies of dominance. Other agencies may affect the vision of the dominant eye and transfer its dominance to the other eye, such as diseases and injuries.

New York Medical Journal

July 23

14 The Bone Called "Luz." F. H. Garrison, Washington, D. C.
15 Clinical Value of the Serodiagnostic Methods in the Diagnosis of Syphilis. W. Litterer, Nashville.
16 The Noguchi Reaction in Serodiagnosis. W. M. Phelps, Washington, D. C.
17 *The Tuberculin Treatment of Pulmonary Tuberculosis in Office and Dispensary Practice. J. A. Miller, New York.
18* Vaccine Therapy in Tuberculosis. H. M. King, Loomis, N. Y.
19 The Lacrimal Duct as a Portal of Infection in Blennorrhea Neonatorum, and Its Prevention. W. L. Phillips, Buffalo.
20 The Status of the Blood-Pressure Observation in Life Insurance Examinations. F. A. Faught, Philadelphia.
21 The Manual Treatment of the Abdominal Sympathetic. E. F. Cyrian, London, England.

17. **Tuberculin in Tuberculosis.**—Out of 212 cases treated with tuberculin in office and dispensary practice by Miller, only 70 patients continued under treatment 90 days or more. In these the following results were obtained:

Apparently cured, 16, 22.8 per cent.; arrested, 20, 28.6 per cent.; improved, 16, 22.8 per cent.; progressive, 18, 25.7 per cent.

Present Condition: Well in active life, 28.40 per cent.; feel well, still under treatment, 13, 18.5 per cent.; total, 58.5 per cent.; not doing well, 6, 8.5 per cent.; dead, 10, 14.3 per cent.; untraced, 13, 18.5 per cent.

Stage of Disease: Incipient, 9, 12.8 per cent.; moderately advanced, 42, 60 per cent.; far advanced, 19, 27.2 per cent.; 87.2 per cent.

Duration of Treatment: Five months at least, 49; nine months at least, 15; twelve months at least, 6. Patients working while under treatment, 8.

Particular attention is called by Miller to the fact that although 87.2 per cent. were advanced or far advanced cases, 51.4 per cent. were apparently cured or arrested. That eight patients worked regularly during the course of treatment, and that although these patients here reported have been treated over a period of five years, yet at the present time 58.5 per cent. are known to be well and 40 per cent. having finished their treatment, are now well and leading active lives.

18. **Vaccine Therapy in Tuberculosis.**—At the Loomis Sanatorium two classes of patients are advised to take tuberculin, viz.: 1. The class of incipient cases which have been under observation for a sufficiently long time to justify the belief that they are not progressive and are without fever or other evidences of a marked general toxemia; and 2. that class of more advanced cases, presenting evidence of "arrested" activity, the patients having been for some time without material change in their condition either local or constitutional, but who still have cough and a bacillary sputum.

In a few instances King has given tuberculin, in extremely minute doses, in progressive febrile cases, more with a view of gratifying the wish of a very sick patient than with any expectation of success in treatment, and the results in such cases have always been negative. The one demonstrable and constant result of the suitable use of tuberculin, King says, is tuberculin immunity. Realizing that tuberculin immunity is not immunity to tuberculosis, he nevertheless has come to feel that something more is at the same time accomplished in most cases during a well borne course of tuberculin, and that additional protection is afforded the patient against his disease both in the form of present resistance and against future tendency to relapse. He endeavored for a long time to utilize the opsonic index as a guide to tuberculin administration, but abandoned the method when he became convinced that it was impracticable for this purpose.

Northwestern Lancet, Minneapolis

July 1

22 Chronic Inflammation of the Prostate. F. R. Wright, Minneapolis.
23 What Can We Do to Help in the Making and Enforcing Sanitary Laws in Minnesota? J. H. Bayley, Lake [illegible], Minn.
24 An Aid to the Proper Repair of Recent Lacerations of the Perineum. A. W. Abbott, Minneapolis.
25 The Problem of Tuberculosis. F. L. Tuohy, Duluth, Minn.

Virginia Medical Semi-Monthly, Richmond

July 8

26 An Appreciation of Louis Pasteur. H. Byrd, Jacksonville, [illegible]
27 Some Phases of Endocarditis. A. G. Brown, Richmond.
28 An Attempt to Classify Our Knowledge of Suggestion. W. [illegible] Carr, Washington.

American Journal of Surgery, New York

July

29 Local Anesthesia. A. F. [illegible], Kansas City, Mo.
30 The Treatment of Bladder Tumors by the High Frequency Current. E. L. Keyes, New York.
31 Urinary Calculi. [illegible] W. M. Brickner, New York.
32 Surgery of Posterior Urethral and [illegible] Abscess and [illegible] Resulting Fistulæ. B. M. Ricketts, Cincinnati.
33 Meatitis [illegible] H. [illegible], New York City.
34 The End Results of Prostatectomy. J. B. Squier, New York.
35 Combined Cauterization and Curetting [illegible] Chancroids. A. C. Pedersen, New York, and [illegible], Brooklyn.
36 Accidental Cauterization of the [illegible] Concentrated Silver Nitrate Solution; [illegible] A. L. Wolbarst, New York.
37 Apparently Cured Cases of Gonorrhea with Persistent Gonococci. C. S. Stern, Hartford, Conn.
38 New Instruments for Throat Work. H. Hays, New York City.

Surgery, Gynecology and Obstetrics, Chicago

June

39 *Gall Stones During Pregnancy and the Puerperium. R. Peterson, Ann Arbor.
40 The Employment of Vaccine Therapy in Gynecology and Obstetrics. J. W. Williams, [illegible] and [illegible], Baltimore.
41 *On Fibromyomata of the Uterus with Special Reference to Abdominal Hysterectomy. I. S. Stone, Washington, D. C.
42 *The Repair of Inaccessible Vesicovaginal Fistula Following Hysterectomy. G. G. Ward, New York.
43 *Bilateral Tubal Pregnancy. P. Findley, Omaha.

44 *The Surgical Treatment of Puerperal Sepsis. H. N. Vineberg, New York.
45 *Id. F. E. Montgomery, Philadelphia.
46 *When Shall We Operate in Pulmonary Septic Infection? J. O. Polak, Brooklyn.
47 *Three Unusual Cases. W. P. Manton, Detroit.
48 *What Are End Results of Surgery or Surgical Operations for the Relief of Neurasthenic Conditions Associated with Various Visceral Ptoses? J. A. Blake, New York.
49 Id. R. R. Smith, Grand Rapids, Mich.
50 Successful Reimplantation of Pelvic Kidney in the Female. D. Bissell, New York.
51 *Syphilitic Fever in Pregnancy and the Puerperium. F. J. Taussig, St. Louis.
52 *Right Pelvic Kidney, Absence of Left Kidney and Uterus; Both Ovaries in the Inguinal Canal. T. S. Cullen, Baltimore.
53 Carcinoma of the Right Fallopian Tube so Large that It was Readily Palpable Through the Abdomen. T. S. Cullen, Baltimore.
54 Colopexy. S. G. Gant, New York.
55 Technic of Hysterectomy Used in Clinics of Barton Cooke Hirst. E. E. Goder, Peoria, Ill.
56 Radical Cure of Infiltrating Cystitis and Contracted Bladder. G. Kolischer and H. Kraus, Chicago.

39. Abstracted in THE JOURNAL, May 28, 1910, p. 1812.

41, 42, 44, 45, 46, 52. Abstracted in THE JOURNAL, June 11, 1910, pp. 1992, 1993, 1994.

43. Abstracted in THE JOURNAL, May 14, 1910, p. 1630.

47. Abstracted in THE JOURNAL, May 21, 1910, p. 1712.

48. **Relief of Neurasthenic Conditions.**—In recommending an abdominal operation to relieve neurasthenia, Blake says the following four conditions must be satisfied: 1. That there is a definite morbid or mechanical perversion of the normal condition of the viscera; 2, that it is the chief underlying cause of the neurasthenic state; 3, that the neurasthenic condition cannot be cured without its correction; 4, that it can be corrected by a definite operative procedure of only moderate danger to life.

51. **Syphilitic Fever in Pregnancy.**—Taussig reports a case of syphilitic fever occurring toward the end of pregnancy and persisting for some time after the delivery of the child. He says that the fever at the outburst of the syphilitic eruption is very different from the later syphilitic fever. The eruption fever lasts three to four days, is remittent in type, and does not usually rise over 102 to 103. With the drop in temperature the syphilitic rash appears. The striking effect of the hypodermic treatment of syphilis as against that of internal medication was illustrated in this case.

West Virginia Medical Journal, Wheeling

July

57 Brain Surgery: Report of Cases. F. L. Hupp, Wheeling.
58 Three Cases of Cranial Injury, with One of Subdural Cyst. B. H. Powell, Grafton.
59 Pellagra. J. R. Bloss, Huntington.
60 Vasectomy: Its Ethical and Sanitary Limitations. C. H. Preston, Davenport, Iowa.

California State Journal of Medicine, San Francisco

July

61 Surgery of the Lungs. A. S. Lobingier, Los Angeles.
62 Differential Pressure. D. Tait, San Francisco.
63 Methods of Differential Pressure. R. Russ, San Francisco.
64 The Future of Heart Surgery. H. M. Sherman, San Francisco.
65 Clinical Features of Hypophysis Disease. H. C. Moffitt, San Francisco.
66 A Plea for a State Institution for the Treatment of Chronic Alcoholism and Drug Habitués. R. L. Bering, San Francisco.
67 Prolonged Dilatation for Dysmenorrhea. G. B. Somers, San Francisco.
68 Fifty-fifty Versus the Commercial Side of Medical Practice. Which Will Serve? J. McMahon, San Jose.
69 Malignant Tumors: Early Diagnosis and Treatment. R. T. Legge, McCloud.

Texas State Journal of Medicine, Fort Worth

July

70 General Observations on Cancer. B. Saunders, Fort Worth.
71 Information the Public Should Have Regarding Cancer. B. C. Eskridge, Houston.
72 Infant Feeding. J. P. Keene, Houston.
73 *An Unusual Case of Transposition of Viscera. M. P. Stone, [illegible]

73. **Transposition of Viscera.**—In this case there was an opening 2½ by 1½ inches in the diaphragm a little to the left of the median line which was found to be smooth and free from adhesions. A loop of small intestine measuring 12 inches was contained in the left pleural cavity. The entire greater omentum and transverse colon were also in the left pleural cavity. The cecum pursued a diagonal course from the cecum to the left abnormal opening in the diaphragm, thence upward to the dome of the pleural cavity, descending in a curve to the left, outward and downward, and out through the same opening through which it entered. After entering the abdominal cavity again, it pursued its normal course. The esophagus passed out of the thorax through the same opening as the aorta, forming a sacculation 3 inches long by 2 inches wide, having very much the appearance of a second stomach. It then passed through the opening in the diaphragm into the cardiac end of the stomach. The stomach was enlarged, surrounded by adhesions, and embedded in the great omentum. The cardiac and pyloric ends were in close apposition, and situated just above the opening in the diaphragm. The left lung was very much flattened and was plastered against the pericardium and the vessels leading away from the aorta. The heart was entirely on the right side. The right lung was bound down in a mass of strong pleural adhesions, and its apex was riddled with cavities. The appendix was retrocecal, perforated and buried in adhesions. The liver was very much enlarged, and extended to the crest of the ilium. This case had been diagnosed pulmonary tuberculosis just prior to the death of the patient.

Albany Medical Annals

July

74 Faraday: His Life and His Work. W. G. Tucker, Albany.

Laryngoscope, St. Louis

July

75 The Isthmus of the Eustachian Tube: The Pathology and Treatment of the Middle Ear. S. Yankauer, New York.
76 Status Thymo-Lymphaticus and Its Relation to Sudden Death. G. H. Cocks, New York City.
77 Suppurative Ear Disease in Diabetes Mellitus. O. J. Stein, Chicago.
78 Severe Sepsis Following Tonsil Operations. L. W. Dean, Iowa City, Iowa.
79 Abscess of the Nasal Septum. G. F. Keiper, Lafayette, Ind.
80 A Forceps for the Control of Tonsillar Hemorrhage. S. Rosenheim, Baltimore.

Archives of Internal Medicine, Chicago

July

81 **Paramœba Hominis* an Intestinal Parasite of Man. C. F. Craig, Washington.
82 *The Quantitative Determination of the Chlorids in the Urine. S. C. Harvey, New Haven, Conn.
83 *The Bovine Type of Tuberculosis Associated with Tuberculosis in Man. M. Fabyan, Boston.
84 The Nitrogen and Sulphur Metabolism in Morbus Ceruleus. N. B. Foster, New York.
85 Adiposis and Lipomatosis. I. P. Lyon, Buffalo.

81. **Paramœba Hominis.**—Four years ago Craig described a new intestinal parasite of man, which, because of its life-history, was included in the genus paramœba, established by Schaudinn, naming the organism *Paramœba hominis*. The object of the present paper is to record further observations on this interesting parasite and to call attention to its probable occurrence in patients suffering from chronic diarrhea, in which the attacks alternate with periods of constipation, thus resembling quite closely the clinical picture of the form of dysentery due to the invasion of the intestine by *Entamœba histolytica*.

82. **Determination of Chlorids in Urine.**—In making a number of chlorid determinations in urine according to the original Volhard method Harvey noticed that when only a small amount of nitric acid was used, the end point was indistinct and that it was difficult to obtain duplicates. On increasing the amount of acid used, however, the end point became sharp and two determinations on the same urine checked within the error of reading the burette. Moreover, on comparing these results with those obtained with the modified Volhard they were found to be identical. Based on these findings Harvey evolved a modification of Volhard's method which he now describes.

83. **Bovine Type of Tuberculosis in Man.**—The three cases cited by Fabyan illustrate different types of tuberculosis, all obscure as to diagnosis during life. In the first case—that of an adolescent—either the local tuberculosis may have had no immediate connection with the cause of death, or else the beginning of dissemination of the virus from the primary focus may have led to a reaction of the tuberculin type and to death. In the second case—that of an infant—the generalized tuberculosis starting from the mesenteric lymph nodes

was evidently not suspected, for the clinical history states that within the last week of life the patient had an acute nephritis. Here also the liberation of tubercle toxins may have been responsible for the acute nephritis. In the third case—that of a child of 17 months—the symptoms pointed to the central nervous system and at one time a tentative diagnosis of anterior poliomyelitis was made. No similar cases have come under observation during this period. Fabyan says they may be considered three consecutive cases as studied in the laboratory, all due to the bovine type of tubercle bacillus.

Long Island Medical Journal, Brooklyn

July

86 The Long Island College Hospital: An Historical Sketch. J. M Winfield, Brooklyn.
87 Hemorrhage from the Kidney: Its Recognition, Significance and Treatment. P. M Pilcher, Brooklyn.
88 Indications for the Various Operations on the Gall-Bladder and Biliary Passages: Points in the Technic. W C Wood, Brooklyn.
89 Types of Movable Kidney. J. O. Polak, Brooklyn.
90 Intractable Hemorrhage of the Uterus. W. P Pool, Brooklyn.

Cleveland Medical Journal

July

91 The Baby in the Tuberculous Home. R. A. Bolt, Cleveland.
92 Clinical Evidence of the Relation of Menstruation, Ovulation and Fertilization. A. H. Hill, Cleveland.
93 Relation Between Ovulation, Menstruation and Fertilization as Shown by Some Early Human Embryos. N. W. Ingalls, Cleveland.
94 The Relation of Menstruation, Ovulation and Pregnancy in Mammals. F. C Waite, Cleveland
95 The Profession of Nursing. C. L. Scudder, Boston.
96 Albuminuria of Adolescence. W C. Stoner, Cleveland.
97 The Tonsils as Sources of General Infection. T. A. Burke, Cleveland.
98 Recent Advances in the Treatment of Pathologic Conditions of the Nose. W. B. Chamberlin, Cleveland.
99 Aerophagia, Causes and Treatment. M Schott, Cleveland.
100 Chronic Cephalic Tetanus. A N. Dawson, Cleveland.

Ohio State Medical Journal, Columbus

July

101 *Laboratory Diagnosis—Its Importance to the Practitioner. F. C. Wood, New York.
102 Chronic Pancreatitis. C N. Smith, Toledo.
103 *Premature Baldness—Alopecia Seborrhoica, Pityroides, or Furfuracea—Its Symptomatic and Rational Treatment. M L. Heidingsfeld, Cincinnati.
104 *Diagnosis and Treatment of Early Pulmonary Tuberculosis. J. P. DeWitt, Canton.
105 *New Method of Treating Uretero-cervical Fistula. E. M. Gilliam, Columbus.

101. Abstracted in THE JOURNAL, July 9, 1910, p. 154.

103. **Premature Baldness.**—Heidingsfeld says that animal experimentation and clinical experience reveal that premature baldness is not a specific infection. Heredity exercises, at most, a predisposing influence. It occurs chiefly in the opulent individuals who indulge in such over-attention as frequent and unnecessary shampooing, combing and brushing, massage and faradism, etc. It is an infrequent condition in the indigent poor and unkempt. It predominates greatly in private over dispensary practice. It is doubtless somewhat predisposed by causes which impair the general condition of the patient. It possesses a symptomatology consisting of four well-defined symptoms, namely, dandruff, excessively dry or excessively oily conditions of the scalp, itching and loss of hair. Treatment to be successful must be prophylactic, general and local in character. Local treatment should be symptomatic and carefully controlled to meet the special indications of the various manifest symptoms.

104. Abstracted in THE JOURNAL, July 16, 1910, p. 245.

105. **Uretero-Cervical Fistula.**—Following a supravaginal hysterectomy, a uretero-cervical fistula developed. The fistula, no doubt, was the result of forceps pressure on one of the ureters. An abdominal operation for the repair of the injured ureter was suggested, but refused by the patient. An attempt was then made to divert the flow of urine into the bladder by turning the cervix into that viscus. The vaginal wall was dissected from the bladder extensively on both sides through a median incision, and a crescentic incision made around the cervix. The cervix was denuded in its entire extent with the exception of the portion of the tip which projected into the bladder. A male catheter, armed with catgut, was then pushed up through the urethra and the bladder wall incised on the end of it, the opening in the bladder being sufficient to admit the cervix. Interrupted chromic gut sutures fastened the anterior surface of the cervix to the uppermost portion of the vesico-vaginal opening. A ligature through the posterior lip of the cervix was then caught in the loop of the catheter suture and drawn out through the urethra, pulling the cervix into the bladder. The edges of the incision in the vaginal and bladder walls were tacked to the posterior denuded surface of the cervix with chromic gut and silk-worm sutures. No leakage occurred on filling the bladder.

Journal of the Kansas Medical Society, Kansas City

July

106 *The Use of Tuberculin in the Diagnosis of Tuberculosis. M A Barber, Rosedale
107 Etiologic Factors in Children's Dysenteries E H S[illegible] Lawrence
108 Non-Tuberculous Infection of the Kidney C C N[illegible] Kansas City
109 Acute Endocarditis E L Simonton, Wamego.

106. **Use of Tuberculin in Tuberculosis.** The tuberculin tests, says Barber, are of decided value in those numerous cases in which the ordinary methods leave the physician in doubt. They present no technical difficulties insuperable to the careful practitioner. The positive von Pirquet in children the negative in children and adults, the positive Calmette, the positive and negative subcutaneous and especially the positive subcutaneous with focal reaction have a greater value than the other tuberculin findings. No condition should be judged by the tuberculin test alone, but this should be taken only as one element in making up the diagnosis.

St. Paul Medical Journal

July

110 The Relational Pathology of Pneumonia H A Tomlinson, St Peter, Minn
111 Mosquitoes of Minnesota K Taylor, St Paul
112 Estimation of Kidney Function. F. J. Savage, St Paul.

United States Naval Medical Bulletin, Washington

July

113 Illumination of Study Rooms. A. L. Parsons and H W. Smith, U S Navy
114 The Surgical Aspect of Filariasis. C. F Stokes, U. S Navy
115 Venereal Prophylaxis of the Asiatic Station O. Diehl, U S. Navy
116 *Dried Blood Serum: A Substitute for Fresh Blood Serum in the Rapid Preparation of Löffler's Medium. E W Brown, U. S Navy
117 Need for a Pathologic Collection at the U S. Naval Medical School C S Butler, U. S. Navy
118 Helminthologic Technic P. E. Garrison, U S Navy
119 Demonstration of Treponema Pallidum F M Sh[illegible]k, U S. Navy
120 *"Unlearnable" Vision Test Card for Use in Naval Services F. J Grow, U. S Navy
121 A Suggested Bunk Tray G. F. Freeman, U. S. Navy

116. **Dried Blood Serum.** Brown describes a method for the preparation of Löffler's blood serum medium on board ship, which could be used elsewhere quite as well. The success in the manufacture of the dried milk suggested to him that a similar process might be applied to blood serum, the serum being dried in toto, free from preservatives and at reasonable cost. Accordingly, several samples were forwarded prepared from fresh beef serum. These were sealed in small tin cans and were received on board the U. S. S. *Vermont*, Jan. 2, 1910. None was opened until the ship returned to Hampton Roads from Guantanamo, March 30, 1910. Blood serum slants were prepared from the material. A 12½ per cent. solution of the dried serum was made, this corresponding approximately to the proportion of solids in the original serum, the solution being readily effected by rubbing up with mortar and pestle. Glucose bouillon was added as in the usual method, inspissation carried out at 70 C. for two hours, and sterilization effected in the dressing sterilizer at 8 pounds pressure for thirty minutes. The results were excellent and compared favorably with slants as ordinarily made from fresh serum. The coagulum was firm and free from bubbles. Inoculations were made from a pure culture of diphtheria bacilli and typical growths obtained.

The dried serum samples, opened after a period of nearly five months, were free from all signs of deterioration. A large number of tubes were prepared and again uniformly good results were yielded. Inoculations were then made directly from a large number of throats of diphtheria cases in the hospital. A control was made by inoculating tubes made from fresh serum and from the same clinical cases. The stained preparations were equally typical in all cases, whether from the dried or fresh serum.

120. **"Unlearnable" Vision Test Card.**—In order to overcome the possibility of such previous familiarity with test cards as to enable the person tested to read the letters readily even when not actually visible, Crow has devised a method which is effective and at the same time exceedingly simple. The desirability of having a chart that eliminates the possibility of the candidate being able to learn the letters either intentionally or unconsciously is apparent. By the method generally in use the medical examiner is never certain whether the candidate has learned the letters or not, and his first suspicion may be aroused by receiving a letter from the bureau announcing the fact that so and so, whom he passed a month previously, has been surveyed and discharged from the service on account of defective vision, existing prior to enlistment.

The new chart proposed is constructed with a view to eliminating this constant source of error. The chart is made with the idea of securing uniform test letters (Snellen); adequate illumination and an "unlearnable" set of letters. The card bearing the letters is placed inside an illuminated box, and by means of a movable back, certain letters are made to appear at a horizontal and a vertical opening. The operator does not know the letters presenting until he observes them himself. The candidate under examination has no guide to assist him, and if he reads the letters presenting correctly he must see them. The numerous combinations of groups of letters which can be instantly thrown into view are too many for him to memorize, and although he may learn every letter on the card in their sequence, that knowledge would be valueless when the test is applied, for he reads only the letters which the operator throws into position and he cannot pronounce them unless he actually sees them, which is the object desired. In other words the candidate can have possession of the chart, and any knowledge he can gain thereby will be of no assistance in aiding him to deceive as to his actual visual acuity.

Journal of the Medical Society of New Jersey, Orange

July

122 A Plea for a Higher Standard of Medical Education. B. A. Waddington, Salem.
123 The Broader Aspect of Medical Science. W. G. Thompson, New York.
124 Why and By Whom Should Surgery be Advised? J. B. Deaver, Philadelphia.
125 The Production and Use of Vaccine Virus. R. Slee, Nannet, N. Y.
126 Rural Sanitation. P. F. Rafferty, Red Bank.
127 Abuse of Medical Charity. J. W. Reid, Kearny.
128 Hospital Nurses. D. Strock, Camden.

American Journal of Physiology, Boston

July

129 The Analysis of Edestin and Zein. T. B. Osborne and L. M. Liddle, New Haven, Conn.
130 The Sources of Loss in Analyzing the Products of Protein Hydrolysis. T. B. Osborne and D. B. Jones, New Haven, Conn.

Chicago Medical Recorder

June

131 Contemporary Workman's Compensation for Industrial Injuries. W. H. Allport, Chicago.
132 Some of the Characteristics of the Work of O. Henry. H. T. Byford, Chicago.
133 Post-Partum Hemorrhage. D. A. Horowitz, Chicago.
134 The Necessity of Medical Inspection of Schools. S. F. Wright, [illegible], Wis.

July

135 Contemporary Workman's Compensation for Industrial Injuries (continued). W. H. Allport, Chicago.
136 *The Etiology of Zymotic Enteritis (Epidemic Diarrhea). R. Vincent, Westminster, Eng.
137 A Homeopathic Feast. G. Koehler and H. A. Kraus, Chicago.
138 Is Stramonium a Sedative? W. F. Waugh, Chicago.
139 Hypertrophy of the Heart. L. F. Bishop, New York.

136. **Zymotic Enteritis.**—Vincent maintains that the effective cause of zymotic enteritis is not the organisms which directly promote its production but the methods by means of which the infant has been deprived of its natural safeguards against them. The fundamental characteristic of the natural food of the infant is that it is a raw fluid. In all circumstances the cooking of milk for the use of infants gravely impairs its nutritive value. With regard to zymotic enteritis, no serious amelioration in the mortality arising from this disease can be accomplished until the fullest protection of pure raw milk is secured for every infant, and special precautions must be taken, at times when heat and dust are prevalent, to secure that the milk for the use of infants shall be preserved fresh and unboiled.

American Journal of Public Hygiene, Boston

June

140 *A Method of Sealing Test Tubes to Prevent Evaporation of Culture Media. W. L. Beebe, St. Cloud.
141 *Age Problems in Industrial Hygiene. O. R. Lovejoy, New York.
142 Protection of Factory Employees Against Dust Arising from Certain Occupations. W. C. Hanson, Cambridge, Mass.
143 *Ventilation of Industrial Establishments. C. T. Rogers, New York City.
144 *The Sex Problems in Industrial Hygiene. F. Kelley, New York.
145 *Relation of Life Insurance to Public Hygiene. L. K. Frankel, New York.
146 *Physiologic Aspects of Ventilation. T. Hough, Charlotte, Va.
147 Incineration of City Wastes with Utilization. P. M. Hall, Minneapolis.
148 Disposal of City Wastes and Consideration of Nuisances in Edmonton, Alberta, Canada. T. H. Whitelaw, Edmonton, Canada.
149 The School Nurse as an Aid to Medical Inspection of Schools. G. L. Kiefer, Detroit.
150 The Control of a Large Milk Supply. W. A. Evans, Chicago.
151 The Relation of Public Water Supplies to General and Specific Mortalities. A. Lederer, Chicago.
152 The Need of Quantitative Methods in Epidemiologic Work. C. V. Chapin, Boston.
153 Period of Incubation of Inoculation Rabies. B. L. Arms, Boston.
154 Dry Air and Its Effect on Health. W. E. Watt, Chicago.
155 Boston and Chicago Death Rates. W. H. Davis, Boston.
156 Condensed Milk and Its Value for General Use and for Infant Feeding. J. P. Jordan and F. E. Mott, Boston.
157 Personal Hygiene. P. C. Stiles, Boston.
158 Veterinary Hygiene. W. L. Beebe, St. Cloud, Minn.
159 Sanitary Engineering. R. S. Weston, Boston.
160 Public Health Legislation. F. H. Slack, Boston.

140. **Method of Sealing Test-Tubes.**—In the method devised by Beebe a square piece of glass is covered with sealing wax and pressed down on the top of the tube while the tube is hot enough to melt the wax. In his experience the best results were obtained by the following procedure: The glass sealing wax caps are easily made by cutting window glass into squares of from three-fourths to one inch. These are thoroughly cleaned and dipped into very hot sealing wax, thus covering them evenly. They are then dropped into a dish of cold water which cools the wax before they reach the bottom of the dish so they do not adhere to one another. Bacteriologic test tubes which are thicker than the ordinary tubes should be used. It is desirable to use tubes without a lip because thin tubes are frequently broken in removing the cap. It is advantageous to have the top of the tube ground if the edge is uneven. The cotton plug should fit rather loosely, so that they can be flamed and pushed down just below the mouth of the tube. The tube is then heated sufficiently to melt the sealing wax where the rim of the tube comes in contact with the wax. The glass sealing wax cap is firmly pressed down on the mouth of the tube and held in position for a few seconds and then placed in an upright position in a test tube rack until they have cooled. Tubes that have been sealed by this method have been kept in his laboratory for over three years without evaporation. The caps are easily removed by tapping them on the underside with some instrument, such as a scalpel.

141, 143, 144, 145, 146. Abstracted in The Journal, Nov. 20, 1909, pp. 1845, 1846.

Illinois Medical Journal, Springfield

July

161 *The Future of Medicine. C. G. Stockton, Buffalo.
162 *Cancer. G. W. Crile, Cleveland.
163 The Non-Operative Treatment of Inguinal Hernia and the Hernia and Truss Questions. C. G. Buford, Chicago.
164 Severe Sepsis Following Tonsil Operation. "Death from Sepsis Following Tonsillectomy." L. W. Dean, Iowa City.
165 Certified Milk. G. M. Whitaker, Washington, D. C.
166 The Chicago Medical Society Milk Commission. J. W. Vanderslice, Chicago.
167 Certified Milk Commissions. O. P. Geier, Cincinnati.
168 The Pain of Gastric Ulcer. F. Ewing, Galesburg.

161. **The Future of Medicine.**—After reviewing the advances made in medicine and the various influences which have made very decided inroads on the physician's income and which are becoming more potent forces in eliminating the unfit medical practitioner, Stockton asks: What should be the attitude of the profession toward this question? There has been a time when the profession has not stood for the good of the race. When individual members have lost sight of this fact they

have sloughed off from the proper body of the profession. It would seem to be a wiser plan deliberately to cooperate with the movement, to curb its rank and unintelligent exuberance where we may, to cement in a lasting foundation that which is undeniably good. To this end, it is necessary now, more than ever before, for the physician to interest himself in sociology as well as pathology, and thus to create for himself a larger place, more amplitude of vision, a wider interest and the means of subsistence. There must necessarily be a demand for special training, and it will probably be found that physicians shall have no less active occupation when they shall have adapted themselves to these new requirements of a contending civilization.

It is highly probable that the aroused public interest in the subject of medicine will result in a much more enlightened laity than was previously known. Many diseases may be prevented, or their oncoming foreseen, so that the physician will have more opportunity for treating the patient rather than the disease. The great question of heredity may eventually receive discriminating attention. But long before this it is probable that methods will be found more economical in suffering and expense than is at present true in the management of a large proportion of cripples and neurasthenics, of inebriates and others who now encumber society. But even though this tendency of the semi-public treatment of disease appears to be temporarily an obstruction to the profession, even though in some respects it is found to be inimical to professional interest and destructive to the welfare of the laity, it is sure in the course of events to right itself, leaving for physicians a residuum of good.

162. **Cancer.**—Based on the work of the experimentalist, the biologist, the internist and the surgeon, tested by a personal experience of over 600 operations for cancer in various parts of the body, Crile makes the following generalizations: Cancer occurs widely throughout the entire animal kingdom, in the herbivora and the carnivora, in birds and in fish, quite regardless of habit or mode of living. Its incidence and growth obeys the law of no known injection; its actual increase in frequency is still unproven; rare cases undergo spontaneous retrogression; in experimental cancers, at least, such regression is accompanied by an immunity; the immunity in sarcoma in dogs, at least, is in the blood and may be used to cure other cases in dogs; in man this principle has not yet been established; no curative power of any drug or serum has proven effective for human cancer. X-ray and radium may kill superficial cancer cells, but as agencies for cure they are unreliable. In cancers on the superficial parts of the body where observations may be accurately made, at least in most cancers, there is a pre-cancer stage, the most common form being chronic irritation, chronic ulcer, scar, wart, moles, benign tumors, keratosis, etc. Such cases should be decancerized. Preventable or curable cancer should not be watched, it should be prevented or cured.

Buffalo Medical Journal

July

169 The Progress of Medicine and Surgery. M. D. Mann, Buffalo.
170 Presentation of Genitourinary Specimens. J. H. Dowd, Buffalo.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 9

1 Subjects of Surgical Interest. H. F. Waterhouse.
2 *Modern Treatment of Fractures. F. N. G. Starr.
3 Accuracy in the Diagnosis of Urinary Disease. B. J. Ward.
4 *The Early Diagnosis and Treatment of Tuberculous Kidney. A. Fullerton.
5 *Suprapubic Drainage of the Bladder as an Alternative to Prostatectomy and as a Relief Operation. J. B. Pike.
6 The Incidence of Tuberculosis in Childhood. F. Hamburger.
7 The Prevention of Mortality from Pelvic Operations. H. Macnaughton-Jones.
8 The Presence of Sugar in Healthy Urine as a Source of the Osazone Reaction. F. W. Pavy and H. W. Bywaters.

2. **Modern Treatment of Fractures.**—The open treatment of fractures is recommended by Starr. He states briefly the advantages and disadvantages of this procedure.

4. **Tuberculous Kidney.**—Out of a recent series of 400 cases of all sorts of bladder and renal complaints requiring the use of the cystoscope for diagnosis, of which Fullerton says he has more or less extensive notes, 24, that is 6 per cent., were cases of tuberculous kidney. In 13 of these the diagnosis was confirmed by operation, 9 patients having been operated on by Fullerton and 4 by other surgeons. In a few other tuberculous foci were found in other parts of the body—for example, lymph nodes, epididymis, testicle, prostate, or lungs, but these associated lesions were entirely overshadowed by the renal or vesical condition. In the large majority the bladder was secondarily involved. Eleven cases occurred in the male sex and 13 in the female. The youngest patient was a boy aged 11 years. Another case was that of a girl aged 12 years. One was a boy aged 17, who had, in addition, signs of early phthisis at the apex of the right lung. Eight occurred between the ages of 20 and 30, 8 between the ages of 30 and 40, and three between the ages of 40 and 50.

In 8 cases Fullerton was able to elicit a distinct history of tubercle in the immediate relations. In all but one of the remainder a family history of all forms of tubercle was denied. In one case he failed to find any note on this point. In about 33 per cent., therefore, there was a distinct history of family tuberculosis.

In 11 cases the right kidney was affected; in 11 the left; in one both kidneys were obviously diseased, and in one, the second kidney was suspected. Tubercle bacilli in the urine were found in 11 cases. In some of the remainder the diagnosis seemed so obvious that the search was not persisted in.

In 9 cases Fullerton removed the affected kidney. One patient died six weeks after operation. One patient lived for a year, making an apparently good recovery for a while, but succumbed later from pulmonary phthisis. Another developed tuberculous epididymitis shortly after nephrectomy and Fullerton had to remove the affected epididymis with the testicle. He still has nodules in his prostate and is occasionally troubled with a small sinus over the position of the stump of the divided vas. In spite of this, he is now in excellent health, being 3½ stone (50 lbs.) heavier than he was at the time of his operation two and a half years ago. A patient whose vesical ulcers had disappeared when examined four months after nephrectomy, is still keeping well three years later. The others are so far doing well. In 4 cases the affected kidney was removed by other surgeons. Two of these are quite well more than 2 years after. A third is only a few months done. A fourth patient died a few days later.

This gives an operative mortality of about 15 per cent., but the patients dying after operation were operated on almost too late to expect a good result, so that one can, Fullerton thinks, look forward to a death rate in early cases of not much more than that of gastro-enterostomy or appendicectomy, provided, of course, that the corresponding organ on the opposite side has been found to be efficient. Of the patients not operated on, one died four years after the onset of symptoms from epileptiform convulsions, two have been lost sight of, and the others are living in a more or less miserable condition, with the exception of one patient in whom an attempt at natural cure had taken place.

5. **Suprapubic Drainage of the Bladder as an Alternative to Prostatectomy.** In some cases in which the removal either of the growth or the organ seems hopeless, Pike believes that as a relief measure suprapubic drainage appears to have a valuable place.

Lancet, London

July 9

9 *The Cerebrospinal Fluid. F. W. Mott.
10 *The Behavior of the Leukocytes in Infection and Immunity. F. W. Andrewes.
11 Submucous Resection of the Nasal Septum. H. B. Tawse.
12 The Examination of Feces in Medical Practice. O. Kraus.

13 The Administration of the Public Health and Education Acts in Relation to the Prevention and Cure of Diseases of the Nose and Throat. T. J. Faulder.

9. **The Cerebrospinal Fluid.**—A rough method for the chemical examination of the cerebrospinal fluid is described by Mott as follows: Ten c.c. of the centrifuged fluid, after examination for cells has been made, are taken and rendered faintly acid with acetic acid; 3 c.c. of absolute alcohol are added and the whole gently heated on a water bath for 15 minutes. After standing overnight, it is again warmed and filtered. The amount of protein can be approximated at sight or weighed on a tarred filter paper or Gooch crucible, the amount of ash being subtracted from the total weight of protein. The filtrate is rapidly evaporated to dryness at a low temperature, the residue is moistened, and a smear transferred on the end of a glass rod to a slide, and one drop of a saturated solution of iodin in 10 per cent. potassium iodid is added. The mixture is now watched under the microscope, when, if cholin is present, brownish-black rectangular plates of cholin periodid will be formed. The moisture is removed from the residue by evaporation, and another extraction with absolute alcohol is made. The filtered extract is evaporated to dryness and extracted with hot chloroform. The volume of chloroform is reduced to about 2 c.c., and the presence of cholesterol detected by Liebermann's test, which is thus carried out. Add to chloroform solution a few drops of acetic anhydrid, then add concentrated sulphuric acid drop by drop. After a time, a rose coloration of the acid, and a violet coloration of the chloroform turning to blue, then green, indicate the presence of cholesterol.

The test for sugar can be performed on one or more c.c. of the original fluid, and Noguchi's and other confirmatory tests may be made on any of the remaining fluid. Many observations have been made, based on the examination of fluids obtained after death. Mott has found, however, that within a very short time after death the composition of the fluid so alters that the results obtained are useless and misleading.

10. **Leucocytes in Infection and Immunity.**—Andrewes believes that in the case of infection with the pyogenic cocci the immune animal responds by a higher and a more ready increase in the circulating polynuclear leucocytes than the normal animal.

Practitioner, London

July

14 Malignant Endocarditis. J. Broadbent.
15 Treatment of Large Postoperative Ventral and Umbilical Hernia. H. J. Waring.
16 Internal Abdominal Injuries. W. H. Battle.
17 Hydrocephalus. L. G. Guthrie.
18 The Diagnosis of Intracranial Tumors. A. J. Hall.
19 The Case of Exostosis of the Os Calcis. H. French.
20 Acute Polioencephalitis. R. Miller.
21 Slight Opacities of the Lens. A. H. Thompson.
22 Pregnancy Complicated by Intestinal Obstruction and Appendicitis. J. F. Gemmell.
23 Bennett's Fracture. V. A. P. Costobadie.
24 *One Hundred and Thirty-three Cases of Hydramnios. L. Burstal.
25 The Safety of Immediate Appendicectomy in Suppurative Appendicitis. M. Mamourian.
26 Traumatic Cerebral Hemorrhage with Remarkably Late Onset of Symptoms; Operation; Recovery. G. H. Hamm, R. Coombe and W. Gordon.
27 *The Prescription-in-a-Nutshell System. F. S. Pitt-Taylor.

24. **Hydramnios.**—According to Burstal the percentage of women with hydramnios varied from 65 at Queen Charlotte's Hospital to 13 at York Road Lying-in Hospital. The total number of cases at the two hospitals was 133, out of which 6 were twin pregnancies. The sexes were distributed in a different way to what is usually given in the text books, 74 being males and only 61 females. Monsters and deformities were rare. Two were anencephalic, one was hydrocephalic with double harelip, spina bifida and talipes, and one had harelip and cleft palate, i. e., four deformities out of 139 children born. The effect of the excess of liquor on the second stage of labor was not marked, the average duration being about 1 [illegible] hours. The excess of liquor amnii seemed to predispose to postpartum hemorrhage, it being recorded in 19 cases.

The presentation was vertex in 122 patients, breech in 13, face in 2, and transverse in one. The excess of fluid does not seem to predispose to abnormal presentations.

The age of the mother cannot be considered a predisposing cause for hydramnios, the ages varying from 18 to 46, nor can the number of the pregnancy, as hydramnios occurred in pregnancies varying from the first to the fifteenth. In no single case was there a previous history of hydramnios. Albumen was present in the urine of the mother in 46 out of 112 recorded cases. With regard to the twin cases no definite statement can be made.

27. **Prescription-in-a-Nutshell System.**—Without going to the trouble of keeping any record in a book, the system described by Pitt-Taylor enables a record of the prescription to be written on the label of the bottle of medicine or other package dispensed. In order thus to record the prescription rapidly and secretly on the label, every bottle, jar or other package in the dispensary must be alphabetically lettered and numbered, and the letter and number of each ingredient of the prescription dispensed, followed, if necessary, by its quantity in the bottle, are then written down on its label. All the bottles, jars, and other packages, on the shelves are numbered in order, A, A1, A2, A3, A4, A5, A6, A7, A8, A9, B, B1 to B9, C1 to C9, and so on to Z9, commencing by numbering the bottle or jar on the extreme left hand side of the lowest shelf, and proceeding with the others, one after the other, on its right side straight round the dispensary until all those on the lowest shelf are numbered, and then continuing in the same manner with those on the shelf immediately above, and so on until all of them in the dispensary are numbered. A letter marks either the whole, or the first portion, of each ingredient's characters, and thus acts as a dividing point between the number which precede and succeed it; for instance, in $C_4D_1E_3$ the three components are clearly distinguished, whereas this distinction would not exist if the bottles were simply numbered numerically, as 243.246. It is not necessary to record the amount of each ingredient, or any at all of some of the prescriptions dispensed. Most physicians soon learn the usual amount of each drug they dispense and it only becomes necessary to indicate the amount when it varies either above or below this quantity. In these cases the amount of each ingredient to be recorded should be placed underneath a line drawn under the letter, or letter and number or numbers indicating it, so as to make, as it were, a fraction, and the words grain, minim, and ounce can be represented by using their first letters G, M, D, and O placed first; for instance, suppose the prescription contains 16 grains of potassium iodid, two drams of sodium salicylate, two drams of sodium bicarbonate, and an ounce of syrup of orange peel, and the dose is two tablespoonfuls three times a day, the ingredients alone are represented by writing, say $B_4C_6C_8H_1$, and the quantities as well by writing $\frac{B_4C_6C_8H_1}{G_{16}D_2D_2O_1}$.

In order to facilitate the working of this system, the label should be provided with a notice printed below the other instructions concerning the dose: "Please quote the letters and figures of the prescription number at future consultations, or return the bottle."

Journal of Laryngology, Rhinology and Otology, London

July

28 The Pathogeny of Cholesteatomata. V. W. Wingrave.
29 Congenital Insufficiency of the Palate (concluded). A. B. Kelly.

Glasgow Medical Journal

July

30 The Deaf Child from the Viewpoint of the Physician and of the Teacher. J. K. Love.
31 *Disease of the Cecum and Sigmoid which Simulated Affections of the Uterus and Adnexa. J. M. M. Kerr.
32 Arterial Spasm in the Brain Associated with Transient and Permanent Paralysis. G. A. Allen and G. H. Wilson.
33 *Congenital Enchondroma of the Right Hand. A. J. Hutton.

31. **Disease of the Cecum and Sigmoid.**—The cases reported by Kerr may be summarized as follows: 1. Carcinoma of the

sigmoid which simulated an ovarian tumor; removal of sigmoid and rectum by combined abdominal and perineal operation, recovery. 2. Advanced malignant disease of rectum which resembled fibromyoma of uterus colotomy recovery. 3. Cyst of left ovary with carcinoma of sigmoid, which at first presented features of extrauterine pregnancy—removal of ovarian cyst, subsequent resection of bowel, recovery. 4 Tuberculous disease of cecum which simulated an ovarian tumor lateral anastomosis, ten days later removal of cecum, recovery. 5. Chronic inflammation of appendix and cecum simulating a fibromyoma of the uterus—removal of cecum—recovery.

33. **Congenital Enchondroma of Right Hand.**—The patient, aged 23, whose grandfather had a similar deformity, presented large, irregular firm swellings on all the phalanges and metacarpal bones, with here and there soft areas over which superficial ulceration had occurred. The fingers were mere knobs projecting from the surface of the tumor, and the hand was quite useless. The largest swelling was as great as a big apple, and was situated on the metacarpal of the "ring" finger. On pathologic examination, the tumors showed the ordinary appearances of chondroma with calcified and osseous areas.

Bristol Medico-Chirurgical Journal

June

34 The Development of the Human Skull. E. Fawcett.
35 Biliary and Intestinal Sand. G Parker.
36 A Case of Oxycephaly G H Almond
37 Iodoform and Thyroidism. A. R Short.
38 *A Case in Which a Stone Formed in the Urethra Around a Piece of Wood Introduced into the Urethra Twenty-six Years Before the Removal of the Stone. C. A. Morton.
39 Bromoform Poisoning R. Waterhouse.

38. **Stone in the Urethra.**—Twenty-six years before this man, aged 48, was seen by Morton, he had had retention of the urine, and in order to relieve himself he passed a kind of a bougie which he made of wood. The end of this broke off in his urethra, but did relieve the retention. The broken-off end of the wooden bougie, however, remained in the urethra. He had had difficulty with micturition at times since, and had kept in the house a No. 4 metal catheter, which he passed when the difficulty was marked. In doing so, he struck the piece of wood. He really struck the stone, but knowing nothing about stones in the urethra, he imagined it to be the piece of wood. A few weeks before Morton saw him a sinus formed in the perineum and an abscess was opened. There was a large mass of induration in the perineum, more to the right than the left. Morton removed the stone. The mass of induration was very largely due to the size of the stone. It lay in a pouched urethra, distinctly more to one side of the middle line than the other. On cutting open the stone a piece of wood was discovered as its nucleus.

Annales de l'Institut Pasteur, Paris

May, XXIV, No. 5, pp. 337-432

40 Study of Epidemic of Relapsing Fever in Algiers. (Recherches sur la fièvre recurrente et son mode de transmission.) E. Sergent and H. Foley.
41 *Epidemic of Malta Fever in France (Epidémie de fièvre de Malta dans le departement du Gard.) P. Aubert, P Cantaloube and E Thibault.
42 Theoretical and Practical Study of Cheese Making. (Technique fromagère.) P. Maze.
43 *Report of Paris Pasteur Institute for 1909. J. Viala.

41. **Malta Fever in France.**—An epidemic of what was called infectious grip affected 106 of the 630 inhabitants of a farming district in southern France, and 40 died, while others were bedridden for several months. Investigation revealed that the epidemic was typical Malta fever, which has been known in France for some years, probably the result of importation of goats from Sicily. The epidemic had been preceded by an epizootic among goats, the disturbance manifested chiefly by numerous abortions among them. Goat's milk is used exclusively throughout the district. Sheep were also found infected but not in such numbers as the goats, and their milk was not used raw but made into cheese or left for the lambs. It has been suggested that cheese might transmit the infection and research in this line is now under way. Rabbits proved susceptible to experimental Malta fever infection. If it is found that these animals eliminate the microbe in the same way as the goats in the urine rabbits might prove an important agent in the transmission of the disease as they multiply with such rapidity and are sold in every market in France. The authors insist that Malta fever should be added to the list of notifiable diseases; that the introduction of goats into the country should be strictly supervised and that the goats already there should be kept under control and people warned against taking raw goat milk or cheese They add that search for Malta fever and separate classification of the cases, will, they are confident, reduce the number of supposed cases of typhoid in the cities of southern France

43. **Treatment of Hydrophobia at the Paris Pasteur Institute.**—The number of cases has constantly diminished from 2,671 in 1886 to 467 in 1909, and the mortality among the patients taking treatment from 0.94 to 0.21 per cent The only death in 1909 during the course of treatment was an English sailor bitten at Gibraltar and not applying for treatment until after a delay of 12 days A comrade bitten on the same day and coming with him, developed symptoms of rabies 6 months after the course of treatment, and he died in 3 days.

Annales de Médecine et Chirurgie Infantiles, Paris

June 15, XIV, No. 12, pp. 381-408

44 *Morbid Associations V Hutinel
45 Recurring Chorea H. Triboulet and C Perineau
46 The Phenolphthalein Test in Nephritis (Valeur séméiologique de la réaction de Meyer dans les néphrites.) G Paisseau and L. Tixier, H Triboulet and C Périneau
47 Gymnastic Exercises in Treatment of Curvature of the Spine (De la gymnastique dans le traitement des deviations du rachis.) P. Redard

44. **Morbid Associations.** Hutinel discusses the way in which two concomitant diseases modify each other, generally aggravating each other and preventing the natural development of immunity in consequence. He describes a number of cases of the kind, typhoid with tuberculous pleurisy, scarlet fever and pneumonia, pneumonia and typhoid, typhoid and measles, typhoid and whooping cough, and mucomembranous enteritis and typhoid. In one case measles coming on during the latter stages of typhoid induced a relapse of the typhoid and recurrence of scarlet fever during convalescence from both scarlet fever and pneumonia was observed in another case The typical course of the various diseases was materially modified by the coincidence of the two infections. In a case of typhoid coming on during whooping-cough the symptoms of the latter subsided with the onset of typhoid symptoms but returned again for two weeks after defervescence from the typhoid; this was followed by recurrence of the typhoid for 12 days, when the fever subsided and again the whooping cough symptoms reappeared The spasms of coughing were more violent than ever for 10 days when again the temperature arose and typhoid symptoms returned, followed again by whooping-cough symptoms as the fever subsided again He declares that this alternation of relapses of both diseases showed how each had prevented the natural process of immunity in the other, and warns that the reaction to the tuberculin tests may be deceptively modified by a coincident infectious disease, possibly latent. He refers also to some cases of children with an inherited syphilitic taint, hitherto latent, but roused to serious manifestations by an intercurrent typhoid.

Lyon Chirurgical, Lyons

July, IV, No. 1, pp. 1-[illegible]

48 *Intermittent Hydrops of the Gall-Bladder (Quelques [illegible] cas d'hydropisie intermittente de la vésicule.) E. Villard and G. Cotte
49 Radium Treatment of Cicatricial Stenosis of the Throat [illegible] Cantas
50 Mistaken Diagnosis of Tuberculous Peritonitis (Trois observations rares de chirurgie abdominale.) L. Desgouttes
51 Incision and Resection of the Auditory Canal and of the Concha after the Petromastoid Operation (Incision et résection du conduit auditif et de la conque après l'évidement pétromastoïdien.) Lannois and Jacod

48. **Intermittent Dropsy of the Gall-Bladder.**—Villard and Cotte report a case in which an intermittent accumulation of serous fluid in the gall bladder was diagnosed as hydronephro-

sis and a lumbar incision made through which the gall-bladder was removed. In a second case the same mistake was made but the incision was sutured without cholecystectomy and the patient refuses any further operation, not having had any further attacks. Even catheterization of the ureters will not always clear up the diagnosis in these cases; an exploratory incision is generally necessary. In a third case the absence of a liver or gall-stone history, the recurring pain in the lumbar region and catheterization findings all suggested intermittent hydronephrosis, but nephrotomy revealed that the gall-bladder alone was at fault. In all these cases the trouble was due to obstruction by unsuspected gall-stones. Tanarky has recently reported a case of intermittent hydrops of the gall-bladder from a combination of gall-stones and cancer. Still another cause for the intermittent dropsy of the gall bladder was evident in another case reported in detail by Villard and Cotte: besides calculi, stricture of the common bile duct or kinking of the cystic duct, retention of the contents of the gall-bladder may result from the extremely viscous character of its contents. The mucus is too thick and heavy to flow off normally through the outlet. This hypersecretion they ascribe to some infectious process and this assumption is confirmed by the benefit from prolonged drainage with modifying local injections. The drain was taken out too early in the case reported and the infectious process flared up a little again, but finally subsided entirely after drainage had been resumed for three months longer. By this time the secretions were normally fluid and there was no further pain. This patient had complained of recurring attacks of pain in the stomach and subhepatic regions, coming on a few hours after eating, generally in the afternoon. During the last five years the attacks had been more severe, compelling recumbency for several days afterward, but there was never any fever or jaundice although the patient was growing thin. The gall bladder was found distended and painful, with intermittent tension under palpation. The walls of the gall-bladder gave evidence of repeated attacks of inflammation but there were no adhesions and all the symptoms subsided as soon as the organ had been evacuated. The patients in the cases were all women, the age ranging from 35 to 52.

Presse Médicale, Paris

June 29, XVIII, No 52, pp 489-496

52 *Transplantation of the Kidney (La transplantation du rein.) L. Villard and L. Tavernier

July 2 No 53, pp 497-512

53 *Serotherapy and Anaphylaxis in Cerebrospinal Meningitis. V Hutinel
54 *Quinin and Urea Bichlorid in Local Anesthesia. (Le chlorhydrate double de quinine et d'urée.) M Gaudier
55 Wassermann Reaction in 200 Cases. C Garin and C Laurent
56 Institutions and Organizations for Protection of Mothers and Infants (Les œuvres de protection de la mère et des enfants du premier age dans le departement de la Seine.) M G Schreiber
57 *Idiopathic Contracture and Spasms of the Stomach. (La chorée de l'estomac.) G Leven and G Barret

52 **Transplantation of Kidneys.**—Villard and Tavernier report experiences with seven dogs or goats in which they transplanted one of the animal's own kidneys or the kidneys from another animal. The autotransplantation gave durable results, while homotransplantation allowed the survival of the implanted kidney and its apparently normal functioning but whether the effect will be permanent is still a question. Transplantation of a kidney from another species of animals has not given satisfactory results to date. They did not find it necessary to rinse the excised kidney before implanting it, finding that clamping the arteries and veins was sufficient to prevent clotting of the blood in them, so that this perfusion is not necessary. The ureter they state should be implanted in the bladder, not in an external mouth. In the choice of an artery to connect with the implanted kidney, the splenic offers a number of superior advantages, especially the accessibility, size and functional adaptability.

53. **Fatal Anaphylaxis in Serotherapy of Cerebrospinal Meningitis.**—Hutinel has had 2 cases and knows of 2 others still unpublished, in which antimeningococcus serum was given 3, 5 and 41 days after the first injections and serious nervous symptoms developed at once proving rapidly fatal. The patients were children between 3 and 6, and the injections had all been made into the spine; from 25 to 30 c.c. of the serum had been injected each time. He discusses the theories in regard to anaphylaxis and the reason why the toxic phenomena do not occur unless an interval of a few days has elapsed before the resumption of the injections, and the fact that these phenomena are more liable when the fluid is injected near the central nervous system. Ether and alcohol seem to confer a briefly transient immunity against anaphylaxis, and he adds that it is a popular notion in northern France that ingestion of a small amount of ether will cure the symptoms observed in certain persons after eating poisonous mussels. The symptoms induced by this mussel poisoning are very much like those of anaphylaxis and he suggests that the antianaphylactic properties of ether might be used in treatment of serious disturbances following injection of antimeningococcus serum. Besredka advocates rendering cattle immune to anaphylactic disturbances in seroprophylaxis by vaccinating them with the serum just beforehand. This method has recently been applied in Roumania on a large scale, Alexandrescu having used in vaccinating cattle against anthrax a mixture of antianthrax vaccine and serum. The animals are vaccinated against anthrax regularly once a year, at least, and oftener in case of epizootics. Ninety out of 180 animals thus treated were given a subcutaneous injection of 1 c.c. of the antianthrax serum five hours before the vaccinating mixture was injected, and none of these animals showed any trace of anaphylaxis while 10 per cent. of the 90 other animals not receiving the preliminary injection developed symptoms indicating anaphylaxis. Another prophylactic measure Hutinel suggests is to make the succeeding injections with a serum derived from another animal, a sheep, for instance, if horse serum had been used at first. In 2 of the cases Hutinel reports there was concomitant tuberculous infection which, he remarks, may have aided in inducing the anaphylactic phenomena or at least in conferring greater gravity on them.

54. **Local Anesthesia with Quinin and Urea Hydrochlorid.**—Gaudier's experience confirms that of Thibault, Hertzler and others as published in The Journal in the last three years. (See the issue of Oct. 23, 1909, page 1393.) He performed with this method of local anesthesia numerous operations on the nose, superficial tumors and other lesions in mucous membranes. It was his experience that this method of anesthesia did not prevent local hemorrhage and that the oozing recommenced at the slightest excuse when the dressings were changed. The anesthesia induced is more strictly localized than with cocain and lasts longer; he was able to renew the compressing dressings five hours later without pain. The reduction of sensibility persisted on an average fully three days. This property, he adds, may commend this method particularly for treatment of fractures. Cicatrization, however, seemed to him to be a little retarded, the wound not healing quite as quickly as with cocain. The anesthesia induced does not develop as rapidly as cocain anesthesia, and is not quite so profound, but it lasts much longer. The absence of vasoconstriction may interfere a little with the operation, but addition of the active principle of the suprarenal gland may obviate this although it was his impression that the latter in combination with the quinin had a less intense vasoconstricting action than alone.

57. **Chorea of the Stomach.**—Leven and Barret report three typical cases out of their much larger experience to sustain their assumption that the stomach may be affected with what they call actual chorea; that is a tendency to spasms and contracture of the musculature and sphincters, this motor restlessness entailing symptoms which prove rebellious to all ordinary methods of treatment. Skiagrams of the same stomach taken at a few moments interval, show the remarkable changes in the shadow as the stomach curves up on itself, straightens out or undulates in waves. The first patient had been treated for 10 years without benefit, his frequently recurring attacks of gastric pain, vomiting and exhaustion of the stomach having been diagnosed as gall-stone trouble, gastric crises, etc. But he was soon speedily cured by treatment directed to resting and soothing the stomach, bed rest for 4 to 8 days, with moist heat to the stomach, no food beyond

a small cup of milk every three hours from 7 a. m. to 7 p. m. for 3 to 5 days, then avoiding meat, bread and all indigestible food for two weeks, interposing one "milk day" every 4 days. These measures are supplemented every 2 hours during the first week by a dessertspoonful of a mixture of 5 parts bismuth and 15 parts acacia in 150 parts distilled water. This patient was also given 3 gm. of sodium bromid a day to act more directly still on the hyperesthesia of the gastric mucosa. The affection in the second patient had been differentiated as stenosis of the pylorus with ulcer and he had been kept for five years on an exclusive milk diet, but without relief. During the last 18 months spasm of the cardia had still further complicated the case, and the patient was unable to eat any solid food without severe pain, which continued until the food had been vomited. Radioscopy revealed spasmodic contraction of the cardia and pylorus and aerophagia, but no stenosis. Treatment as outlined above cured the patient in a few days and the cure has been complete for over 2 years to date in both cases. The tendency to aerophagia was also treated at the same time. The third patient was being treated for stenosis of the pylorus, vomiting and pain after eating, and he was placed behind the screen for a radioscopic examination but for some reason the apparatus did not work. The patient however did not know this, but he was absolutely cured by the supposed radioscopy; there has been no recurrence of symptoms for over 10 months to date. These patients were all men, the first two were about 50 years old, and the cases are cited to sustain the assumption that gastric spasm and contracture may occur without an organic lesion; in all the symptomatology had been grave, of long standing and rebellious to treatment by experts, but yielded to suggestion or to simple sedative treatment. An organic lesion is incompatible with the rapid and permanent cure while radioscopy has confirmed the actual chorea of the stomach. Physicians familiar with this syndrome of chorea of the stomach, they remark, will not let their patients be operated on for supposed stenosis or cancer, which the syndrome may most deceptively simulate. The trouble can be cured without; when a cure has been realized in such cases by operative intervention, the benefit is the result of the rest enforced by the operation, the dietetic restrictions and the fact that a moral, accidental or surgical traumatism may usefully modify a neurosis. The trouble in these cases is evidently a motor and sensory neurosis of the stomach. A single instantaneous skiagram might give very misleading findings, but if the stomach is patiently examined with the screen its motor restlessness will soon reveal itself and explain the puzzling shadows.

Semaine Médicale, Paris

July 6, XXX, No 27, pp. 313-324

58 *Complications of Rubeola. C. D. Martelli.

58. **Complications of Rubeola.**—Martelli observed pneumonia in the course of rubeola, evidently a complication of the latter, in 3 cases in a recent epidemic in Italy. In one case the pneumonia ran a protracted course and vigorous tonic medication was required afterward before the child was well again. In 6 other cases he noted slight albuminuria and tube-casts in the course of the rubeola. In another case there was slight hematuria for ten days after defervescence, with a slight tendency to albuminuria but nothing else to suggest possible nephritis. Hematuria was encountered in only 1 of his 46 cases of rubeola, but he refers to Banbace's report of an epidemic of rubeola in which hematuria was the rule.

Archiv für Gynaekologie, Berlin

XCI, No 1, pp 1-242 Last indexed June 4, p 1909

59 *Tubal Sterilization of Women. (Ueber die tubare Sterilisation der Frau.) H. Offergeld.
60 The Albuminoids in the Urine in Parturients (Eiweisskörper des Harnes bei Gebärenden und Wöchnerinnen.) B. H Jagerroos.
61 Reabsorption of Bone in the Intrauterine Disappearance of the Fetus. (Knochenresorption bei intrauterinem Eischwund.) F. Koebner
62 The Behavior of the Diastatic and Antitryptic Ferments in Pregnancy. (Verhalten des diastatischen und antitryptischen Ferments in der Schwangerschaft.) H. Schirokauer
63 Ovarian Endothelioma. (Zum Studium der Eierstocksendotheliome.) P. Llaguno
64 *Oliguria and Chronic Uremia with Uterine Carcinoma. H Offergeld
65 Experimental Transplantation of Ovary Tissue. S. Higuchi.

59. **Tubal Sterilization.**—Offergeld discusses the indications, technic and medicolegal aspect of tubal sterilization and the results of his own experience. It has sometimes happened that women suffered from prolonged uterine hemorrhage coming on some time after the operation on the tubes. There is no hemorrhage at the time, but about four days later there is what seems to be an ordinary menstrual hemorrhage, only it lasts for a week or more. He thinks that the removal of the tubes has some unexplained influence on the endometrium; this is evidenced particularly by success of ergot in arresting the hemorrhage and preventing any excess at the following menses.

64. **Oliguria and Chronic Uremia in Cancer Patients.**—Offergeld presents evidence which sustains the assumption that cancer patients suffer from chronic uremia more than is generally recognized, the products of the cancer injuring the kidneys indirectly or the cancer compressing them or their outlets. He then describes in detail 4 cases in which he tried to remedy matters by administration of beef kidney extract or in substance but with constantly negative results or possibly an aggravation of symptoms. He adds in a foot note that the results were also negative in a case of pregnancy eclampsia with advanced interstitial nephritis. The organotherapy gave no relief when applied as a last resort the patient dying 20 hours after the onset of the first symptoms, promptly followed by induction of abortion. The evils of chronic uremia with inoperable cancer possibly may be palliated, he adds, by nephrostomy, ureterostomy or ureterocystoneostomosis. Or it may be possible to supply the lacking internal functional products of the kidney by extract from healthy human kidneys. The attempts to date to accomplish this with organotherapy with products derived from animals of another species have not given promising results.

Archiv für klinische Chirurgie, Berlin

XCII, No. 2, pp 265-595

66 *Experimental and Critical Study of Ligation of Mesentery with and without Plastic Use of the Omentum (Mesenterialunterbindung mit und ohne Netzplastik.) H v Haberer
67 Advantages of Early Operation in Appendicitis (Wodurch setzen wir die Mortalität der Appendicitis herab und verhüten Abscesse und Peritonitiden.) H Kümmell
68 Excellent Outcome of Osteotomy of the Os Calcis for Flat Foot in 37 Cases. (Erfolge der Operation des Plattfusses nach der Methode von Gleich-Brenner.) H Riedl
69 *Results of Histologic and Chemical Research in 160 Cases of Exophthalmic Goiter (Untersuchungen von 160 Basedowfällen.) A. Kocher
70 *Treatment of Pseudarthrosis and Extensive Gaps in the Long Bones (Behandlung der Pseudarthrosen und der ausgedehnten diaphysären Continuitätstrennungen.) A Codivilla
71 *Operations on the Spleen in Malaria. (Ueber Operationen an der Malariamilz.) S. Solieri
72 *Operative Treatment in 20 Cases of Traumatic Epilepsy O Tilmann
73 *Physiologically Correct Abdominal Incisions (Kritische Betrachtungen über Bauchdeckennaht und Bauchschnitt.) O. Sprengel

66. **Ligation of Mesentery.** The extensive experimental research reported by v. Haberer shows that the terminals of the mesenteric arteries have such a different arrangement in man and dogs that conclusions drawn from the latter cannot be applied to man. The dog mesentery does not bear ligation well, and the disturbances in the circulation almost inevitably entail trouble.

69. **The Chemical and Histologic Changes in the Thyroid in Exophthalmic Goiter.** Kocher concludes from examination of 160 patients with exophthalmic goiter that the hypersecretion of the thyroid, or rather the hyperresorption, as he prefers to say, is dependent on the chemico-histologic behavior of the gland before clinical manifestations develop. A diffuse colloidal degeneration may exist without the knowledge of either patient or physician. He states that more iodin is eliminated from the Basedow gland than under other conditions, while this surplus iodin is not eliminated from the system at once as in health.

70. **Treatment of Pseudarthrosis and Defects in the Long Bones.** Codivilla has applied osteoplastic treatment in 27 cases and gives radiograms of the ultimate outcome to show the advantages of his technic. The transplanted strip of bone was generally taken from some other bone in the same patient and was fastened with two wires at each end. He aims further to promote the activity of bone regenerating processes

by the use of pedunculated flaps of bone forming tissue, or at least taking similar living flaps from some other person. The two main factors for the healing are stability of the flaps in their new bed and ample supply of periosteum.

71. **Splenectomy in Malaria.**—Solieri reports four cases in which the enlarged malarial spleen required removal on account of subcutaneous rupture, sevenfold torsion or displacement. The patients were a man of 57 and three women between 22 and 34. The hemorrhage in the man was so severe that he succumbed; 4½ hours had elapsed before operative treatment, during which time the man had walked nearly a mile, showing that the hemorrhage in a ruptured spleen must occur slowly enough to give surgical measures a chance if the delay is not too long. Solieri advises against splenectomy for the malarial spleen unless it induces serious disturbances and the upper pole is below or only a little above the costal arch.

72. **Surgical Treatment of Traumatic Epilepsy.**—Tilmann reports 20 cases with a complete cure in 60 per cent. and improvement in an additional 5 per cent., while 2 patients were still under treatment and one had died. The interval since the operation had been from 6 months to over 3 years. He reviews 260 similar cases from the literature, stating the technic and the outcome. A cure or improvement was realized in all but 15.3 per cent. with the exception of 6.1 per cent. with a fatal termination, but he adds that 29 per cent. of the total were under observation for less than 6 months. He draws the important lesson from his experience that operative treatment is always indicated when there is a "depression fracture" of the skull or when any signs indicate a lesion of the skull or brain. In scarcely any of the total cases of traumatic epilepsy had there been any primary trephining, while on the other hand, Beresowsky has reported that epilepsy developed in only 1 out of 13 cases of severe injury of the skull in which operative treatment was instituted at once. An abscess developed in this one case but all the other patients remained healthy, although there must have been extensive adhesions. He experimented on dogs and found that adhesions invariably develop in such a case but scarcely ever any nervous symptoms if trephining had been done. Tilmann's patients were between 20 and 41 years except 4 youths between 13 and 17.

73. **Physiologically Correct Abdominal Incision.**—Sprengel relates the reasons which have compelled him to abandon the transverse incision in favor of the longitudinal and to refrain from auxiliary sutures as superfluous with this technic. Several colored plates accompany the article.

Beiträge zur klinischen Chirurgie, Tübingen

May, LXVIII, No. 1, pp. 1-378

74 Frequency of Hernia in Cicatrix from Appendicitis Operations. (Häufigkeit der Narbenhernien nach Appendicitisoperationen, besonders nach den mit primärer Naht behandelten Abscessen.) M. v. Brunn.
75 Acute Osteomyelitis of the Ribs. H. Fritz.
76 Mechanical Basis of Ileocecal Invagination. K. Blauel.
77 Branchiogenic Ecchondroma. H. Kolaczek.
78 *Actinomycosis of the Orbit. P. Müller.
79 [illegible] of Fracture of the Top of the Skull. (Der Gewölbebruch des Schädels.) [illegible] Schwartz.
80 *Roentgen-Ray Diagnosis of Surgical Gastric Lesions. (Die Roentgenographie [illegible] Diagnostik chirurgischer Magenkrankheiten.) J. Finckh.
81 *Rupture from Taxis of Incarcerated Intestine in Hernia. (Die [illegible] des eingeklemmten Bruchdarmes.) [illegible]
82 Appendicitis in Hernial Sac. (Appendicitis im Bruchsack.) [illegible]
83 *Amputations During Childhood and Their Consequences for the Growth of Bone Later. (Die Amputationen im Kindesalter und ihre Folgen für das Knochenwachstum.) A. Reich.

78. **Actinomycosis of the Orbit.**—In the case described there was considerable proliferation of the inflamed bone, forcing the eyeball forward, but the disturbances subsided after the bone was removed by turning back the malar bone to obtain ample access to the lesion. Müller has found 9 similar cases on record, which he summarizes. The patient had probably been infected through carious teeth, as there were actinomycotic processes [illegible] under the temporal muscle. Eight of the 9 patients on record succumbed to meningitis or other intercurrent affections and the ninth to typhoid, all within one year of the first symptoms of the orbital lesion and Müller's patient did not survive the operation more than a few months as there was early recurrence.

80. **Roentgen-Ray Diagnosis of Malignant Stomach Disease.**—Finckh states that 150 patients with suspicious stomach affections have been examined with the Roentgen rays at the Tübingen university clinic in the last two years and that in every case in which the lack of hydrochloric acid and other symptoms suggested cancer, although no tumor could be palpated, the skiagrams revealed its existence and the operation confirmed the positive findings. But in every such case the lesion was found too far advanced for successful removal. The 5 patients in this group were between 29 and 63. In another case a tumor could be palpated and yet the gastric secretions seemed to be normal, the Roentgen findings were positive, and the cancer was successfully removed while it proved inoperable in a second similar case. In the 90 cases of certain cancer there was free hydrochloric acid in 7, lacking in 78; lactic acid in 46, lacking in 38. The combination of lacking hydrochloric acid plus present lactic acid was encountered in 45 cases; both were absent in 32. Several plates accompany the article.

81. **Rupture of the Bowel from Taxis of Incarcerated Hernia.**—Sänger gives the details of 5 such cases encountered in 165 cases of incarcerated hernia in the last 3½ years at the Tübingen university clinic. The patients were women between 44 and 70 and the hernia was of long standing in all; the taxis was done by a physician in 2 of the cases. The rupture was followed by peritonitis in all the cases, to which 3 of the patients succumbed, while the others were saved by resection of 7 to 130 cm. of the gut. Sänger then gives summaries of 35 similar cases he has found in the literature; all the patients were over 30. It is probable, he adds, that many such cases of taxis rupture occur without the knowledge of any medical man, the primary cause of the resulting peritonitis not having been ascertained. The larger proportion were femoral hernias, and generally of long standing and in most cases the hernia had been frequently previously reduced without trouble. The rupture occurred in one case only 1 hour after the onset of the incarceration, while in another case the intestine could be easily sutured without reenforcement, although the incarceration was of 12 hours' standing. He is convinced that rupture may occur from taxis even with a sound bowel. In the total 40 cases the taxis had been applied by a physician in 14 cases, and in 6 cases special mention is made of the reduction having occurred very easily and promptly under cautious maneuvers. Ten of the 22 patients operated on were saved, but only 10 of the total 40, the mortality thus being 75 per cent.

83. **Consequences for the Later Growth After Amputations in Childhood.**—Reich reviews 15 cases from the literature, 20 from the Tübingen clinic, and also 18 cases in which coxa valga developed after amputation of the leg. Study of this material shows that much can be done in the way of prophylaxis to prevent the almost inevitable slanting contraction of the pelvis which results from the unequal bearing of the weight on the sound leg. The bone of the stump continues its growth in children while the muscles atrophy. The result is a tapering stump, and this physiologic tapering should be prevented, he declares, at the time of the amputation, by providing for ample attachment of the muscles to the stump of the bone, thus permitting the muscles to develop normally, parallel with the bone. The technic for such an arrangement is still to be worked out, he adds, as also means to prevent development of coxa valga and oblique contraction of the pelvis after amputation of the leg in children supplied with an artificial limb. The growth of the pelvis is comparatively uninfluenced when the child uses a crutch exclusively. The article is illustrated.

Berliner klinische Wochenschrift

June 20, XLVII, No. [illegible], pp. [illegible]-1192

84 *Albumin Milk in Infant Feeding. (Ernährung magendarmkranker Kinder mit Eiweissmilch.) H. Finkelstein and L. F. Meyer.
85 *Experimental Syphilis in Rabbits and Monkeys. (Zur experimentellen Kaninchen- und Affensyphilis.) P. Uhlenhuth and P. Mulzer.

86 *Suction Drainage of the Pleural Cavity. (Saugdrainage der Pleurahöhle.) F. Härtel.
87 Hernia of the Diaphragm. (Hernia diaphragmatica dextra.) H. Dietlen and G. Knierim.
88 *Unilateral Congestion of Lymph with Lung and Pleura Lesions. (Ueber halbseitige Lymphstauung bei Erkrankungen der Lunge bzw. Pleura.) M. Bönniger.
89 Sphygmograph. R. du Bois Reymond.
90 Ether-Acetone Antiformin Method of Sputum Examination. Koslow.

84. See abstract 107 in The Journal, July 2, 1910, page 93, and editorial, July 30, page 407.

86. **Suction Drainage of the Pleural Cavity.** In this communication from the university clinic at Berlin in charge of Bier, Härtel describes a simple portable contrivance which permits continuous aspiration of pus and other fluid from the pleural cavity while the patient is up and about. A square of dentist's rubber dam, through the center of which a catheter is passed into the pleural cavity, fits air tight against the skin, while a rubber tube connects the catheter with a glass vial with two necks, the second neck connected with a rubber bulb. The vial is made flat and curved to fit against the body and is worn in a cloth pocket suspended from the opposite shoulder while a second similar pocket on the other side holds the rubber bulb. He reports several cases of empyema in which this little portable contrivance aided materially in the cure. The method can be applied to any fistula opening into a suppurating cavity.

88. **Unilateral Impairment of Circulation of Lymph with Disease in the Lung and Pleura.** Bönniger has been studying for four years a symptom which he thinks is of extreme importance for the early diagnosis of affections of the lungs. This is a change in the tissues on the corresponding side so that they look plump, the change manifesting itself in the muscles, in the connective tissue and skin. It is not edema; the diseased side merely looks plumper and healthier. He explains it as the result of a congestion of lymph resulting from the pleural affection; there is no inflammation, redness or pain. With extensive processes the stasis may extend through the whole side of the body, as he shows by some examples of the extreme type in women with cancer or actinomycosis of the lung. The congestion never amounts to actual edema and the sound side is entirely free from it. In one of the illustrations given a child is shown with the buttocks and side plumper on the side of a pneumonia process some time before. In another the gluteal region is much emaciated, while the side corresponding to a tuberculous lesion in the lung with pleurisy is plump and rounded. A very important point is that this unilateral plumpness may first become apparent or may assume striking proportions immediately after a subcutaneous tuberculin test. He has observed this local reaction in a number of cases after the tuberculin test with doses too small to induce a general reaction. He further says that Pottenger's sign of muscle rigidity is probably due to this cause and not to contraction of the muscles from irritation of the sympathetic, as Pottenger explains it. Inflammatory processes in the pleura seem to entail this stasis of lymph in its most pronounced form, but its great diagnostic value is with apical disease, although its absence does not exclude lesions in the lung and pleura. It is characteristic more for the pleura than the lung, although its sudden development after injection of tuberculin has specific differential value.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

June 18, XIII, No. 10, pp. 369-400

91 *Operative Treatment of Gastric Crises in Tabes. A. Götzl.

91. **Operative Treatment of Gastric Crises in Tabes.** Götzl reviews the experiences to date in this line, having applied operative treatment to one of his own patients with gratifying results, as has already been mentioned in these columns. Mingazzini first suggested intradural resection of the sacrolumbar roots for the lancinating abdominal pains in tabes, but Foerster first rendered it feasible for gastric crises, and Küttner applied it in practice. The latter has now operated in four cases of gastric crises. Bruns and Sauerbruch in another, one recently reported by Enderlen and Götzl's case bring the total to 7 to date. The question now is as to the best time for operative interference and whether it is not better to resect enough roots to ensure against recurrence of both gastric and abdominal pains. The pathologic anatomic basis for the operation is the assumption that the gastric crisis is a periodical syndrome of phenomena showing irritation of a hypersusceptible gastric mucosa, the phenomena involving the sensory, motor and secretory functions of the stomach at once as a rule. Besides these phenomena there is generally a zone of hyperesthesia of the skin in the zone corresponding to the segment innervated by the seventh to the ninth dorsal roots, inclusive; this hyperesthesia is permanent or observed only during the attacks, and the cutaneous reflexes in the epigastrium are generally exaggerated. According to Head, the sympathetic fibers for the gastric mucosa run in these same seventh to ninth spinal roots. Any pathologic irritation of these roots might therefore theoretically induce all the phenomena observed, and severing the six roots in question does seem to put an end to the gastric crises *in toto.*

Correspondenz-Blatt für Schweizer Aerzte, Basel

June 20, XL, No. 18, pp. 569-600

92 Freud's Conception of "Sexual Neuroses." (Zur "Psychoanalyse" nach Freud.) P. Mang.
93 Etiology and Treatment of Post Partum Hemorrhage. A. Labhardt. Commenced in No. 17.

Deutsche medizinische Wochenschrift, Berlin

June 30, XXXVI, No. 26, pp. 1209-1256

94 *New Drugs. (Ueber neuere und neueste Arzneimittel.) J. Biberfeld.
95 *Ehrlich's "Substance 606." (Ueber das neue Ehrlichsche Mittel.) A. Neisser.
96 *Serodiagnosis of Syphilis by Noguchi Technic. J. G. Sleeswijk.
97 *Modification of Serotherapy to Prevent Anaphylaxis. (Anallergische Sera.) A. Ascoli.
98 Vaccination Against Relapsing Fever. (Vakzinationsversuche bei Typhus recurrens.) J. Schereschewsky.
99 *Constitutional Predisposition to Bothriocephalus Anemia. (Welche Rolle spielt das konstitutionelle Moment in der Pathogenese der Bothriocephalus-Anämie?) O. Schaumann.
100 Advantages of Intravenous Tuberculin Treatment. F. [illegible]
101 Causes of Rigidity of Abdominal Wall. (Ursachen der Bauchdeckenspannung.) A. Hoffmann.
102 *Electrolytic Cure of Recurring Cancer in the Rear of the Pharynx. (Ueber eine wichtige Verwendungsmöglichkeit der Elektrolyse in den oberen Luftwegen im Anschluss an einem geheilten Fall von Epithelialkarzinom der Basis cranii.) R. Kafemann.
103 Medical Missionaries in the German Colonies. (Stellung und Tätigkeit der Missionsärzte in unseren Kolonien.) K. Axenfeld.

94. **New Drugs.** Biberfeld reviews the pharmaceutical harvest of the last few years, saying that not much grain is left after separating it from the chaff.

95. **Ehrlich's "Substance 606."** A summary of Neisser's article was given in the Berlin Letter on page 326, July 23.

96. **Serumdiagnosis of Syphilis According to Noguchi.** Sleeswijk found that the Noguchi paralleled the Wassermann findings in cases of certain syphilis but that non-specific changes were liable to occur with the Noguchi technic in febrile and in other not explained conditions, such as are not observed with the original Wassermann technic and [illegible] detract from the reliability of the Noguchi method.

97. **Antianaphylactic Serum.** Ascoli comments on the clinical experience that anaphylaxis does not occur when the succeeding serum injection is made with serum from a different species of animal from that used in the first series of injections. After considerable research he was able to produce diphtheria antitoxin from sheep serum, and thinks that this will solve the problem of warding off anaphylaxis. The sheep antitoxin may be reserved for the succeeding injections for patients who display the slightest signs of intolerance for the first injection. The sheep serum does not prevent ordinary serum sickness, but it serves to obviate the symptoms resulting from the hypersusceptibility of the individual. Consequently he proposes to call the serum used for this purpose anallergic serum, adopting von Pirquet's term "allergy" to express this hypersensitization of the system. He mentions in passing that the most serious cases of anaphylaxis were observed by von Pirquet after the use of heated serums, and he also cites Francioni's statement that the development of anaphylaxis seems to be followed by the loss of the passive immunity conferred by the serotherapy.

99. **Family Tendency to Bothriocephalus Anemia.**—Schauman writes from Helsingfors to call attention to the occurrence of bothriocephalus anemia in several members of a family as he has encountered it in 8 families. In 7 other cases bothriocephalus anemia was followed later by the development of a progressive and fatal anemia some time after a successful course of treatment to dislodge the parasite.

102. **Successful Electric Treatment of Recurring Cancer in the Throat.**—Kafemann reports a case of epithelial carcinoma in the nasopharynx of a policeman about 38 years old. The cancer was removed with apparent success but three months later there was a stormy recurrence with numerous metastases in adjoining glands on both sides of the neck. After curetting the growth, it was given electrolytic treatment and rapidly retrogressed under 13 exposures; there has been no trace of recurrence during the 2 years since. He applied a current of about 22 milliamperes for 10 or 15 minutes at a time, the sittings at intervals in the course of 6 months. A suspicious bunch was curetted away twice during the course of electrolytic treatment and the glands in the neck were operated on a month before the last exposure.

Fortschritte der Medizin, Leipsic

June 23, XXVIII, No. 25, pp. 771-800

104 Treatment of Uterine Carcinoma. F. Fromme.
105 Action of Baths on the Size of the Heart. (Einwirkung von Bädern auf die Herzgrösse.) R. Schmincke.

Medizinische Klinik, Berlin

July 3, VI, No. 27, pp. 1043-1082

106 *Progress in Pathology and Bedside Diagnosis of Heart Disease. (Fortschritte der Pathologie und Diagnostik der Herzkrankheiten und ihre praktische Verwertung am Krankenbette.) N. v. Jagic.
107 *Importance of the Thyroid for the Growth of the Skeleton. (Das Längenwachstum bei Hyperthyreose.) J. Holmgren.
108 Intestinal Hemorrhage with Appendicitis. (Darmblutung bei Perityphlitis.) H. Riese.
109 Test for Bilirubin. (Bilirubinprobe.) H. Gunther.
110 Experiences with Modifications of the Wassermann Reaction. (Ergebnisse der Porgesschen Luesreaktion 131 Fällen.) L. Merian. (Erfahrungen über die Dungersche Methode der Syphilisreaktion in der Sprechstunde.) Schultz-Zehden.
111 Readily Improvised Incandescent Electric Light Baths. Laumann.
112 Indications for and Advantages of Institutional Treatment of Heart Disease. (Anstaltsbehandlung bei Herzkranken.) Kornfeld.
113 Behavior of Pathologic Sera in Respect to Saponin Hemolysis. A. Herz and K. Landsteiner.
114 Relations Between the Viscosity of the Blood and the Organic Functions. (Beziehungen der Viskosität des Blutes zu den Körperfunktionen.) H. Determann.

106. **Progress in Bedside Diagnosis of Heart Disease.**—Jagic discusses what has been learned in recent years from inspection, palpation, percussion and auscultation findings as controlled by radioscopy, graphic registration of pulse and blood pressure, plethysmography, the electrocardiogram, etc. None of these new methods can take the place of the older physical means of examination but they have served a most useful purpose in giving us more confidence in the percussion and auscultation findings and enabling us to interpret them more accurately, as he reviews in detail.

107. **The Growth of the Skeleton with Hyperfunctioning of the Thyroid.**—Holmgren states that when exophthalmic goiter or a tendency thereto develops about puberty the young people thus affected grow unusually tall as a rule but when the exophthalmic goiter develops after maturity, the individuals are not above the average height. His study is based on 127 cases of goiter and 2,500 measurements of children of various ages to establish average standards. He has also found on record 89 cases of exophthalmic goiter in children under 15; in 25 of the 37 cases in which the size of the children was mentioned it is stated that they were unusually tall and in 6 rather tall. His research has further demonstrated that the ossification of the epiphyses occurs earlier in tall children than in the short. Nature seems to wish to give the latter a chance to catch up with the others. All his material seems to suggest that extra functioning on the part of the thyroid gland entails greater growth of the skeleton. Negative evidence is also afforded by the defective growth with hypofunctioning of the gland. He mentions in passing that the thyroid is the only vital organ with the exception of the skin which lies superficially without being protected by a bony covering. With increasing age the thyroid gradually sinks lower until in middle age it is protected behind the manubrium. A number of the "growing" symptoms observed at puberty may be traced to hyperfunctioning on the part of the thyroid, he adds, and there is much to suggest that when the latter occurs the children mature earlier, both physically and mentally. It is possible, he suggests, that a casual infection may stimulate the thyroid to greater functioning and thus indirectly promote the growth of the skeleton.

Monatsschrift für Kinderheilkunde, Berlin

May, IX, No. 2, pp. 65-130

115 *Influence of the Nursing Mother's Diet on the Growth and Development of Her Infant. (Einfluss der Nahrungsart der Mutter auf Wachstum und Entwicklung des Säuglings.) A. N. Schkarin.
116 *Influence of the Nursing Woman's Diet on Lactation. (Einfluss der Ernährung der Stillenden auf die Laktation.) A. Keller.
117 *Some Fundamental Conceptions of "Physical Chemistry." (Wandlung unserer Anschauungen über die Bedeutung der anorganischen Salze.) H. Koppe.
118 Fifteenth Critical Review of Recent Literature on the Biology, Chemistry, etc., of Milk and the Production of Milk. (Milchwissenschaft und Molkereipraxis.) R. W. Raudnitz.

115-116. **Influence of Diet of Nursing Mother on Development of the Infant.**—Schkarin's research was conducted on rabbits but the results confirm what is constantly observed in practice, namely, that the mother seems to be able to supply her nursling with all that it needs for its normal development, regardless of the kind and amount of food she is herself taking. Keller has been studying the subject from the standpoint of the lactation. A nursing mother, wife of a physician, wishing to retain her figure unmodified by lactation, subsisted on an antiobesity diet, a strict "Banting course," for two months with much exercise. The amount of milk constantly averaged from 350 to 450 gm. a day. The child seemed to thrive on this although it did not increase quite normally in weight until the mother's milk was supplemented by another's. The mother weighed 70 kg. at the birth of the child and 67 by the end of two months. The child weighed 2,700 gm. at birth, 5,770 at six months and 7,200 at 12, and has always been healthy except for a slight tendency to rachitis.

117. **Infant Feeding from Standpoint of Osmosis.**—Koppe hails as a great advance the recent attempts made to estimate the effect on the osmosis of the mineral salts in infant feeding. Certain experiments have already shown that the organism reacts differently to various food mixtures containing exactly the same mineral elements and in the same amount but of different constitution. He insists that the ash content and the salts content of the food are by no means identical. See 84 above.

Münchener medizinische Wochenschrift

June 28, LVII, No. 26, pp. 1377-1424

119 *Treatment of Placenta Prævia. M. Hofmeier.
120 *Pathology of the Suprarenals. (Zur Pathologie der Nebennieren.) R. Rossle.
121 The Functional Capacity of the Human Mammary Gland. (Leistungsfähigkeit der menschlichen Brustdrüse.) M. Thiemich.
122 *Value of the "Thread Reaction" in Typhoid. (Welchen Wert hat die "Fadenreaktion" für die Diagnose des Abdominaltyphus, für das Auffinden von Typhusbazillenträgern und die Differenzierung von Bakterien der Paratyphusgruppe?) W. Gaehtgens and W. Kamm.
123 *Rapid and Simple Staining Technic for Spirochetes. (Eine neue Spirochätenfärbung.) R. Kalb.
124 Alkaline Phenol Method of Determining Organic Oxidizing and Reducing Substances. W. Loele.
125 *Technic for Continent Artificial Sphincter. (Operation des Krebses der Analportion mit künstlicher Sphinkterbildung.) I. Welcke.
126 Treatment of Ankylosis of the Shoulder. (Zur Behandlung der Schultergelenkversteifung.) A. L. Stein.
127 The Wassermann Reaction and the General Practitioner. H. Noguchi.
128 W. F. v. Hilden, M.D., 1560-1634. (Guilhelmus Fabricius Hildanus.) C. Sudhoff.

119. **Treatment of Placenta Prævia.**—Hofmeier reviews 100 cases of placenta prævia from his own experience; the mortality was 8 per cent. but in only 3 per cent. of the fatal cases could the method of treatment possibly be incriminated in the outcome. The general results show, he declares, that there is no reason for forsaking the old reliable methods of combined version and the use of the inflatable bag, and he urges that medical students should be trained in these and other methods as it will be many years yet before institutional care is possible for all deliveries.

120. **Pathology of the Suprarenals.** Rössle remarks that a growing respect for small organs is one of the signs of modern pathology, and an autopsy now has no claims for completeness unless the tonsils, thymus, pancreas, suprarenals, thyroid and parathyroids and the hypophysis are examined. The suprarenals are proving to be indispensable organs; this is not so clear with Addison's disease, on account of its gradual development, as with the hemorrhagic destruction of the suprarenals in the newly born. He reports a case of the latter, one of the few in which the correct diagnosis was made during life. He also cites some cases of hyperplasia and hypertrophy of the suprarenals with the resulting syndromes, and a case in which aberrant suprarenal cells were found in the pararenal tissue; some were calcified and one had evidently been the source of fatal hemorrhage in the bed of the kidney. He has found at autopsies 39 cases in which the suprarenal medulla was moderately hypertrophied and 15 with excessive hypertrophy. All these cases had the common feature of repeated large or continuous small hemorrhages, and in other cases there seemed to be a special tendency to dropsy, chronic diarrhea and frequent vomiting—all of which may have aided in inducing the hypertrophy of the suprarenals, as he explains in detail. The drop in blood pressure following much loss of blood is probably compensated for by extra production of the active principle of the suprarenal gland. This suggests that it might be well to supply the organism with the active principle of the suprarenal gland from without in case of repeated large or continuous small hemorrhages. This assumption is sustained by the remarkably small amount of suprarenal medulla which he found in cases of a permanently overfilled vascular system, in which the tension of the vessels was maintained by their content alone, and thus the suprarenal functioning was rendered comparatively superfluous. Experimental research is needed in both lines, first to see how animals stand hemorrhage after removal of the suprarenals on one side or both; secondly, to see whether the blood contains more of the active principle of the suprarenal gland after venesection and whether the suprarenal medulla becomes hypertrophied after repeated withdrawal of small amounts of blood.

122. **"Thread Reaction" as Differential Sign of Typhoid.**—This rapid method for differentiation of typhoid was described in The Journal, March 5, 1910, page 929. The experiences related in this article seem to confirm its value, especially for detection of healthy bacillus carriers. Only the completely positive reaction has specific value, and this complete reaction generally accompanies high agglutinating properties, although the tendency to thread production briefly precedes agglutination as a rule.

123. **Improved Stain for Spirochetes.** Kalb describes a staining method which, he states, takes less than a minute, the stains are cheap and the technic simple. In 49 cases he determined the presence of spirochetes by this method when the Wassermann reaction was occasionally negative. The technic is commended especially to the general practitioner for its simplicity and convenience. The stain is a combination of 0.5 parts of eosin B.A.; 50 parts alcohol and 30 parts triacid stain (methyl green, acid fuchsin and orange). The stain thus contains four dyes; the mixture should be clear. He prefers oozing serum for the test, obtained as a papule is rubbed a little or an erosion curetted. The specimen is fixed and a few drops of the stain are poured on it and the whole heated over a flame; then rinsed with water and a large amount of a 10 per cent. solution of commercial acetic acid poured over it carefully two or three times from the edge. The specimen then looks pink, the spirochetes and bacteria do not take the stain but show up white against the pink background unless the staining has been done too intensely, in which case it is better to commence over again. The spirochetes show up better in the edges of the preparation.

125. **Artificial Sphincter Formation.** Welcke reports success with an artificial sphincter formed by crossing a bunch of fibers from the gluteus muscle on each side of the fistula after resection of a rectal cancer. The stump of the rectum was drawn out for more than an inch and was sutured to the skin where it emerged. In the case described the patient soon learned to contract the gluteal muscle at the approach of feces so that continence is secured; the crossed fibers were able to exert the needed pressure on the base of the protruding stump of the bowel. The article is illustrated.

Wiener klinische Wochenschrift, Vienna

June 30, XXIII, No. 26, pp. 961-990

129 *Pathogenesis of Pellagra. H. Raubitschek.
130 *Pathogenesis of Psoriasis. B. Lipschütz.
131 *Ozonization of Milk. (Ozonisieren von Milch.) I. Wiener.
132 Operative Treatment the Only Effectual Means of Curing Cancer. (Über die Versuche das Karzinom auf nichtoperativen Wege zu heilen.) I. Venus.

129. **Cause of Pellagra.**—Raubitschek has been applying the biologic, anaphylactic, serologic, deviation of complement and other tests to determine the actual bases of the various theories in regard to the origin of pellagra. His extensive experimental work was done at the institute for pathology and bacteriology at Czernowitz. The constantly negative results show, he thinks, that none of the theories at present in vogue is correct. He then reports further research which seems to show that pellagra and beriberi are the result of the action of some toxin in corn and rice which does not display any toxic action unless it is sensitized by the chemical rays of the sunlight. Laboratory animals fed with corn or rice kept well so long as they were not exposed to direct sunlight, but under the influence of sunlight developed emaciation and paralytic phenomena, dying in from 8 to 21 days. He found that animals taken away from the sunlight, soon after the onset of symptoms, rapidly recovered, without change of diet. The anatomic and bacteriologic findings in the animals were constantly negative. He was led to this conception of the origin of pellagra as the action of an alimentary poison plus sunlight by the experiences with white animals fed on buckwheat. Kept in the dark they remained healthy, while when exposed to the sunlight the hair dropped out and the animals became emaciated and soon died with symptoms of paralysis. This syndrome was not observed with the dark colored animals or with those kept out of the sunshine. The similarity between this "fagopyrism" and pellagra is more striking on account of the facts that the pellagra symptoms develop in summer with special intensity, that the skin manifestations are almost exclusively restricted to the parts exposed to the sunlight, that corn has more fat than any other grain, and that the active body in buckwheat is soluble in alcohol. He explains pellagra consequently as due to a toxin which develops in the parts of the skin exposed to the sunlight from the action of the chemical rays on the lipoid, alcohol-soluble element in corn. The toxin developing in the skin causes the superficial lesions and has also injurious systemic action. He cites some analyses of wheat, rice and corn showing the proportions as follows:

	Water	Dry Substance	Protein	Fat
Wheat	13.6	86.4	12	1
Rice	10	89.5	11.7	2
Corn	10.2	90	15.2	[illegible]

131. **Ozone Sterilization of Milk.** Wiener presents an apparatus which he states sterilizes milk completely from pathogenic germs and toxins without altering it in any way or impairing its protecting substances while the milk can be kept much longer. The milk in the form of a very fine spray is submitted to the action of the ozone while the ozone is then driven off by immediate aeration. The lactic acid bacilli resist the sterilizing process more than cholera germs, typhoid, colon and tubercle bacilli. The process has to be different from the technic for ozone sterilization of water as it is important to refrain from destroying the organic substances in the milk.

Zeitschrift für Geburtshülfe und Gynakologie, Stuttgart

LXVII, No. 2, pp. 175-[illegible]. Last indexed May [illegible]

133 Rapidity of Dissemination of Germs in Puerperal Endometritis. (Schnelligkeit der Keimverbreitung bei der puerperalen septischen Endometritis.) O. Pankow.
134 *Scopolamin in General Anesthesia. (Scopolaminnarkose.) R. Ruckert.
135 *Experiences with Instrumental Dilatation of the Lower Cervix and Vaginal Cesarean Section. (Die Erfahrungen bei der Cervixerweiterung nach der Bossischen Methode und beim vaginalen Kaiserschnitt für die Jahre 1905-1910.) Weischer.

136 Cesarean Section. (Zur Kaiserschnittfrage.) M Henkel.
137 *The Physician Before the Law (Der Arzt als Angeklagter.) F Ahlfeld.
138 Importance of Lecithin for Differentiating Various Species of Streptococci (Zur Differenzierung von Streptokokkenstämmen durch Fremmes Lezithinverfahren.) M Traugott.
139 *Relations Between Uterine Myoma and Conception O Goetze
140 *Anatomic Bases for Post Partum Hemorrhage. A Labhardt.
141 Final Outcome of Genital Prolapse Operations with Plastic Utilization of the Uterus (Resultate der Prolapsoperationen mit Interpositio uteri vesico-vaginalis.) P Bröse.
142 *Prognosis and Treatment of Puerperal Fever R T Jaschke.

134 **Scopolamin Preliminary to General Anesthesia.**—Ruckert usually gives the evening before the operation 0.5 gm. veronal, one hour before the operation an intramuscular injection of 0.0004 gm. of scopolamin and a half hour later 0.0002 gm. of the same with 0.01 gm. morphin, following with chloroform or ether. He reports the experiences with 114 patients anesthetized in this way although the above dosage was strictly followed in only 87 cases. His verdict is favorable on the whole; in 2 cases there was some anxiety; both were uterine cancer cases, and in the first the patient ceased breathing although the heart kept beating regularly; not until after 45 minutes of artificial respiration and stimulants was respiration restored. In the second case there was violent delirium for an hour after the patient roused from the anesthesia. There was no asphyxia in any case, the respiration was regular but shallow; the pulse was frequently irregular and slight cyanosis was frequent. The euphoria on rousing was striking; there was no vomiting afterward in 7 cases and only slight vomiting in 13. The pain and restlessness increased regularly towards night so that another injection of morphin was necessary.

135. **Instrumental Dilatation of the Cervix Uteri and Vaginal Cesarean Section.** Both this and the previous article issue from the Berlin university clinic for women, in charge of Olshausen. Weischer reports the use of the Bossi dilator in 71 cases with favorable outcome for both mother and child in all except 1 case of uremia, 1 of protracted delivery and 15 of eclamptic coma and 1 of eclampsia. The dilator answered its purpose in every case. The cervix became lacerated in 23 of the cases but not enough to require suturing except in 14, and only 6 were followed by a febrile puerperium. Seventeen of this group of 23 recovered, the 5 who died were all in eclamptic coma at the time the dilator was applied. The placenta had to be separated afterward in 4 of the total cases. The dilator is thus seen to answer its purpose and not to do the harm that some fear from it. Vaginal Cesarean section was applied in 45 cases and all the women recovered except 6 in eclamptic coma. The incision tore further in 3 cases but this did no harm. There was fever in 14 cases, preexisting in 7 of the cases. Olshausen adds a word to the effect that vaginal Cesarean section has the advantage of more rapid action but that the metal dilator is preferable in the absence of skilled assistance.

137 **The Physician Before the Law.**—Ahlfeld discusses proposed changes in the criminal code in Germany, especially in regard to the necessity for explicitly excepting physicians from the provisions of the personal injury laws. The more explicit the exemption of physicians under given conditions from the laws regulating personal injury, the less likelihood for malpractice suits against them. Every medical and surgical procedure is to aid in healing and helping and it should not, he says, be regarded from the standpoint of personal injury, but should be specially exempted. The consent of the patient before and may sometimes be dispensed with by experienced and responsible heads of institutions, but there should be some legal restraint on the zeal of young beginners and others too ready to operate. He cites some instructive instances of the direct refusal of the family to permit the needed operation; in one such instance, a case of transverse presentation with a very contracted pelvis, Credé finally locked the objecting husband out of the room and did what he deemed necessary. Ahlfeld discusses the legal aspect of artificial abortion, perforation, and expert testimony by and against physicians. In conclusion he applauds von Franqué's suggestion, recently mentioned in these columns, that it shall be legally provided that no suit shall be instituted against a physician without previous consultation with a medical expert or with a committee from the medical faculty of the university to determine whether there are actual grounds for the suit, as the mere bringing even of a baseless suit is liable to tarnish a physician's reputation.

139. **Relations between Myoma and Conception.**—Goetze states that 8.1 per cent. of the 1,500 gynecologic patients at the Greifswald clinic in the last 2 years had myoma and that 13.6 per cent. of the 105 married women with small myomas were sterile, 17.4 of those with myoma up to the size of a child's head, and 50 per cent. of those with myoma the size of a man's head and over. Submucous myomas develop almost exclusively in women who have borne children. Small subserous myoma scarcely interferes at all with conception and even very large myoma does not exclude it. The submucous myomas have the most unfavorable prognosis, especially when there are changes in the mucosa and much bleeding. Their removal is indicated generally the more as the patients have already borne children as a rule. Conservative myomectomy increases the chance for conception, and conditions for it are more favorable the less the mutilation and mucosa changes and the earlier the myoma is diagnosed. If an operation is not possible, women in the thirties with an interstitial myoma of some size have scarcely any chance of further conception.

140. **Anatomic Bases for Post-Partum Hemorrhage.**—Labhardt declares that preponderance of connective tissue in the uterine musculature is sometimes responsible for post partum hemorrhage. It is practically impossible to diagnose this condition except from the failure of the uterus to respond to the usual measures. In these cases hysterectomy is the only means to arrest the hemorrhage.

142. **Prognosis and Treatment of Puerperal Fever.**—Jaschke comments on the disappointing results of study of the blood picture and similar means to estimate the probable outcome in puerperal fever, and then states that he has been devoting special attention to study of the heart and large vessels and has discovered that the paralysis of the splanchnic vessels is the index of the severity of the disease, while it is the main source of danger. The tone of the splanchnic vessels is so important for maintaining the blood pressure that when this weakens, the serious disturbances in the circulation characteristic of puerperal fever follow. In the cases that terminate favorably the heart is able to compensate the lacking elasticity of the vessels. As this relaxation of the splanchnic vessels and the compensatory strengthening of the heart action, or the lack of them, can be clinically determined and followed by the measurement of the blood pressure on one hand and by the behavior of the second aortic sound on the other hand, it is possible to draw reliable conclusions as to the prognosis. It is favorable in the cases in which the blood pressure does not decline or the decline at first is followed by return to normal either from recuperation of the splanchnic vessels or from compensating extra work on the part of the heart, either naturally or under the influence of digitalis, caffein or suprarenal preparations. The prognosis is absolutely bad when the aortic sound grows weaker and the blood pressure declines and this cannot be altered permanently by therapeutic measures. The reacting capacity and its promptness, under drugs, are also an index of the resisting powers as well as of the severity of the infection.

Zentralblatt für Chirurgie, Leipsic

July 9, XXXVII, No 27, pp 905-928

143 A Year of Tincture of Iodin Sterilization of the Skin (Ein Jahr Hautdesinfektion nach Grossich.) T Papaioannou.

Zentralblatt für Gynäkologie, Leipsic

July 9, XXXIV, No 27, pp 897-928

144 *Local Anesthesia of the Pudic Nerve in Gynecology and Obstetrics (Anästhesierung des Pudendus in Gynäkologie und Geburtshilfe.) H Sellheim
145 Nucleic Acid Not Reliable as Prophylactic for Puerperal Fever (Haben wir von der prophylaktischen Anwendung der Nukleinsäure unter der Geburt und im Wochenbett eine Verbesserung der Morbidität zu erwarten?) L. v Graff
146 *The Question of Congenital Tuberculosis A Hamm

144. **Local Anesthesia of the Pudic Nerve in Gynecology and Obstetrics.** Sellheim has been testing the method of local anesthetization of the pudic nerve recently suggested by Ilmer

and mentioned in The Journal, page 95. He found it very satisfactory, enabling suture of tears in the perineum, application of forceps and extraction of the fetus, even in primiparæ, without pain, besides various gynecologic operations. No untoward by-effects were observed in any instance. He advises injecting a considerable amount of the anesthetic fluid around the pudic nerve (N. pudendus), injecting it in different directions and at various depths, thus encircling the nerve and its branches near the ischiorectal fossa. The attempt to act directly on the nerve trunk in the sacrosciatic foramen he regards as dangerous on account of the liability of injury to the contiguous vessels. This perineural technic, he adds, is like using shot rather than a bullet; the result is less elegant, but it is more readily attained and surer. A single injection generally proved ample in his experience; only exceptionally was a second required. By the exclusion of the anesthetized pudic nerve it proved possible to analyze the elements of the labor pains; only the pain resulting from the stretching of the vulva and perineum was abolished by this means. The course of the nerve is palpated by the finger in the rectum or vagina as well as through the perineum. The spine of the ischium is the inner sidepost of the great sacrosciatic foramen through which the nerve emerges and is useful in locating the nerve; the injection is best made along the stretch of the nerve between the ischiorectal fossa and the lesser sacrosciatic foramen. The point of injection is readily marked with the thumb of the palpating hand, to the side of the anus, about the middle of the inward slope of the tuberosity of the ischium, while the middle finger in the vagina locates the spine and the index finger controls the progress of the needle. The control can also be made by a finger in the rectum. Sellheim combined this method of local perineural pudendal anesthesia with the scopolamin-morphin preliminary technic in some cases and found it quite satisfactory.

146. **Congenital Tuberculosis.** Hamm insists that the discovery of tubercle bacilli in the placenta is no evidence that the fetus is infected with them, and that inoculation of animals in case of negative histologic and bacteriologic findings in the fetus is the only way to solve the problems involved.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 23, XXXI, No. 75, pp. 793-800

147 Appendicitis. (Note pratiche sull'appendicite.) B. Oreste.

Policlinico, Rome

July 3, XVII, No. 27, pp. 835-866

148 *Treatment of Cancer with Autolysate of Human Fetuses. (L'azione dei prodotti di autolisi fetali omogenei sul tumori maligni dell' uomo.) G. Fichera.

148. **Treatment of Cancer with Autolysates of Human Fetuses.** As age seems to be such an important factor in the development of cancer, Fichera has been conducting research to determine whether fetal and embryonal tissue does not possess some property or contain some element which would have a curative action on cancer patients treated with it. He has applied this treatment in 36 cases of inoperable cancer and 18 have been given a systematic course; 8 of the patients did not seem to be benefited but in the 10 others a favorable influence seemed unmistakable. In 5 of the patients the malignant tumors seem to have entirely retrogressed or repeated microscopic examination of excised scraps has shown that the cancer tissue has been transformed into ordinary connective tissue. In these 5 cases the cancer was in the breast in 3 and in the lower rectum or thyroid in the others. The injections of embryonal tissue were made into the lesion or at a distance, the former method being most active in results. The change in size and consistence of the tumor does not always parallel the actual therapeutic results, which can be distinguished only with the microscope. He uses autolysates of human fetuses, the tissues mixed with about 20 parts physiologic salt solution, with a little thymol or phenol, with a layer of oil or toluol on top, and kept at a constant temperature of 37 C. (99 F.) for about two months, when it is ready for use after its sterility has been tested and found complete. The autolysate forms a homogeneous suspension by this time, and he injects 2 or 3 c.c. from two to four times a week, continuing for months according to indications. Continuing treatment for a time after complete cure of the cancer there was no tendency to recurrence in his clinical and experimental experience, and he is confident that when this method of treatment can be applied to less desperate cases than those in which he tried it, the results will be proportionately better. The work issues from the university surgical institute at Rome in charge of Durante.

Hospitalstidende, Copenhagen

May 25, LIII, No. 21, pp. 569-600

149 *A New Apparatus for Differential Pressure. (Teknisk Redegorelse for et nyt Apparat til Overtryksoperation.) H. Mollgaard.

150 *Endogenous Gonorrheal Lesions in Cornea and Skin. (Om endogene gonorroiske Hornhinde- og Hudaffektioner.) C. F. Heerfordt. Commenced in No. 19.

June 1, No. 22, pp. 601-632

151 Case of Fatal Abdominal Actinomycosis. (Et Tilfaelde af Underlivsaktinomykose.) E. Frolich.

June 8, No. 23, pp. 633-656

152 *Periodic Vomiting and Acetonuria in Children. (Om periodiske Opkastninger og Acetoneudskillelse hos Born.) C. E. Bloch.

153 Elective Staining of Living Tissue and Living Microbes under the Ultramicroscope. (Elektiv Farvning af det levende Vaev og den levende Mikrob og Undersogelse heraf ved Hjaelp af Ultramikroskopet.) J. Fellberg.

June 22, No. 25, pp. 681-704

154 *Titration Tuberculin Test. (Undersogelser over Tuberkulintiterens diagnostiske Betydning.) A. Erlandsen and O. V. C. E. Petersen. Commenced in No. 24.

149. **Differential Pressure Apparatus.** Mollgaard regards emphysema as a compensatory process in certain cases and the experiences with the differential pressure procedures confirm, he asserts, the correctness of this view. The emphysema is the result of reflex action to relieve the circulation through the region, and in all operations on the thorax the production of a compensating emphysema should be promoted. Collapse of the lung compresses the capillaries while an increase in the size of the lung increases the diameter of the capillaries unless this increase is excessive, when it drags on the capillaries and narrows their lumen. These are the principles on which is based this new apparatus devised by Rovsing, which is here described and illustrated. It aims to keep the pressure in the lung constant, independent of the phases and volume of the respiration, this constant pressure never exceeding the normal capillary pressure, but is capable of adjustment to the individual case.

150. **Gonorrheal Eye and Skin Lesions.** Heerfordt reports a number of cases of lesions in the subcutaneous tissue and cornea developing in persons with gonorrheal general infection. Subepidermoid vesicles frequently develop in the course of the superficial dermatitis, and the vesicles may be grouped to resemble herpes even without any preceding dermatitis. These gonorrheal skin affections frequently display a hemorrhagic tendency and the dermatitis is sometimes accompanied or introduced with rheumatoid pains, suggesting involvement of the peripheral nerves. Keratitis was observed in 8 of his 23 cases of gonorrheal epibulbar subconjunctivitis and also in a few other cases. The phlyctenular, herpetiform or parenchymatous keratitis, complicating the gonorrheal subconjunctivitis, is evidently of endogenous origin. He gives a plate of the ocular findings in 12 cases to illustrate the various types mentioned. The gonorrheal manifestations in the skin are also liable to assume this same phlyctenular or herpetiform character. In 537 cases of gonorrhea in women he found record of herpes outside the genital region in 7 and in 10 out of 1,773 men; the proportion is probably larger in reality as only the severer forms of herpes were recorded. He reviews the literature on the subject, adding that both the ocular and cutaneous manifestations are generally mild and comparatively transient.

152. **Periodical Vomiting and Acetonuria in Children.** Bloch reports another case of this combination. His patient was a boy of about 3 much depressed by the periodical vomiting. The odor of acetone permeated the air of the room. He had seven attacks of the recurring vomiting, each accompanied by much acetonuria, during the two years afterward, but then he seemed to outgrow the tendency and is now an apparently healthy child. Adenoid vegetations were removed in the interim.

154. See abstract 62 in The Journal, July 30, 1910, page 442.

Hygiea, Stockholm

June, LXXII, No. 6, pp. 593-704

155 Historical Sketch of Early Medical Education in Sweden (Några ord om den medicinska undervisningen vid universiteten i Uppsala och Lund under 16- och 1700-talet.) E. Welander.
156 *Further Experience with the Two-Route Method of Treating Tuberculosis and Lupus. (Ytterligare fall af tuberkulos och lupus i de öfre luftvägarna, behandlade med NaJ + O_3, samt redogörelse för metodens tillämpning och praktiska användning.) S. A. Pfannenstill.
157 Idiosyncrasy to Milk in Children. (Till frågan om orsakerna till komjölkens mindervärdighet som uppfödningsmedel åt späda barn.) W. Wernstedt.
158 Atherosclerosis in Youth of 17 with Pulmonary Tuberculosis and Chronic Nephritis. M. Simon.
159 Case of Mesenteric Cyst. (Cystis chylosa mesenterii ilei.) K. Belfrage.
160 Case of Fatal Heat Stroke. (Om ett fall af s. k. värmeslag med dödlig utgång.) V. Asklin.

156. See abstract of previous communication in The Journal, July 16, 1910, page 264.

Nordiskt Medicinskt Arkiv, Stockholm

XLII, Internal Medicine, Nos. 3-4. Last indexed Feb. 19, p. 633

161 Case of Syndrome Probably Resulting from Lesion in the Petrous Portion of the Temporal Bone Extending from the Geniculum of the Facial Nerve into the Carotid Canal. (Syndrom von Spasmus, Parese und Neuralgia facialis, mit Hemiatrophia, okulären und anderartigen sympatischen Symptomen verbunden.) G. Söderbergh.
162 *Primary Liver Cancer. (Genese des Leberkrebses.) S. A. Pfannenstill and E. Sjövall.
163 Trigeminal Tumor with Cerebellopontine-Angle Symptoms. (Fall von Trigeminustumor mit Symptomen vom Kleinhirnbrückenwinkel, nebst einigen Bemerkungen über die sogenannte cerebellare Ataxie.) G. Söderbergh.
164 Experimental Adaptation of a Streptococcus Strain to the Subcutaneous Lymph Glands in Rabbits. G. Forssner.
165 Case of Internal Rupture of the Stomach. (Fall innerer Magenruptur.) J. Tillgren.

XLII, Surgical Section, No. 3. Last indexed April 2, p. 1179

166 *Fulguration in 32 Cases of Cancer. (Ueber die im Seraphimerlazarett bisher gewonnenen klinischen Erfahrungen in Bezug auf die Keating-Hart'sche Behandlung maligner Tumoren oder die sog. Fulguration.) J. Berg.
167 *Tuberculosis of the Neck of the Femur in Children and Its Relation to Coxitis. (Die Tuberkulose des Collum femoris im Kindesalter und ihre Beziehungen zur Hüftgelenkentzündung.) H. Waldenström.

162. **Liver Cancer.**—In the first case described a factory girl of 16 presented the typical syndrome of Banti's disease including great enlargement of the spleen, anemia, cirrhosis of the liver, jaundice, ascites and hemorrhages. The disease commenced with a sudden onset with pains in the epigastrium. Autopsy three years later revealed an unsuspected primary cancer in the liver. In another case the primary cancer in the liver occurred in a girl of 14 with symptoms for only a few months. There was also in this case chronic hyperplasia of the spleen and general anemia with slight ascites, but no traces of cirrhosis in the liver. The third patient was a man of 49, and the liver cancer was accompanied by brownish discoloration of most of the viscera. The three cases described indicate that irritation of the parenchyma is an important factor in the origin of cancer as also of cirrhosis of the liver.

166. **Fulguration in Cancer.**—Berg found that an incomplete operation supplemented by fulguration by the Keating-Hart method was followed by local healing and general improvement in certain cases while in others it seemed to promote the malignant growth. He would restrict fulguration to cases in which the operation is necessarily incomplete, and then apply it only after energetic Roentgen or radium treatment. His conclusions are based on 32 cases, which are described in detail.

167. **Tuberculosis of the Neck of the Femur.**—Waldenström found a focus in the neck of the femur in 21 of his 80 cases of tuberculous hip joint disease, and advocates excision of the focus in the early cases. If the lesion is isolated the patient is sound again the moment the trochanter has healed. If there is concomitant synovitis, this is left to heal under conservative measures which may require a long time but finally result in a well functioning hip joint. He gives an illustrated description of his technic for prophylactic extracapsular excision of the focus. The trochanter and a small piece of the shaft are sawed off and the flap turned back, permitting access to the focus in the neck. A disk of rubber tissue larger than the wound with a hollow metal cylinder fitted in the middle made with a screw-thread outside, is then fitted into the focus in the bone and through this cylinder the focus is curetted and cleansed, the rubber pressed firm against the sawed surface of the bone, and thus preventing all contact with infectious matter. The focus is then filled with iodoformed glycerin, the trochanter replaced and sutured. The tuberculin test is very important for the early diagnosis of the lesion, and especially for differentiation between the synovial and bone forms of the affection. If the child ceases to limp after a week or two, although it is still up and about, the trouble is probably not tuberculous. If the limping continues for two or three weeks, a Roentgen-ray examination should be made. Limping, atrophy of the muscle and spontaneous intermittent pain in the upper, inner part of the knee or hip joint with a localized pain on deep pressure anywhere on the bone, speak strongly in favor of an isolated focus in the bone, but if there is pain on pressure anywhere over the capsule and interference with the movability of the hip joint, synovitis should be suspected. If there is only local pain at a certain point in the bone but not over the entire capsule and without impairment of the movements of the joint, synovitis can be excluded. In conclusion Waldenström mentions that he induced teachers of the public schools to watch for limping among the pupils and obtained records of 296 limping children among 20,000 school children. He was able to examine personally 258. A focus in the neck of the femur was found in only 2, tuberculous coxitis in 15, septic coxitis in 2, congenital dislocation of the hip joint in 13, spinal paralysis in 23 and Little's disease in 5. He ascribes the small number of cases of an isolated focus in the neck of the femur to the fact that the children were all older than the age at which this lesion generally develops, that is, under 5. The teachers, however, had their eyes opened to the importance of proper treatment of limping among their scholars, so that now they promptly send to the physician those that are found to be limping.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

A Text Book on the Therapeutic Action of Light. Including the Rho Rays, Solar and Violet Rays, Electric Arc Light, The Light Cabinet. By Corydon E. Rogers, M.D. Cloth. Price, $3.50. Pp. 323, with illustrations. New York: C. E. Rogers, 382 Second Avenue, (1910).

The Practitioner's Case-Book. For Recording and Preserving Clinical Histories. Prepared and Arranged by the Editorial Staff of the Interstate Medical Journal. Cloth. Price, $2. Pp. 286, with 80 Anatomic Charts. St. Louis: Interstate Medical Journal Co., 1910.

Fourth Annual Report of the American Oncologic Hospital for the Study and Treatment of Cancer and Other Tumors. Forty-fifth and Chestnut Streets, Philadelphia, Pa. For the Year Ending Dec. 31, 1908. Paper. Pp. 45, with illustrations. 1909.

Twenty-first Annual Report of the Director of the Psychiatric Institute, 1908-1909. To the State Commission in Lunacy, State of New York [Adolf Meyer, Director, Pathological Institute, Ward's Island, New York]. Paper. Pp. 131. 1910.

Twenty-fifth Annual Report of the State Board of Health of the State of Rhode Island. For the Year Ending Dec. 31, 1902. Including the Report on the Registration of Births, Marriages and Deaths in 1901. Cloth. Pp. 332. 1910.

La Greffe Ovarienne: Historique, Résultats Cliniques et Thérapeutiques. Par le Docteur Ivan Scheurer. Paper. Price 4.50 francs. Pp. 182, with 9 illustrations. Paris: G. Steinheil, 2, rue Casimir-Delavigne, 1910.

Dyspepsia: Its Varieties and Treatment. By W. Soltau Fenwick, M.D., Doctor of Medicine of the University of Strassburg. Cloth. Price, $3 net. Pp. 485, with illustrations. Philadelphia: W. B. Saunders Co., 1910.

Praktische Winke für die chlorarme Ernährung. Von Dr. H. Strauss, Dirigierender Arzt der inneren Abteilung des Jüdischen Krankenhauses in Berlin. Paper. Price, 1 mark. Pp. 47. Berlin: S. Karger, 1910.

Report of the Seventy-ninth Meeting of the British Association for the Advancement of Science. Winnipeg, Aug. 25-Sept. 1, 1909. Cloth. Pp. 933. London: John Murray, Albemarle Street, 1910.

Handbuch der Biochemie des Menschen und der Tiere. Von Dr. Carl Oppenheimer in Berlin. Installment 25. Paper. Price, 5 marks. Pp. 240. Jena: Gustav Fischer, 1910.

Annual Report of the Brockton Hospital Company. For the Year 1909. Fourteenth Year. Paper. Pp. 69.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

Vol. LV, No. 7 Chicago, Illinois August 13, 1910

VISUAL REQUIREMENT IN THE PUBLIC SERVICES OF THE UNITED STATES *

WILLIAM CAMPBELL POSEY, M.D.
PHILADELPHIA

I invite your attention to the consideration of the visual standards in the public services of the United States, the subject concerning which I have chosen to address you this afternoon. It occurred to me that it might be well to collate all the laws which the government has enacted regarding the visual requirements of those engaged in its public services. I was aware that this information had never been collected and placed in a readily accessible form, as I had frequently myself had difficulty in ascertaining what the standards of vision were, which governed the admission of cadets into our naval and military academies, or regulated the granting of licenses to pilots.

With this idea in mind, and with the intention of laying the entire subject before the Section at this meeting, I devoted myself to the acquisition of as much information regarding the matter as was possible, and in addition to studying the conditions at home, communicated with foreign governments through the cooperation of our embassies, and obtained from Great Britain, Germany and France, the visual standards which these countries enforce in their various services.

With the data of these investigations at hand and with all the information on the subject which I could command, I determined before proposing any modifications or changes in existing standards to endeavor to elicit the aid and cooperation of the officers of the various branches of the public services themselves, realizing that while we, as practicing and scientific ophthalmologists, might be more familiar with certain phases of the subject, they for their part, by virtue of long experience, were better fitted than we to decide on certain points. With this end in view, I had an interview with the Surgeon-General of the Army, Dr. George H. Torney, and was much pleased to have not only his entire approval of my plan, but also his offer of full cooperation. Indeed, he suggested that I proceed at once to draft a new series of visual requirements for the Army, and that this revision of the standards might be comprehensive and in a manner authoritative, he suggested that I associate with me the three ophthalmologic members of the Medical Reserve Corps of the Army, Drs. L. Webster Fox and George E. deSchweinitz, of Philadelphia, and Dr. Myles Standish, of Boston, nominating me also to a lieutenancy in the same Department. All three of these gentlemen expressing their willingness to cooperate, the Philadelphia members, Drs. Fox, de Schweinitz and myself, invited a number of army officers who were resident in Philadelphia at the time, and several prominent members of the Pennsylvania National Guard to meet us, for the purpose of obtaining from them their ideas regarding the degree of vision which was necessary for the proper performance of the duties of a soldier or officer in the various fields of army activity. The demands on sight in each corps of the army were considered very carefully and the views of all of the gentlemen present, who represented nearly all the departments of the army, were carefully noted.

The various communications on the subject which had been addressed to the War Department from time to time by officers and surgeons of the army, relative to vision were also studied, and mention must here be made of the indebtedness of the commission to the admirable report[1] of Lieut. Col. J. M. Banister, and Major H. A. Shaw, made in October, 1909, from which much valuable information was obtained regarding the degree of vision necessary for the enlisted man.

The visual standards in operation in the armies of Great Britain, Germany and France were next studied and consideration given to the probable reasons for their variations from our standards. With this information drawn from such wide and varied sources at hand, the commission drafted a series of requirements of its own. These have received the approval of the Surgeon-General of the Army and will shortly be submitted by him to the general staff for adoption.

PRESENT REQUIREMENTS IN THE ARMY

The present requirements, with dates of adoption for the various corps and departments attached are as follows:

U. S. MILITARY ACADEMY—ADMISSION

"Vision, as determined by the official test types, must not fall below 20/40 in either eye, and not below 20/20 unless the defect is a simple refractive error not hyperopic, is not due to ocular disease, and is entirely corrected by proper glasses.

"In the record of all examinations, the acuity of vision without glasses, and also with glasses when the acuity is less than 20/20, will be given for each eye separately; in the latter case the correction will also be noted.

"Hyperopia requiring any spherical correction, anisometropia, squint or muscular insufficiency if marked, are causes for rejection.

"Color blindness, red, green or violet, is cause for rejection."

(G. O. 176, '06.)

" . . . . *In the examination of cadets*, except those on probation, discharge will not be recommended except for some cause which disqualifies for the duties of a cadet or is likely in the future to impair his efficiency as an officer of the Army.

---

* Chairman's address before the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, St. Louis, June 7-10, 1910.

* The length of this address made necessary its abbreviation in The Journal. The introductory remarks are omitted, in which Dr. Posey commented on some of the features of the program for this session. Some of the details of the descriptions of various visual tests are also omitted further on in the article. The complete text appears in the Transactions of the Section and in the author's reprints.

[1] Circular No. 5, War Dept., Washington, Jan. 25, 1908.

Defects of vision, however, must in all cases be entirely corrected by glasses." G. O. 176, '06.

SECOND LIEUTENANT FROM CIVIL LIFE

The visual requirements are satisfied by a candidate who has "20/40 in either eye, or who is not color blind for red, green or violet." G. O. 59, '08.

MEDICAL CORPS

"Errors of refraction, if not below 20/40 in either eye, are not cause for rejection, provided they are not accompanied by ocular disease and are entirely corrected by appropriate glasses."

HOSPITAL CORPS

"Applicants may be accepted with a vision of 20/70 in either eye correctible to 20/40 with glasses, provided that no organic disease exists in either eye." G. O. 256, '07.

ENLISTED MEN OF THE LINE

Enlisted men of the line of the Army and of the Engineer and Signal Corps, a minimum of 20/40 for the better eye, and of 20/100 for the poorer, provided that no organic disease exists in either eye.

Enlisted men of the Ordinance, Subsistence and Quartermaster's Departments and for the Hospital Corps a minimum of 20/70 in each eye correctible to 20/40 with lenses, provided that no organic disease exists in either eye.

Recruits may be accepted for the line of the Army when unable with the better eye to recognize all of the letters on the 20/40 line, provided that they may be able to read some of the letters on the 20/30 line. Circulars 4 and 5, 1908

Reference to the "better eye" in the preceding requirements indicates the right eye, it having been determined that shooting from the left shoulder is undesirable.

PROPOSED REQUIREMENTS

The proposed requirements which have been presented by the commission appointed by General Torney are as follows:

I. REQUIREMENTS IN THE U. S. MILITARY ACADEMY

For Entrance.—A minimum of 6/6 vision in each eye. If hypermetropia be present, as detected by the test lenses, a manifest of more than 1 D. will exclude. The muscle error at 6 meters shall not exceed a hyperphoria of 2°, an exophoria of 5°, or an esophoria of 8°. Color-blindness, red, green or violet, is cause for rejection.

For Graduation.—A minimum of 6/12 vision in one eye and and of 6/18 in the other, but capable of being corrected to 6/6 in each eye by proper lenses, is requisite.

ADDENDA

Examination shall be made of the eyes of all cadets at the commencement of each academic year and if at any time during the course vision is found to have deteriorated to a degree greater than is required at graduation, the cadet shall be dropped. When a refraction error exists, cadets shall be commanded to wear the glasses prescribed for them precisely as directed by the medical officer in charge.

II. SECOND LIEUTENANT FROM CIVIL LIFE

A minimum of 6/12 in one eye, and of 6/18 in the other, capable of correction in each to 6/6, and a normal color sense are requisite. The muscle error at 6 meters shall not exceed a hyperphoria of 2°, an exophoria of 5°, or an esophoria of 8°.

III. FOR PROMOTION

For advancement through the various grades short of that of major, uncorrected vision must equal at least 6/24 in one eye and 6/36 in the other, and corrected vision, 6/6 in one eye and 6/12 in the other. For promotion to the rank of major and all higher grades no definite visual standard is required. The eyes, however, shall be carefully examined in each case and if in the opinion of the Examining Board their condition be such that they render the performance of the military duties peculiar to each rank impossible, the officer shall be recommended for retirement.

IV. MEDICAL CORPS

For Entrance.—A minimum of 6/18 is requisite in each eye, which is capable of improvement to 6/6.

For Promotion.—Uncorrected vision shall not fall below 6/30 in one eye and 6/60 in the other, and corrected vision shall equal 6/6 in one eye.

V. HOSPITAL CORPS

For entrance and promotion, a minimum of 6/21 is requisite in either eye, which is capable of improvement to 6/6 in one eye and at least 6/12 in the other.

VI. ENLISTED MEN OF THE LINE OF THE ARMY AND OF THE ENGINEER AND SIGNAL CORPS

A minimum of 6/12 for the better eye and of 6/30 for the poorer is requisite.

VII. ENLISTED MEN OF THE ORDNANCE, SUBSISTENCE AND QUARTERMASTER'S DEPARTMENTS AND OF THE HOSPITAL CORPS

A minimum of 6/21 for the better eye, and 6/30 for the poorer is requisite, correctable to 6/6 and 6/12, respectively.

OTHER CAUSES FOR REJECTION

Apart from the visual standards which have just been described, and the restrictions as to muscle error and defects in the color-sense imposed in certain branches of the service, the presence of any structural changes or inflammatory conditions of the eyeball or its adnexa, such as might lead to impairment of vision later, are causes for rejection in all departments of the Army. Candidates whose eyes present merely the results of former inflammatory processes, may be accepted, provided the eyes are entirely free from inflammation at the time of the examination, and that they possess the necessary degree of vision, and that the sequelæ of the previous inflammation have entailed no serious impairment in the structure of the eye or its adnexa.

DIRECTIONS FOR CARRYING OUT THE TESTS

In testing the degree of visual acuity and of the balance of the extraocular muscle, the candidate must be seated exactly at 6 meters from the charts and the light used in the muscle test, and this distance must never be varied. (Six meters shall be regarded as equivalent to 20 feet.)

For purposes of uniformity and to guard against the possibility of any deception on the part of the candidates, all tests shall be made with the standard charts issued by the department. These shall be exhibited to the candidate in a good natural or artificial light at a height of 4 or 5 feet from the ground. In the tests made at the Military Academy, the charts shall be illuminated by the Williams battery of electric globes, with daylight excluded from the room.

Each eye shall be tested separately and the examiner must exercise the greatest caution that the eye which is not under examination shall be properly excluded. During the performance of the test the lids must remain naturally open, squinting being prohibited. In the event that the candidate is unable to read all the letters on the line designated as his minimum vision, he will be passed, provided he is able to read three of the letters on the next smaller line with both eyes directed on the chart.

The manifest hypermetropia shall be detected by testing each eye separately, either by the so-called fogging system of first holding a + S. 3 D. or 4 D. lens before the eye and then gradually abstracting from its strength by holding — S. lenses before it until 6/6 vision is attained, or by beginning with a + S. 0.25 D. and gradually increasing the strength of the lens until the letters on the 6/6 line are no longer visible.

The muscles of candidates at the Military Academy and of second lieutenants from civil life shall be tested with the Maddox rod, and a set of prisms. Their color sense shall be ascertained by the tagged Holmgren worsted test of Williams.

L. Webster Fox,
George E. de Schweinitz,
Myles Standish,
William Campbell Posey, Chairman,
Lieutenants Medical Reserve Corps, Feb. 11, 1910

. . . . .

In our letter of explanation to the Surgeon-General, of the proposed standards and tests which we offered the commission wrote as follows:

The requirements at the Military Academy have been raised so that each candidate must have full visual acuity. This has been done for a variety of reasons. In the first place, it is believed that there will be no difficulty in obtaining a sufficient number of candidates from young men who possess full vision, as observation has shown that at least 65 per cent. of the young men who enter American colleges have normal sight in both eyes. If a lower degree of visual acuity is accepted, a number of candidates with myopia and astigmatism will be received into the department, whose sight will still further deteriorate under the strain of student life while they are in the Military Academy, as well as in the service later, as a consequence of the tax placed on the eyes by the increasing amount of study demanded of officers for promotion through the various grades. The elimination of candidates with high degrees of hypermetropia by the rejection of those possessing more than 1 D. of manifest hypermetropia, as well as of those with troublesome degrees of muscle errors, has been advised with a view to debarring from the service all who would be likely to suffer from eye-strain under the demands of prolonged study.

It has been deemed wise to establish a standard for graduation, in order that the department may have an authoritative basis for retiring a cadet when the eyes had deteriorated to such an extent that his usefulness as an officer might be curtailed, but the commission has purposely set the standard so low that only those whose eyes had deteriorated to an unusual degree would be debarred from graduation. It is believed that a minimum of 6/12 in one eye and of 6/18 in the other, capable of improvement in each eye to 6/6, will not exclude cadets who may develop the moderate amount of myopia which is natural at their age among all students employing their eyes under somewhat similar conditions.

It is advised that the medical officer in charge of the Academy should make ocular examinations of all the cadets at least once a year and should carefully test under atropin all those with symptoms of asthenopia or whose eyes manifest any tendency toward deterioration. Glasses should be worn constantly if judged necessary.

In order to avoid deception on the part of the candidates, it is recommended that the department prepare its own charts, on which such devices and letters may be figured as will not lend themselves to be easily learned by the candidates.

At West Point, where it is most desirable that all of the tests should be made under uniform conditions, a standard means of illuminating the test cards has been suggested, and the committee recommends that devised by Dr. Charles H. Williams, of Boston, for this purpose.

A candidate for a second lieutenancy from civil life is given the same visual requirements as obtain for graduates from the Military Academy.

Candidates for entrance into the Medical Corps are permitted to possess a somewhat lower degree of visual acuity than under the old standards, i. e., 6/18 instead of 6/12, while the same standard is maintained for the Hospital Corps, though improvement of the vision in one eye to normal is deemed requisite.

The former standard for enlisted men of the line of the Army has been maintained, as it is the opinion of the committee that while the possession of the minimum degree would be insufficient for sharpshooting and the performance of other duties which demand the sharpest vision, there would always be a sufficient number of candidates enlisting with normal vision from whom there would be no difficulty in securing soldiers who would be able to perform the duties demanding extraordinarily sharp vision.

It is not possible to dwell further at this time on the eyes of the soldier, but to those who may be surprised at the comparatively low standard which has been set for the enlisted man, it may be said that modern warfare has abolished in large measure the need of sharp vision, and that with the exception of sharpshooting, firing at the enemy is done in volleys at definite ranges, which is determined by the officers in charge and is irrespective of definite aim at any one object.

THE MERCANTILE MARINE PILOTS

There are two classes of pilots in the United States.

1. *Federal Pilots.*—Under this class is comprised masters, mates and pilots of all steam vessels and the masters of sail vessels of over 700 gross tons, and all other vessels of over one hundred gross tons carrying passengers for hire.

2. *State or Bar Pilots.*—These branch pilots, as they are frequently termed, are under state law or municipal regulation. They lie off the principal harbors and bring in and take out vessels in the foreign trade and in some states sail-vessels in the domestic or coasting trade. They are in no way amenable to the federal government, but are under the supervision of the pilot commissioners or bureaus of navigation of the various states.

FEDERAL PILOTS

According to act of Congress (Sections 4439, 4440, 4442 of the Revised Statutes of the United States), "No original license as master, mate, or pilot of any vessel propelled in whole or in part by steam, gas, fluid, naphtha, alco-vapor, electric, or other like motors, or master or mate of sail vessels, shall be granted except on the official certificate of a surgeon of the Public Health and Marine-Hospital Service, that the applicant is free from the defect known as color-blindness. No renewal of license shall be granted to any officer of the classes named who has not been previously examined and passed for color-blindness: *Provided, however,* That any person that received a license prior to the adoption of the rule demanding a visual examination may have such license renewed for daylight navigation only, provided there is no other bar to such renewal: *Provided, further,* That any person holding a license as mate on steamers navigating waters flowing into the Gulf of Mexico and their tributaries issued prior to 1905 may have such license renewed without being subjected to the examination for color blindness.

"Any person requiring examination for color-blindness who is living at a distance of 100 miles or more from a surgeon of the Public Health and Marine-Hospital Service may be examined for color blindness by any reputable physician; and the physician shall furnish a duplicate report of the examination made on the regulation blanks, one copy of which shall be furnished the applicant and the other sent to the local inspectors of steam vessels to whom the applicant shall apply for such original or renewal of license."

The first test for color-blindness in the U. S. Marine dated from an order from the Treasury Department to Supervising and Local Inspectors of Steam Vessels as early as 1880. The wording of the decree was as follows:

> By an amendment to Rule 47, Rules and Regulations of the Board of Supervising Inspectors, adopted at the twenty eighth session of the Board, recently held in this city (Washington), and which was approved by the Secretary of the Treasury Feb. 13, 1880, and promulgated in Department Circular No. 13, 1880, it was ordered that all persons applying for either a renewal of license, or an original license, as pilots on steam vessels, shall be required to undergo a visual examination, in order that it may be determined whether such person can properly distinguish the colored lights used as signals on steam vessels, and, in future, inspectors will issue pilots' licenses only on certificates of surgeons of the United States Marine-Hospital Service that applicants therefor fulfil all the requirements of the rule referred to.
>
> Under the provisions of Department Circular of June [illegible], 1879, surgeons of the Marine-Hospital Service [illegible] make such examinations free of expense [illegible] therefor.

In pursuance of this order the Marine-Hospital Service in 1903 enacted the following (paragraph 110).

> Whenever officially requested by the local inspectors of steam-vessels or other proper officials, commissioned officers will examine applicants for pilots' license as to sense of hear-

> ing, color perception and general visual capacity, and will give a certificate accordingly.

In Instructions Relative to Physical Examinations (paragraph 15) the following instructions are given:

> The eyesight will be tested by the test-types furnished by the Bureau, and the Holmgren worsted test will be employed in testing for color-sense. The test must be made for each eye separately.

LACK OF A FIXED STANDARD

It will be seen, from the foregoing that the federal government has recognized the importance of the color test for a considerable length of time and has enacted sufficient legislation to debar color-blind navigators from the command and piloting of many vessels. It has, however, failed to designate the degree of visual acuity which a candidate for a pilot's or officer's license must possess. The Marine-Hospital Corps, realizing that its officers who make the tests at the request of inspectors of the Department of Commerce and Labor, must have some standard to guide them in their examinations, established an unwritten requirement that vision shall not fall below 15/20 in each eye when tested separately. I have ascertained, however, by extensive inquiry, that many officers of the corps are unaware of the existence of this order, and that those who are cognizant of it do not always adhere to it with absolute literalness.

As at present constituted, the final decision in regard to the acceptance or rejection of a candidate does not reside with the officers of the Marine-Hospital Service, but with the local representatives of the Department of Commerce and Labor, the inspectors of steam-vessels of a port, the officers of the former corps merely transmitting the results of their examination to the inspectors, with a recommendation as to the candidate's fitness or unfitness for the position for which he is applying. The Department of Commerce and Labor having failed to establish a standard, the decision of the degree of vision a navigator must possess before he is granted a license depends entirely, therefore, on the judgment of the Marine-Hospital officer conducting the test, and the opinion of the local inspector.

From what has been said, it is apparent, I think, that the absence of any fixed standard of visual acuity to govern the tests made by the federal government is due to no fault of the Marine-Hospital Service and reflects in no way on the admirable and efficient conduct of that corps. The power to create standards for use in these tests resides entirely in the Department of Commerce and Labor, and I have no doubt but that the present lack of a standard is due to the fact that the officers of that department have never had their attention called to the matter and have not appreciated the actual condition of affairs.

STANDARDS PREPARED FOR SUBMISSION TO THE DEPARTMENT OF COMMERCE AND LABOR

With a view to correcting the evil and to obtaining if possible, a fixed standard of vision on which to base the granting of licenses to navigators under federal law, I visited Washington some months ago and took up the question with General Wyman. This distinguished officer received my overtures with the greatest friendliness and alacrity, and suggested that I submit my ideas of proper standards to him, that he might present them to the Department of Commerce and Labor for consideration and possible adoption.

As I have been much interested in the examination of pilots' eyes for many years, and as official oculist to the Board of Pilot Commissioners of Pennsylvania had just finished testing the eyes of all the pilots of that state under a new law which the commissioners had put in operation at my instance some months before and which had proved most satisfactory in its operation to commissioners and pilots alike, I ventured to accede to General Wyman's request and to draft a series of standards which were framed along the same lines, to govern the examinations of federal pilots. The standards which have been prepared for the consideration of the Department of Commerce and Labor to govern the examination of federal pilots by the Marine-Hospital Service are as follows:

Normal color-sense is requisite. Any imperfection disqualifies.

A candidate must have at least 20/40 uncorrected vision in one eye and 20/70 in the other, and corrected vision must equal 20/20 in one eye and at least 20/40 in the other.

All pilots under 50 years of age must submit to reexamination every five years; those over 50 years every two years.

In the event that the examiner has reason to suppose that visual acuity or color-sense may rapidly deteriorate, he shall issue a license only for as long a time as he considers the visual standards will be maintained, the candidate being ordered to report for reexamination at the end of that period.

DIRECTIONS TO BE OBSERVED IN MAKING THE TEST FOR VISUAL ACUITY

The examiner will observe that the Snellen charts used in the tests shall be exhibited to the candidate at a height of 4 or 5 feet from the ground and at a distance of 20 feet exactly, and this distance must be maintained throughout the test. A good light must fall on the chart, and during the tests charts with different lettering should be employed in such a manner that the candidate cannot become familiar with the letters on the various lines. Each eye should be tested separately by carefully excluding the eye which is not being examined by holding a card before it. No pressure should be exerted nor should the excluded eye be closed.

As soon as the examiner has ascertained the lowest line which the candidate has been able to read, the vision shall be recorded in the form of a fraction, the numerator of which will represent the distance at which the test was made, i. e., 20 feet, the denominator the number on the chart opposite the last line which was read. The fellow eye is now similarly tested. During the performance of the test, the lids must remain naturally open, squinting being prohibited. In the event that the candidate is unable to read all the letters on the line designated as his minimum vision, he will be passed, provided he is able to read three of the letters on the next smallest line with both eyes directed on the chart.

DIRECTIONS TO BE OBSERVED IN MAKING THE TESTS FOR COLOR-SENSE

The wools should be carefully kept in the boxes provided for the purpose, except when in use in examinations, in order that they may not become faded or dirty.

The test should be made only by daylight and never when the weather is very dark or foggy.

A properly assorted set of wools consists of 3 large test skeins, of a light pure green, rose pink and red, respectively, and of 150 small skeins of the following colors: red, orange, yellow, yellow green, pure green, blue green, blue, violet, purple, pink, brown and gray. In addition, there are several shades of each color and a number of gradations of each tint from the deepest to the lightest.

Test 1.—After the entire set of wools has been spread out on a table before the candidate, the examiner places the large green test skein at a distance of about two feet from the other colors, and asks the candidate to select from the heap of colors all that look to him like this test skein, and place them beside it. No names should be mentioned in connection with any color in the above worsted test, which should be based only on a comparison of colors. The candidate should be made to understand that he is not expected to find an exact match for the test skein, but that he is to choose all the colors that appear to him of the same general color as the test skein, both those that are lighter and those that are darker in shade. If he does not easily understand what is wanted, let the examiner himself select the colors; then, having returned them to the general heap and mixed them thoroughly with the rest of the colors, let him call on the candidate being examined to repeat the selection. This demonstration will not enable a candidate who is defective in his color-perception to select the colors correctly, and he may pick out, as looking to him like the large test skein, some greens and also some of the gray or brown confusion colors, which will appear to him of the same general color as the test skein only varying from it in shade.

A person with a normal color-sense will pick out the lighter and darker shades of green rapidly and without hesitation. He may, perhaps, include in his choice a few green skeins inclining to yellow or blue; but this is no evidence of color-blindness, but rather of a lack of practice with colors. The completely color-blind, whether to red or green, will select, with or without greens, some confusion colors—grays, drabs, stone-colors, fawns, pinks or yellows. The incompletely color-blind, or those with a feeble chromatic sense, will add to the selection of greens one or more light fawns or grays: or they may pick out a skein, hesitate, add it to the greens and then withdraw it, and so on.

When confusion colors have been selected, we know that the candidate is either completely or incompletely color-blind. In order to determine its nature and degree we employ a second test.

Test 2.—Return all the colors to the heap and mix them together. Place the rose test skein apart from the rest, and have the candidate select, as before, all the colors that look to him like this skein.

The color-blind will always select deeper colors, i. e., either the light or deep shades of blue and violet. The completely red-blind will select blue or violet, either with or without purple. The completely green-blind will choose green or gray either with or without purple.

A candidate who is proved color-blind by the first test is only incompletely color-blind if he matches the rose with deeper purples alone.

Test 3.—This test is merely supplementary to the two preceding and consists in separating the red skein from the rest of the wools. The red-blind will select, besides the red, green and brown shades darker than the red. The green-blind will select green and brown shades lighter than the red. Only persons with marked color-blindness manifest their defect with this test.

Williams Lantern Test.—Turn the rheostat so as to have a medium illumination from the two incandescent lights in the lantern, or, if an electric current is not available, light both lamps, taking care not to turn them up so high as to smoke, then place the lantern 20 feet from the person to be examined about on a level with his head, the side of the lantern carrying the disc with the colored glasses directly toward him, and darken the room. Place the shutters so that three lights are shown at one time through either the largest or the medium openings, turn the disc slowly, and have the person examined call aloud the names of the colors as shown, designating them thus, "middle red, right red, left green," etc. Under each color is a distinguishing number which is lighted at the same time as its color, and as the examination proceeds the examiner will note the number of the color shown and the name given to it.

After all the combinations with three colors at a time have been shown, change the shutters so as to show one or two lights at a time and revolve the disc again, noting the results as before.

Calling a green light blue, or *vice versa*, calling a yellow red, or, with the smallest opening failing to see the color of No. 7 (cobalt blue) which transmits less light than some of the others, will not be considered serious mistakes, but the confusion of red or green with each other will reject.

UNLICENSED PILOTS

According to the present law, there are a large number of vessels of considerable tonnage whose masters need not necessarily take out a license. Thus, masters of yachts and of sailing vessels under 700 gross tons and of motor vessels of 15 gross tons or less, and motor vessels, irrespective of tonnage, if not engaged in transporting freight or passengers, are not required to have their eyes tested. As a consequence, there are numerous craft on our waterways which are a continual menace to the safety of navigation, for surely a color-blind pilot of a sailing vessel of less than 700 tons or of a yacht or a large motor boat may be as much a menace to safe navigation as one on a larger vessel! Quite apart from the perhaps comparatively insignificant loss of life and property which might follow an accident to a small vessel, it has not infrequently happened that large vessels have been sent to the bottom as a result of collision with smaller craft and hundreds of lives lost, and millions of dollars worth of property sacrificed by the carelessness or incompetence of the navigators of the smaller boat. As an instance of this may be mentioned the following disaster:

"Feb. 11, 1907: Schooner *Harry Knowlton*, 317 gross tons, bound from City Island, N. Y., to Everett, Mass., coal-laden, collided with and sunk passenger steamer *Larchmont*, en route from Providence, R. I., to New York, in Block Island Sound. Collision occurred about 10:30 p. m. Schooner abandoned. Crew saved. Of *Larchmont's* passengers, 89 (estimated) were lost; also 44 members of the crew. . . ."

The government would do well, it seems to me, if it extended its jurisdiction over all navigators of vessels of any appreciable size.

REVENUE CUTTER SERVICE

In addition to conducting the examinations for federal pilots, the Marine-Hospital Service performs the same duties in connection with the Revenue Cutter Service. This service includes officers, cadets and enlisted men. The present requirements demand normal vision without glasses and normal color perception, for cadets and seamen, but no mention is made of the requirements demanded for promotion or of the repetition of the test; the visual standard for the enlisted men between decks, who are mere firemen or stewards, without the need of sharp vision, are the same as those for the true seamen on deck.

LIFE-SAVING SERVICE

The Navy Department controls the examination also of the Coast Guards. This picked body of men are examined annually and the department demands that they possess normal color sense and 15/20 uncorrected vision in each eye.

COAST AND GEODETIC SURVEY

Candidates for the Coast and Geodetic Survey are also examined by the Marine Hospital Corps, but in this department the Department of Commerce and Labor, under whose secretary the Coast and Geodetic Survey is operated, has not established any definite standards. A recent letter directed to the acting superintendent of the Coast and Geodetic Survey regarding the visual test for candidates into their service, brought the following reply:

> When an eligible is certified to this office by the Civil Service Commission for a vacancy on the field force, his medical certificate is considered with the view of ascertaining whether he is physically able to stand the hardships and exposures incident to the field work of this survey. *There is no definite standard and each case is treated separately.* [Italics mine.—W. C. P.] Should there be any doubt as to whether a man is physically fit for our service, he will be required to stand a physical examination before an officer of the Public Health and Marine

Hospital Service. Such an examination would be in order to get exact data regarding the health of the applicant and the question of whether he was suitable for appointment to this survey would still be decided by this office. You will see from this that the Public Health and Marine-Hospital Service is called on more to give facts in any case than to make a decision.

CIVIL SERVICE COMMISSION

According to a ruling of the U. S. Civil Service Commission, applicants for appointment to positions controlled by that service may procure a medical certificate from any physician, but the applicant may be required to pass a physical examination before an officer of the Marine-Hospital Service before appointment. I have been unable to ascertain that this commission has established any definite physical standards, and infer that the Marine-Hospital officers consider each candidate with a view to his general fitness.

STATE OR BRANCH PILOTS

Under an Act of Congress, of Aug. 7, 1789, it is provided "that all pilots in the bays, inlets, rivers, harbors and ports of the United States shall continue to be regulated in conformity with the existing laws of the states, respectively, wherein such pilots may be, or with such laws as the states may respectively hereafter enact for the purpose, until further legislative provisions shall be made by Congress."

This law is still in force, and as has been already said, these state, bar or branch pilots lay off the principal harbors and bring in and take out vessels in the foreign trade and in some states sailing vessels in the domestic or coasting trade. These pilots are amenable to state law or municipal regulation, and are under the immediate supervision of a board of pilot commissioners, or bureau of navigation. This board or bureau has the power to regulate the service of the pilots as it deems proper. The pilots themselves, however, determine in large measure their membership, recruiting their members very often from their own families, and have formed themselves into associations or unions for their protection and benefit. In popular phraseology, they form "a close corporation," and I have been told by a reliable informant that they employ a skilled lobbyist in Washington, who keeps jealous watch that none of their ancient rights or prerogatives shall be curtailed.

The federal government exercises absolutely no control over them, and there is no record in Washington of the requirements which the various states demand of them.

Being unable to obtain from the central government any information regarding the visual tests which state pilots must submit to before they are given their licenses, I addressed a letter requesting this information to the president of the board of pilot commissioners at each of our principal seaports. The answers received at once revealed that with but few exceptions the commissioners in the various states had failed to enact any definite visual requirements, but that the question of the sight of pilots was left to the pilots themselves. As a rule each pilot must serve an apprenticeship of six years under the personal observation of the active pilots, and it is claimed by the pilot associations of most of the states that by this method all candidates with defects of vision are eliminated, before they are recommended for appointment. In some of the states, and this is particularly true of those on the Pacific slope, the pilot commissioners refer the candidates to the Marine-Hospital Service and each pilot is required to present a certificate that he has passed the examination of that department. It is probable that the officers in charge of these tests demand the same requirements as they do of federal pilots.

The important harbor of New York is under the control of both New York and New Jersey pilots. In order that the Section may be informed as to the precise manner in which the pilots for that busy harbor are examined, I shall read the very lucid replies which were sent me by Mr. D. A. Nash, the Secretary of the Board of Commissioners of Pilots of New York:

> In examining pilots for eyesight (which is done at least once each year and oftener if occasion seems to call for it) we use the regular test cards of printed letters prepared and used by opticians for that purpose. We also use the buoys in the upper bay (of which a number are visible from this office) and for readiness or quickness of observation the numbers of passing elevated railroad cars, etc., the examiner using a binocular glass to verify the answers where necessary.
>
> For colors we use the system of worsteds as recommended in the work of B. Joy Jeffries.[1]
>
> I may add that owing to the custom in vogue here of choosing the candidates for apprenticeship from the young men already working as hands on the pilot-boats, it is not often that a color-blind person or one who is below the normal in eyesight reaches the point of applying for registry as apprentice. They are eliminated before that time arrives.
>
> We are not aware of any special tests demanded by the State of New York.
>
> The only provision of law known to the board relating to the examinations of the eyes of the New York State bar pilots (whom alone we have to deal with) is by-law No. 12, d, as follows:
>
> By Law 12, d.—"Every candidate shall be examined in the presence of the board as to color-blindness and as to his general eyesight and hearing, and before each renewal of his license to pilot he shall undergo a like examination by the secretary. A pilot considered deficient or doubtful by the secretary shall be referred to the board for final action. A person held to be deficient on the above points by the board shall not be entitled to receive a license."
>
> There are no special oculists who test the eyes of the pilots. If a pilot is not satisfied with the decision of the board, he may go to an oculist of his own choice or to the U. S. Examiners for Steamboat Pilots and submit their report to the board.
>
> The final decision rests with the board, who may or may not agree with the findings of these supplemental examinations.

It will be noted that no definite standard of vision is required and that the tests are made by laymen, the services of an oculist being only resorted to in case of dissatisfaction from an adverse ruling.

The tests for the harbor of Boston are made by the Pilot Commissioners themselves, under the following requirements: The candidates must have "good sight for distances, and must be able to tell the colors of light at a distance."

The Delaware River is under the control of Pennsylvania and Delaware pilots. Until a few months ago the Commissioners of Navigation of Pennsylvania submitted candidates to examination by an oculist, appointed by them, and required that each applicant for a license possessed "good vision and normal color perception." As far as I can learn, therefore, the Pilot Commissioners of Pennsylvania were the first to demand that the examination of the pilots under their supervision be conducted by a competent oculist. The standards, however, were faulty, for the requirement of mere "good vision" was too vague and placed too much responsibility on the personal judgment of the examining oculist. It must be said, however, to the credit of the commissioners, that as soon as their attention was called to the defect, they speedily determined to right it, and asked me to prepare what I considered to be a proper and adequate standard, requesting also that a standard for hearing be added to complete the examination of the special senses.

---

[1] Houghton, Mifflin and Co., Boston, Mass., publishers.

The following report was accordingly presented to them in February of this year and adopted by them shortly afterward. It is only fair to say that while I personally assumed the responsibility of fixing the standards which are embodied in the report, I took the precaution of submitting them to Dr. Alexander Duane, of New York, and Dr. Charles H. Williams, of Boston, from both of whom I received valuable suggestions. The requirements which follow represent, therefore, in a measure the views of both of these gentlemen as well as my own, and I wish to take this opportunity of publicly acknowledging my indebtedness to them.

VISUAL REQUIREMENTS FOR PILOTS

For apprentices and all candidates for pilots' licenses, normal color-sense is requisite; any imperfection disqualifies.

A candidate must be able to read 6/6 Snellen with each eye separately and without glasses. The eyes must be free from disease and from appreciable muscle error.

All pilots under 50 years of age must submit to reexamination every three years; those over 50 years, every year. More frequent examinations shall be made by order of the Commissioners of Navigation in all cases in which there is a tendency to deterioration in sight or hearing.

If at any of these later tests, vision has deteriorated to such a degree that uncorrected vision does not equal at least 6/9 in one eye and 6/24 in the other, and corrected vision 6/6 in one eye and at least 6/9 in the other, or if there be any imperfection in the color-sense, the license shall be revoked until vision and color-sense have attained the above standard.

REMARKS

All tests shall be made by a competent oculist, acting under appointment of the Commissioners of Navigation. A complete record of each examination shall be kept on file at their office, and a copy shall be given to the person examined if he so desires.

In the event that the official oculist of the board has judged a candidate or pilot unfit for the duties of pilot by reason of defective sight or hearing the candidate or pilot may have the right to submit himself for examination to another oculist not connected with the board, and in the event that the opinion of this oculist differs from that of the official oculist, the board shall request the two oculists just mentioned to select a third who shall be acceptable to the board. A third and final test shall then be made in the presence of representatives of the board, and the decision arrived at, at this test and conference shall be final.

The examiner will observe that the Snellen charts used in the tests shall be exhibited to the candidates at 6 meters exactly, that a good light is thrown on the card and that "care be exercised that each eye is tested separately. During the tests, charts with different lettering shall be employed in such a manner that the candidate cannot become familiar with the letters on the various lines." The color-sense shall be tested with tagged Holmgren's wools and also by a Williams lantern. A selection of confusion colors with the true colors when tested with the green test skein or with the rose test skein of the Holmgren worsteds, or a confusion of red and green with the worsteds or with the lantern, will reject.

DIRECTIONS TO BE OBSERVED IN MAKING THE TESTS FOR COLOR SENSE

1. Holmgren Colored Worsted Test.—Place the whole number of colored worsteds on a table in good clear daylight. Put the green test skein at a distance of about two feet from the other colors and ask the man to be examined to select from the colors all that look to him like this test skein and place them beside it. Have him understand that he is not expected to find an exact match for the test skein, but that he is to choose all the colors that appear to him of the same general color as the test skein, both those that are lighter and those that are darker in shade. If he does not easily understand what is wanted, let the examiner himself select the colors; then, having returned them to the general heap and mixed them thoroughly, let him call on the person examined to repeat the selection. This demonstration will not enable a man who is defective in his color perception to select the colors correctly, and he may pick out, as looking to him like the test skein, some of the greens and also some of the gray or brown confusion colors.

Note the numbers on the tags of the skeins selected as similar to this green test skein, and also whether the selection is prompt or hesitating.

Return all the colors to the heap, mix them together, then place the rose test skein apart from the rest, and have the person examined select as before all the colors that look to him like it, and note the numbers on the skeins so selected.

No names should be used in connection with this worsted test, which should be based simply on a comparison of colors.

2. Williams Lantern Test.—Turn the rheostat so as to have a medium illumination from the two incandescent lights in the lantern, or, if an electric current is not available, light both lamps, taking care not to turn them up so high as to smoke, then place the lantern 20 feet from the person to be examined about on a level with his head, the side of the lantern carrying the disc with the colored glasses facing directly toward him, and darken the room. Place the shutters so that three lights are shown at one time through either the largest or the medium openings, turn the disc slowly, and have the person examined call aloud the names of the colors as shown, designating them thus, "middle red, right red, left green," etc. Under each color is a distinguishing number which is lighted at the same time as its color, and as the examination proceeds the examiner will note the number of the color shown and the name given to it.

After all the combinations with three colors at a time have been shown, change the shutters so as to show one or two lights at a time and revolve the disc again, noting the results as before.

Calling a green light blue, or *vice versa*, calling a yellow red, or, with the smallest opening failing to see the color of No. 7 (cobalt blue) which transmits less light than some of the others, will not be considered serious mistakes, but the confusion of red and green with each other will reject.

STANDARD FOR HEARING

Words or numbers spoken by the examiner in an ordinary conversational tone of voice must be repeated correctly by the person examined standing with closed eyes 20 feet from the examiner. This degree of aural acuteness must be maintained not only at the initial test for candidates, but also at all subsequent ones.

DIRECTIONS TO BE OBSERVED IN MAKING THE TEST FOR HEARING

Have the room as quiet as possible, place the person to be examined at a distance of 20 feet from the examiner, with one ear toward him. Have the man close his eyes and put his finger over the further ear, then have him repeat aloud the words spoken by the examiner in a conversational tone and record the distance in feet at which this can be done correctly. Have him turn the other ear toward the examiner and repeat the test.

THE DEPARTMENT OF STATE

The following is an extract from information which has recently, i. e., May 4, 1910, been prepared for the guidance of those surgeons of the Army, Navy, or Public Health and Marine-Hospital Service, who are to conduct, when necessary, physical examinations of candidates for foreign service appointments.

Regarding the matter of vision it may be said that defective vision possible of correction by glasses and not due to ocular disease is not considered as physically disqualifying a candidate for appointment, although in the report of the examination note should be made of the character of the defect, if any, and of the possibility of and necessity for correction. If correction be found to be necessary, the Department of State will take the matter up with the candidate.

THE NAVY

Candidates for admission into the U. S. Naval Academy are required to have normal visual acuteness, i. e., 20/20 for each eye without the aid of glasses. A normal color sense is also requisite. On graduation a vision of 15/20 in each eye is requisite, capable of correction to 20/20, and freedom from ocular disease. To quote still further from a letter received a few weeks ago from Dr. C. F. Stokes, the Surgeon General of the Navy:

> A candidate for the Medical Corps, for civil engineer or for chaplain of the Navy must have 12/20 in each eye, capable of correction to 20/20, and be free from ocular disease.
>
> An applicant for the Pay Corps and the Naval Hospital Corps must have 15/20 in each eye and be free from ocular disease.
>
> For the Navy Nurse Corps (female) there are no specific requirements beyond what is the opinion of the examining surgeons necessary for the proper performance of work.
>
> For appointment as a commissioned officer in the Marine Corps, 18/20 in each eye is required, capable of correction to 20/20.
>
> The requirement for enlisted men in general is 15/20 in each eye. On subsequent enlistment and, in certain instances, on first enlistment, as in the clerical force (yeoman branch), this requirement is sometimes waived, providing there is no disease.
>
> For officers on promotion, the board must certify that the officer is able "to perform efficiently all of his duties at sea."
>
> A moderate error in refraction, if fully corrected by glasses and there is no ocular disease, does not necessarily reject in the upper grades. All candidates are examined for color-blindness before promotion, and defective color-sense is always a sufficient cause for rejection.
>
> Applicants for the position of gun-pointer (already enlisted) must have 20/15 with the right, or aiming eye, and a minimum of 20/20 with the other eye.

These, so far as I am aware, comprise the visual requirements which are in force in the public service of the United States, and with the exception of those projected for the Army and of those already adopted by the Navy, and the Department of State, I think it will be agreed that there is much need of elaboration and standardization. The requirements for pilots, both federal and state, are surely inadequate, and I am convinced myself that were the subject thoroughly investigated the loss in the past of many lives and of much property could be traced to faulty vision in pilots and navigating officers.

Anticipating some action by this Section on this question which is of such vital importance to the country, I have already done what I could to establish better standards, as you have heard. The Surgeon-General of the Marine-Hospital Service is endeavoring to have the Department of Commerce and Labor adopt the standards of which I have told you, and I have written to a prominent oculist in the largest port of each coast state, enclosing a copy of the Pennsylvania laws and urging the enforcement of similar laws by the commissioners of navigation in each state for the proper control of state pilots.

It will not be an easy matter, however, to influence legislation either in Washington or the various states; nor indeed do the standards whose adoption is urged cover the entire field of our public services. I would suggest, therefore, if it meet with the approval of the Section that a commission be appointed from its body, to cooperate with the Department of Commerce and Labor, and with the Marine-Hospital Corps, to establish proper standards and to devise proper tests in making the examinations, for the examination of the eyes of all candidates in their several departments, the duties of whose position demand sharp sight and healthy eyes. And in order that the purposes of this commission may be ratified and supported by the Association at large, I would advise that the representative of this Section in the House of Delegates be empowered to present the matter to that body for its official sanction.

2049 Chestnut Street.

THE RÔLE OF PATHOLOGY AND PHYSIOLOGY IN PREVENTIVE MEDICINE*

WALTER L. BIERRING, M.D.
IOWA CITY, IOWA

Preventive medicine, in the nature of things, may well be accepted as the criterion of the state of scientific medicine. That it is again coming into its logical place is due to the great progress which has been made during recent years in all branches of scientific medicine, and in this development the studies in pathology and physiology have been of fundamental nature.

In this symposium I take it that the part assigned to me is to refer in a concise way to the prominent facts contributed through the avenue of pathology and physiology which have influenced preventive medicine. I recognize that this will be largely a review of well-known facts, and I fear there will occasionally be some encroachment on the subjects treated in the other papers of the program.

In the memory of many now living, our conception of the nature of the disease has been revolutionized, and with the recognition that its ultimate processes, whether produced by external agents or the result of modifications in the normal metabolism, are chemicophysical, we have reached a standpoint from which to approach the problem of prevention and cure in a rational way.

TUBERCULOSIS

In no phase of preventive medicine has the knowledge of causative conditions been a greater factor than in the prophylactic control of tuberculosis, the real advance dating from the time when the etiology and infectivity of this disease were established.

It was an interesting fact that the true significance of the pathologic lesions and their infectivity were recognized long before the tubercle bacillus was demonstrated. Klencke in 1843 first demonstrated the infective nature of tubercle by producing general miliary tuberculosis in rabbits by inoculating "tubercle cells." The importance of his discovery was not recognized until in 1865, when Villemin by carefully controlled inoculation experiments on rabbits confirmed Klencke's views and demonstrated beyond doubt the infectiousness of tubercle by transmission from animal to animal.

Klebs in 1868 demonstrated by animal inoculation that the sputum of tuberculous patients contained an infective element which was capable of producing the disease in guinea-pigs. Chauveau in 1868 infected calves by feeding them bovine tuberculous masses. Gerlach in 1870 by ingestion experiments demonstrated the infectivity of milk from tuberculous cows. Tappeiner, in a series of experiments beginning in 1877, demonstrated beyond doubt the infectiousness of phthisical sputum by inhalation experiments. Giboux, in 1882, succeeded in infecting rabbits by confining them in boxes into which tuberculous patients had expectorated, thus demonstrating long before Flügge's classical experiments, the dangers of sprayed particles of sputum of phthisical patients.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Thus the infectiousness of tuberculous matter in man and cattle, the dangers of tuberculous sputum and milk, the identity of the different tuberculous lesions in man and animals, and the established value of animal inoculation as a diagnostic aid were fully known before the birth of bacteriology and before the epoch-making paper of Koch in 1882 announced the discovery of the tubercle bacillus.

Koch confirmed Cohnheim's views as to infectiousness being the best criterion of tuberculous disease, but the establishment of the value of the microscopic search for the tubercle bacillus in diagnosis placed the prophylaxis of tuberculosis on a scientific basis, and demonstrated wherein the sources of danger existed. Subsequently Cornet contributed his exhaustive experiments demonstrating the dangers of dried sputum, indicating one of the principal modes of infection to be by inhalation of dried particles of expectorated material contained in dust from rooms inhabited by tuberculous patients. Later Flügge proved the danger of droplet infection in the immediate neighborhood of such patients.

The entire system of hygienic care of sputum and other discharges has been built up on these results, and in this newer knowledge of tuberculosis the field of general sanitation has been greatly enlarged; the recognition of the widespread prevalence of the infection, the great frequency with which healed lesions were found, and the knowledge of the importance of the character of the tissue soil, led to the adoption of present day sanatorium, open air, and dietetic treatment with all their beneficent results.

Results are at all times most convincing, and in no way is this more clearly shown than in the decreased death-rate from tuberculosis during the past three decades. In England there has been a decrease of 50 per cent. since the discovery of the tubercle bacillus. In New York City during the past twenty years the reduction in the death-rate from pulmonary tuberculosis has been nearly 40 per cent. and in Prussia the death-rate has been notably decreased, being 50 per cent. less in 1903 than 1885. In Boston, during the last thirty-one years the diminution in death-rate from tuberculous disease approximated 55 per cent., a decrease representing in actual saving 11,112 lives. Thus has the sum of human happiness been advanced by this phase of scientific medicine.

TYPHOID—CHOLERA—DYSENTERY

A second interesting chapter in preventive medicine is presented by the studies on typhoid, cholera and dysentery.

Before any successful warfare can be waged against an infectious disease it is of the highest importance to know with precision the nature of the agent which produces the disease, how it invades the individual, what its method of action is, how it is excreted, and finally how it perpetuates itself outside the living body.

The aforenamed diseases are associated principally in their symptoms and pathology with the intestinal tract, and in a search for the causes of these diseases it was but natural that the study should focus itself on the rich bacterial flora of the intestines. While the specific micro-organism for each of them has been determined, it has not been possible to produce the typical clinical picture in the lower animal, so that in a sense there has been a break in the chain of evidence associating a micro-organism with the disease process. Aside from the influence on municipal hygiene and general sanitation, these studies have added to our knowledge in another direction of far reaching importance—in the discovery of the so-called Pfeiffer phenomenon.

In the early nineties Pfeiffer successfully produced a state of immunity in animals with typhoid bacilli and cholera vibrios in which they could stand, without symptoms, doses which at first would have proved fatal.

In further study he investigated the fate of cholera and typhoid germs introduced into the peritoneal cavity of immunized animals, the germs becoming clumped together and dissolved—the animal remaining in good health. This clumping, agglutination or dissolution, of disease germs under the influence of specific immune agents constitutes the Pfeiffer phenomenon, which in many ways has revolutionized our knowledge of infectious diseases.

A similar agglutination was observed in the serum of a sick human being, also likewise produced in a test-tube, and through the further elaboration by Grueber and Widal was brought forth the so-called Widal test, a diagnostic procedure most valuable in typhoid fever and many other diseases.

The importance of a specific reaction such as the agglutination phenomenon in the diagnosis of fevers with symptoms specially referable to the intestinal tract requiring the isolation of organisms from the stool, is apparent.

It is impossible to say how many lives are saved annually and how much disease and suffering are prevented through methods of diagnosis alone made possible by the discovery of Pfeiffer's phenomenon. Indirectly it has influenced the development of protective inoculation, as furthered by Haffkine in cholera, Shiga in dysentery, and Leishman and Chantemesse in typhoid fever.

The rôle of chronic typhoid carriers is now recognized as an important factor in maintaining typhoid infection in a community, and the knowledge that such individuals may exist in any community will strengthen to a very great extent the hands of the health officers in checking the ravages of the disease.

INSECT INFECTIONS

It was also in the study of this class of infections that the transmission of disease by means of insects was specially developed. Much evidence has been brought forward in recent years to show that flies are frequent carriers of typhoid infection, and there can be no question of the proof of the same.

Fisher estimates the [illegible] of life of typhoid bacilli in the bodies of flies as twenty-three days, and [illegible] that they can live for some days on the feet and legs of flies, illustrating that there are two ways of transmission—on the surface and within the body of the insect. During the Spanish-American War flies were important agents in the transmission of the disease, and since then a number of epidemics have been traced to this source.

Perhaps one of the most important contributions to modern scientific medicine is the demonstration of the mosquito as an intermediate host in the transmission of malaria and yellow fever. To do justice to this remarkable addition to our knowledge would mean a review of the wonderful accomplishments of preventive medicine in Cuba, South Africa, and other regions once veritable pest regions in the tropics.

To-day the Canal Zone of Panama, for years the grave-yard of the white man, has a death-rate as low as that of any city in the United States.

The problem of life in the tropics for the white man has been solved, since malaria and yellow fever may now be prevented by very simple measures. And these are all results of laboratory studies which have placed in our hands power for good never before wielded by man.

BIOLOGIC AND PHYSIOLOGIC STUDIES

In the diseases diphtheria and tetanus, a new problem is presented. While due to specific micro-organisms, special toxic products are generated, and by learning to cope successfully with these toxins by means of antitoxins, humanity has been greatly benefited. Both diphtheria and tetanus antitoxin sera are active prophylactic agents, while their curative virtues, especially the former, have robbed these diseases of much of their terrors. The use of specific antibacterial serums has thus far not been very promising except in the case of the serum of Flexner and Jobling for cerebrospinal fever, in which it has produced most beneficent results.

The use of bacterial vaccines has no such field of usefulness as the antitoxins just mentioned, either in a curative or prophylactic sense, yet there is reason to entertain a hopeful view as to the future, for the progress within the past ten years inspires the greatest confidence.

The principle of producing a protective immunity by means of vaccines consisting of an attenuated virus, as illustrated by smallpox vaccination, inspired the brilliant achievements of Pasteur, leading to his epoch making contributions in connection with chicken cholera and anthrax, and out of which arose the marvelous researches of Pasteur and his co-workers on the subject of rabies, demonstrating the location of the purest and most concentrated virus in the central nervous system, and gave to the world the wonderful protective inoculation which has reduced the mortality in man to a fraction of one per cent.

The rôle of vaccination for smallpox in preventive medicine hardly requires any emphasis as its efficacy is generally accepted. An epidemic of smallpox is practically impossible in a well vaccinated community. Vaccination is also the only scientific means of controlling smallpox, and its adoption in the place of quarantine, as is the case in Minnesota, is a most logical procedure.

The triumphs of preventive medicine are reflected mainly through the advances in pathology and its handmaid, bacteriology, mainly because it has been more prominently concerned with the disease of distinctly infectious or bacterial origin; but equal benefit has come through the avenue of physiology by a better conception of a large class of noninfectious conditions; for a better knowledge of the functions of organs and their perversions has led to most remarkable results.

Medical science has profited in all its aspects largely from the purely biological researches, and coincident with the progress in the infectious processes a closer study of cell-life has led to the recognition of a vital activity or special function of cells, as illustrated by a better knowledge of the ductless glands. The attitude of Heidenhain in assuming a "vital activity" of epithelial cells resulted in considerable progress in the recognition of processes of secretion and intercellular changes accompanying them. It is an interesting fact that the newer knowledge of the ductless glands is largely the result of cooperation with the clinical domain, and in most instances the newer conception of the function of these glands was contributed by the clinician.

In Hermann's well known work on physiology published in 1883 it is stated in one line that we know nothing of the functions of the thyroid and adrenals, but in the same year the contributions of Kocher of Berne, in an extensive report of the after-effects of complete removal of goitrous glands recognized for the first time the significance of the thyroid in the animal economy. The light which was shed on the vital importance of these glands lit up the entire field of internal secretions which had remained impenetrably obscure for many past centuries.

The intense activity of modern experimental medicine managed to bring to light in less than ten years the following important facts: 1. The relation of the thyroid to natural myxedema and cretinism and the surgical conditions of a similar nature. 2. The effects of the radical removal of a goitrous gland can be obviated by leaving behind a small part of the gland. 3. The extract of the thyroid gland is capable of removing the symptoms due to the natural or artificial absence of the gland. 4. The unrestricted use of thyroid brings on a condition which is very similar to the pathological complex known as exophthalmic goiter or Graves' disease or hyperthyroidism.

Associated with the brilliant chapter of thyroid investigation is that of the relation of the parathyroid to tetany or post-operative spasms. Beebe has observed that the nucleoproteins of the parathyroids are capable of controlling this symptom. MacCallum and Voegtlin discovered that this can be controlled also by the administration of calcium.

Although our knowledge of the function of the suprarenals is far from complete, the relation of the medullary portion to various pathologic and toxicologic states, as chloroform poisoning, shock, nephritis, etc., is recognized. We know it to be an absolutely vital organ, and exerts its physiologic influence by emptying its secretion into the blood; the extract that is obtained has proved of immense practical and scientific importance.

The discovery by Marie of the relation of the hypophysis to acromegaly ranks with the preceding brilliant results.

The production of experimental diabetes by Von Mering and Minkowski by complete removal of the pancreas has established the control of carbohydrate metabolism by the internal secretion of the pancreas. As the knowledge of this function becomes more complete there is hope that the prevention and treatment of diabetes will be on a firmer foundation.

By the studies of these vital organs that three decades ago were thought to be useless, surgery, therapeutics and general medicine have learned many lessons, and the field of preventive medicine has likewise been enlarged.

It is only fitting that emphasis should be given to the recent advances in the physiology of the digestive organs, and their bearing on medicine and surgery, and indirectly on preventive medicine.

The researches of Cannon, Starling, and Pawlow on the movements of the stomach and intestines have greatly benefited the surgeon and given the internist a better conception of digestive processes and their functional disturbances.

The work in the physiologic chemistry of nitrogen-purin metabolism by Chittenden and Folin has placed modern dietetics on a scientific basis, and this, with the important discoveries relating to the metabolism of the inorganic constituents, such as those relative to acidosis, have opened up a new and hopeful chapter in scientific medicine by suggesting a probable cause and preventive measures, for nephritis, arteriosclerosis, diabetes, and other disturbances in nutrition.

CONCLUSION

The purpose and object of preventive medicine is to keep away from mankind those ills which interfere with the pursuit of happiness by crippling physical well-being. More exact knowledge of the cause and nature of disease enables the physician to prevent that damage, and therein lies the rôle of pathology and physiology in preventive medicine.

13½ South Dubuque Street.

THE RÔLE OF THE PHARMACIST IN PREVENTIVE MEDICINE*

JOSEPH P. REMINGTON, Ph.M.
PHILADELPHIA

The words "preventive medicine" have, to a commercial druggist, a significance which he has yet failed to grasp entirely in its far-reaching influences. The term "preventive medicine," according to our lexicographers, means, "something taken, used, or done beforehand to ward off disease." While, in one sense, prophylactics are medicines which are intended to prevent disease, specifically the term "preventive medicine" has a much wider application and means "medicine that aims to ward off disease by properly directed personal and public hygiene."

While the pharmacist has not, and should not have, the proper equipment for diagnosis and the prescribing of remedies in serious cases, he should be imbued thoroughly with the principles of preventive medicine, and, as far as in him lies, bend his energies in the direction of stamping out disease in season and out of season.

It would at first appear that the pharmacist's rôle is necessarily a restricted one and again the public, in some quarters, do not look to the apothecary to advise them not to take medicine, but very frequently such advice, if tendered, is apt to arouse in the minds of a patient or customer a suspicion of ignorance, for the public have been trained to expect that medicines are to be paid for—advice never; and it cannot be denied that a patient coming from a doctor's office, after hearing him discourage the use of any specific medicine for the case, goes right to the drug store and asks the druggist to give him some relief from the hacking cough, because he thinks he cannot afford to travel to some more salubrious climate as his doctor has recommended.

It should always be the aim of the pharmacist to uphold the opinion of the physician, and if the customer demands a medicine which he has been in the habit of using to alleviate his cough it would be the duty of the pharmacist to say a few words against depending on the palliative, and certainly not encourage the patient to use such a weak prop. Just as a physician gives to a patient the best advice possible, so should the pharmacist refrain from giving any suggestion which would lead to the building of false hopes.

The pharmacist, is, of course, in business; his daily bread depends on his sales and he cannot be expected to give medical advice, for if he does he will be very apt to hear from the physician on the ground that he is trenching on the latter's prerogative, and the conscientious druggist is frequently placed in a very delicate position, for he is at a loss to know to what extent he may go, in discouraging the use of some questionable mixture and just how much he ought to say. Cases are frequent in which physicians have been unwilling to prescribe any medicine whatever, in certain cases and recommend instead, exercise, pure air, pure food, pure water, sleeping in the open air, etc., and when the patient refuses, or finds it impossible from his environment to take this advice, he has bought some preparation from a pharmacist and obtained relief.

A wise and skillful physician would often find it judicious, in order to secure the patient's adherence to preventive measures, to prescribe some safe mixture in addition. Pharmacists have for centuries furnished medicines which are prophylactics—vaccine in all its forms, serums, antiseptics, sanitary appliances and many others, even including drinking water in bottles. The tendency of the modern drug store is in the multiplication of stock and branching out into side lines, many of which are not intended for the exclusive use of the sick.

Pharmacists can do much in the way of preventing infection from noxious germs. Cleanliness has come in with the antiseptics, and asepsis is being vigorously exploited. There have been several practices followed by careless and ignorant druggists which have undoubtedly increased the death rate in the past. Bottles and boxes which have been sent straight from the infected sick room to be refilled, bottles for holding oil emulsions, and other medicines, are usually sent back without cleansing thoroughly.

Corks are particularly dangerous as germ bearers; corks which have been in the mouths of tuberculous patients are often picked up by infants, and as everything goes into the mouth of a baby, is a source of infection. The habit of not removing the old label from the bottle or box coming from the sick room but pasting the new one right over the old dirt is a habit which has been animadverted against for centuries. Unclean, germ-laden hands and fingers in pharmaceutical manipulations should be carefully guarded against, and the disgusting habit, sometimes seen, of using the mouth as a corkphesser, by chewing the cork, is almost obsolete, thanks to continued preaching and teaching. Corks, bottles and boxes from infected sick rooms should be immediately destroyed; in fact, they should never leave the infected room. Prescriptions could easily be refilled by telephoning or having some member of the family, not infected, send a written memorandum giving the number and date of the prescription which is to be refilled, and then have the pharmacist send new containers.

The rejuvenation of corks, particularly for wine bottles and other beverages, is attended with considerable danger and whenever old bottles and boxes come into the store to be refilled they should be disinfected or sterilized, but far better destroyed, so that their power for increasing disease may be eliminated. The intelligent pharmacist, when he is once awakened to the necessity for taking up his daily burden in preventive medicine, will be enabled to do a vast amount of work of benefit to his fellows.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

ABSTRACT OF DISCUSSION

ON PAPERS OF DR. BIERRING AND PROFESSOR REMINGTON

Dr. W. A. Evans, Chicago: Discussing the theme of Dr. Bierring, I should like to know whether it is your judgment that health departments should offer their laboratories in the diagnosis of venereal diseases? Are the procedures conclusive enough and at the same time simple enough to be within our field?

Discussing Professor Remington's subject, has not the time come to standardize the sale of antitoxin? Antitoxin for curative purposes should not be given promiscuously any more than flour or quinin. On the other hand, it should not be sold for $1.50 a thousand. The way to standardize its sale is, first, to abolish "returns." This will require machinery for quick moving of the product. Second, to reduce the advertising and introduction expense. Third, to make its sale a cash transaction. Fourth, to have but two sizes—1,000 units and 5,000 units. Such a system should reduce the price to 30 to 40 cents a thousand, retail. Antitoxin at this price would save lives through (a) prompter use, (b) larger dosage.

Dr. Liston H. Montgomery, Chicago: Pharmacists, while dispensing our prescriptions, are careless sometimes about removing the collection of dust and other detritus about the corks and necks of their bottles. I have noticed this. Take simple syrup, for instance; there may be deposits from flies and other filth which has accumulated. On more than one occasion I have gone behind a prescription counter and courteously and quietly called the attention of the druggist to such conditions. If a bottle prescription is filled, detritus, débris, dust, germs of disease, etc., may thus be dispensed. You will notice this as you examine and shake the medicine in the bottle at your next visit to your patient. Particularly is this true in collyria. In fact this condition of sediment is often present in other prescriptions that are dispensed. Of course not all registered pharmacists are careless in this respect, some are sanitary and scrupulously clean and remove whatever collection or deposit there may be about the cork or mouth of a bottle before they dispense a prescription.

I am careful about permitting a druggist to refill my prescriptions, unless he has my consent. I have printed on my blanks these words, "This prescription must not be refilled without my order," or the words, "Non repetatur" printed thereon, unless it is something that is very ordinary and doesn't do any harm.

To illustrate, I have a patient, a lady, who has a mitral lesion, who is taking my prescription. She has a friend who has heart disease. My patient, desiring to favor her friend, gave the number of the prescription on the label of her bottle and she had the prescription dispensed and nearly died as the result of taking that medicine. She evidently had a different condition altogether from that of my patient.

Dr. George Edward Fell, Buffalo, N. Y.: There is more to this subject than most of us appreciate. Some of my prescriptions have been filled for seven years after they were made. I heard of it by my patients telling me that they had been giving that prescription around, since it was made, which was seven years before. If such things do occur why not have the pharmacists help a little and disinfect the bottles that come back, if they are going to allow them to come back? I don't believe it is within our power to prevent the druggist from refilling prescriptions, or the patients from taking them back, even if we do lay down our law and request them not to do it. If it could be done, it would be a great help. I believe the pharmacists can do a great deal to aid us in preventive medicine in many ways.

Dr. Seneca Egbert, Philadelphia: In regard to the paper on pathology and physiology, I think we should all appreciate the wonderful assistance that has been given preventive medicine by these two sciences which, as the gentleman said, were thought thirty or forty years ago to be of no practical benefit to the doctor. Some of us have been advocating the exploitation of the knowledge that we now have. There is no question that we need to do that to get popular [illegible]; but we have only opened the door, as it were, in the matter of original research; and while I do not believe that the ordinary medical school is the place for carrying on all of the original research work, I do believe that every one of us ought to support those who are capable of doing it and who are doing it as admirably as our colleagues in the profession have done in the past two or three decades.

With regard to the paper of Professor Remington, there is another line in which the druggist, it seems to me, can be of tremendous assistance to us, and that is in his counter-prescribing in venereal diseases. If the druggist will not do that, and if he will send the patient to the doctor, there is some chance not only of prophylaxis but of education, a chance that otherwise might be missed. I do believe that this is one phase of the pharmacist's work wherein a great deal of good can be done, by telling a man or a boy who comes to him for a cure for diseases of that kind: "No, I am not the man for you. We pharmacists, as well as the doctor, realize that to-day those diseases are no longer to be looked on as harmless troubles; they are diseases dangerous to you and to the community as well, and I cannot prescribe for or treat you."

Dr. Walter L. Bierring, Iowa City, Iowa: I appreciate that in the field of preventive medicine we are making use, in a coordinate way, of the knowledge of the different fundamental principles which apply to the entire subject. There is also much in the suggestion of having laboratories associated with boards of health or with other bodies interested in preventive medicine, in order that special research work may add greatly to our knowledge along this line, and at the same time benefit the cause of general sanitation.

In Iowa we have been conscious for some time of the fact that there is much discrimination and hardship imposed by the high price of antitoxin, so the department of health has taken on itself to introduce a method of furnishing antitoxin, not free, but at a reasonable price. It has made arrangements with several manufacturers of antitoxin so that it is able to furnish the same at a rate of about 40 cents per thousand units; a supply is kept on hand at different depots throughout the state to facilitate its being easily obtained and arrangements are also made to have it transferred readily from one city to another as the particular depot may run short in its supply. In that way it is kept constantly fresh, and kept moving, which was a point specially mentioned in this discussion. By this method there can be no thought of pauperizing the citizen, yet it brings the antitoxin to such a low figure that no one will have an excuse for not receiving its benefit; and again, where the people are indigent and unable to procure it the county or municipal authorities will furnish it as needed.

I am sure what was said by Professor Remington in reference to the opportunity for infection in a modern drug store is very applicable, and therein lies a duty for physicians to do away with the pernicious practice of having prescriptions refilled, thus making such a medium as the drug store a source for the spread of infectious diseases.

Prof. Joseph P. Remington, Philadelphia: The American Pharmaceutical Association has taken up the matter of what is called the declaration of the prescription; and the mooted question of the ownership, which has been discussed for so many years, is likely to be taken up in a business like way. It is the intention to refill prescriptions when indicated by the physician, and only on his approval. You will see, later on, I have no doubt, published in The Journal of the American Medical Association, just what action was taken recently at the meeting at Richmond, Va.

I believe that if this Section, or the American Medical Association, would get up a properly worded request or circular which could be sent to the druggists throughout the United States, calling their attention to causes of infection in dispensing prescriptions, it would be received in a proper spirit. It is very desirable to call the attention of the druggist and the physician to this subject, so that causes of infection may be reduced to a minimum. Let the physician go in and say, if any bottle, box or container comes from an infected home destroy it at once and have the prescription refilled with new and clean containers. It only needs a little education on the part of physicians and pharmacists to remedy the evil to a very great extent.

AUTO-INTOXICATION AND ALLIED INTESTINAL TROUBLES

AS A POSSIBLE CAUSE OF CERTAIN VASCULAR AND FUNCTIONAL DISTURBANCES OF THE EYE *

HIRAM WOODS, M.D.
BALTIMORE

This paper is the result of a personal conversation in October last, the participants being our Chairman and Secretary and myself. We met in Philadelphia, at the invitation of the Chairman, to discuss the program for this meeting.

Among other matters, ocular disturbances from various toxic influences were considered. The papers which have already appeared were reviewed, and especially the pioneer work of de Schweinitz with his chemical helpers, Edsall and Fife. These researches, it will be recalled, had to do with inflammatory lesions, specially those of the uveal tract. We thought of lid, conjunctival and various functional anomalies of the ciliary structure, things of daily observation, which resist local treatment, are prone to relapse, and which are not uncommonly associated with those remote symptoms which de Schweinitz has aptly defined as "conjectural." That is, one finds associated with certain lesions of the lid structures or functional derangement of the anterior uvea—just the history and symptoms which, if associated with uveitis, would lead one to think that the internist (having at command chemical means to investigate defects of metabolism) could throw light on etiology. Is there more in this than association? If so, how far has the physiologic chemist enabled us to go?

This question was put to Dr. Edsall, and he was invited to follow an interrogatory paper with one explaining what we want to know. His reply was that he felt that, after his contributions, accessible to all, there was nothing more definite to add. We felt that it was useless to seek farther. Still, our own clinical observations led us to think the matter worth presentation, and this position has been, since October, confirmed by a paper by Dr. J. F. Shoemaker[1] of St. Louis. The lesions of the adnexa which I wish to consider are those of the lids and mucosa. De Schweinitz describes the former in his text-book under the title, "Hyperemia of the Lid-Border (Hyperemia Marginalis, Vasomotor Blepharitis)." He says:

> The margins of the lids have an unpleasant, slightly swollen, red appearance. Exposure to cold, wind or any strain on the accommodation causes a feeling of heat followed by burning and lacrimation. The redness is caused by the passive congestion of the superficial blood-vessels. Scales or crusts are absent, or but sparingly present.

Discussing the etiology of blepharitis, without specially mentioning the vasomotor variety, but evidently with it in mind, he says that it may follow in the wake of an exanthem, may result from ametropia, "inflammations of the tear-sac, stricture of the nasal duct, and obstructive disease of the posterior nares, although it may be difficult to decide whether the blepharitis has caused the closure of the lacrimal passages or whether this has developed the blepharitis." Dr. Shoemaker, presenting the clinical conjunctival picture, with a possible autotoxic cause in view, says:

> As a rule, the cases I have observed have very little or no secretion. The eyes feel uncomfortable, particularly with their use in artificial light, and the blood-vessels of the bulbar conjunctiva are considerably engorged. The diagnosis must be made, however, from the history of indigestion or constipation, together with other symptoms of autointoxication. Some of these symptoms are drowsiness, especially after eating, dizziness, periodic attacks of headache, certain diseases of the skin, particularly of the erythematous or urticarial types, various nervous disturbances and aching and stiffness of the muscles which might be confused with, or attributed to muscular rheumatism. The patients may not complain of any of these symptoms, but inquiry will usually develop the fact that they suffer with one or more of them.

Before attempting to couple the lid and conjunctival disturbances and discussing the possibility, in certain cases, of an autotoxic cause, I want to add a third class. I allude to recurrent circumcorneal injection, recurrent asthenia of the ciliary muscle, spasm of accommodation, and the condition known as hysterical accommodation spasm, or cyclospasm. It is well described in Posey and Spiller's book, "The Eye and Nervous System." It has been studied specially by Parinaud, and his description is given:

> The spasm may be partial or total, unilateral or bilateral. It is similar to that produced by eserin, and has as its chief characteristic a displacement toward each other of the punctum proximum and the punctum remotum—that is to say there is a diminution of accommodation at both ends of the line.

Here, then, are three vascular or functional troubles which we see constantly in routine practice. To connect them with remote causation demands first, painstaking exclusion of known causes. For instance, in hyperemia of the lids, lacrimal obstruction, as de Schweinitz observes, is frequent. As he says, again, it is not always easy to say which stands as cause, infection to the lids from the excretory apparatus, or to the latter from the lids. I am sure that often the course is toward the lids, and that at least one factor can be readily overlooked. Definite accumulation of mucus in the sac or persistent epiphora are easy enough; but lesser grades of obstruction are not so readily diagnosed. Ziegler told us about this years ago, and devised probes of great value. I am sure that infection, or, possibly, irritation, from the nose can often do no more than cause catarrhal swelling of the mucosa in the canaliculus or even shutting of the puncta. Chronic hyperemia of the lids often disappears after dilatation of the puncta and canaliculus without going into the duct at all. Nitrate of silver solutions of ½ to 5 per cent., applied to a swollen turbinal, and a somewhat persistent use of such a mildly stimulating agent as an oil solution of menthol in the nostrils, often cure chronically congested lids. Injection of the conjunctiva, as described by Shoemaker, stands in close relation to lid hyperemia. The structures are but parts of one vascular area.

Circumcorneal injection, in the absence of corneal lesions, of course, focuses attention on the anterior part of the uveal tract. This brings us to the most important of the recognized causes of lid and conjunctival hyperemia and functional disturbances of the ciliary muscle, namely, refraction and muscular errors, and the varied relations they have to each other. It is not my purpose to do more than mention this causative factor. In such an association, for instance, as hyperopia and exophoria, one could naturally look for relapsing ciliary cramp; but every clinician knows that cases occur in which his best efforts, along line of recognized causes, fail to cure.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Shoemaker, J. F.: Etiology and Treatment of Certain Forms of Conjunctivitis, Am. Jour. Ophth., January, 1910.

If at first relieved, the patients relapse. Why do they not stay cured?

A second essential, if relapsing eye troubles are to be attributed to remote disturbances, is the more or less constant association of ocular lesions or derangement of eye function, with symptoms of the supposed causative disease. This association, I take it, is what de Schweinitz means by the presence of certain things which lead one to "conjecture" a toxic cause. If one of the three classes of eye trouble occurs when the patient is constipated, when he has periods of neuralgia, when he is suffering from what he calls "nervous dyspepsia"; if local remedies do not relieve, or, at the most, give only temporary relief; if all these symptoms, including those of the eye, clear up when the remote trouble is removed, then we are justified in suspecting causative relation. If these simultaneous eye and remote troubles occur not once, but repeatedly, and if they occur not in one, but in many patients, this suspicion becomes a conviction. I do not consider it necessary to prolong my paper with narration of cases; brief allusion to one will suffice.

A man of 25, total refraction error D 1. of hyperopia, with less than D 0.5 astigmatism with the rule. Vision immediately after cycloplegia distant vision (d. v.) 20/15; near-point accommodation 12 cm.; orthophoria, d. v., exophoria 3° at near.

Gradually, from this state of things, he develops a reduction of d. v. to about one-half, with recession of his near point to 30 cm. With or without correction of his low error, this thing occurs. Why? Invariably, in three or four such experiences, he has given a history of pain after eating and constipation; there has been foul breath, and he has learned that this association exists. He leads a sedentary life, and makes his living by keeping books. Homatropin restores normal eye function, and so long as he keeps his diet regulated, and constipation does not overtake him, ciliary cramp does not return.

This case is narrated because I have linked ciliary disturbances with those of the lid and its mucosa. Dr. Shoemaker has covered these sufficiently.

While we can eliminate recognized causes, and prove clinical association, we cannot as yet fulfill a third condition—explanation of pathogenesis. We call it auto-intoxication; and there are good reasons for so doing. For instance, we see conjunctival hyperemia and "vasomotor" blepharitis in diseases of known infectious origin; note their occurrence in the beginning, through the course and after the exanthemata. We see all grades of ciliary involvement, from asthenia of transient type to complete and stubborn paralysis, after various infectious diseases, typhoid fever, chicken-pox, scarlatina and diphtheria. These lesions we attribute to toxins, and it is to be especially noted that since the advent of diphtheria antitoxin we see fewer cases of postdiphtheritic paralysis.

Secondly, in diseases not themselves infectious, but capable of forming toxins, we note similar eye troubles. Nephritis, diabetes and occasionally pregnancy serve as examples.

Thirdly, there is good reason for thinking of the intestines as the source of this autotoxic influence. [illegible] the proved association between uveitis and intestinal disorders, the work of de Schweinitz and Fife seemed to afford chemical proof of a pretty satisfactory nature. Cases of pupillary derangement, clearing up after expulsion of intestinal parasites, are recorded. Bruns of New Orleans reported such a case in discussing my paper[2] on ocular neurasthenia at our meeting in 1907. There is the peculiar edema of the conjunctiva in trichinosis. In two cases I saw during the past winter, the edema involved the bulbar conjunctiva, between the limbus and external canthus, presented a peculiar yellowish reflex, and was totally inexplicable, till fever, blood examinations, etc., cleared the diagnosis. In the first volume of Osler's "Modern Medicine" this eye symptom of trichinosis is recorded.

The reason, then, for calling these eye disturbances, associated with various intestinal disorders, "autotoxic" is that they bear a strong similarity to eye troubles of either known general infectious nature, or to those seen in systemic diseases capable of producing toxins. Shoemaker attributes the conjunctival congestion to the fact that the conjunctival "substantia propria consists of adenoid connective tissue which is richly supplied with blood-vessels and lymphatics, the walls of which are irritated, and become diseased by these poisons." He quotes Deland as authority. Such effects on blood-vessels, with subsequent exudates and hemorrhages, are well-recognized results of toxemia. So, too, are varying degrees of interference with muscular function, from slight impairment to complete paralysis. In the presence of changes, characteristic of toxemia, it is but natural to think of the latter as a cause, in spite of the fact that we do not know the toxin at work or are even sure that there is any such influence. Autotoxic diagnosis is a matter of inference, though undoubtedly the most probable, in our present state of knowledge. This is as far as we can go till the physiologist and chemist blaze the way. So far they have not given us very dependable diagnostic means or explained pathogenesis much beyond the hypothetical stage, at least so far as my limited knowledge goes. A recent publication shows their own uncertainty. Among the Oxford medical publications of last year is a most interesting and instructive book by Arthur F. Hertz, entitled "Constipation and Allied Intestinal Disorders." Speaking of auto-intoxication or copremia, Hertz says:

> There is no entirely satisfactory method of estimating the activity of bacterial decomposition in the intestines. Jaffé thought it could be measured by the amount of indican, and Baumann by the amount of ethereal sulphates in the urine. The results obtained, however, give no definite indication as to the degree of autointoxication, which may be present, as different putrefactive bacteria produce different products, some of which are comparatively innocuous, whilst others are excessively poisonous. Hence an increase of the quantity of indican or ethereal sulphates in the urine is no evidence that excessive production of other more poisonous products is occurring, and on the other hand, it would be quite possible for severe intestinal auto intoxication to occur in the complete absence of any change in the urine which could be demonstrated by Jaffé's or Baumann's methods. Both indican and ethereal sulphates have been found to be increased in some cases of constipation, but by no means constantly . . . and Strauss and Philippson found a diminution in the ethereal sulphates as often as an increase. When excess of these substances is present in the urine of constipated individuals, it may just as well be due to the increase in the quantity absorbed, owing to the longer stay of the feces in the colon, as to an increase in the quantiy produced. . . . There is thus at present no chemical evidence that an abnormal amount of decomposition occurs in the intestines of constipated people. . . . It is, however, possible that even in the absence of any increase in the production of poisons, the slow passage of feces through the intestines might lead to autointoxication by giving more time for the absorption of products of bacterial decomposition. But definite evidence is still wanting to show that the products of ordinary bacterial decomposition in the intestines can give rise to poisonous symptoms on absorption.

Hertz then discusses the poisonous effects of ethereal sulphates, sulphuretted hydrogen, "which is normally present in traces in the colon," ammonia, the amido-acids, indol, and concludes that all are only slightly toxic. Regarding the latter, he thinks that the amount apt to be absorbed in constipation would not affect a healthy individual, but that those "with an abnormal nervous system" would react. He sets aside ptomains as the cause of toxic symptoms in constipation because none has been found in the urine or feces of persons suffering in this way. He says:

---

[2] Woods, H.: The Journal A. M. A., July 20, 1907, xlix, 211.

> Volatile fatty acids and most of the products of bacterial decomposition of carbohydrates are rapidly oxidized in the body so that they are not likely to produce any poisonous effects. . . . It is, of course, possible that the symptoms are due to the absorption of some unknown poisons. But no accurate means have yet been devised for investigating this possibility. . . . Though there is no evidence that such a condition as copremia exists, yet many of the results of constipation are more easily explained by the theory of auto-intoxication than in any other way. This is particularly the case with some of the nervous symptoms. . . . This auto-intoxication is probably due to the abnormally long period during which the feces are present in the intestines, and to the consequent excessive absorption of poisons, and not to any increase in bacterial decomposition.

Relative susceptibility is then discussed. The liver is "the chief defense against auto-intoxication," and its power to convert toxic into harmless substances is presented. Even after absorption, no great harm is done if the eliminative organs are in good shape.

Lastly, Dr. Hertz states that the ultimate effect of toxic absorption depends on the state of the organ itself. He emphasizes the harmful effects of constipation in producing functional diseases and on "a depressed nervous system."

I have introduced these views of Dr. Hertz because they seem to me full of significance. Reduced to their simplest terms, they indicate that "auto-intoxication" from constipation and other intestinal disorders is but a working hypothesis, and seems to explain, better than any other, clinical findings. They also throw great doubt on the value of usual methods of chemical investigation. There are certain interesting clinical facts which I have observed, having some bearing on this contention. Exactly the same ocular symptoms which I have detailed have been observed in chronic appendicitis. Two of the patients suffered from repeated attacks of appendiceal pain before operation, and functional eye symptoms came immediately after their subsidence. One girl developed in different attacks "cyclospasm," a manifest astigmatism which disappeared after cycloplegia, and finally a chorioidal exudate. There were no symptoms of "auto-intoxication" and no constipation. The interesting point is that the patient had an inflamed adherent appendix removed four years ago, and has had no functional eye disturbance since. I alluded to this case in my paper on ocular neurasthenia in 1907. Of course, it is possible that the pain produced neurasthenia, and that the so-called "hysterical accommodation" resulted from this. Still, the girl is a remarkably level-headed person, and not in the least hysterical, in the ordinary acceptation of the word. The other patient was an educated woman in the thirties, who presented repeated and inexplicable lengthening of the punctum proximum. I knew nothing about her appendix symptoms till she came to tell me about a prospective operation. This was two years ago. I have seen her frequently, as she has come at my request, and I have never found relapse of the functional eye trouble. The only abdominal symptoms in both cases were those of appendicitis. I cannot connect auto-intoxication with these, and incline to the belief that there is some other path to eye irritation.

Again, in cases in which there has been association of eye anomalies with constipation and its toxic results, I have had the urine carefully studied. In some of them the chemical findings were negative; however, treatment directed to the intestines is keeping the patients well. Allusion has been made in this paper to unrecognized infection as a cause of the symptoms under consideration. I have now under care a woman, 63 years of age, who has had for twelve years peripheral lens striations of the non-progressive type. She preserves normal central vision. She is gouty, a free liver —or, rather, has been—and came to me this time for obstinate conjunctival congestion of the right lower lid. She brought with her a diagnosis of constipation, indicanuria, auto-intoxication, etc. There were no manifest symptoms of lacrimal trouble at first, and for several weeks we worked along autotoxic lines without improvement. Then she developed a not very annoying epiphoria, and a probe introduced into the duct showed no stricture. The canaliculus was not split. But from this time, under the one probing and repeated washing of the sac, there has been steady lessening of the chronic conjunctival hyperemia. By contrast the case shows the essential difficulties of diagnosis.

In conclusion, I think that there is enough association between the eye disturbances named and manifest symptoms of auto-intoxication from constipation to justify the belief of causative relation. There is reason to think that the same eye troubles can follow intestinal lesions which do not essentially produce toxic products. It seems that the physiologic chemist is not yet in position to help us much in proving the diagnosis, and that until he is we must study these obstinate cases from a clinical standpoint only. If we are ever to explain them or to relieve them, we must view the eye as the receiving as well as the sending end of what we call remote disturbances.

842 Park Avenue.

ABSTRACT OF DISCUSSION

Dr. J. F. Shoemaker, St. Louis: The three forms of ocular trouble mentioned in Dr. Woods' paper are frequently observed. Each has more than one etiologic factor, and I believe that intestinal toxemia will be recognized as the underlying cause in an ever-increasing number of cases. I am unable to furnish any chemical proof in the way of evidence that definite poisonous substances are to be found and isolated in patients suffering thus; but, I believe that carefully collected clinical evidence is of great importance and that there are such substances. I have observed more cases of the second class, viz., those of patients suffering with conjunctival hyperemia and inflammation, than of the other two classes. In more than one case of conjunctivitis, after I had exhausted my best efforts in the way of local treatment with little or no benefit, great relief was soon obtained by treatment of an existing constipation or indigestion. In such cases a hearty dinner will often undo more in a single night than can be accomplished in weeks in the way of curing by local treatment, particularly if much meat and alcoholic stimulants are taken. Some of these patients often are more uncomfortable at night than during the day. Several patients have complained of awaking during the night with quite severe pain in the eyes, and most of them have more or less discomfort when they first awake in the morning and state that they have some difficulty in opening their eyes, not on account of the presence of any pus which glues the lids together, but on the contrary, on account of the lids being so dry that they adhere to the globes.

While I have, of course, had cases of the third class, in which the ciliary body is affected, with circumcorneal injection, spasm of the ciliary muscles of subnormal accommodation. I have not been able to satisfy myself that they were caused by auto-intoxication, although I have more than once suspected it. I have at present, however, a patient who is a confirmed dyspeptic and suffers with constipation, and who, whenever she uses her eyes for near work for a short time, complains of a sharp pain in her left eye as though she had a foreign body in the eye. The most careful and painstaking correction of her refraction and muscular imbalance does not relieve the trouble. I am convinced that the cause of the irritation is some toxic substance absorbed from the intestinal canal.

One of the most chronic and persistent cases of conjunctivitis I have ever had was in a young woman who had a chronic appendicitis. She was troubled with constipation, so that I do not know that the appendicitis had anything to do with causing the conjunctivitis, but as we are told that constipation is sometimes caused reflexly by a chronic appendicitis, this latter condition may be the primary cause of some of these troubles. R. T. Morris reports a case of double central chorioiditis occurring in a man who had a chronically inflamed appendix. With the removal of the appendix the inflammation of the chorioid stopped short and cleared up with practically normal vision. Some patients may present symptoms of auto-intoxication and yet deny that they have any indigestion or constipation. I believe that the explanation in some of these cases is that while the bowels move every day, perhaps, yet the evacuation is not complete and, enough fecal matter is retained in the large intestine to produce a toxemia. In one of my cases there existed a spastic condition of the sigmoid which prevented the complete evacuation of the bowel, and at times caused quite stubborn constipation. It was not until a rectal examination was made by a competent internist that the true condition was found and treatment was satisfactory. In such cases ordinary laxatives or purgatives are of little value in treating the constipation.

I am of the opinion that in the great majority of cases the trouble arises because meats or protein foods are not properly digested, thus permitting excessive putrefaction to occur in the intestines. Some people seem able to digest properly only a small quantity of meat, while others may not be able to digest any well. As Thayer and Turck have pointed out, in such conditions a few grams of meat may be enough to produce severe symptoms from the poisons formed and while the amount of poison may be very small it may, nevertheless, be quite injurious because of its being constantly repeated.

Dr. Judson Daland, Philadelphia: To demonstrate absolutely the relationship between intestinal toxemia and functional or organic ocular diseases would necessitate the isolation and experimental administration of these toxic substances and the reproduction of these lesions. The character of the toxic substance or substances, unfortunately, is not known, and therefore we are compelled to fall back on general clinical evidence which is strong enough to produce a belief in a causal relationship, in certain cases, between, for instance, the condition known as biliousness and certain ocular disturbances.

To-day intestinal toxemia may be viewed from two standpoints: one concerned with aberrations or variations in metabolism, and a second concerned with putrefactive changes in the contents of the colon—a statement which shows the vast field of possibilities. The diagnosis of intestinal toxemia or of disturbed metabolism is often not difficult. The simplest and most common form of intestinal toxemia is that symptom-complex known as biliousness. Occasionally there exists what may be termed fecal retention; the bowels move daily, but the colon is never empty. A simple method exists by which this condition so frequently in association with intestinal toxemia may be determined, namely, by irrigating the colon after the morning evacuation of the bowels; if more than a half teacupful of feces is recovered, fecal retention is present. Feces thus obtained should be examined microscopically and chemically.

The commonest sign of intestinal toxemia of putrefactive origin that has attracted the most attention is the presence in the urine of indican or the indoxyl sulphate of potassium. It is now believed that this substance in itself is non-toxic, but plays the rôle of an indicator, indicating that substances formed during the process of putrefaction have been absorbed. These substances are exceedingly variable in number, combination and quantity, depending on the character and amount of foodstuffs ingested, and variations in digestion. Certain of these substances may be detected by a skilled organic chemist after prolonged labor; while others are unknown or unrecognizable. It is well known that intestinal toxemia may exist in the absence of indicanuria or skatoluria.

Dr. J. L. Thompson, Indianapolis: I have many patients coming to me who tell me that they have been to their physicians and that the latter have been treating them with electricity and similar methods, and I look into the eye and see no edema, no hemorrhages and no trouble with the optic nerve; I have written to the patients' physicians to give half a large tumblerful of a saline purgative every day, every two days or twice a week, and then have them come to see me again. I do not have them stop the electricity. The patients come back in three weeks greatly changed. When one is in doubt the bowels should be cleaned out thoroughly.

Dr. L. Connor, Detroit: I remember the custom of the late C. R. Agnew, many years since, when I was studying ophthalmology under him, of telling patients suffering from one or more disturbances of the eye which were related to abdominal infections that they should so modify their living habits as to restore an equilibrium in their metabolism. For this he prescribed systematic walking, with such clothing as made it easy; appropriate attention to food, the alvine evacuation, the care of the skin; and I observed that the patients recovered from their ocular disturbances. The same practice is continued to the present. Dr. Woods told me recently that his patients with corneal trouble did better if they lived in the open air. In short, many ophthalmologists have recognized these conditions though unable to trace to their exact causation, in spite of the successful empirical treatment. As a stimulus to farther study Dr. Woods' paper has done us good service. We may hope for better results as every doctor gains a minimum of real ophthalmic practice by his working knowledge of infectious diseases of the eye and its simple refractive defects. The observations of 135,000 physicians added to those of the 3,000 ophthalmologists ought to furnish material for conclusions nearer the facts of the relations of both gross and fine lesions of the eyes to defective abdominal metabolism.

Dr. A. G. Bennett, Buffalo, N. Y.: In my experience as oculist to the Children's Hospital, Buffalo, I get numberless cases of inflammations of the conjunctiva and cornea that improve almost immediately as attention is directed to the intestinal tract. This is the type of case that I was taught to treat with syrup of the iodid of iron and yellow oxid of mercury ointment. My experience has been that when you look after the intestinal tract you do not need very much local treatment.

Dr. R. D. Gibson, Youngstown, O.: This paper brings out the necessity of the oculist's having had a general medical experience before going into the eye specialty. The man who has not undertaken to practice medicine before he goes into eye work does not appreciate the effect of intoxications on the eye. We find that children with phlyctenular conjunctivitis are children with bad digestive troubles, that have been given sweets to eat, that have fermentation. Many years ago I learned that calomel given in small doses, frequently repeated, was almost a specific for this trouble. It was the eliminative effect of the calomel on the alimentary canal. There is much virtue in the admonition of the old Scotchman, "Fear God and keep your bowels open."

Dr. S. L. Ziegler, Philadelphia: This question of autotoxemia and the perverted metabolism from which it arises brings us face to face with the great problem of the pathology of the future which will undoubtedly turn our attention from the study of bacteriology to the study of physiologic chemistry. It seems to me that chemotaxis is the pathogenic process that originates many of the diseases we are studying, and possibly many of those that we have been ascribing to bacterial invasion. Some years ago I wrote a paper on the relation between errors of diet, errors of metabolism, intestinal errors, and the causation of corneal ulcers. There is no question but that the ingestion of sweets, tea, coffee, and other articles of that character, will create a disturbance that is first manifested in the intestines or in the stomach, from there is transmitted to the nose and thence through the tear-duct to the eye. That is rather a circuitous route for the transmission of this vicious influence, but that is the course it takes. Eales of Birmingham has long since called attention to intra-ocular hemorrhage due to constipation, and I believe we should carefully consider the important rôle that constipation bears to these disturbances. I reported some years ago a case of this character in which the constipation sometimes lasted for ten days. It originated in a severe attack of dysentery. There were recurrent ciliary hemorrhages, and following these a cataract, which was afterward operated on successfully. In the other eye there were hemorrhages that became organized and remained there.

As the remedy for these conditions we should first cleanse the bowels, thus relieving the constipation and removing a great deal of this deleterious material from the system. We also have the nose to clear out, thus improving the breathing process, and thereby increasing the oxidation of the system. We likewise have the skin to look after, and very often much can be accomplished by sweats, whether by means of vapor baths, electric light baths, or pilocarpin. These are all problems that we must consider, and it seems to me desirable that Dr. Woods should continue this investigation and bring it to a consummation. In order to do this successfully he will undoubtedly require the cooperation of the physiologic chemist. This will be extremely difficult to accomplish for two reasons; first, it is almost impossible to procure these biologic products in large enough quantities for analysis, and second, the skilled physiologic chemist is still a *rara avis.*

Dr. Hiram Woods, Baltimore: In a case just seen, a man 38 years old, had lost one eye some years ago by accident. He had been in the hands of half a dozen people trying to get relief from asthenopia. He said that at times, without warning, his vision would become obscure. He unloaded a whole lot of glasses; among them one was a plus 1 cylinder, 150 degrees, and another, a plus cylinder at 80 degrees. All had been given by capable men, simply because when he went to these men he had this manifest refraction. Under prolonged scopolamin cycloplegia the only error was 1½ spherical. With that he had cl. v. 20 15, and accommodation from 8 out to 20 inches for Jaeger 1. I told him to come the next time he had an attack. When he came, the first thing I did was to put a drop of atropin in the other eye. He had an anterior synechia there and I wanted to see if that was the source of irritation. That did not help him. The second time, vision had fallen from 20/15 to 20 50; his accommodation range was 11 to 15 inches. He was constipated, had a foul breath odor, and was very irritable. That man was given calomel with a saline purge and allowed to go on with his work. He came back after two days with a 20/15 cl. v. and accommodation restored. I have got him in the hands of an internist who has put him on a restricted meat diet, intestinal antisepsis. I believe this is an example of many cases we will find if we look for them and study this question of metabolism.

DEVELOPMENT OF THE TEMPORAL BONE *

G. W. BOOT, M.D.

EVANSTON, ILL.

I wish to describe briefly some of the points of difference between the os temporale of the infant and that of the adult.

In the os temporale of the nine-months fetus[1] the ossification of the three centers is well advanced, so that they are all attached to each other, but neither firmly nor throughout the whole of their adjoining edges. The squama temporalis is thin and light. In its posterior portion is seen the series of perforations which mark the outer wall of the antrum tympanicum (which is often incorrectly called the antrum mastoideum but which distinctly is not a part of the processus mastoideus). The processus zygomaticus is light. The fossa mandibularis is merely a shallow depression below the posterior extremity of the processus zygomaticus. The middle and posterior roots of the processus zygomaticus are distinct, but the anterior root has not yet appeared.

The annulus tympanicus is a mere ring. The bony meatus acusticus externus does not yet exist. The annulus tympanicus is attached at this stage by both anterior and posterior extremities, though but slightly. The anterior and posterior tubercles are indicated, but are so small that unless their later development were known they would not be worthy of being named. The greater part of the annulus tympanicus is not yet attached to the os temporale.

Part of the pars petrosa is well developed. The processus mastoideus is wholly absent. There is no processus styloideus. The fossa jugularis is very shallow. The sulcus sigmoideus is discernible, but is shallow and not well marked. The part of the bone that fills in the space under the canalis semicircularis superior is has not yet appeared. The petrotympanic fissure, the canaliculus chordæ tympani, the tuba auditiva and the semicanalis tensoris tympani are not yet separated from each other, but all form one common cleft between the annulus tympanicus and the pars petrosa.

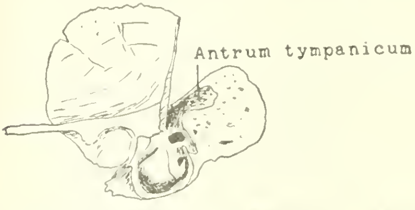


Fig. 1.—Temporal bone of a 9 months-old fetus, cut to show the location of the antrum tympanicum. Note that the antrum lies wholly above the level of the zygoma

DEVELOPMENT OF THE ANNULUS TYMPANICUS

In the os temporale of the 9-months fetus (Fig. 1) the annulus tympanicus is a mere ring just wide enough to contain the groove for the attachment of the membrana tympani. It is attached at its two extremities to the squama temporalis alone. There is no attachment to the pars petrosa.

In the temporal bone at about the time of birth (Fig. 2) the annulus tympanicus has become fused with the pars petrosa, which partly overlaps the lower posterior part of the annulus. The attachment has taken place, not through any growth of the annulus, but through a growth of the pars petrosa outward to meet the annulus. The tuberculum tympanicum anterius and the tuberculum tympanicum posticum are distinctly marked, but are not prominent.

In the 3-months-old child there is a distinct growth of bone from the annulus toward the common opening of the tuba auditiva, fissura petrotympanica and semicanalis tensoris tympani.

In the 6-months-old child the annulus has widened considerably at the lowest point and also at the two tubercles, so that its opening is no longer circular, as it was at birth, but is elongated in the vertical diameter.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Throughout this article, reckoning of the age of the fetus is by lunar months.

At a year old and at 1 year and 3 months old the widening has progressed, but is still most marked in the lower part of the region of the posterior tubercle, so that there is now a marked projection of this tubercle into the opening of the annulus.

At a year and 6 months of age the growth of the annulus is not only toward the opening of the annulus, but also horizontally outward at the posterior part of the annulus, so that this part has a rough outer margin similar to that presented in the adult bone for the attachment of the cartilage.

From this age on the anterior and posterior tubercles gradually approach each other, until, at 3 years, they have met and fused together, still leaving an opening which represents the original opening at the annulus tympanicus. While this opening usually closes, it does not always do so, and one not infrequently sees adult bones with this defect present.

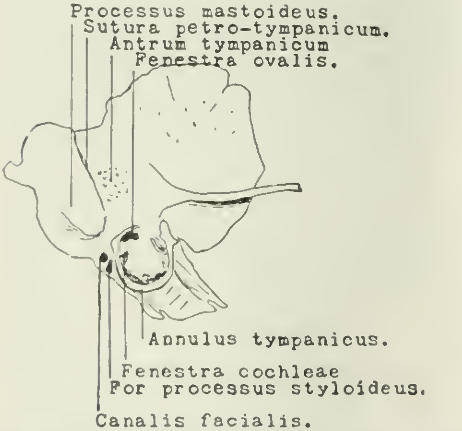


Fig. 2.—Temporal bone of the infant at birth, somewhat inclined, showing the first rudiments of the mastoid, the perforated outer wall of the antrum, and canalis facialis opening on the outer wall of the bone about the middle of the annulus tympanicus. Note that the petrotympanic suture lies between the antrum and the developing mastoid.

In the temporal bone of the new-born infant the free margin of the annulus is smooth, but from the age of 1½ years the outer margin becomes thickened and roughened.

In proportion, as the annulus widens and closes, the fossa mandibularis deepens from the shallow marking seen in the new-born infant to the deep cavity seen in the adult bone.

DEVELOPMENT OF THE PARS MASTOIDEA

There is no pars mastoidea in the fetal bone and very little in the child up to the age of 1 year. The first marked indication we have of a mastoid appears at the age of 1 year and 3 months. It is true that, before this time, there has been some change in the shape of the portion which is subsequently to become the pars mastoidea. It has extended outward as the posterior attachment of the annulus has widened.

In a child of 1 year and 3 months there is a distinct bulging outward at about the level of the upper posterior extremity of the annulus. This bulging continues until, at 2 years, the projecting pars mastoidea has reached down to the level of the inferior surface of the pars petrosa.

LOCATION OF THE SUTURES IN THE OS TEMPORALE

In the nine-months fetus there is but one suture, the petrosquamous, in addition to the attachments of the annulus tympanicus to the squamotemporalis, which latter are known as the tympanosquamous anterior and tympanosquamous posterior.

In a child at birth there is, in addition, the petrotympanic suture anterior and the petrotympanic suture posterior, which are directly continuous with the tympanosquamous anterior and tympanosquamous posterior respectively.

By the growth of the pars petrosa the bony tuba auditiva and the semicanalis tensoris tympani have become shut off from the canaliculus chordæ tympani and are wholly surrounded by the pars petrosa. The canaliculus chordæ tympani lies between the tympanic plate and the pars petrosa. The petrotympanic fissure is what remains of the anterior squamotympanic suture. A portion of the pars petrosa becomes wedged in between the tympanic plate and the pars squamosa, dividing the squamotympanic suture into two portions, which become the squamotympanic anterior and the petrotympanic anterior. The squamotympanic posterior eventually becomes obliterated and the petrotympanic posterior is shown only by a narrow line which still contains a canal for the transmission of vessels.

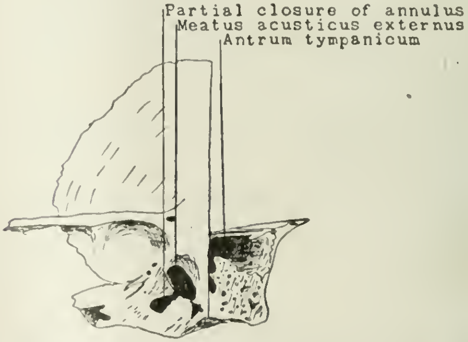


Fig. 3.—Temporal bone of a child of 2 years cut to show the location of the antrum. Note that the antrum lies wholly below the level of the zygoma.

In the course of time all the sutures become obliterated more or less, but that portion of the petrotympanic suture lying behind the antrum tympanicum may be traced in the adult bone by the denser part of the pars mastoidea corresponding to its location. The cells lying in front of it are comparatively small, while those lying behind it are apt to be large. This suture thus forms the dividing line between the antrum tympanicum and the larger mastoid cells. The obstruction to the mastoid cells by this suture explains why mastoiditis beginning in the antrum tympanicum is so often much more destructive near the tip of the mastoid than near the antrum.

The squamopetrous suture along the superior surface of the bone is quite a wide cleft in the new born child. It leads into the tympanum and antrum through the tegmen and, as is well known, by its failure to close leaves those deficiencies which predispose to meningeal and brain infections.

LOCATION OF THE CANALIS FACIALIS IN THE YOUNG BONE

The course and shape of the canalis facialis do not vary so much in themselves as in their relation to the surrounding parts, and this is chiefly dependent on the development of the pars mastoidea.

In the new-born child and for several months afterward, that is, until the mastoid begins to develop, the opening of the canalis facialis is on the outer surface of the pars petrosa of the os temporale. It lies just outside and behind the opening in which the processus styloideus is afterward formed. It is about opposite the middle of the annulus tympanicus and 2 mm. posterior to that ring. Its location is such that, if the ordinary incision for the complete mastoid operation were made, the nerve would be in great danger of division. This location explains why facial paralysis of the baby is caused by instrumental delivery. With the development of the pars mastoidea at the age of 1 year and 3 months it begins to recede from the outer surface of the os temporale and to be covered by the overhanging processus mastoideus until in the adult bone it lies fully 1.5 cm. within the plane of the outer surface of the processus mastoideus.

LOCATION OF THE ANTRUM TYMPANICUM IN INFANCY AND ITS MIGRATION IN LATER LIFE

In the temporal bone of the new-born child the recessus epitympanicus is much smaller comparatively than it is in the adult. Instead of extending across the whole width of the tympanum it occupies a little less than half that space and extends directly upward from the middle of the tympanum.

The antrum tympanicum lies directly above the recessus epitympanicus and extends obliquely upward and backward from it. Thus the antrum tympanicum drains into the top of the tympanum instead of into its upper posterior part, as in the adult. In the 9-months fetus (Fig. 1.) the antrum extends from 2 mm. in front of a vertical line through the posterior limb of the annulus to 2 mm. posterior to that line. It is wholly above the level of the processus zygomaticus. In the child of 2 years (Fig. 3) it has come to lie wholly below the level of the processus zygomaticus and has assumed the adult position with reference to the surrounding parts. This migration is well advanced at the age of 1 year and 3 months.

800 Davis Street.

ABSTRACT OF DISCUSSION

Dr. George E. Shambaugh, Chicago: Instead of beginning at the bottom and working up, it is the rule to-day for the men entering special fields to begin at the top, and comparatively few ever do work down and acquire that knowledge of the fundamentals of the special field which should constitute their preparation for the clinical study of cases. Too often the thing the prospective specialist aims to do is to see and treat cases, and as a rule it is the operations, the most difficult part of treatment, that he wants to undertake first. Too few of the men who begin in this way ever do master the fundamentals of their specialty, the detailed knowledge of anatomy, the embryology, the physiology of their subjects, which is the sort of training that makes it possible for them to become expert clinicians. The internist does not begin by attempting to treat diseases of the liver, nor the surgeon by operating on the liver. They first become grounded in embryology, the anatomy and the physiology of the organ, and then they are in a position to study intelligently disease and to apply treatment. The specialist in otology or ophthalmology ought to begin in the same way to acquire first of all a knowledge of the fundamentals of his subject. The dentist, who is working in a highly specialized field of medicine, is much more careful to get adequate training in the fundamentals of his specialty, although the clinical problems he has to meet are in no way so difficult to deal with as in our specialty. It is only here and there that a specialist undertakes, as Dr. Boot has done, to work up the fundamental anatomy of the temporal bone. This is something that cannot be acquired from text-books nor from drawings; it can be learned only by the handling of the preparations themselves.

ADAPTABILITY OF SCIENTIFIC INFANT-FEEDING TO GENERAL PRACTICE *

H. LOWENBURG, A.M., M.D.,
Instructor in Diseases of Children, Jefferson Medical College; Pediatrist to the Lebanon Hospital, Philadelphia, and to the Jewish Maternity Hospital; Pediatrist to the Jewish Seaside Home, Ventnor, N. J.
PHILADELPHIA

Realizing that human milk is the best food for babies, the pediatrist determined to his own satisfaction long ago that, this failing, the best substitute is properly adapted cow's milk. To state that the percentage, fractional or American system of infant-feeding is a panacea for the nutritional ills of infants during the first year of life would be to adopt a fallacy and create a position readily made untenable. To regard this as the best and easiest means of adapting cow's milk to the digestive capacity of the individual is rational and scientific. It affords the best way of carrying the greatest number of feeding cases, both sick and well, to a successful issue. That it is not too intricate and complex for adoption by the general practitioner can be proved by demonstrating that failure results, not from the method, but from causes independent of it. For convenience these causes of failure may be grouped under three headings.

1. CAUSES OF FAILURE DEPENDENT ON THE PHYSICIAN

For many of these causes of failure the pediatrist himself is to blame. In his teachings and in his writings he has made the subject too complex. Didactically he has taught not enough principles and too many methods, and in the hospital wards he practices none of them, leaving the matter of feeding to the inexperienced intern, confining his own efforts to his private patients and the consultation room. The result has been that nearly all hospitals for children are carrying many semimarantic infants who neither gain nor lose, and who are finally taken home or die from some intercurrent affection. From this the general practitioner takes his cue that perhaps the matter of percentage feeding is too intricate and too complex for the pediatrist himself. This is not the case. It simply emphasizes a fault, almost unpreventable, that even in the best-conducted institutions the number of infants to each nurse is too great. The result is that the patients suffer from the lack of that intimate contact and perfect hygiene which is desirable and necessary to the successful conduct of any medical case, and, further, that the pediatrist is unable to give the time and study to each individual patient.

In this connection I believe the subject of sufficient importance to recommend that each large hospital and college should have on its staff a pediatric dietitian.

---

* Read before the North Branch of the Philadelphia County Medical Society and by invitation before the Southeast Branch of the same society.

The multiplicity of algebraic monstrosities proposed and taught as methods of milk modification, "simple and practical," have justly bewildered the practitioner and he eagerly takes refuge behind the directions plainly printed on the label of some patented food. The laboratory modification of milk, while theoretically ideal, is most often impractical and too expensive and will not be considered here.

For home modification the practitioner, as well as the pediatrist, should become familiar with one, and by no means more than two, methods of milk modification. These can readily be acquired with a little patience and they soon become a part of his therapeutic equipment. I would recommend Holt's top-milk method for the majority of cases in private practice, and Baner's cream-and-milk method for institutions and the poorer class of private work and dispensary patients as there is no waste. The more these methods are used the clearer and more simple they become.

The physician should know the normal constituents of human and of bovine milk, and the physical as well as the chemical and bacteriologic differences. Without giving these their full value, failure will be absolute. It is insufficient to diagnose indigestion; he must designate the variety of indigestion, whether it be the protein, fat or sugar which is at fault, and act accordingly. He must seek to adapt the milk to the baby, not the baby to the milk, remembering that each baby is a law unto itself. He must pay no attention to the child's age with the idea of determining its digestive capacity or the amount to be fed or the interval of feeding. It must ever be borne in mind that cow's milk was never intended by Nature for babies. Chapin's researches in comparative physiology and biology have abundantly proved this. Therefore, the nicety of his percentage adjustment will fail unless the physician notes the physical differences between the curd of bovine and that of human milk. In this connection, as will be emphasized later in more detail, he must apply to his percentage formula the advantages to be derived from sodium citrate, cereal decoctions, whey and pancreatization[1] (peptonization). Milk must be clean. Accurate percentages will not prevent infection from a dirty milk.

Many practitioners, as well as pediatrists, have a mistaken idea as to just what percentage feeding means. I have no patience with that teaching which claims that it is a matter of importance as to whether the amount of any one of the different constituents varies a quarter or a half of 1 per cent. one way or the other. Such fine adjustment is not only unimportant, but impossible. The completed preparation, I venture to say, rarely if ever would analyze to correspond to the written formula. Nor is this necessary. Any attempt to secure this would lead to disaster and confusion and justly bring the system into disrepute. What percentage feeding means and affords is a simple and scientific way of thinking and of adapting the milk to the infant's digestive capacity. The first formula is always an experiment, and by percentage feeding any one or more of the various constituents can be diminished or increased. It cannot transform cow's milk into human milk, but with it the physician can attack rationally and scientifically that element which is responsible for the indigestion, feeling that subtle satisfaction which one experiences when doing a thing for a reason.

Though I cannot give detailed reasons, I would advise against too frequent weighing, too frequent inspection of the stools, too frequent changing of the formula, to which the two former lead, and against attaching too much importance to the presence of a few curds and some mucus and the occasional occurrence of a green stool.

The physician cannot afford to be lazy. The results and the rewards are just as great as any in medicine. He who can transform a shriveled, discolored, weazened mite into a pink, fat, laughing babe has accomplished as brilliant a thing as surgery ever did. This percentage feeding, if properly interpreted and properly applied will do more frequently than any haphazard system of feeding or patented infant food. The physician must not scorn to teach the mother the importance of details or to soil his hands by going into the kitchen and showing her how to make up the first formula and the various milk diluents. He will have an apt pupil who will eagerly follow in the lead of his enthusiasm.

II. CAUSES OF FAILURE DEPENDENT ON THE MOTHER AND ENVIRONMENT

Other things being equal, the most important thing on which a successful issue depends is the intelligent cooperation of the mother—with emphasis on "intelligent." Hysteria and meddlesome interference have no place in the therapeutics of pediatrics. The mother must choose between her medical adviser and her well-meaning but poorly informed relatives and friends and her own notions as to what is right or wrong. She must promise not to interfere, to carry out orders to the letter, to believe that black is white, or to dispense with her physician and to assume the responsibility herself. This cannot be too strongly urged on the mother of a prospective patient. To my mind maternal control is the most important preliminary. Attention to details, quantities to be fed, intervals of feeding, the time consumed in taking the milk, position of the infant while feeding, picking the baby up after feeding, cleanliness of the nipples and bottles, are all matters which make or mar a successful outcome and the blame must not be placed on the system of feeding, whatever that may be.

Environment is a potent factor for good or for evil. Proper clothing, proper cleanliness of the mouth, proper ventilation and sufficient out-door airing are essentials that cannot be neglected. Too much coddling and playing with the infant ought to be avoided. Infants should be expected neither to be amusing nor amused. A little wholesome neglect is very often the best tonic to a poor digestion. Percentage feeding cannot hope to cope with ignorance and squalor met in the home of the slum dweller any more than can aseptic surgery. The practical demonstration of a valuable and proved theory is here impossible. I have encountered many instances, however, in this class of patients in which, with patience on the part of the physician, the cooperation of the mother was obtained and with surprisingly brilliant results. Kerley has had a similar experience amongst a large number of dispensary patients and tenement dwellers in New York City.[2]

III. CAUSES OF FAILURE DEPENDENT ON THE INFANT

There are some infants who cannot digest cow's milk in any form. It is true that these cases of idiosyncrasy are rare, and yet they do occur, and unless recognized lead to disaster. Other patients there are who possess an intolerance for fat. Whenever persistent vomiting occurs three common etiologic factors should be seriously considered, viz.; faulty hygiene, fat or sugar indigestion and congenital hypertrophic pyloric stenosis. Any one of these, alone or in combination, must be proved or eliminated. The character of the vomitus, together with the time of occurrence, associated with other symptoms, will usually admit of a correct conclusion and suggest the remedy. In these cases an easily performed and too much neglected procedure is stomach-washing.

---

[1] The term "pancreatization" is used advisedly as students and many practitioners associate the term "peptonize" with pepsin. A peptogenic milk powder contains 15 grains of sodium bicarbonate and [illegible] grains of extract of pancreatin. The terms pancreatize and pancreatization, therefore, explain this.

[2] Kerley, C. G.: Tr. Sect. Dis. Children, American Medical Association, 1906.

Premature infants, congenitally weak ones, rachitic and marantic patients, all present feeding problems different from those of the ordinarily healthy bottle-fed baby and require peculiar and delicate manipulation to start them on the road to recovery. This can best be secured through careful percentage feeding, rationally applied. In this connection it must be emphasized that properly to prescribe a formula for an infant not only includes the giving of correct percentages for the case in hand, but also the ability to overcome the difficulties of digestion peculiar to the individual and the other causes of failure which have been described. It may not be amiss to discuss here the more important details of procedure when ordering the first formula, and the methods employed in meeting the feeding problems encountered in the more difficult cases.

IV. DETAILS OF FEEDING

In an endeavor to determine the infant's digestive capacity the history of every child should be carefully investigated with reference to its weight at birth, its present weight, the causes for discontinuing breast-feeding, the various foods and milk combinations which have been tried, its appetite, quantities fed and the interval of feeding, the presence or absence of vomiting, constipation, diarrhea, the color, odor, frequency and consistency of the stools together with the persistent presence or absence of curds, fat, mucus, pus or blood. The patient's physical state should be noted with special reference to nutritional changes indicating marasmus, rickets or scurvy. Trouble is rarely encountered when transferring a healthy breast-fed infant to the bottle.

In weaning these infants it is best to determine the strength of the mother's milk by analysis and then to endeavor to supply a mixture, slightly weaker, especially in protein and fat, than this analysis would indicate. Sudden weaning must be avoided wherever possible. One bottle should replace a breast-feeding for two or three days and the effect noted on the stomach and bowels; then two bottles are given, and so on until the entire breast-feeding is replaced. The various percentages are now increased in the same gradual manner until at a year, or thereabout, the infant is receiving plain cow's milk. The entire process of weaning should occupy from four to six weeks. Frequently the results at weaning are quite as good where an analysis of the maternal milk cannot be previously made. Here a formula representing percentages of protein, fat and sugar somewhat weaker than those of average breast-milk (P. 2 per cent., F. 4 per cent. and L. 7 per cent.) may usually be employed with success as the first formula.

In prescribing the correct percentage of fat no two cases can be treated alike. It is therefore difficult to arrange any general rule. Vomiting an hour to an hour and a half after feeding is a prominent symptom of fat indigestion, especially when the vomitus is sour, smelling like rancid butter. Associated with this, as a rule, are frequent green, greasy movements, usually acid in reaction and containing lumps of undigested fat. Less often the stools may be constipated, greasy, white and foul. Thus having, in a rough way, determined the infant's' fat capacity, the percentage is decided on. It is best to commence with 1 per cent. to 1.5 per cent. and gradually to increase the amount as tolerance is established. The quantity should never exceed 4 per cent. and in the majority of instances it is wise not to go beyond 3.5 per cent. Some infants cannot digest fat at all. This class of patients is becoming decidedly more numerous as our diagnostic ability increases. These babies must be fed on modified skim-milk from which all the fat has been removed, or on fresh buttermilk containing cooked wheat flour and sugar. In other cases fat intolerance can be overcome without reducing the percentage of fat by properly pancreatizing the formula. This is a valuable and too little-employed maneuver. It must not be continued too long or the very purpose for which it was used will be defeated. My own experience with it would place it among the life-saving measures to be depended on especially in extremely asthenic cases of marasmus. It must also not be forgotten that rickets and scurvy may follow the feeding, over a prolonged period of time, of percentages of fat which are too low.

With reference to the digestibility of the protein elements, particularly the paracasein (curd[3]), authoritative opinion is somewhat at variance. It was formerly taught that this, or rather the indigestibility of the curd of cow's milk, constituted the crux of the whole question of artificial feeding. Many present day authorities deny this, some, notably M. Budin of France, going so far as to feed undiluted cow's milk, with reported good results.[4]

Whichever may be right, the fact remains that curd indigestion is an existent and troublesome condition. Its prevention or correction becomes, therefore, a matter of extreme importance. A healthy new-born infant should not receive more than 0.5 per cent. to 0.75 per cent. of combined proteins. If this is tolerated the amount is slowly increased until at six months from 1.5 per cent. to 2 per cent. is given, and at the age of from ten months to one year 4 per cent. can as a rule be digested. While frequently cases are met in which stronger percentages are digested with ease and benefit at an early age, the rate of progression just detailed does not hold in the case of very weak infants in cases in which distinct curd intolerance exists, notwithstanding the age. When curded, green, slimy stools, associated with colic and irritability, or hard, dry, white movements, which readily crumble, indicate curd indigestion the initial treatment should be a purgative dose of castor oil followed by whey feeding for a few days. Whey contains about 1 per cent. soluble protein and is easily digested. Then small amounts of paracasein are added and the effect noted as these are increased. In exceptional cases it may be necessary to pancreatize the formula for a short time. By this means larger amounts of paracasein can be taken, the danger of rickets being thereby minimized. The time of pancreatization is gradually reduced and the pancreatization omitted as soon as possible. After this the addition of some efficient digestive ferment to each bottle or to every other bottle just before feeding is an excellent aid until the digestive function has been completely established.

---

[3] The terms "paracasein" and "curd" are used as synonyms in keeping with the most advanced chemistry of the protein of milk. The coagulable protein is held in suspension by its combination with calcium phosphate and is called calcium casein (formerly caseinogen). This is changed by rennet into calcium paracasein, from which the paracasein is separated as an insoluble curd by small quantities of dilute hydrochloric acid. The earlier term for the curd was casein.

[4] Cotton, A. C.: Diseases of Infancy and Childhood, p. 129.

In many instances the curd is rendered readily digestible by the use of one or two grains of sodium citrate for every ounce of milk and cream in the mixture, as first advocated by Wright and Poynton of England, and later by Van Derslice of Chicago. The early teaching of Jacobi,[5] advocating the use of cereal decoctions as a curd attenuant, still holds good as an excellent means of rendering the paracasein easily digestible, and has received recent emphasis from the work of Chapin, who employs dextrinized gruels. The cereal decoctions provide a certain amount of starch, which, according to the investigations of Kerley,[6] can be digested and assimilated by infants as young as nineteen days. Ordinarily, barley-water made from the grain is to be preferred, either full strength or diluted one-half with boiled water. If constipation be present, oatmeal-water used in a similar manner makes an excellent substitute. My own experience with the old-fashioned flour-ball, baked to a bread-brown, grated and added to the amount of a half a dram to each bottle just before feeding has been eminently satisfactory in facilitating protein digestion. Occasionally whey may be employed as a diluent of milk, cream or top-milk, as the case might be, in order to render the curd finer and more susceptible to the digestive juices. In these cases the whey must be heated to 150 F. to destroy the action of the ferment. Beyond this point, 158 F. to 167 F., the lactalbumin will become coagulated.

Sugar is rarely a cause of trouble. The new-born infant should receive from 4 per cent. to 5 per cent. and the amount rapidly increased to 7 per cent. This is continued up to nine months, when it is gradually reduced to 4 per cent. at the age of one year. Frequent, watery, acid stools that excoriate the buttocks, associated with a sour, watery vomitus, flatulency and colic, are indicative of sugar indigestion. Besides marked wasting, a deficiency of sugar produces a subnormal temperature. Infants who are receiving too much sugar and who do not suffer from indigestion are fat, flabby and anemic and are frequent victims of scurvy and rickets. Theoretically, milk-sugar should be employed, but practically plain ordinary cane-sugar answers as well and is cheaper, cleaner and more accessible.

Any formula, however accurate in composition and however scientific in its adjustment to the infant's digestive peculiarities, must always be regarded as an artificial food. As such it must be reinforced by those elements which will cause it to approximate Nature's product in freshness, cleanliness and antiscorbutic and antirachitic qualities. The finished product should therefore be made from certified milk, should be well iced and should never be kept longer than twenty-four hours. Fifteen grains of sodium chlorid should be added to each twenty ounces of formula, and expressed beef blood, freshly made, or orange juice in half-dram or dram doses should be given between bottles on an empty stomach.

CONCLUSION

Thus it has been shown that failures with this system of feeding depend on causes foreign to it, and that success can be attained only by studying the needs of the individual and meeting them scientifically. The strongest argument in favor of accurate feeding is that results, both immediate and remote, far excel those obtained by any other method. It is a matter of daily occurrence for the specialist to see infants with a history somewhat as follows:

Born in normal labor. Weight at birth, 7½ pounds to 9 pounds. Age, six months. Present weight 6 pounds and some ounces. Breast-fed for one week. Discontinued the breast because the doctor or the nurse considered the milk insufficient to nourish the baby properly. Placed on indifferently modified cow's milk. Continued to vomit and cry. Colicky, irritable and restless. Stools green and contain curds and mucus, or white and dry. Discontinued milk. Put on barley water, then whey and cream. Vomiting; bowels continued bad. Put on pancreatized milk. Agreed for a while. Started to vomit again. Child fed irregularly with indefinite amounts. Loss of weight continuous. Then ran the gamut of condensed milk, malted milk, and various prepared foods, and four or five able physicians, until this bit of starving, crying, vomiting, purging humanity is thrown into the lap of the pediatrist and his reputation put to the test to work a miracle!

And can he do it? Yes, in the majority of cases with the child free from tuberculosis and syphilis. How does he do it? By studying the needs of his patient and meeting them by carefully adapted cow's milk. The physician can do as well, and by doing less he does not do justice to himself or accomplish his full duty by his patient. He has learned more difficult things than percentage feeding, and the time is not yet when he is ready to acknowledge his inability to do so and leave these cases to the specialist.

CHILDBIRTH AFTER APPARENT MENOPAUSE

L. BUCKLE, M.D.
NEW YORK

C. H., a well preserved and healthy looking woman, aged 50 years, always menstruated regularly and never had any genital troubles till 15 years ago. At that time she gave birth to twins, making the number of children seven in all. About a year later menstruation returned but with considerable irregularity; and in another year it ceased altogether. Two years ago, 11 years after the cessation of menstruation, she began to feel out of sorts; she lost her appetite, had nausea and felt weak. She was examined and treated by several physicians, including myself, at various times, but her true condition was not diagnosed and she remained unrelieved. One doctor told her that she had a growth and an operation would be necessary to remove it. The others treated her for gastritis, nervous dyspepsia, etc. She began to worry over her troubles and became much emaciated, anemic and nervous.

One day she came into me and said, "Doctor, I have a cancer and I feel it move around here," pointing to her abdomen. But this time ballottement, fetal heart sounds, milk pressed out from nipples, and other signs pointed to an undoubted pregnancy. She must have been then in the sixth month, for about 3½ months later, I delivered her of a boy of normal size and weight. About a year after this birth, menstruation returned and since appears regularly every month.

Pregnancy eleven years after cessation of menstruation is rather rare. So also is the return of normal menstruation after a cessation of thirteen years. These unusual features seem to justify reporting the case.

---

[5] Jacobi, A.: Therapeutics of Infancy and Childhood, p. 29.

[6] Kerley, C. G.: The Treatment of the Diseases of Children, p. 126.

VEIN-TO-VEIN TRANSFUSION OF BLOOD *

GEORGE MORRIS DORRANCE, M.D., and NATE GINSBURG, M.D.
PHILADELPHIA

In a previous paper, dealing with the transfusion of blood in the human species, we presented a summary of the literature on this subject and a description of both the old and modern methods of performing transfusion. At the present time, the method in vogue in the performance of this operation is the direct junction of the vessels either by suture or some mechanical appliance. We intend to discuss only certain features pertaining to the operation and we offer this preliminary report, which is based on the development of a new technic, under three heads: (1) the advantages of the vein-to-vein method of performing transfusion over the arteriovenous method; (2) the indications for employing transfusion; (3) the contraindications to transfusion.

I. ADVANTAGES

The artery-to-vein method has been advocated in the last few years by investigators of the subject, notably by Crile. Anastomosis of the vessels is established either by means of a modification of Payr's original tube, or by direct suture of the vessels. Tubings of various types are also advocated, especially by Brewer.

At the best, the operation is a delicate one and should be performed with a full realization of the risk, both to the recipient and to the donor. To the recipient, the dangers incident to the transfusion are the transmission of disease, hemolysis and acute dilation of the heart. The first of these is readily eliminated by a careful inquiry for a history of syphilis or other transmissible disease, supplemented by a rigid physical examination. With regard to hemolysis, the conditions necessary for its occurrence are as yet imperfectly known, and the clinical tests proposed for their detection have not proved of much practical value. We have not, thus far in our experience, had a case of hemolysis. In the case reported by Pepper and Nesbit, obscure changes were undoubtedly present before transfusion was done.

Acute dilatation of the heart from overengorgement is a grave accident which cannot always be avoided when the arteriovenous method is employed, even by the exercise of all possible care on the part of the surgeon. As will be shown later, however, this accident is practically impossible with the vein-to-vein method of transfusion, because the principal factors in its production, namely, increased pressure and volume of the blood-stream, are eliminated.

The advantages claimed for the employment of the arteriovenous method of transfusion are: (1) that sufficient blood-pressure is obtained to introduce the blood quickly from the donor into the circulation of recipient, and (2) that the blood obtained is richer in oxygen content. On the other hand, the method suffers from various disadvantages.

1. The operation itself is beset with many technical difficulties and should not be attempted by any one who has not perfected his skill by repeated experiments on animals.

2. The size of the vessels can never be determined beforehand. Frequently, the radial artery is found to be so small that some other artery must be exposed for use. The impression of the size of the peripheral arteries which one gains in the dissecting-room is erroneous, since, in the living subject, they are of considerably narrower lumen than those observed in the cadaver.

3. The pressure and volume of the blood-stream, when the arteriovenous method is employed, are sometimes so great as to cause acute dilatation of the right heart, which is a grave complication, appearing rapidly and frequently proving fatal. It undoubtedly explains one of the sudden deaths that occur during transfusion. In Crile's animal experiments, acute dilatation was often noted, and Cole and Winthrop mention it in their work. We have observed it twice in our human cases, and for this reason, the vein-to-vein method suggested itself to us.

The technical difficulties, encountered in the arteriovenous method, of performing transfusion have led to the development of various instruments, principally modifications of the original Payr's tube. Under the most favorable conditions, even in the hands of an experienced operator attempts at transfusion will often fail, but failure in these cases is due to insuperable obstacles, such as abnormally small, or sclerotic arteries, or deep-seated vessels buried in a thick layer of adipose tissue.

In vein-to-vein transfusion, on the other hand, the surgeon is dealing with the superficial vessels, which are easy of access. Moreover, a gradual flow is obtained so that danger of engorgement and the resulting sudden dilatation of the right heart are avoided. The size of the structures and the ease of access make it a simpler procedure than the anteriovenous method. The principal advantage we suggest for the vein-to-vein method of performing transfusion, is its simplicity. There is no danger to be considered except the possible one of hemolysis.

II. INDICATIONS

The basis for classification of the diseases or acute emergencies necessitating the performance of transfusion has been previously stated at some length. In general, transfusion is employed either to save life or to hasten the patient's recovery. After severe hemorrhage, we have two conditions to fulfil: first, to make up for the loss of fluid in the patient's blood-vessels, and second, to increase the number of oxygen-carriers, (red corpuscles). The first of these conditions can be fulfilled by the injection of saline solution, either subcutaneously or intravenously. The second can be fulfilled only by the transfusion of human blood.

The indications for performing transfusion are therefore as follows: the sudden depletion of the vascular system due to grave accidents, or following operations, as in the case of severe tonsillar hemorrhage, and in hemorrhage occurring during the course of typhoid fever; hemophilia; melena; poisoning with carbon dioxid, coal-tar derivatives and other substances characterized by the production of methemoglobin; and pellagra, in which the transfusion of blood from a patient, who has recovered from the disease, has been found beneficial in a number of reported cases.

III. CONTRAINDICATIONS

It is of no value in severe infections, in the cachexia of cancer and in tuberculosis. In pernicious anemia and in leukemia, transfusion has disappointed the great expectations which the introduction of the method aroused for the cure of these hopeless conditions. Transfusion is decidedly harmful in cases of purpura hemorrhagica, and whenever hemolysis is taking place.

---

* From the Laboratories of Experimental Surgery in the University of Pennsylvania.

* Read before the College of Physicians of Philadelphia, May 4, 1910

The above claims are based on experiments performed on dogs. The transfusion of blood was obtained by employing veins; as jugular to jugular or better, jugular to femoral, in this way eliminating any possible negative pressure or suction. No difficulty was encountered in successfully transfusing enough blood to resuscitate a dog that was practically exsanguinated. This experiment could be repeated again and again on the same dog by clamping the donor's vessel and bleeding the recipient until practically pulseless; the clamp was then removed and the blood allowed to enter the recipient's circulation until the pulse and respiration returned to normal, while symptoms of hemorrhage developed in the donor. Communication between the veins was established by means of Sweet's modification of Payr's tubes.

In concluding, we wish to express our appreciation of the services rendered by Messrs. Burleigh, Hayward, Pitt and McElhone, undergraduates in the University of Pennsylvania.

Note.—After this paper had been put in type, we performed a vein-to-vein transfusion on a woman for a very severe hemorrhage following a ruptured extrauterine pregnancy. The pulse before was very weak and rapid, about 160 per minute. Five minutes after the medial cephalic of the husband was connected to the median cephalic of the wife, the pulse was much fuller and 110 per minute. After the blood had flowed thirty minutes the pulse was good, full and 120 per minute. No abnormal heart sounds could be heard.

THE CAMPAIGN AGAINST DIPHTHERIA AND SCARLET FEVER IN CHICAGO *

I. D. RAWLINGS, M.S., M.D.
Assistant Chief Medical Inspector, Chicago Department of Health
CHICAGO

These two diseases are constantly endemic in Chicago, each day bringing its quota of reports to the health department. In diphtheria and scarlet fever, perhaps to greater extent than in any of the other more serious endemic diseases which are prone to become epidemic, large cities, as a rule, demand an adequately manned contagious disease bureau and expect great vigilance and diligence of those in charge in their efforts at preventing epidemics.

Chicago until recently was wofully deficient in her safeguards against epidemics of these two diseases. In spite of repeated warnings she chose to ignore the recommendations for adequate protection and was content with the following conditions as regards diphtheria and scarlet fever.

For several years prior to 1907 the function of the health department in these two diseases had been little more than advisory to the attending physician, who practically had delegated to him the protection of the public against the spread of contagion. The physician made the diagnosis, gave the family such instructions as he chose regarding quarantine, reported the case if he chose to comply with the city ordinance, and, if he reported it used his own pleasure about having the premises placarded, and the time of ending the case.

Because the activities and energies of the few medical inspectors were needed in fighting smallpox or in other equally urgent duties, such as antitoxin administration and intubation, the contagious disease bureau was forced to admit its inability to compel the reporting of diphtheria and scarlet fever cases, and therefore extended to the attending physician, as the price of reporting the case and cooperating with the department, the privilege of "assuming responsibility" for the prevention of the spread of contagion. By simply writing the magic word "assume" in a certain space on the reporting postal card the physician enabled his patient to escape practically all surveillance of the bureau of contagious diseases, and no warning placard was posted.

This plan of allowing the attending physician to "assume responsibility" may have resulted in an increased number of cases being reported at its inception, but in 1904, when I first became intimately acquainted with its results, I was speedily convinced that it was unpractical and not justified by existing conditions, when all other large cities of the United States, and even the majority of progressive villages in the vicinity of Chicago, were requiring the reporting of cases by physicians and the posting of warning placards.

Under this plan of "assuming responsibility" many physicians took the stand that, inasmuch as the management of diphtheria and scarlet fever cases was left to them anyway, and their course of action was the same, whether the case was reported and responsibility assumed, or the case was not reported at all, there was no reason that they should bother with reporting the case. Other physicians took the position that it was absurd for a health department to think that a physician who sees a case of contagious disease for fifteen or twenty minutes once or twice daily at the onset, and perhaps once a week during the convalescent stage, could guarantee that his instructions as to quarantine would be carried out. The physicians of this group would not put their signature to something they could not guarantee and still were not willing to placard the premises of their patients unless it was a general requirement. Another smaller group of our physicians reported their contagious cases and had premises placarded because they felt it a duty they owed the community in which they practiced that they should have knowledge of the location of all diphtheria and scarlet fever in their midst.

Under this system the laity soon came to feel that placarding was a reflection on their good citizenship, as indicating they could not be trusted to do the right thing without a warning sign on their door, while their next-door neighbor, perhaps much more reckless of life and the rights of others, had no warning sign. This feeling led them to beg their physicians not to have a placard posted, and, ultimately, to seek out that physician in the neighborhood who never had warning signs placed on the premises of his contagious cases. This sentiment among the laity helped the majority of physicians who never reported their cases, and also that large group of physicians who "assumed responsibility," whereas the small group of physicians who were doing the right thing as measured by standards set by all progressive municipal health boards found their practice curtailed with resulting financial loss. The plan of "assuming responsibility" was, in my opinion, the greatest millstone to progress that could be tied about the neck of any municipal contagious disease bureau.

By Jan. 1, 1907, the situation as regards scarlet fever was alarming and as regards diphtheria threatening. During the preceding year just closed diphtheria reports had almost doubled and more than four times as many cases of scarlet fever had been reported by about the same group of physicians who had done the reporting in previous years. This probably meant a marked increase in the number of these two diseases and that less than one half the cases were reported, and yet delegations to

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

the bureau of contagious diseases were frequent and insistent that something be done to protect their communities where localized epidemics existed. Many of the medical profession were in a measure hostile, as they had come to feel it their prerogative to have charge of quarantine and other restrictive measures. The laity, too, resisted placarding of their premises.

The bureau of contagious diseases, forced to a "do-nothing policy" for want of men, was already greatly overworked. Records were in a chaotic condition. The office force was absolutely inadequate to handle a normal situation. Unavailing had been all efforts to convince those in authority that, in many respects, a contagious disease bureau is an emergency service just as truly as is the fire department, and that to cope with contagious diseases it is just as important that a large city have a specially trained and adequate contagious disease bureau force, if lives are to be saved and financial loss averted, as it is that she maintain a well-equipped and well-manned fire department for protection of lives and property.

Early in January, 1907, the threatening epidemic of scarlet fever broke forth and on January 29 reached its height as regards the highest number of cases reported in one day, with 413 reports. Our common council finally took the situation in their own hands and speedily provided for 350 men, nearly all physicians, 100 more than the number asked for by the contagious bureau, with whom to combat the epidemic. This was largely a milk epidemic.

It was February 1 by the time these raw recruits were instructed and competent to do work that would bring results. The cases decreased almost one-half in February over January. March saw a decrease of about one-half as compared with February. By April the situation was well in hand.

During the excitement incidental to the epidemic a level-headed councilman, stimulated doubtless by some progressive physician who realized the evils and handicap of "assuming responsibility," had passed an ordinance making it compulsory and mandatory on the health department to placard all cases of scarlet fever and diphtheria. With the lessons of an epidemic fresh in memory, and with the aroused public sentiment and a united press demanding safeguards against future epidemics, the prospects for better regulations as regards scarlet fever and diphtheria were bright indeed.

THE PROBLEMS FOR SOLUTION

Some of the problems left for solution by the 1907 epidemic were the following:

PROBLEM 1.—How to keep alive the aroused public sentiment to the point where press and public would demand a properly organized and manned contagious disease bureau that should pursue as progressive, as wide-awake and as aggressive an attitude towards scarlet fever and diphtheria as it did towards smallpox. This first problem was, fortunately, completely solved when in April, 1907, Chicago was given a progressive, fearless, energetic and thoroughly competent Commissioner of Health, respected by the medical profession of Chicago, her press and public generally. The press and public, guided largely by Dr. W. A. Evans, the Commissioner of Health, has certainly demanded a live, vigorous policy of the Contagious Disease Bureau ever since.

PROBLEM 2.—What immediate safeguards were needed for prevention of future epidemics? The following had been advocated for years by Dr. Spalding, the chief of Bureau of Contagious Diseases, and seemed desirable:

A. Increased number of medical inspectors.

B. A systematic, unified field inspection service.

C. Reorganized methods of keeping contagious disease records.

D. School inspection for contagious diseases.

E. An increased office force, work better systematized, and a full day's work demanded.

F. More accurate office data as to location of cases.

A. *Increased Number of Inspectors.* One hundred medical inspectors were asked for and secured within one month and they have ever since been a permanent part of our force.

B. *A Systematic Field Inspection Service.*—This was obtained by dividing Chicago's 190 square miles into 100 districts and assigning a medical inspector to each district. He is made responsible for the contagion and other conditions in his district. A definite territory to each inspector makes much less duplication of work. This field work is fourfold: (1) inspection; (2) investigation; (3) vaccinations, and (4) diagnosis.

1. By inspection we mean the proper handling of a case of contagious disease regularly reported by the attending physician. An inspection implies:

(*a*) If diphtheria, a diagnostic culture, also antitoxin for patient and contacts.

(*b*) Placarding premises in front and rear.

(*c*) Establishing a strict quarantine.

(*d*) Definite oral and printed instructions to family as to quarantine requirements.

(*e*) If good quarantine is impossible, leaving a note for ambulance driver and order to hospital.

(*f*) If diphtheria, and case is to go to hospital, culture contacts.

(*g*) Leaving card of instructions for quarantine officer back of front door placard, giving him definite, concise information as to the quarantine requirements laid down by the medical inspector.

(*h*) Notification to principals of schools attended by children in building of case of contagious disease and also to principals as to who, if any, from building infected, may safely attend school.

(*i*) A complete written report to the department of each case inspected, embodying a statement of above and other facts, such as name of milkman, source of infection, school and room attended, etc.

In 1909, 49.952 inspections were made by medical inspectors. During the first five months in 1910, there were 27.693 inspections.

2. Vaccinations, in case of smallpox exposures and contacts, includes following up cases to see if vaccinations are successful and a watch for symptoms of smallpox. If symptoms develop, then prompt removal to Isolation Hospital.

3. Investigations are made of suspected cases learned of from all sources other than through the attending physician. Inspector is required to examine case carefully and if contagious, report to the department, quarantine, placard, etc.

In 1909, there were 23.141 investigations by medical inspectors. In 1910 to June 1, there were 2.216 investigations by medical inspectors.

C. *Reorganized Methods of Keeping Contagious Disease Records and Files.*—Instead of using the card index method with a separate file of each item relating to a case, which required us to look in five or six different places before we could get complete data on the case, it was decided to use the envelope filing method. This enables us to keep all data relating to case where we can refer to it quickly in its entirety. This change was of great value to both office force and public as to economy of time and convenience.

D. *School Inspection for Contagious Diseases.*—This is probably the most valuable single factor that Chicago has in the prevention of spread of contagion through the pupils of her 400 schools. This plan calls for a daily systematic inspection as follows: (1) A superficial routine examination of all pupils at opening of schools in fall; (2) all pupils who have been absent for more than three days before entering the class room; and (3) any child referred to inspector by principal or teacher as suspicious.

How valuable this is in preventing diphtheria and scarlet fever is self-evident when it is explained that out of 537.599 pupils examined in 1907, 633 cases of diphtheria and contacts, many of whom were undoubtedly "carriers," were halted at the threshold of our schools. In scarlet fever the figures are even more convincing. 1,456 cases of scarlet fever and contacts were excluded from our schools.

A summary since 1907 follows:

School Medical Inspection for Contagious Diseases

	Examined	Excluded Diphtheria	Contacts	Scarlet Fever	Contacts
1908	439,946	178	180	278	251
1909	647,842	47	292	189	581
1910, to June 1	262,645	14	136	92	233

E. *Increased Office Force.*—The office force was more than doubled, the work was carefully systematized and a full day's work demanded.

F. *More Accurate Office Data.*—Daily spot maps, made by months, were installed so that those in charge of contagious diseases might see at a glance the location and grouping of the cases of diphtheria and scarlet fever.

PROBLEM 3.—What measures were needed as additional safeguards against future epidemics? The following, among others, seemed very desirable and plans were laid to secure and put them into operation at no very distant date:

A. *Placarding and Instituting all Quarantine Measures More Promptly.*—To accomplish this, we go for our mail before 7 a. m., and have three clerks come one hour earlier than formerly. We sort, assign and telephone all assignments to the medical inspectors before 8:30 a. m., which is before they go out on their morning's duties. By this plan we often quarantine a case twenty-four hours earlier than formerly. We go for our mail Sundays and holidays and at once telephone out to the inspectors all diphtheria and scarlet fever cases for immediate action. This frequently means a saving of forty hours in instituting quarantine.

B. *More Strict Quarantine in Diphtheria and Scarlet Fever.*—To meet this requirement it was decided to separate the workers of the family from the patient and his attendants more completely. The plan adopted was that all adults of family who work out must live in a portion of the flat completely cut off from the patient and attendant, or if in a large house, live in a portion remote from patient and not come in contact with anyone who comes in contact with patient, or if these conditions were impossible of fulfilment, then the workers would have to room and board elsewhere or quit work and stay at home, unless they should elect to end the entire quarantine by sending the patient to hospital.

This plan works a hardship to a certain extent, but not as great as one would suppose. Very frequently the living rooms are so arranged that by sealing one door the patient and attendant can be completely isolated from front part of flat and placards placed only on back door, so that the workers may sleep in front, but must take meals and find toilet facilities outside of premises. Our rule requires that the patient and attendant be given that portion of the house containing bath or at least toilet facilities.

To control the quarantine more effectually, a plan of espionage was devised. The disinfector is to call every other day and watch for violations of quarantine. On his first visit he removes from behind the front-door placard a card left by medical inspector for him, giving concise instructions as to what quarantine shall be demanded. On back of this card he notes the date and quarantine conditions found at each subsequent visit as well as mailing the department a separate report at each visit.

The quarantine officer is supplied with special blanks to be filled out carefully and completely in case he finds flagrant violation of quarantine and this data is used as evidence in prosecution. If his quarantine report is unfavorable we determine from the statement what action is needed. As a rule, if the case is one of diphtheria with a positive diagnostic culture, we immediately send the patient to a hospital. If the case is one of scarlet fever, we also do this, if we can obtain room at Cook County Contagious Hospital. This hospital very frequently is crowded to its capacity, so we must have, then, a special police officer stationed to enforce a rigid quarantine. We have been censured for maintaining such rigid quarantine requirements, but, personally, I prefer to be blamed for some slight financial hardship to one family for the sake of adequate protection of many families rather than the reverse, which was formerly often true, namely, that mothers would call, dressed in mourning, and blame us because their children had contracted diphtheria or scarlet fever and died through the carelessness of some person, made possible through failure of the department to provide the needed protection.

C. *Corps of Medical School Nurses.*—Nurses are an indispensable adjunct to any efficient school medical inspection service, and the forty nurses whom we have, have added fully 50 per cent. to the value of our school inspection service. These nurses were obtained and put to work Oct. 12, 1908.

D. *Scientific Handling of Diphtheria.*—Dealing as we were with a disease of definite etiology, with a specific therapeutic agent, if used early, and also amenable to transitory prophylactic immunity, our Commissioner of Health early decided that we ought to use accurate laboratory information as our basis for terminating diphtheria quarantine, instead of guesswork. Inasmuch as contacts are at times "carriers" and the cause of epidemics, it was necessary that our bureau should take cognizance of them. It was finally determined to require two negative cultures on consecutive days from patient and one from each contacts before raising the quarantine through disinfection.

It was also decided that we should get contacts immunized by acting through the attending physician if possible, but if he was indifferent, then through the medical inspector. These two measures have now long been in operation. Only since January 1 have we gone a step further and insisted on a diagnostic culture supplementing the clinical diagnosis. In all cases of diphtheria in which the attending physician has not taken a culture, the medical inspector is instructed to do so. If the first diagnostic culture is negative, he takes a second one, as statistics show that from 12 to 18 per cent. of throats, when a negative result is obtained at the first attempt, will give a positive result when a second culture is taken. With two negative cultures from the throat and a written statement from our medical inspector that in his opinion the case clinically was not diphtheria, we send the attending physician the following communication:

> Two cultures have been examined with negative results in the case of diphtheria reported from .. .. St., in person of . . . . On the enclosed card, please advise us of your wishes as to the disposal of case. Should quarantine be continued or terminated now? If terminated now, is disinfection desired?

The physician replies on a card of the following form:

> Concerning case reported as diphtheria in the person of...... .. , living at.. . .. ., I hereby advise that
>
> Quarantine be {Terminated. / {Continued. And that disinfection be {Performed. / {Omitted.
>
> Name .. .., M.D.,
>
> Address.. .. ..

E. *Establishment of a Municipal Hospital.*—Facilities for hospitalization of diphtheric cases had long been needed, and it was decided finally that, inasmuch as we seldom had many cases of smallpox, it would be advisable to build a less expensive plant for smallpox, and take over that commodious and splendidly equipped hospital for diphtheria cases. The diphtheria hospital was opened Nov. 27, 1908. A more rapid mode of conveyance of patients to the hospital seemed a necessity, and to obtain this, an automobile ambulance for contagious diseases was procured.

F. *Better Communication Between the Municipal Laboratory and Physicians.*—To accommodate our physicians better and make the Municipal Laboratory more valuable to them, a plan for keeping culture media at all police stations was worked out, and incubators installed at eight police stations in various portions of the city. A messenger service, twice daily from the police stations to the department of health, was also instituted. The attending physician or medical inspector could hand the inoculated culture outfit to the first policeman he met. He in turn would take it to his station; the desk sergeant upon receipt of it would arrange to send it by messenger to the department of health, or else to the nearest station with an incubator. As a rule, it would not be in the police station incubator long before the time would arrive to send a messenger to the office of the chief of police and incidentally he brought along these cultures to the health department. It was also arranged to open the municipal laboratory earlier each morning and continue it later each day, with better service also Sundays and holidays. These improved conditions together with numerous free antitoxin stations, distributed over the city, made it easy for physicians to apply laboratory methods in diagnosing diphtheria and gave them no excuse for failure to use antitoxin.

G. *Means of Making Our Health Ordinance More Effective.*—This problem was solved by having passed by the city council certain rules and regulations to supplement the existing health ordinances, which, when passed, would have the weight of ordinances. These "rules and regulations" were passed Jan. 27, 1908, and have been of enormous value to us in enforcing health measures. Of these ninety "rules and regulations" at least twenty-eight apply directly to diphtheria and scarlet fever, and nineteen others indirectly touched on these two diseases.

H. *Compulsory Reporting of Sales of Antitoxin by Druggists.*—Recently we secured a law, long wanted, which compelled a druggist to report the sale of antitoxin. This reads in substance as follows:

An ordinance passed by the city council Nov. 1, 1909, requires all persons, firms and corporations to report to the Commissioner of Health within twenty four hours any sale or gift of diphtheria antitoxin within the city of Chicago, giving the name and address of seller, buyer and patient; also the date and hour of sale and number of bottles sold, with number of units in each.

I. *Means of Getting Diphtheria and Scarlet Fever Cases Reported.*—From the time "assuming responsibility" was abolished, this problem was recognized as of great importance and plans were made to solve it. We were all agreed that physicians were not reporting their diphtheria and scarlet fever cases as generally as they should. Gradually, however, the physicians have taken to reporting their contagious cases, until to-day this problem is less complex and of less moment than formerly. A large majority of our physicians are pleased with the present methods of the department in the management of these two diseases. The very small minority who do not willingly report their cases of diphtheria and scarlet fever, do, nevertheless, report them because they realize that if they are detected concealing or "not reporting" a case of diphtheria or scarlet fever they are put to the inconvenience and expense of defending themselves in court for violating an ordinance, with danger also of having to pay a $10 to $200 fine. If a suit is started where there has been flagrant, almost criminal, negligence on the part of the physician it is given publicity in the newspapers. Also, if a conviction is secured, additional publicity is given.

As a rule it works this way: Suit is started, if a flagrant case, and the physician notified. He comes in alone, or with his attorney, to try to get the suit withdrawn. This is refused, but, on his promise to be good in the future, he is let off with costs and no notoriety in the public press. Less flagrant violations result in a letter to the physician asking him to call at the department and state his case, provided he thinks there are any extenuating circumstances which might cause the department to refrain from pressing the contemplated suit against him. Even this makes him trouble and elicits a promise to be good in the future. In still less flagrant violations, the department sends a form letter calling on the attending physician to make a statement in writing as to his relations with a case of diphtheria or scarlet fever said to have been "not reported" to the department.

This small percentage of physicians know that the Health Department is in earnest about demanding that they report their cases of diphtheria and scarlet fever. They fully realize that we have the public, press, charity and other organizations demanding reporting of these cases; also, 300 school principals, a small army of school and Sunday school teachers, a host of school pupils and the police department, in addition to the regular machinery of the department, chiefly the school nurses and medical inspectors, all on the lookout for and ready to report hidden cases or suspected hidden cases to the Health Department.

This changed attitude of our people in three years is astounding and it is remarkable how often we hear from some one of these sources of the existence of a case of contagion before the attending physician's report gets to the department. Many physicians, slow in reporting cases in spite of the law requiring a report within twenty four hours, are improving in this respect for the very reason that they fear that we will get the report from outside sources first, which will put them in the attitude of trying to conceal the case

Another factor that makes for reporting of cases by the attending physician since school inspection was established, is the difficulty in concealing a case if there are school children in the family, as these children often tell of sickness at home and this leads to an investigation of the nature of the sickness by the school inspector.

If the patient is a school child, detection is still more certain when the medical inspector looks up absentees reported by school teacher as sick at home with sore throat or rash. Even if the case is not investigated, and after recovery the child tries to reenter school, the medical inspector then reviews the nature of the illness and if there are suspicious circumstances about the case, he sends the child home and goes to the home and makes a thorough investigation.

If facts warrant it, the child is told to bring a written statement from the medical attendant that illness was not of a contagious nature. More than once we have confronted a physician with his written statement that there was no contagious disease present, when he had used antitoxin, and the culture from a reddened throat showed the presence of the Klebs-Loeffler bacilli. A grilling for a physician under these circumstances, together with inconvenience caused him and his patient, makes him a convert ever afterwards to that group who report their contagious cases. Many physicians formerly crawled behind the excuse that it was only a suspicious case, that no positive diagnosis was made and, therefore, not reported. To prevent the obvious abuse of this plea, Rule 4 was added to our rules; this reads: "It shall be the duty of the physician who suspects one of the above named diseases to report it as a suspicious case. Such cases will not be placarded or removed unless a warranting diagnosis is established. A corrected report of the case shall be made by the attending physician as soon as the diagnosis is made."

Another factor in inducing the physician to report is that the department learns of the name and address of the patient and the attending physician in every case in which the state of Illinois furnishes free antitoxin within the city limits of Chicago; also the law that if the physician or family buys antitoxin, the druggist is compelled under penalty to report at once to the Health Department such sale, giving names and addresses of patient and the attending physician.

All reports from state and druggists are looked up in our files and if the case is not regularly reported by the attending physician, an investigation by the medical inspector is made. Our index envelope records of physicians who do not report or coöperate fully with the department is often of value. If a physician gets into trouble with the department over not reporting a case, he invariably makes the plea that it is his first offence, and that, heretofore, he has always cooperated with the department to the fullest extent. Often we can meet this plea with documentary evidence of from two to ten instances in which he has not complied with the law as regards the minor contagious diseases. We estimate that we are now getting reported about 95 per cent. of all cases of diphtheria and about 93 per cent. of all scarlet fever attended by physicians.

METHOD FOR HANDLING LOCAL EPIDEMICS

DIPHTHERIA

The following is a good illustration of procedure in diphtheria:

A public school known as the McCosh Branch, consisting of four large school rooms and one small class-room, had been remarkably free of all contagion from the time school opened, early in September, 1909, and in this district no case of diphtheria had occurred in any family whose children attended this school.

On Nov. 1, 1909, three cases of diphtheria suddenly appeared in this district. On November 2, two more were reported and on November 3 three more cases. November 4, 5 and 6 each brought three cases reported among pupils of this branch. The evening of November 3 I communicated with Dr. G. M. Cushing, our medical inspector for that district, and instructed him to watch this situation, even if he had to neglect other schools. He stated that two factors were common in these cases. The patients all had the same milk-supply and all attended the McCosh Branch school. On November 4 a double investigation of the milk-supply by the medical inspector and food bureau excluded that as a cause. Dr. Cushing then took cultures from the throats of all the children in the school. November 4, 112 cultures from pupils of the three large rooms were sent to the municipal laboratory and on November 6 seventy-nine were sent in from the remaining pupils of this school.

The laboratory on November 5 reported that eight of the 112 cultures showed presence of Klebs-Loeffler bacilli. On November 6 the laboratory reported one positive result among the second lot of seventy-nine cultures submitted. All nine of the pupils with positive culture results were excluded from school, together with other children in these families. The entire school building was thoroughly disinfected. The school was not closed, although two or three delegations of excited parents demanded it. It is the policy of the bureau not to close schools; we believe in getting the pupils with contagious diseases out of school and then keeping the well children in school, where we can observe them daily.

Among the 112 which were examined and from which cultures were taken was one throat so suspicious that this child was sent home at once. The medical inspector followed soon after and found the following conditions, if my memory serves me right:

One child was dead with malignant diphtheria and two others gave unmistakable evidence of beginning diphtheria. The dead child had been attended for a week by a physician who had failed to recognize the nature of the malady, had given no antitoxin, and had permitted four children of the family to attend school. Another physician, called in as the child was dying, recognized the probable nature of the disease, used antitoxin, and no more deaths resulted.

Out of seventy-nine throats which were examined and from which cultures were taken on the second day was one so suspicious that the medical inspector took the child in his automobile to its home, with the intention of advising the parents to call their physician. On arriving he found an older brother, recently employed as a delivery boy for a near by grocery, who had been sick for a week complaining of his throat. Examination showed a well-marked case of diphtheria. A sister, thoroughly exposed, was visiting in a near-by suburb, and when the medical inspector went to the address given he found her with a slight sore throat and brought her home.

A physician was called, positive cultures obtained, and all received antitoxin. Three of the four patients recovered, but the older brother developed a typical diphtheric paralysis and died on November 21.

Investigation in the homes of the other pupils whose cultures gave a positive result revealed diphtheria clinically in one of these pupils, and when cultures were taken from the throats of the members of the family a positive result was obtained from the mother, with a history of a probable mild diphtheria recently. The family physician reported and quarantined this family on November 6.

A second family called in a physician and the case was reported and quarantined. The remaining five, when visited, gave no evidence of diphtheria and members of the family, when cultures were taken, gave no positive result. Each child with positive cultures but no symptoms was immunized and placed under quarantine until two negative cultures were obtained, when he was readmitted to school.

Absentees from school were visited and cultures were taken, but no cases were found. After excluding the above cases on strength of laboratory findings not another case developed from these foci of infection in that school or in the district after November 9, and that little epidemic was at an end as soon as these cases terminated. This case is selected because of the small size of the school and the fact that it illustrates the various remedies used in combating diphtheria epidemics.

I know of no better illustration of the great value of laboratory methods. The laboratory told us accurately and quickly that the nine pupils in that school were a menace to 190 others. This elicited my admiration almost as much as did a demonstration a few years ago by Dr. H. Spalding, who, by inspecting the vaccinal status, was able to say which six of 250 people, thoroughly exposed for several days to smallpox in an institution, would contract smallpox; the six he picked out, and no others, did develop this disease.

SCARLET FEVER

The following, in a small way, shows the method of combating scarlet fever:

A neighbor complained to me that a child was attending a public school from a home where he believed there was scarlet fever. Our spot map showed a great many cases in this immediate neighborhood. The medical inspector of the district was asked to investigate the complaint, and found a child with scarlet fever in this home and no medical attendant. A child of the family in the "peeling" stage was found, not in the public school, as reported, but in a parochial school. A careful inquiry elicited the following: This child was sick at home for a week and then returned to school with a statement that he had been ill with a cold. The sister in charge, instead of having him examined by the school medical inspector, permitted him to enter the class-room without such precaution. The history was so typical of scarlet fever that no inspector could possibly have overlooked the diagnosis. Thirty-nine cases of scarlet fever occurred among the pupils of that school, due to failure of this school, in this instance at least, to live up to the requirements.

A plan of control given a trial in connection with the cases quarantined during this little epidemic worked so admirably that it was later attempted on a much larger scale. The plan was this: A disinfector was detailed to call daily on the thirty-nine patients under quarantine and make them all take precautions against spread of contagion. Incidentally he disinfected premises whenever one of these cases terminated. The following extract of a letter written by me Feb. 18, 1909, to the medical inspector of this district shows the success in limiting the contagion to the original cases infected:

> On January 30 we put a disinfector in your district to watch the thirty nine cases of scarlet fever and to maintain a strict

quarantine. Since then no new cases have developed and all but twelve of the old cases have terminated. It is necessary to remove the disinfector to some other district. Please visit each of these remaining cases daily until terminated. See if you cannot prevent a new case occurring from any of these.

The following is another illustration of what can be done in efforts at prevention. A number of small children were exposed to scarlet fever in a nursery. These children were all in their homes before exposure was known to the health department. The name and address of each was secured, the family advised of the exposure, and each was kept under close observation by the medical inspector of this district during the period of incubation. In this way any cases developing were promptly recognized and placed under early quarantine.

The figures given in the accompanying tables seem to indicate a marked increase in the number of cases of diphtheria and scarlet fever in Chicago in the last two years.

TABLE 1.—CASES OF SCARLET FEVER REPORTED TO THE CHICAGO DEPARTMENT OF HEALTH FROM JANUARY, 1904 TO MAY, 1910

	1904.	1905.	1906.	1907.	1908.	1909.	1910.
January	215	109	458	3058	473	881	688
February	197	103	383	1741	438	590	671
March	189	94	478	894	416	644	692
April	167	85	527	562	354	587	600
May	106	71	513	421	301	455	...
June	91	72	489	315	287	382	...
July	41	57	284	276	203	261	..
August	42	52	213	242	173	216	...
September	45	41	270	270	297	342	...
October	84	79	369	291	608	514	...
November	129	145	519	341	841	684	...
December	110	198	586	445	914	686	...
Total	1416	1106	5089	8856	5305	6242	2651
Deaths	143	79	493	715	398	360	131
Per cent	.101	.071	.097	.081	.075	.058	.049

TABLE 2.—CASES OF DIPHTHERIA REPORTED TO THE CHICAGO DEPARTMENT OF HEALTH FROM JANUARY, 1904 TO MAY, 1910

	1904.	1905.	1906.	1907.	1908.	1909.	1910.
January	313	262	475	923	417	745	468
February	245	217	339	690	401	522	443
March	172	189	348	491	379	522	470
April	143	193	273	355	233	483	527
May	123	140	301	293	254	378	...
June	152	144	272	259	306	320	...
July	127	152	229	186	255	268	...
August	130	110	181	212	251	223	...
September	150	249	286	337	341	327	...
October	290	438	530	521	788	550	...
November	376	461	613	563	880	719	...
December	381	346	610	508	934	601	...
Total	2607	2901	4457	5338	5439	5658	1908
Deaths	395	426	574	536	564	675	253
Per cent	.151	.147	.129	.100	.104	.119	.132

We believe, however, that there have been no more cases in Chicago for the past two years than in 1904 and 1905. We are convinced that the cases are reported much better than formerly and that this accounts for the large apparent increase in the prevalence of these two diseases. Our reasons for this conviction are as follows:

1. Instead of a small group of physicians formerly on our records as reporting contagious diseases we now have hundreds of names of physicians not formerly in evidence there.

2. Figures show that the increase has been less in diphtheria than in scarlet fever, and this was anticipated, as diphtheria was always better reported than scarlet fever, because physicians could not well avoid reporting those cases in which they obtained free antitoxin and free examination of positive cultures at the municipal laboratory.

3. The increase in both diphtheria and scarlet fever reports has been about what we expected, as our machinery for compelling reporting has gradually improved.

4. We do not get one-tenth of the complaints we did in 1904 and 1905, accusing physicians of concealing cases.

It has always seemed to me that a comparison of death-rates for different years on diphtheria and scarlet fever is subject to great error. The virulence of the particular strain of micro-organism causing the disease often varies so greatly from year to year that there are bound to be marked fluctuations in the death-rate, just as in smallpox.

The physician who conceals the diphtheria or scarlet fever patient until dead will rarely certify the correct cause of death, and in my opinion many of these patients were formerly buried as dying of non-contagious diseases.

We do not get as high a percentage of cases of scarlet fever reported as in diphtheria and we are still greatly handicapped by not having a municipal hospital for scarlet fever. How badly we need this hospital is shown by the fact that in the past five months we have had 280 patients with scarlet fever in Chicago who were willing to go to the hospital, or else quarantine conditions were such that the patients should have been forced to the hospital.

Our requirement for period of quarantine in scarlet fever was formerly six weeks. We now send our disinfector in one month, if the attending physician requests it. Occasionally we send him even a few days earlier than this, if the doctor furnishes us a written statement that he has inspected the patient carefully and is positive that desquamation is complete and no complications present. Our Rule 21, which says, "Physicians representing cases ready for house disinfection when they plainly are not ready will be prosecuted," prevents abuse of written special requests for early termination of scarlet fever quarantine by disinfection.

To our surprise, we find the percentage of cases as "peeling" no higher than when we held to a six-weeks period before sending to disinfect.

CONCLUSIONS

1. Chicago has made enormous strides in management and control of diphtheria and scarlet fever since 1907.

2. Safeguards against extensive epidemics of these two diseases are as complete and effectual as can be obtained at the present low per capita cost.

3. The department receives reports of almost all cases of diphtheria and scarlet fever seen by physicians.

4. School inspection, strict quarantine and hospitalization are the three most valuable assets as municipal safeguards against epidemics of these two diseases.

5. A campaign against diphtheria and scarlet fever to give results must be a daily, continuous and ceaseless battle.

100 State Street.

Sleeping-Sickness. Professor Ronald Ross and D. Thomson have studied a case of sleeping sickness in the former's Liverpool clinic for a period of seventy-three continuous days by precise enumerative methods and reported to the Royal Society, June 16 (*Nature*, June 23) the discovery of a regular periodic increase and decrease of the parasites in the blood. A variation from time to time had been previously observed, but the regular periodicity of their increase in every seven or eight days, observed by Ross and Thomson, seems to have been overlooked by other observers, probably owing to insufficient methods of counting.

WHAT CAN HEALTH DEPARTMENTS DO TO CONTROL SCARLET FEVER?*

C. HAMPSON JONES, M.D.
BALTIMORE

My attention was first attracted to the question by observing the marked contrast in the tracings of the cases and deaths due to scarlet fever and diphtheria in Baltimore. The record of cases reported of such diseases was available for only a few years, commencing with the year 1891 and ending with the year 1909, making a period of nineteen years.

Previous to 1891, the death-record alone gives us any information, and this has been reproduced in the tracings for the two diseases as far back as 1875, when our burial law requiring death certificates to be filed at the health department went into effect.

DIPHTHERIA

If, now, we consider the tracing for diphtheria (including croup) we find the number of deaths in 1875 was 238, which increased almost steadily to 929 in 1882. Then the number decreased year by year until the low number 206 was reached in 1889. Again the death-line rises year by year until 428 deaths are recorded in 1892, which was almost equaled in 1898 with 412 deaths, since which time the death line has decreased steadily until 1908, when only 64 deaths occurred. This decrease in the number of deaths of course was directly due to the free distribution of diphtheria antitoxin, which was commenced in 1895, but the use of this curative agent did not become general until 1898 and 1899.

The "case" line for diphtheria commences in 1891, when 1,031 cases were reported; it then fell, out of proportion to the number of deaths, to 346 cases in 1893; then it began to rise and in 1897 raised to 1,620 cases, which was 967 cases more than the year before, and continued to rise until 2,077 cases were recorded in 1898, since which time the number has decreased each year, with three exceptions (when there were 1,858, 1,461 and 1,172 cases respectively) until the low mark of 756 cases was reached last year.

The increase of recorded cases beginning in 1895 and ending in 1898, was undoubtedly due to three causes:

1. The return of the natural increase.
2 The opening of the Health Department Laboratory.
3. The distribution of free antitoxin.

The first cause probably has as a prime factor the increase of non-immunes.

The second cause was the use of the laboratory to assist in diagnosis, thereby acquainting the department with many cases that might not have been reported otherwise.

The third cause induced the people to submit more rapidly to the placarding of their houses in order to obtain speedy relief, thereby again increasing the number of reported cases.

The decrease of recorded cases since 1898, when there were 2,077 cases, down to 756 in 1909, was due to the following factors:

1. Free antitoxin
2 Throat inspections by cultures taken by the health department before fumigation
3 House placarding (commenced in 1898).
4 Fumigation
5 Semiweekly notification of school teachers of cases, with instructions to keep other children of the same house away from school.
6. Permits to return to school issued by the department only.

The number of reported cases, while showing a steady decline, yet remains higher than the number previous to 1898, due, we believe, to the fact that the use of the laboratory and the free antitoxin insures now the reporting of all cases of diphtheria, which did not formerly occur. Indeed, we have good reason for believing that many cases reported as diphtheria are not that disease.

SCARLET FEVER

Scarlet fever tracings are considered for the same number of years as the diphtheria tracings, and under the same conditions; i. e., the death line, commencing in 1875, and the case line in 1891.

Owing to the discovery of certain clerical errors in records previous to 1891, one should not place absolute confidence in the correctness of this scarlet fever "death" line, but there undoubtedly was, from 1875 to 1909 inclusive, a corresponding reduction (but probably not to the same degree) in the death-rate due to scarlet fever per 1,000 inhabitants in Baltimore, as occurred elsewhere. This reduction is shown in Table 1, originally published in a paper by Dr. Sidney Davies, which gives the record of the scarlet fever death-rate in London:

TABLE 1.—SCARLET FEVER DEATH-RATE IN LONDON PER 1,000 POPULATION

Year.	Death-Rate.	Year.	Death-Rate.
1861-1870	1.13	1895-1900	0.14
1871-1880	0.60	1901-1905	0.11
1881-1890	0.33	1906	0.11
1891-1895	0.24		

The probability that such a reduction in the death-rate per thousand of population is indicated by the small number of deaths in Baltimore due to scarlet fever from 1885 to 1909, inclusive, during which time the number of deaths varied from 85 to 11, except in the years 1891, 1892 and 1904, when there were 138, 258 and 143 deaths respectively.

The case-rate per thousand population, however, does not show so satisfactorily and we do not find any indication of a control of the number of cases such as is shown in the diphtheria record.

Commencing with 1891, the number of cases of scarlet fever reported each year was as shown in Table 2:

TABLE 2. NUMBER OF CASES OF SCARLET FEVER IN BALTIMORE

1891	1,512	1898	588	1904	1,212
1892	2,713	1899	434	1905	615
1893	406	1900	402	1906	577
1894	999	1901	391	1907	436
1895	775	1902	480	1908	1,312
1896	694	1903	1,224	1909	456
1897	928				

In studying this "case" line it must be borne in mind that some reduction in the number of cases reported since 1898 is due to the placarding of houses and to the school reports, because in 1898 we commenced to placard houses and added from time to time new regulations, and now we make the following requirements:

1. Placarding of houses.
2. Semiweekly reports to school teachers excluding all children in the infected house until released by the health department.
3. Fumigation.
4 Health department certificates permitting children to return to school.

Inasmuch as we have no counteracting influence, such as the giving out of a free antitoxin practiced in diphtheria, that would tend to reduce the reporting of all cases of scarlet fever, there probably are many cases not reported.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

These four regulations, however, seem not to produce any lasting control, as evidenced by the "case" line from year to year. It is no doubt true that the regulations lessened the total number of cases each year, but not to such an extent as to warrant us in believing that they would prevent another epidemic like that which occurred in 1892.

The case-rate per thousand population in Baltimore during the past nineteen years was as shown in Table 3.

TABLE 3.—SCARLET FEVER CASE-RATE PER 1,000 POPULATION IN BALTIMORE

Year.	Case Rate	Year	Case-Rate.	Year.	Case-Rate.
1891	3.10	1898	1.19	1904	2.28
1892	6.04	1899	.86	1905	1.12
1893	.86	1900	.79	1906	1.04
1894	2.06	1901	.75	1907	.77
1895	1.64	1902	1.91	1908	2.39
1896	1.45	1903	2.32	1909	.79
1897	1.91				

It appears also from this table that no real control of the disease exists.

As far as I have been able to compare other American cities with Baltimore, it is noticeable that in them also is the same want of control of the number of cases, even in those cities where the hospital accommodations for scarlet fever is provided and to a great extent used by the public. In this connection it is interesting to note that even in London, where it is said that nearly 90 per cent. of all cases are cared for in hospitals, there is a similar want of control. Table 4 is taken from Dr. Sidney Davies' article:

TABLE 4.—SCARLET FEVER CASE-RATE PER 1,000 OF POPULATION IN LONDON

Period.	Case-Rate.	Period	Case-Rate.
1891-1895	5.3	1900-1905	3.6
1895-1900	4.4	1906	4.3

It would seem, therefore, that something more is needed than the four regulations above cited in common use in our cities, and the hospital isolation practiced in a few of them.

It is well known that the case mortality in scarlet fever during the last twenty-five years has been markedly less than in the previous years. In London this has been noticed since 1860, and this decrease in the mortality has been attributed to the improvement in sanitary conditions; but there has not been a corresponding decrease in the number of cases, although great reduction in the number has been produced by notification and isolation. It cannot be doubted that if notification and isolation were more rigidly carried out by physicians and health officials, a much greater reduction in the number of scarlet fever cases, or in other words, better control of the fever could be effected by health departments.

Why is it that a greater percentage of the cases are not reported? The following reasons may be given:

1. Mildness of attack, which results in many cases not being correctly diagnosed, and in many cases not being seen by physicians.
2. The opposition to house placarding among patients and their families for selfish reasons. Because of this opposition physicians do not report cases when they have doubt as to the correct diagnosis, and they give their patrons the benefit of that doubt.
3. The length of time a house is placarded or quarantined for each case. This difficulty is a serious one from the family's standpoint and we need very much enlightenment as to the length of time a patient is dangerous to others after the fever has disappeared.

If these difficulties are successfully overcome and proper isolation maintained, it is reasonable to believe that not only will epidemics be prevented, but the number of cases will be kept at the minimum.

To overcome the first difficulty, i. e., the "mildness of attack" two things at least are necessary — (1) proper instruction of the public; (2) proper training of physicians.

The Proper Instruction of the Public.—The method of giving such instructions will vary in different places, but the knowledge to be imparted consists of essentially two fundamental principles: (*a*) that scarlet fever, like all infectious fevers, may vary widely in severity, from an apparently simple sore throat to the so-called fulminating form producing death in a short time; (*b*) that all sore throats are communicable. We know of course that this is not strictly true, yet for practical purposes it makes a good working basis for the prevention of spreading disease.

The Proper Training of the Physician.—This consists, first, in an opportunity when a student to study clinically all so-called minor infectious diseases. A municipality should therefore not only make provisions for properly equipped hospitals for infectious diseases, but also should afford ample facilities for the instruction of students, because in the end the people are the gainers, not only by return to them of able physicians to treat such diseases, but also physicians who will more readily recognize such diseases in their milder forms.

The second difficulty, i. e., house placarding, is one that is at once overcome when all physicians are made to believe that in the end they are gainers by reporting scarlet fever promptly. Is it not true that there are but few physicians who do not dread being called on to care for such patients, and in consequence of such feeling are apt in one way or another to neglect them, thus causing increased danger to the patient and others.

The third difficulty, i. e., the length of time a house must remain placarded, is one that can be overcome only by more exact knowledge concerning the length of time that the scales of desquamation remain infectious. Until the germ of this disease is found it is impossible for department laboratories to assist the physician in raising the house quarantine until the desquamation has ceased, which frequently is prolonged to four, six, eight and even ten weeks. This long quarantine necessarily produces much hardship, especially to the poorer people who can least afford it, and also promotes ever-increasing carelessness as the weeks go by because of the difficulty of segregating children who are perfectly well although peeling and presumably dangerous to others. Dr. S. G. H. Moore, D.P.H., Medical Officer of Health, Huddersfield, in a paper on the subject[1] advocates the disregarding of the state of desquamation if all affection of the mucous membrane of the nose and accessory cavities has disappeared. By following this suggestion he reduced the duration of stay in hospitals from an average of 44.3 days to 29 days. His views in the discussions of his paper were antagonized by many, who, however, did not present facts to show how long the squamæ are infective. If, however, the desquamation period is dangerous throughout its entire length, or only in the earlier stages, it is important that all should recognize that the very mild cases of scarlet fever frequently show no desquamation even until near the end of the third week after the elevated temperature has disappeared. If the germ of the disease is in the squamæ of epithelium, it is obvious that the use of antiseptic baths during and after the febrile stage in all cases is indicated so that the danger may be reduced to the minimum should the quarantine be accidentally removed before desquamation has ceased.

---

[1] Public Health, London, 1908, xxi, 148.

All the difficulties that have been presented in this paper have, I fear, too much influence on health departments and cause them to exercise supervision over scarlet fever with much less enthusiasm than they do over diphtheria. I believe, however, that health officers can control the disease much more effectually under the following conditions:

1. If they endeavor to instruct the people through every channel of education that their protection for the present lies mainly in their own efforts; that they must consider all sore throats as dangerous to others; that the danger lasts during the entire period of desquamation; that this danger is lessened by antiseptic baths; that the infection of air-passages and accessory sinuses frequently continues longer than the period of desquamation; that isolation is the only means of preventing the spread of the disease.

2. If they urge not only the establishing of municipal hospitals for scarlet fever, but also advocate the early removal of all cases of the disease to it wherever proper isolation cannot be successfully established at the patient's home.

3. If they urge on the people correct information concerning the serious results, such as deafness, endocarditis, nephritis, etc., of even mild cases of scarlet fever.

4. If they urge on medical teaching institutions that medical students should not be granted diplomas until they have studied cases of infectious diseases under competent instruction.

2529 St. Paul Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RAWLINGS AND JONES

Dr. B. Franklin Royer, Harrisburg, Pa.: I think that boards of health and public health officials lay entirely too little stress on the proper observation of scarlet fever cases at the end of quarantine and on proper inspection of the oral and aural passages. For a period of years when I had charge of the Municipal Hospital in Philadelphia we watched carefully the cases that were discharged and never had return cases come from homes where patients had gone that still had some desquamation about them, provided the nose and ears were healed. I believe that as a practical working basis it is well to continue quarantine until desquamation has about ended. In every case coming to the hospital after a previous case had been returned to a home we were able to find either a discharging nose or running ear in the discharged case. I am inclined to agree entirely with Cameron (who made a most important study in London of "return cases," publishing a splendid report covering 120 or 130 pages on the subject), that the peeling skin after a month of illness is not dangerous to the public. Nasal discharges and ear discharges are highly contagious a month after illness.

I wish we knew more of the methods of dissemination of scarlet fever. There must be some epidemiological factor that influences the prevalence of the disease as well as influences its death rate. Certainly it is true, if we study morbidity rates and mortality rates over a period of years, that we will find intervals of rise and fall just as we find unusual prevalence of variola at intervals of about ten years. Some unknown influence permits it to get a foothold and some unknown influence enhances its virulence.

Dr. H. W. Hill, Minneapolis: I would like to suggest, with regard to the infectiousness of scarlet fever scales the possibility that the scales of the hands, since they get on them the discharges of the throat, may be infective by direct carriage of the mouth discharges, while scales not so infected may be—probably are—harmless.

Dr. H. DeLamater, Kansas City, Mo.: We started our medical school inspection this year with a limited number of inspectors, and the medical inspection of the public schools had a great deal to do with suppressing the epidemic. We had, I believe, in one month 123 cases of scarlet fever. In a territory which comprises several nationalities, there were about 7,000 school children. It was found impossible to make physical examination of all the children as we started to do. We could not successfully do so and keep track of the number of scarlet fever cases that would develop. Instead, when a teacher or principal of a school would report to one of the inspectors that little Johnny Jones had been absent from school for three or four days, the inspector would at once visit the home and inquire why the pupil was not attending school. Investigation proved in many instances that it was a well-developed case of scarlet fever that had never been reported to the health department.

The medical inspector would call up the attending physician and inquire if he had seen the case, if so, why he had not reported it to the department of health. By constantly keeping watch over these suspected cases, in this manner we managed in four schools with about 6,000 pupils to have one school (the Washington) in which the attendance is composed largely of Hebrew and Italian children, to have only eighteen cases of scarlet fever. In another school with a population of which 95 per cent. are Italians, we had six cases, and in one parochial school we had eight cases of scarlet fever. I am convinced that in order to control the scarlet fever epidemic, a close medical inspection must be made of the public school children. I believe in cases of scarlet fever, patients suffering from nasal discharge are often released too soon from quarantine, thereby causing great danger of infection to others.

Quarantine in scarlet fever, is in my estimation, a hardship on poor people. This phase of the subject has not been given careful consideration.

If quarantine is maintained for a period of from thirty days to six weeks, the wage-earner of the family will be deprived of his daily wages and his family of its support. This would make it impossible to secure the necessities of life, unless he appealed to charitable organizations therefor. During the past winter where a release was asked from quarantine in case of scarlet fever, before the regular quarantine period had terminated, instructions were given the medical inspector to visit each case and if he found an absence of desquamation and discharge from the upper air-passages, a disinfection of the home was ordered and a release issued.

Dr. R. M. Winn, Hannibal, Mo.: In rural districts where we have no bacteriologic examinations, I should like to ask how long quarantine should be kept up after diphtheria and scarlet fever? Of course, there is no scientific way of determining that without a bacteriologic examination.

Dr. G. Koehler, Chicago: In our experience in the Chicago Department of Health we frequently find diphtheria bacilli in throats of contacts that had been immunized with antitoxin. This method alone is not sufficient to prevent the spread of disease, if it is not combined with the making of cultures.

Dr. Seneca Egbert, Philadelphia: I would call attention to what Newman has said about milk being a carrier of both diphtheria and scarlet fever. Several epidemics have been traced by Newman to milk carriers.

Dr. B. Franklin Royer, Harrisburg, Pa.: Are your inspectors permitted to release patients from quarantine if they have a discharging ear or a running nose?

Dr. I. D. Rawlings, Chicago: One point in connection with Dr. Jones' paper. We find where we have discovered cases of scarlet fever in the "peeling" stage among the pupils in a given room at school, if the duration of the disease has been twenty-five or thirty days or more, and we expect a crop of scarlet fever, it usually does not materialize; but we do find that where a child with scarlet fever of perhaps a week's duration has gone back to school with throat and nose highly infectious, or early in the peeling stage, then we do reap our crop of cases.

Strict quarantine works a hardship to a certain extent, but not as great as one would suppose. Very frequently we can isolate the patient and the attendant with toilet facilities in the rear living rooms and by sealing a door and disinfecting the front portion of the premises, leave a place for the workers to live in front if they provide their meals and toilet facilities outside. If the family elect to send patient to hospital, they escape these hardships.

In reply to Dr. Hill's question, there was a time in Chicago when very few cases of diphtheria or scarlet fever were reported. Rather than not have reports, we thought it would be better to have a record of the case, even if nothing was done; so to obtain reports we allowed physicians to assume the responsibility of preventing the spread of contagion and did not placard, if the physician said he was willing to assume this responsibility. It did good for a time; we obtained reports and physicians were in a measure on their honor; they did their best to try to instruct families as to quarantine; but gradually there came a time when they would write in the word "assume" and forget the instruction part of it, and nothing practically was done.

As to duration of quarantine of scarlet fever, that is a mooted question. In Chicago we, as a rule, quarantine until they are through peeling and free of all complications.

We guard against milk epidemics by furnishing to the food bureau each day the name and address of the milkman in every case of scarlet fever and diphtheria. These are tabulated by weeks, and if there is found an unusual percentage of cases on any one milkman's route, the supply is immediately investigated.

DR. C. HAMPSON JONES, Baltimore: In my paper I attempted nothing concerning the methods of health departments to control the disease. I merely wished to call attention to our method and stimulate inquiry to improve by making our house quarantine method more exact.

Concerning diphtheria, permit me to say that this high point in diphtheria in the year 1898 was the time I took charge of the work. At that time the methods that were put into play seemed to produce direct results. In cases of diphtheria I do not believe there is any reason at all for an epidemic in a city where there is a good number of men in the health department to do the work.

Concerning scarlet fever, we practice what is extensively practiced elsewhere. I believe that we follow up the cases fairly well (that is, the reported cases); prompt placarding of the houses is practiced, instructions are given to the people, and the rooms finally fumigated; yet I don't believe that such methods will result in lowering scarlet fever as has been done with diphtheria, for the reason that the early conditions in the children with scarlet fever spread the disease before the department is notified. Time and again we have taken convalescent, desquamating children in the street playing with healthy children, yet there has not been a single case developed from them as far as we could ascertain. Why, I am not prepared to say.

THE RELATION OF MODERN DENTISTRY TO THE TUBERCULOSIS PROBLEM *

S. ADOLPHUS KNOPF, M.D.

Professor of Phthisiotherapy at the New York Post-Graduate Medical School and Hospital

NEW YORK

Fifty years ago there was really no dental science. The tooth-extractor of that day, picturesquely attired, with his long flowing hair, who went from town to town with a brass band and extracted teeth in the market-place, while in the majority of cases he was a shrewd business man and showman and knew human nature, very rarely had any scientific training or, if he had it, he did not apply it to his calling. The preservation of the teeth and the tedious processes of filling a cavity and doing crown and bridgework were unknown to him. He did not care to preserve teeth, and the more he extracted the more lucrative was his business.

It must be said to the glory of American achievements that dental science, the art of preserving teeth by a truly scientific method, had its birth in this country. The European dentist has for the last twenty or thirty years looked to America as the Mecca of dental science. While we physicians have gone to Europe to complete our education, the European dentist comes to America to learn the best and latest in his art. In the capitals of Europe it is the American dentist who has the elite for his clientele, and many a crowned head has an American dentist attached to his court as *Leibzahnarzt*, and in not a few European universities Americans and graduates of American colleges of dentistry are the leading teachers in this branch.

The latest and the most glorious development of American dental science is dental hygiene. It is this subject which brings me to my main topic, for dental hygiene means prevention and preservation, and these bear the closest relation to the prevention of tuberculosis.

One of the earliest, and a very frequent symptom of tuberculosis is an impaired digestion. Now, while I would not wish to say that bad teeth constitute the only cause of these digestive disturbances, if bad teeth are present, they are contributors to these pathologic conditions. Ulcerated teeth may give entrance into the bone to tubercle bacilli accidentally inhaled, or as the result of secondary infection.

Since it is impossible to control dental hygiene except among children, and, may I also say, equally impossible to teach the subject to the majority of adults, modern preventive medicine has very wisely directed its attention to the children, and of course to those attending the public schools. It has been stated that, if New York children are typical of the school children of the United States, there must be in the schools of this country 12,000,000 children having physical defects, more or less serious, that should receive attention from parents and family physicians. Of the school children in New York City and in the United States there must be handicapped by malnutrition, 11,000 in New York, 1,248,000 in the United States; enlarged glands, 5,460,000 in the United States; bad teeth, 8,988,000 in the United States; defective breathing, 7,092,000 in the United States. Dr. A. H. Merritt informs me that recent investigations have shown that no less than 95 per cent. of the children in a public school are suffering from decaying teeth.

It is not within my province to speak to-night of the manifold medical, esthetic and even economic aspects of bad teeth in children or adults. I only desire to emphasize the great need of good, sound teeth in the prevention of tuberculosis on the one hand, and in the treatment of it on the other. The child or adult having good teeth will masticate his food properly and thus digest and assimilate it to better advantage. I have already said that we cannot reach the adult population, at least not nearly as easily as we can reach the children. It is for this reason that our local health department has very wisely created a division of child hygiene, with Dr. S. Josephine Baker at its head. The first thing to do, if one wishes to accomplish anything in the line of dental hygiene among children, is to instruct the parents; and to this end our New York Health Department issues the following leaflet and distributes copies freely to all parents through the children:

---

* Read by invitation at the meeting of the Dental Hygiene Conference and Exhibit at the Metropolitan Life Building, New York City, May 16, 1910.

Department of Health
The City of New York

INSTRUCTIONS TO PARENTS REGARDING THE CARE OF THE MOUTH AND TEETH

The physical examination of school children shows that in many instances the teeth are in a decayed and unhealthy condition.

Decayed teeth cause an unclean mouth. Toothache and disease of the gums may result.

Neglect of the first teeth is a frequent cause of decay of the second teeth.

If a child has decayed teeth, it cannot properly chew its food. Improperly chewed food and an unclean mouth cause bad digestion, and consequently poor general health.

If a child is not in good health, it cannot keep up with its studies in school. It is more likely to contract any contagious disease, and it has not the proper chance to grow into a robust, healthy adult.

If the child's teeth are decayed, it should be taken to a dentist at once.

The teeth should be brushed after each meal, using a tooth-brush and tooth-powder.

The following tooth-powder is recommended:

2 oz. powdered precipitated chalk.
½ oz. powdered castile soap.
1 dram powdered orris root.
Thoroughly mix.

This prescription can be filled by any druggist at a cost not exceeding 15 cents.

The child should take the tooth-brush and powder to the school and receive instructions from the nurse as to their proper use.

ISSUED BY ORDER OF THE BOARD OF HEALTH

To give an idea of the scope of the work of this department, let me give a summary of its work as far as dental hygiene is concerned.

The Division of Child Hygiene of the Department of Health, through its medical inspectors and nurses detailed to duty in the medical inspection and examination of school children, gives each child in the public schools a complete physical examination. This includes an examination of the teeth.

During 1909, 231,081 children were examined of whom 131,747 were found to have defective teeth.

Of these latter, treatment was provided through the dispensaries and private dentists of the city for 4,616 children, of whom 2,591 had fillings and 2,025 had extractions. Each child was thoroughly instructed in the hygiene of the mouth. Children are assembled in the schools, in groups, by the nurses and are taught the use of the tooth brush.

These instructions are repeated at the home each time that a nurse makes a home visit for any purpose whatever. At these home visits the instructions are made inclusive, so that they may be taken advantage of by all the children in the family and especially by those who have not yet reached the school age. A copy of the above quoted circular is given to each child in the school and left by the nurse at each home visit.

The circulars referred to are available for distribution by any agency in the city which requests the supply, and are at present in use in the schools of the Children's Aid Society and many of the other free schools of the city. This gives an idea of dental hygiene in its relation to tuberculosis as far as it can be accomplished among the pupils of our public schools.

The modern treatment of tuberculosis consists in the judicious use of fresh air, plenty of good food, plenty of good pure water inside and outside, careful regulation of rest and work and medical supervision. The proper feeding of the patient is one of the most essential factors. It cannot be done if the patient has bad teeth. It is very easy for us physicians to say to a patient when we examine him and find his teeth defective, "Have your teeth attended to." We say this daily to our poor consumptives, but I need not tell you why so many of them do not obey our instruction. There are very few free dental dispensaries in this city and the same may be said of many other cities; and many dispensaries require, and perhaps justly so, that the patient pay at least the cost of the material—amalgam, etc. We have in the greater city of New York alone from 40,000 to 50,000 consumptive poor. I do not believe that I exaggerate when I say that the majority of them need dental attention, and I know that it is a fact that only a very small minority get it. Some of our largest tuberculosis sanatoriums and hospitals in this city are without a dentist and all the dental work that is done is performed by the medical interns, and consists in extracting painful teeth. I do not believe that this is considered good dentistry in the light of modern dental science. Yet it is done every day. There are hundreds of the consumptive poor in our institutions who should have an entirely new set of teeth because they have but a very few bad teeth left; and still we say to them, "Chew your food well and eat plenty." How can we expect these patients to chew well and eat plenty of food and get well when they are thus handicapped in the most essential part of the treatment?

It was not my purpose in this paper merely to tell you of the relation of modern dental hygiene to the tuberculosis problem. I would be remiss in my mission did I not plead with you and particularly with men and women of wealth, to help us in the solution of this phase of the tuberculosis problem. One way to help is to create more dental dispensaries, and so to endow them that good work can be done, the workers paid, and the material furnished gratuitously to worthy patients. Every sanatorium or special hospital for consumptives should have one or several dentists attached to its staff according to the number of its patients, with a special well-equipped office, and an abundance of material needed for the efficacious treatment of all patients whose teeth need attention.

Here is certainly a field of true philanthopy and a splendid opportunity to serve a good and noble cause, and thus to be helpful in the attainment of that goal for which we are all striving—the eradication of the Great White Plague.

It is gratifying to note here that, following on the announcement of the Thomas A. Forsyth foundation of $500,000 for the care of children's teeth in Boston, active steps in campaigns for oral hygiene are being taken in several places. The prevention of tuberculosis and other diseases seems to be the main object of the dentists. At a recent meeting in Baltimore the State Dental Examining Board and representatives of the Maryland and Baltimore Dental Associations decided to conduct an educational campaign on the care of the teeth. An exhibition will be held in June. At Rochester, the Dental Society of that city has just voted to work in close cooperation with the Rochester Public Health Association. Similar movements are being forwarded in Lynn, Brookline and other cities.

16 West Ninety-fifth Street.

FURTHER OBSERVATIONS ON THE MILK SUPPLY OF WASHINGTON, D. C.*

G. LLOYD MAGRUDER, M.D.
WASHINGTON, D. C.

At the meeting of the American Medical Association held in June, 1907, I had the honor of taking part in the symposium on milk, held in this Section. At that time I submitted some observations on the origin and progress of the movement for the betterment of the milk supply at the national capital. Attention was called to statements made in the "Report on Typhoid Fever in the District of Columbia,"[1] submitted by the medical society of the city to the House Committee on the District in 1894, and to the report of the Washington Milk Conference. This report was issued subsequently, Aug. 20, 1907, by the Department of Agriculture.[2]

Consideration of this subject is again desirable from the facts that national, state and municipal authorities have not yet fully realized the gravity of the situation; that many physicians still appear to be either ignorant or indifferent to the dangers, and that only recently at Washington, the National Association for the Study and the Prevention of Tuberculosis, in a series of resolutions regarding the pasteurization of milk showed itself loath to admit positively conclusive evidence of the communicability of bovine tuberculosis to man.

HISTORY OF EFFORTS FOR PURE MILK

Much interest was manifested in the presentations, which I made and great satisfaction was expressed that the officials and the scientific experts of the United States government had so actively joined in this movement for the improvement of the public health. I was so impressed with this reception of the work of the Washington Milk Conference that immediately on my return to Washington I sought an interview with Mr. Roosevelt, then President of the United States. At this interview I submitted the following letter:

> In view of the agitation that is now going on in Europe and this country with reference to the question of the influence of milk on infant mortality, as well as the causation of tuberculosis, typhoid and scarlet fevers, and diphtheria, I would respectfully suggest that you direct the Bureau of Public Health and Marine-Hospital Service to make a thorough investigation of the milk industry in the District of Columbia from the farm to the consumer. For this purpose the Bureau should be empowered to have the cooperation of other departments of the government, and proper credit should be given for such aid.
>
> Several foreign governments have recently ordered such investigations, and the reports are frequently quoted by writers in the United States on these subjects. These writers have expressed many divergent views.
>
> The recent investigation conducted by the Bureau of Public Health and Marine-Hospital Service into the cause of the prevalence of typhoid fever in the District of Columbia, which report, including an examination of the milk-supply in the City of Washington, has been printed and will be issued in a few days, and the work of the Department of Agriculture concerning the milk-supply at the farms, have shown that many lives could have been saved and numerous cases of disease avoided by more careful attention to the health of the dairyman, as well as of the cows, and the handling of the milk at the farm, in transportation, and distribution in the city.
>
> Much valuable information has been accumulated by both departments, which can be consolidated and developed so as to be utilized as a standard not only for the District of Columbia, but for the United States. This standard is very essential at the present time, and, with the facilities at the disposal of the United States government, should have equal weight with that of any other government.
>
> It can be readily shown that much can be done to improve the milk-supply without materially adding to the cost of the farmer and thus to the consumer.
>
> The report of such an investigation should be freely illustrated that it may serve as an educational document.

President Roosevelt had previously shown great interest in public health matters. He grasped the importance of the subject and immediately directed an investigation, which was conducted by recognized experts in the United States Department of Agriculture, the United States Public Health and Marine-Hospital Service of the Treasury Department, and Dr. W. C. Woodward, health officer of the District of Columbia.

These experts elaborated and endorsed in every particular the work of the Washington Milk Conference. Their report under the title of "Milk and its Relation to the Public Health," was issued in January, 1908, by the United States Treasury Department.[3] A revised edition was issued January, 1910, as Bulletin 56. While this publication is one of the most valuable ever issued by the government on public health, its value would have been greatly enhanced had it been submitted to a conference of writers of the various articles and the advisory board of the Bureau of Public Health and Marine-Hospital Service. Then probably the statements would have been in greater harmony and the endorsement of such a distinguished body would have added greatly to its authority.

The movement for the improvement of the milk-supply in Washington seems to have two distinct periods, one from 1894 to 1907, the other from 1907 to date. It will be desirable to recall some of the incidents connected with this movement and the results that have accrued. The progress of the first thirteen years was great; that of the last three years has been marvellous. The work done in Washington has exerted an influence not only in this country but also in Europe. In fact, its influence has also extended to Australia.

At a public meeting on Feb. 5, 1894, called for the purpose of aiding in the improvement of the sanitary condition of the city of Washington, the late Dr. Charles Smart of the army read a paper on "The Causes and Prevalence of Typhoid Fever."

The statements made by Dr. Smart were so startling and of such damaging character to the prosperity of the city that I called the attention of the Medical Society of the District of Columbia to them at the meeting held on February 7 and moved for the appointment of a committee to consider the subject. Dr. W. W. Johnston, Dr. C. M. Hammett and myself were appointed as such committee.

It was found that the conditions were even worse than Dr. Smart had represented. The committee considered that there were four principal causes for the occurrence of the disease: (a) Potomac water-supply; (b) pollution of the soil by the leakage from privies, defective sewers and the backing up of sewage from tidal movements; (c) to drinking of well or pump water; (d) drinking of contaminated milk.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Report on Typhoid Fever in the District of Columbia, submitted by the Med. Soc. of the D. C. to the Committee on the District of Columbia of the U. S. House of Representatives, June 14, 1894.

[2] Sanitary Milk Production. Circ. 114 Bur. Animal Industry, Dept. Agric.

[3] Bull. 41 Hyg. Lab. U. S. P. H. and M. H. S.

Among the recommendations of the committee, which were unanimously adopted by the medical society, were the construction of works for the filtration of the Potomac or Washington water—the only method of purification—the abandonment as rapidly as possible of all wells within the city limits; the repairing of defective sewers; the extension of the water supply and the sewers; the making of house connections to these.

The views of the committee as to the unhealthfulness of well waters were fortified by the results of bacteriologic examinations of water from thirteen wells in the city of Washington, made by Dr. J. J. Kinyoun. The water from nine of these wells was classed as bad, and from two as suspicious. It was recommended that the nine wells be closed and that the remaining four be kept under observation.

The influence of these two recommendations in the committee's report was immediately noticed:

> 9. Careful inspection of all dairies in the District from which our milk-supply is drawn, and the enactment of a law by which no milk shall be sold in the District without a permit from the health office. The inspection should cover an examination at the dairies of all possible sources of infection, including the water-supply.
>
> 10. The urging on the members of the profession of a careful evolution of all facts bearing on the mode of infection in each case, and the advantage of reporting such facts to the society, and the propagation of the doctrine that immediate disinfection of the stools is the first duty of the physician as guardian of the health of the community.

It will be seen that pure milk and pure water, both in the city and at the farm, and the avoidance of contact with persons suffering with the disease, were the cardinal preventive measures recommended. The importance of these recommendations was immediately recognized. The United States Congress, as well as the city authorities, sought the aid of the medical society and individual members in framing remedial legislation.

That the recommendations made in 1891 were important and proper is attested by remarks made at the symposium on the causes of typhoid fever in the District of Columbia, held, on my motion, by the medical society, Feb. 19 and 26, 1908. Dr. George M. Kober, professor of hygiene, Georgetown University, said that "every point developed in recent discussions, save the influence of domestic filters and water-coolers, had received consideration before." Dr. Kober's investigation in 1895 confirmed in every particular the conclusion reached by the committee of the medical society in 1891, and developed two new facts, viz., the percentage of imported cases and the agency of flies in the transmission of the disease. Dr. William C. Woodward, health officer of the District of Columbia, said that the problem "Why is typhoid fever more prevalent in the District of Columbia than in other communities?" was clearly the problem before the medical society in 1891, when it inaugurated the campaign against the disease, and the clear realization of the problem to be solved contributed very largely, no doubt, to making the work of that committee as thorough and the results as complete as they were." It may safely be said that, aside from the one or two new facts brought to light by Dr. Kober's investigations, to which Dr. Kober has referred, no material fact has been disclosed by any subsequent investigation that was not anticipated in the report of the medical society.

The contention for pure water, pure milk, and the avoidance of contact, outlined in 1891, as preventive measures against typhoid fever is further sustained in Bull. 44 of the United States Public Health and Marine-Hospital Service,[4] as follows:

> Thus far our studies indicate that typhoid fever will cease to be a problem in any community having clean water, an uninfected milk supply, and in which cases of the disease are treated as dangerous and contagious.
>
> In drawing up the conclusions and recommendations of this report we have had the benefit of consultation with the advisory board of the hygienic laboratory, composed of eminent scientists and sanitarians. This privilege is appreciated and we desire to acknowledge the help we have received from the members of the board collectively and individually.

The first step toward carrying out the recommendation of the committee of 1891 was the passage of an act by Congress, approved March 2, 1895, which required the inspection of all dairy farms and a permit from the health officer of the District of Columbia before milk could be sold for consumption in the city of Washington. This requirement applied not only to the farms in the District of Columbia, but also to those in the states supplying milk to Washington.

CARD REGISTRATION OF DAIRIES

About this time Dr. W. C. Woodward was appointed health officer. He instituted the registration of the results of the inspection of the farms and depots on cards known as score-cards. Washington has the honor of being the first city in the country, if not in the world, to require inspection of the dairy farms as well as the milk depots in the city.

The use of score-cards has proved to be very popular as well as valuable. Many states and cities have adopted them. The United States Department of Agriculture reports that it has supplied them to about 300 cities in thirty-nine states, and that they are being widely used. The province of Ontario, Canada, has also adopted inspectors and the score-card system of recording such inspection. Previous to January, 1908, less than 50 cities had sought the cooperation of the Department of Agriculture in instituting inspection. These figures, however, do not represent the full extent of the use of the score-card system as it has been formally adopted by the state health authorities of fifteen states, and is being introduced by them in the cities under their supervision.

This inspection has revealed many unfavorable conditions both at the farm and at the city depot. Insanitary houses, milk houses and barns were common. The attendants on the cattle were careless of their personal habits and frequently were suffering from disease, sometimes of a contagious character. Cattle were frequently found covered about their flanks, legs, udders, and tails with manure and other dirt, which readily dropped into the pails while milking was being done. Cattle were many times found suffering from constitutional diseases as well as local affections of the udder. Flies swarmed about the premises. Frequently on the surface of the milk in the pails floated dead and dying flies. With the knowledge now available of the habits of the fly, this condition alone is a most dangerous source of milk infection. Dr. L. O. Howard in a recent publication by the Department of Agriculture suggests that the common house fly be known as the "typhoid fly." The presence of sediment in the milk containers was a common occurrence. This is especially dangerous, since it has been shown that the ingredients are pus cells, blood, epithelium, barn-yard manure, and varied bacteria, including colon bacilli, and, as shown by Schroeder and Cotton, very commonly the tubercle bacillus.[5]

---

[4] Bull. 44 Hyg. Lab. U. S. P. H. and M. H. S., May, 1908, p. 9.

Few, if any, facilities were found for boiling the water to cleanse the utensils used in the handling and transportation of milk, the hands of the milkers, or the udders of the cows. Polluted water readily contaminates milk. This contamination rapidly multiples at a temperature above 50 F. The knowledge which is rapidly being accumulated as to chronic carriers of the typhoid bacillus, and the common custom which prevails in rural communities of depositing human excreta on the ground, frequently in close proximity to residences, barns, and water-supplies, demand that the water-supply on dairy farms should be frequently examined and carefully guarded against contamination. The location of the premises for the storage and the handling of dairy products in the city depots was frequently most objectionable and at times entirely unfit for such purposes.

The following are some results of one year's use of the score-card system of inspection at Indianapolis:

Dairies scored, 717.

Barns improved, 381.

New barns built, 41.

Milk rooms built or repaired, 319.

Visits made by request to advise about constructing new barns or repairing old ones, 137.

The report of the official in charge says:

> While at first we met with serious opposition, producer and dealer have become convinced that instead of persecution, the work is for their betterment.
>
> Numbers have thanked us for insisting that they improve their conditions, stating that they do not see how they could have produced milk under the conditions they did.

The records of inspection as kept on score-cards show the result of intelligent inspection of the dairy farms supplying milk to Richmond from May, 1907, to May, 1908. The first inspection in May gave an average of 41.5 out of a possible 100; the inspection in April of the following year, twelve months later, gave an average of 72 for the same premises. This demonstrates a gain of nearly 100 per cent. for the year. The improvement was steady throughout this time.

In the annual report of the Richmond, Va., health department for 1908 the dairy inspector in his report to the chief health officer says: "The disposition among our dairymen to improve their plants is wonderful, and all speak highly of the work of the health department."

Washington city also furnishes an excellent illustration of the effects of intelligent inspection. The inspectors and the producer have learned to understand each other. Many of the farmers welcomed the criticisms and proceeded to remedy these defects, as it was found that much could be done at an insignificant outlay of time and money. Much higher scores were given in many cases on the second inspection. As a result of this educational inspection much milk is delivered to the distributing depots with less than 2,000 bacteria to the cubic centimeter.

At the meeting held Sept. 22, 1909, in Washington, of the Milk Producers' Association of Maryland, Virginia, and the District of Columbia, President Thomas in his address reminded the members of the association that the day was past when the milk inspector was "looked on as an irreconcilable enemy."

Such expressions show the spirit with which intelligent inspection is met. This educational inspection means much to both producer and customer. It contributes not only to the health of the families of both, but also to that of the dairy herd. It is a well-known fact that typhoid fever prevails to an alarming extent in rural communities. It has been found that it is two and a half times more prevalent in the counties of Maryland than in the city of Baltimore. Tuberculosis is also quite common in the country.

RESULTS OF INSPECTION

Inspection has worked well; it should be perfected and extended. It should be assumed by state and municipal authorities and not left to the enthusiasm of public-spirited physicians and other citizens. Washington has apparently had most satisfactory results from the requirements for inspection. Dr. W. C. Woodward, health officer of the city of Washington, D. C.,[6] says:

> The death rate from diarrheal diseases among infants during the five-year period 1880 to 1884 was 162 per 100,000. During the next five-year period it was 168, and from 1890 to 1894 it was 175. In 1895 the milk law was enacted. From 1895 to 1899 the death-rate fell to 135; from 1900 to 1904 it fell to 109, and in 1905 it was only 104, and in 1906, 1907, and 1908 only 97 per 100,000.

In 1909 it fell to 72. It is gratifying to see that 405 fewer babies died in 1909 than in 1894, the year before the milk law was passed.

The diagram that accompanies Dr. Woodward's article (Chart 1) shows the above facts graphically.

MILK AND WATER AS AGENCIES

The improvement in the death-rate from diarrheal diseases, typhoid, malarial and typhomalarial fevers has also been very marked in the period since the enactment of legislation governing the milk supply, and especially so since the active movement for its improvement started in 1907. The title "typhomalarial fever" is no longer used in the classification of diseases. It is a question if the many deaths attributed to malarial fever should not be considered as typhoid. The data of the one are similar to those of the other. Chart 2 well illustrates these observations. The rate 33.2 from typhoid fever in 1909 encourages the hope that Washington with continued improvement in its milk supply will soon attain a much lower death-rate.

The rate in 1909 would have been lowered had the hospitals had a more nearly normal death-rate. There seems to be a connection between the death-rate and the milk-supply of the hospitals. In 1909 there were 780 cases of the typhoid reported with 114 deaths; 70 of these deaths occurred in hospitals. With the normal death rate of 10 per cent. 36 lives should have been saved.

With the limit of safety of "inspected" raw milk fixed at 100,000 the following numbers of bacteria per c.c. were found in milk furnished to Washington hospitals: 2,000,000; 2,800,000; 3,500,000; 4,000,000; 5,000,000; 10,000,000; 10,000,000; 15,000,000; 50,000,000; 111,000,000.[7]

The mortality from typhoid in some Washington hospitals reached the appalling rates of 25, 20, 18 and 16 per cent., although a few have the normal death-rate of 10 per cent. But in only one instance was the German mortality rate of 5 per cent. approached, and this was as low as 7 per cent.

---

[5] See Bull. 99 and Circ. 118, Bureau Animal Industry, Dept. of Agric.

[6] Bull. 41 Hyg. Lab. U. S. P. H. and M. H. S.

[7] See Bull. 41 Hyg. Lab. U. S. P. H. and M. H. S., p. 451, et seq.

It will be noticed that the highest record was reached in 1890. Two factors can be considered as causing this. Kober has attributed it to unusual contamination of the Potomac water supply by the sewage from Cumberland, Md., where an epidemic of typhoid fever prevailed in the winter of 1889-1890. I attribute it to the greater contamination of the milk-supply. This was brought about by the abnormally high temperature that prevailed during the winter. The Weather Bureau reports it as having been the warmest winter for fifty years. No ice was gathered. Consequently milk was almost constantly exposed to a temperature conducive to the growth of bacteria. It is well known that colon and typhoid bacilli proliferate rapidly as soon as the temperature goes above 50 F. May this not help to explain the increased prevalence of typhoid in winter in localities where the temperature goes repeatedly above 50 F.?

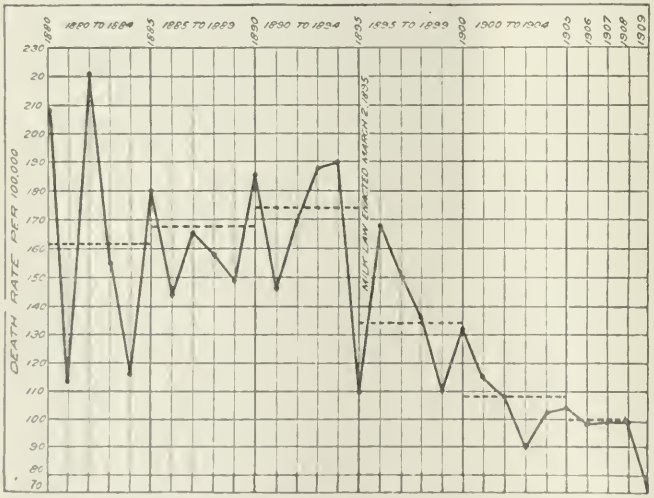


Chart 1.—Diagram showing decreasing death-rate of children under two years of age from diarrheal diseases in the District of Columbia following the enactment of the milk law of 1895. Dotted lines show averages. (In 1909 the death rate fell to 72.)

The winter of 1889-1890, as stated, was the warmest for fifty years. The winter of 1908-1909 was unusually warm. The winter 1909-1910 was quite cold. From January to May, inclusive, in 1909 (warm winter) there were 236 cases of typhoid reported, while during the same period of 1910 (cold winter) there were only [illegible] cases reported.

Comparison of the diagram with the one prepared by Dr. Theobald Smith (Chart 3) on the seasonal prevalence of typhoid fever practically eliminates the Potomac water as a serious causative agent. The filtration plant now positively eliminates it, as is shown by the accompanying table. There is no need to resort to the boiling of Potomac water.

Contrary to every expectation, there was no diminution in the prevalence of typhoid fever following the completion of the filtration plant in the fall of 1905 as compared with the few preceding years. Numerous investigations were undertaken and reports made; some covered conditions in the city, and others covered both the city and the dairy farms.

RESULTS OF TEST FOR BACILLUS COLI OF 10 AND 1 C.C. SAMPLES FROM FILTERED WATER, RESERVOIR AND TAP WATER FROM VARIOUS PARTS OF THE CITY

Fiscal year.	Number samples examined.	Samples in which B. coli was positively determined	
		Number.	Percentage
1905-6	502	8	1.60
1906-7	1,630	52	3.18
1907-8	2,232	42	1.88
1908-9	2,294	15	0.67
1909-10*	940	0	0.00

* Five months only, July to November, 1909, inclusive.

The Bureau of Public Health and Marine-Hospital Service issued three special bulletins on "The Origin and Prevalence of Thyphoid Fever in the District of Columbia."[8] From the peculiar limitations of the functions of this bureau the investigations were mainly of the conditions existing in the District—not in the outlying states.

Continued study convinced me that stricter attention must be paid to the conditions at the dairy farms, including their water-supply, to which I had called attention in 1894. I submitted these views to the Hon. James Wilson, Secretary of Agriculture, at an interview in September, 1906.

Under the direction of the Secretary of Agriculture, every one of the approximately 1,000 farms supplying Milk to Washington was inspected by the Bureau of Animal Industry in the fall and winter of 1906-7. The average score of these farms was as low as 45.03 out of a possible 100. On 60 farms, taken at random, bacteriologic investigations of the springs and wells were made by the Bureau of Plant Industry. These were the first on record of an extended series of investigations of their kind. Dr. Kinyoun did make six such examinations in 1895, in four of which he found the water-supply to be contaminated. Previously the analysis of waters was only chemical. The revelations were startling. These showed that nearly one-half of the water-supplies were contaminated with fecal bacteria and that 25 per cent. of the remainder contained many more than 500 bacteria per cubic centimeter.

The revelations of contamination are quite as astounding in other states as they have been in the vicinity of Washington. Examinations have been made in the District of Columbia, Maryland, Virginia, Massachusetts, Illinois, Wisconsin and Minnesota. The latest report,[9] by Kellerman and Whitaker, issued Nov. 6, 1909, shows that out of 79 samples of water from as many farms in Minnesota 59 were polluted, and on 23 of these farms there was a record of typhoid fever. These studies have confirmed the contention of the danger from this and other contaminations of milk.

---

[8] Bulls. 35, 44 and 52, Hyg. Lab. P. H. and M. H. S.
[9] Bull. 151, Bureau Plant Industry, Dept. of Agric.

CONFERENCE ON MILK-SUPPLY

The investigations of the dairy farms and city depots supplying milk to Washington disclosed many alarming conditions. These were considered by the Medical Society of the District of Columbia and a number of interested citizens. I submitted the ascertained facts to Mr. Macfarland, then president of the Board of District Commissioners. Simultaneously Mr. Macfarland's attention was called to a suggestion made by Mr. E. Berliner that a conference be held on the milk-supply. This suggestion was made at a meeting held at Mr. Berliner's house, when there was a discussion of Dr. Schroeder's and Mr. Cotton's recent publication on the contamination of milk with tubercle bacilli and the significance of such contamination. Mr. Macfarland at once invited a number of gentlemen from private and official life to take part in such a conference.

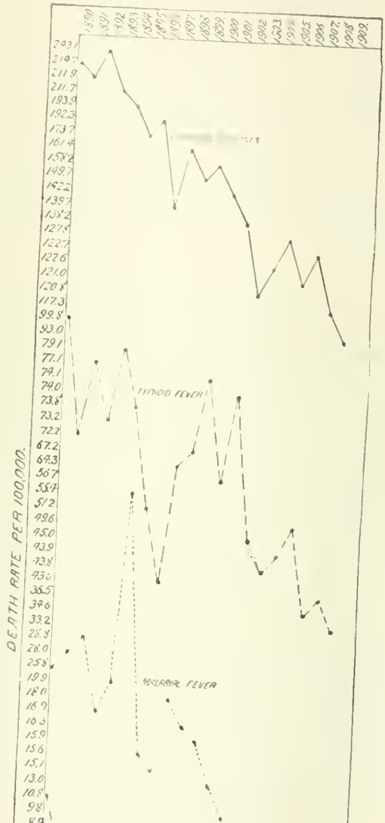


Chart 2.—Diagram illustrating death rate per 100,000 of population for diarrheal diseases, typhoid fever, malarial fever and typho-malarial fever, during the period 1890 to 1909 inclusive.

It was shown that milk and dairy products were disseminators of disease. Repeated instances were cited of outbreaks of typhoid fever, scarlet fever, diphtheria and sore throat, as positively being traced to infected milk. The fearful death-rate among infants, directly from impure milk, was shown. Attention was also called to the danger of milk as a carrier of tuberculosis. Fortunately while pointing out these alarming conditions, the conference pointed out the methods for modifying the danger. The proceedings of the conference were published by the Department of Agriculture as Circular 111 Bureau of Animal Industry under the title "Sanitary Milk Production." The value of the report was greatly enhanced by the fact that it was issued after careful consideration in conference by all of the contributors. It demonstrated the importance of occasionally having the cooperation of official and non-official persons. This furnishes another instance of the watchfulness of the Department of Agriculture over the public health.

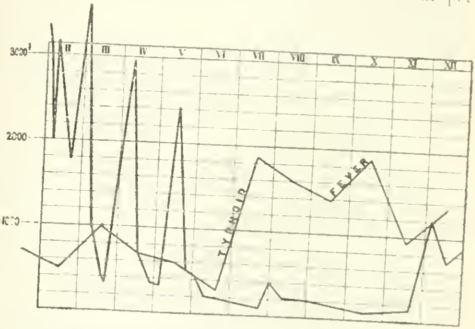


Chart 3.—Diagram prepared by Dr. Theobald Smith, showing comparative number of bacteria found in 1 c.c. of Potomac water in 1886, and also death-rate of typhoid fever during same year

The London *Lancet*,[10] in an editorial headed "Federal Text-Book on Pure Milk Questions," says of this circular:

> The Agricultural Department at Washington has issued a volume of reports containing the results of the conference of experts called together by the department to consider the various questions now agitating the country in regard to the purity of the milk-supply. The conference consisted of thirty-five recognized experts in the study of the questions involved. This volume will be the recognized text-book of the health authorities of this country for the present, as it carries the weight of authority of these experts, and the endorsement of the Department of Agriculture. In brief, these experts agreed upon a definite milk program and have recommended that public safety should be assured by legislation establishing three classes or grades of milk—namely, certified, inspected and pasteurized.

Constant instances of serious outbreaks of diseases from contaminated milk are being reported.

The occurrence of 600 cases of streptococcus sore throat in Stockholm, traced to a streptococcus abscess in the udder of a cow with other reports of similar infections has drawn attention to the necessity of immediate study of the significance of streptococci in market milk.

---

[10] Lancet, London, 1907, ii, No. 13.

The rapidly accumulating reports of outbreaks of typhoid fever resulting from milk infected by bacillus carriers have excited an increased interest throughout the world in the improvement of the milk supply. Dr. Biggs, like many others, has been so impressed with the danger from this source that he considers it almost impossible to secure a safe milk-supply without careful and repeated inspection, including complete and repeated bacteriological examinations of every one connected with the production and handling of milk. As a result of his report, covering this and other points, the New York City Board of Health has adopted an order requiring satisfactory pasteurization of milk used for drinking purposes.

In the fall of 1908 over fifty cases of typhoid fever in Washington, D. C., were traced to the supply of milk from a single farm. The owner was a bacillus-carrier. The supply of milk from this farm was stopped.

From the well-known prevalence of rural typhoid, the presence of bacillus-carriers, and the existence of contaminated water-supplies at many farms which can readily contaminate milk, it seems that milk is a far greater factor in keeping up the typhoid rate in Washington than a number of writers have been willing to admit. I have always contended that dairy products were the principal sources of the disease. In view of recent investigations, I reassert my position.

BOVINE TUBERCULOSIS

During the past three years extraordinary progress has been made in the study of the relation between human and bovine tuberculosis. The position of Koch that bovine tuberculosis is a negligible factor in the causation of human tuberculosis is no longer tenable.

The work of Schroeder and Cotton on this subject attracted universal attention. It was deemed to be of the greatest importance. The British Royal Commission to inquire into the relation of human and animal tuberculosis, confirmed these experiments in every particular, and so reported to the British Parliament in January, 1909, in its "Third Interim Report." Their report was based on the information obtained from these repeated experiments.

Influenced by this report the Board of Agriculture and Fisheries of Great Britain issued in May, 1909, "The Tuberculosis Order of 1909." This order provided that after Jan. 1, 1910, milk sold in Great Britain should come from tuberculin-tested cows, or should be sterilized. These two paragraphs from this order are very positive:

> As your local authority are doubtless aware, the subject of tuberculosis in man and in animals and the relations between the disease in human beings and in animals has been under careful investigation during recent years in this country and abroad and various phases of the question have been inquired into by successive royal commissions. So far as regards the possibility of the transmission of the disease from affected bovine animals to man, the board are satisfied that it must now be accepted as a fact that tuberculosis is transmissible by the agency of milk used for human consumption. The Local Government Board concur in this view, and a bill was introduced in the House of Commons by the President of the Local Government Board on the 25th inst. designed *inter alia*, to afford protection to the public health from the risk of the spread of tuberculosis by the means of milk used for human consumption.
>
> In considering the question in relation to animals, the fact that the disease is communicable to man by milk has a material bearing on the measures to be adopted. Any action which results in the reduction in the number of tuberculous bovine animals in the country must reduce the risk of the spread of tuberculosis amongst the community, and if it were possible to eradicate from this country the disease in animals, a material step forward would have been taken in the campaign against the disease in man.

The accumulated testimony on the communicability of bovine tuberculosis to man was greatly accentuated in a paper by Dr. W. H. Park, director of the research laboratories of the Health Department of New York, which he submitted in Washington, May 3, at the meeting of the National Association for the Study and Prevention of Tuberculosis.

In this paper he showed that 22 out of 84 cases of tuberculosis of children under five years of age showed the bovine type of tubercle bacilli. Dr. W. H. Welch noted that the cases reported by Dr. Park were not selected cases.

PASTEURIZATION AND STERILIZATION

Even though the danger of contracting tuberculosis due to bovine tubercle bacilli from dairy products can be eliminated, if we can obtain milk from healthy cows, there still remains the danger of contracting tuberculosis, due to human tubercle bacilli and other diseases from contaminated milk. Milk can be made safe, however, by the proper application of heat. There are two terms applied to the results of heating milk, pasteurization and sterilization. These two terms must not be confounded; the former is a process that requires the application of a much lower degree of heat than is effective for the latter. Sterilization means the killing of all the germs that may be present in milk. Pasteurization means the destruction of the disease germs that are of more common occurrence in it, such as those of tuberculosis, typhoid fever, diphtheria, etc. The investigation of General Sternberg, confirmed by Dr. M. J. Rosenau, especially, have shown that the common or pathogenic bacteria are unable to retain their life and virulence when they are exposed to a temperature of 60 C. or 140 F. for a period of twenty minutes, and that the value of milk as an article of food is not perceptibly affected by the designated temperature. Professor Kastle, of the University of Virginia, after extensive investigation, concluded that the designated temperature, maintained for a sufficient time to destroy the disease germs of common occurrence in milk, has no deleterious effect on its nutritive value. Thousands of children under the eyes of careful and competent observers have been reared successfully on milk so treated without the slightest signs of scurvy or rickets. Rowland G. Freeman has recently shown that such outbreaks have been traced to mixed feeding: that milk was an insignificant factor. His observations were strengthened by those of numerous observers in Europe. There boiled or sterilized milk was almost exclusively used. The temperature required for sterilization does destroy the enzymes and impair the nutritive value of milk. This emphasizes the necessity for a proper appreciation of the processes of pasteurization and sterilization.

It must be kept in mind that the advocates of pasteurization do not countenance the use of unclean or old milk; on the contrary, they insist that pasteurization should be applied, but simply as a measure of safety against the dangers from milk which no other precautions can obviate. Furthermore, pasteurization should be practiced under proper supervision, and that form of so-called pasteurization which is to some extent commercially practiced, during which milk is heated to an unnecessarily high temperature for barely a fraction of a minute, should be emphatically discountenanced. Health officers should be provided with properly equipped laboratories to keep constant check on the output of pasteurizing plants. Progressive men engaged in the distribution of milk, cream, and ice-cream employ skilled bacteriologists. There are two noted instances in Washington where this precaution has been taken. The rarity of typhoid fever amongst the customers using this pasteurized milk and ice-cream has been marked. All milk, whether pasteurized or not, should be consumed as soon as possible after milking.

It frequently happens that properly pasteurized milk cannot be secured on the market. The observance of the following directions for the home pasteurization of milk, by L. A. Rogers of the Bureau of Animal Industry, can then be practiced:

> Milk is most conveniently pasteurized in the bottles in which it is delivered. To do this use a small pail with a perforated false bottom. An inverted pie-tin with a few holes punched in it will answer the purpose. This will raise the bottles from the bottom of the pail, thus allowing a free circulation of water and preventing bumping of the bottles. Punch a hole through the cap of one of the bottles and insert a thermometer. The ordinary floating type of thermometer is likely to be inaccurate, and if possible a good thermometer with the scale etched on the glass should be used. Set the bottles of milk in the pail and fill the pail with water nearly to the level of the milk. Put the pail on the stove or over a gas flame and heat it until the thermometer in the milk shows not less than 150 nor more than 155 F. The bottles should then be removed from the water and allowed to stand from twenty to thirty minutes. The temperature will fall slowly, but may be held more uniformly by covering the bottles with a towel. The punctured cap should be replaced with a new one, or the bottle should be covered with an inverted cup.
>
> After the milk has been held as directed it should be cooled as quickly and as much as possible by setting in water. To avoid danger of breaking the bottle by too sudden change of temperature, this water should be warm at first. Replace the warm water slowly with cold water. After cooling, milk should in all cases be held at the lowest available temperature.
>
> This method may be employed to retard the souring of milk or cream for ordinary uses. It should be remembered, however, that pasteurization does not destroy all bacteria in milk, and after pasteurization it should be kept cold and used as soon as possible. Cream does not rise as rapidly or separate as completely in pasteurized milk as in raw milk.[11]

CONCLUSION

If the lessons taught by these observations be heeded, a great step will be made toward the control of milk-borne infections. Dollars spent by the thousand for prevention will save millions needed for the care of those afflicted with disease, to say nothing of the days of suffering that will be avoided.

It can no longer be doubted that dairy products—and this term includes milk, cream, ice-cream, butter and cheese—are excellent vehicles for the dissemination of pathogenic bacteria. Outbreaks of typhoid fever, scarlet fever, diphtheria, sore throat, and intestinal disorders of children have been definitely traced to contaminated milk. The proofs of the danger of tuberculous infection from these products are accumulating daily. The opportunities for such infection are manifold. With the greatest vigilance on the part of trained inspectors and the greatest care on the part of the householder this infection cannot be entirely prevented. The householder also has a duty to perform to protect milk from contamination after it has been delivered.

Of course the carrying out of the recommendations for the production and delivery of more sanitary milk entails additional expense at the farm and the city depot. But the receipt of a single additional cent for a quart of milk would justify many improvements by the producer and the seller. A single case of sickness or a funeral resulting from contaminated milk would cost far more than the slight additional price of better milk for a long period.

Under these circumstances there should be no question about demanding that milk should be produced under conditions that would entitle it to be entered under Class 1 (certified milk) or Class 2 (inspected milk) as prescribed by the Washington Milk Conference; or, in case it does not conform to the requirements for these classes, that it should be efficiently pasteurized (Class 3). This classification, prepared by Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, and approved by the Washington Milk Conference, is more fully described in Circular 114 of the Bureau of Animal Industry already referred to. It is a classification that will give us, not bad, indifferent and good milk, but good, better and best milk. To produce milk under any of these classes rigid inspection is required.

The prices that must be charged for the first class make it almost impossible for the man of moderate means to avail himself of such milk. Class 2 can be produced at a lower price, but would still cost more than ordinary milk. Hence the masses must resort to the milk of Class 3. With the precautions suggested, they would reasonably be assured in the use of this milk of a safe and wholesome supply at but a trifling advance in the price.

Those who are interested in the improvement of the milk supply and who wish to obtain a comprehensive summary of facts bearing thereon, are advised to write to the Secretary of Agriculture at Washington, D. C., for a copy of Circular 153 Bureau of Animal Industry, issued April 28, 1910. The title of the circular is "The Dissemination of Disease by Dairy Products and Method of Prevention."

Stoneleigh Court.

ABSTRACT OF DISCUSSION

Dr. William C. Woodward, Washington, D. C.: After searching for a proper basis on which to determine whether or not we have achieved any substantial results through our milk inspection service, I selected deaths from diarrheal diseases only, among children under 2 years of age, and it is to those alone that the chart exhibited by Dr Magruder relates. It is true, as Dr. Magruder says, that the method of milk inspection in use in the District of Columbia was original with a committee of the medical society of the district, on which committee I had the honor to serve. Working quite independently of anything that had been done previously, so far as we then knew, we devised it. Later, however, it came to my attention that as far back as 1873, the three food inspectors who were then doing duty in the District of Columbia had united in a formal report to the then board of health recommending this very method of inspection. This proposed method included not merely the inspection of the farms by the inspectors in the service of the then existing board of health, but included also the permit system, whereby one city or one state can control the situation outside of its territorial jurisdiction. Later, about 1884, one of my predecessors actually inspected some of the dairy farms supplying milk to the district. I mention these things so that honor may go where honor is due. Had these early workers had back of them such public sentiment as was created by the publication of the admirable report of

---

[11] Circ. 152, Bureau Animal Industry, Dept. of Agric.

Dr. Magruder's committee, that first pointed out the probable sources of typhoid fever in the District of Columbia, their work would doubtless have continued. As it was it died utterly, even its memory having passed from the public mind.

Dr. William H. Welch, Baltimore: I think that a model demonstration exhibited in the national capital is significant and impressive, and likely to be productive of results to the rest of the country. Of course, we all realize, I think, that sanitary problems connected with milk are about the most urgent and perplexing, in many ways, of solution, of any. Some years ago in Baltimore we had made an endeavor, at least, to start the same sort of a campaign of education of the public regarding milk that we had attempted in regard to tuberculosis. It may not be known to all that the first tuberculosis exhibit was that arranged by Dr. Fulton in Baltimore. It was a great success there, far beyond any thing we dreamed of; and since then it was adopted elsewhere; but give him credit for that. We have attempted to do the same thing for milk, but it has not had the same response; but I think it is a good idea, and that possibly the time is now more suitable.

It may be that the large mortality in the hospitals is due to the poor quality of the milk used there; but there is a question whether the high mortality of those particular hospitals is due to the milk.

Dr. B. Franklin Royer, Harrisburg, Pa.: Members of this Section might be interested in the educational campaign undertaken by the Department of Health in Pennsylvania. Three years ago our health officers, the men who institute quarantine for us, placard and disinfect premises, etc., were trained for dairy inspection by placing suitable literature in their hands and by having them further instructed by the county medical inspector under whom they work.

At the present time all dairy farms in the commonwealth are inspected twice each year. In our winter inspection completed some time in March we reached a total of 55,000 farms and stables producing milk for sale to creameries, condenseries, cheese factories, wholesalers, retailers and for sale from individual dairies. The inspection up to the present time has not, of course, been done with the great detail practiced at Washington, and it in no way interferes with towns and cities that have already some system of inspection of their own. In fact, it is a campaign intended to reach the men who are handling the cows and stables and caring for the milk in the country. After the inspection is made circulars are handed these men describing conditions that should exist, emphasizing particularly the need for cleanliness of cows' flanks and udders, the need for excluding all forms of dirt from the milk and the importance of cooling it at once.

We are now sending letters to each producer calling attention to the insanitary conditions found. This work reaches far back into the country district where the initial infection of milk commonly begins.

We have a statute which makes communicable diseases reportable, typhoid included. On receipt of such report telling us of the existence of typhoid, diphtheria or scarlet fever on a premises from which milk is sold, our county medical inspector at once visits the premises and establishes the department's regulations for the control of the milk supply. If such regulations cannot be established, the sale of milk is stopped or the stock is transferred to a neighboring farm.

Dr. William Edward Grant, Louisville, Ky.: As has been suggested, we look up to Washington; what governmental authorities order and advise has great influence throughout the entire country. I am acting as health officer for my city, and we are much interested in what Washington tells us. Through such influence, in part, we have been able to get every cow that produces milk for the city I live in tuberculin-tested. We had a hard fight to accomplish this and it took six to eight months of very earnest and constant endeavor. The health officers of the state first issued an order that no milk should be sold in our state that did not come from tuberculin-tested cows, and then the city health officer wrote a letter to each dairyman who sold milk in Louisville, telling him that after a certain date no milk would be permitted to be sold in our city that did not come from a tuberculin-tested cow.

At the same time an order was given that no new cows should be brought into the herd, unless they were tuberculin tested, and that the dairymen should clean up their dairies and disinfect them according to methods suggested by the government at Washington. In that way we have improved the milk supply wonderfully in our city; and have also interested our dairymen in keeping it improved. The education to them has been of great value. The fact is, I believe, the dairymen usually are glad to improve bad conditions, if we tell them how. They didn't know how; and they welcomed somebody who would come and say "This is wrong; and this is the way to correct it." Now we have dairy inspectors go to these dairies and see that the cows are properly curried, and the udders properly washed before they are milked, and the milk taken to a separate place and cooled; and we try to persuade our dairymen to bottle it at once and bring it to market in that way.

I think that bovine tuberculosis is very dangerous to children, but not dangerous to adults. The children in the hot weather are a good deal run down, no doubt, by the heat; and the germicidal power of the blood being lower, the germs find easy access and a location in the alimentary canal of infants, and in that way they become diseased. That is avoided in part by having none but pure milk distributed. "The Babies' Pure Milk Fund" is doing a good work with us, and we have also pasteurized and certified milk, and in this way see that the babies get only the best.

Dr. Seneca Egbert, Philadelphia: A few years ago, when the newspapers of New York were advocates almost universally of pasteurization of the milk, if I remember rightly, Dr. Darlington, of the board of health, opposed pasteurization at the dairy, the objection being that it gave the consumers a false sense of security, since a considerable period elapsed from the time the milk left the dairy until it reached the consumer, and there was the possibility that in the time of transit the milk might be contaminated, especially if carelessly handled. It does seem to me that that objection can be made a very strong one—that the milk can be pasteurized, and yet, if the way be left open for careless handling on the part of the train men or the dairy dealers in the cities, that there is chance for danger there.

Another thing that I am glad Dr. Magruder mentioned was the fairness of giving the dairymen and milkmen—the producers—a higher price for the milk. It is unfair, it seems to me, for us to advocate this better milk, unless we are willing to pay for it. Any man who knows anything about farming, knows that it is a pretty hard thing to provide the things demanded—sanitary barns, good stock and all that—and then to get no more than 3 cents or thereabouts for the milk. We must educate the public to allow a higher price for the milk—see that they understand that that don't come into the category of things to be cheapened in the attempt to reduce the high cost of living. The question of inspection is the big question and I believe that we have yet to appreciate that in most of our large cities the cost of inspection is apparently prohibitive. It ought not to be, but we are not getting—at least, as far as the municipalities are concerned—as much inspecting nor as many efficient inspectors as we should have.

Dr. G. Lloyd Magruder, Washington, D. C.: First in regard to Dr. Woodward's observation, I do not claim paternity of the idea of the inspection and permit system. I did claim and do claim that the report of the committee of 1891, embracing recommendation 9, quoted by me, directly caused the passage by Congress of the law giving this authority to Washington. Hence I think it is justifiable to claim the honor of being instrumental in the initiation of inspection.

As to Dr. Welch's observation, I said bad milk was *probably* the cause of the high death rate in hospitals. The lowest rate occurred where little milk was used. It is a great satisfaction that Dr. Welch has corroborated the statement that bovine tuberculosis causes from fifteen to twenty-five per cent. of certain cases of tuberculosis in children under five years of age.

In answer to Dr. Egbert's question, pasteurization should take place in the city under official supervision. I spoke of 50° F. as the danger line because of the rapid growth of bacteria in milk above this temperature. This prompts me to mention the desirability of investigating the effects of freezing milk. I shall promptly take up this question with the Secretary of Agriculture. Three years ago the United States Consul at Chemnitz reported to the State Department that a German physician had recommended the transportation of milk in frozen blocks, since no deleterious influence was exerted by freezing. American officials caution against allowing milk to freeze. These divergent views interested me at that time. I sought without success to have them investigated at the Hygienic Laboratory. General Sternberg, chairman of one of the committees at the Yorktown Exposition, awarded first premium for milk to the Virginia Polytechnic School at Blacksburg. This milk was delivered partially frozen, after transportation 400 miles in jacketed cans.

The influence of this Section since 1907 on the milk problem has been so great that I thought it desirable to report what has been done in Washington. The symposium at Atlantic City in 1907 on the milk supplies of several cities received marked attention. The paper which I read at the symposium contained observations made by officials of the Bureau of Public Health and Marine-Hospital Service, of the Department of Agriculture, of the Health Officer of Washington, and of citizens in private life. Much enthusiasm was manifested at the information, which showed that the government authorities were so interested in milk and water supplies.

I had seen Mr. Loeb, Secretary to President Roosevelt, before I left Washington. Mr. Loeb stated that the President was opposed to a department of public health, but was heartily in favor of a bureau. On my return to Washington I saw President Roosevelt and reported the proceedings of the Association on public health matters. He showed marked interest. He directed the investigation of the milk supply as requested in the letter introduced in my paper. Many other valuable investigations along this line have been conducted since then by the government. Much of this interest is directly due to the impetus given to the movement in this section in 1907.

SCAB FORMATION IN THE NOSE

ITS ETIOLOGY AND PREVENTION *

W. PEYRE PORCHER, M.D.

Visiting Laryngologist to the Roper Hospital; Lecturer on Laryngology, Charleston Medical School

CHARLESTON, S. C.

"When all is said and done the local therapeutics [of atrophic rhinitis] seems to reduce itself to a thorough cleansing of the nasal mucous membrane, and the use of any simple application is as effective as anything. The severer remedies do not seem to have any material advantages over the milder ones. I am afraid that we have no specific, but I hope that one may be found and that the future will not, as in the past, show more failures than success."

These words form the closing lines of an article by Dr. George L. Richards, and about express the prevailing opinion held by rhinologists in regard to the treatment and cure of atrophic rhinitis, or true catarrh; that is, the formation of large collections of hardened mucus in the nose. The atrophic process in my opinion may be more truly regarded as a result rather than a cause of the scab formation. Be this as it may, whether *post hoc* or *propter hoc*, we are sure, at least, that we have as a result large roomy nostrils, filled with gummy collections of mucus of a desiccating character and a nauseating odor. In the early stages of the disease the nostrils are not so roomy, nor do the scabs become so dry and hard; but they rapidly cover the turbinates and fill up the vacant spaces, apparently in successive layers, until the nose is more or less completely occluded. Such is the picture which is presented to us in a case of true catarrh in the earlier stages, that is, before the nose has become hollowed out, as it were, from the accumulated scab formation and the atrophic or drying-up process which take places beneath them has gone so far as to leave the whole interior of the nose almost functionless, as far as normal secretion, the purifying and moistening of the air, the function of olfaction, etc., go.

Confronted with a case like this we are at once inclined to look to the hidden recesses of the adjoining sinuses as the "fons et origo mali." We do this because there must be a cause for the gummy change which takes place in the secretions. This problem has puzzled the scientific world up to the present time.

ETIOLOGY AND TREATMENT

The etiology of atrophic rhinitis is wrapped up in such an interminable maze of theory and conjecture that to give even a brief outline of it would amount almost to a historical investigation. Among the most prominent of the etiologic factors to which it has been attributed may be mentioned syphilis, inhalation of dust, tuberculosis, anemia and chlorosis, tobacco and alcohol, hypertrophic catarrh, effects of a previous purulent rhinitis and suppuration of the accessory sinuses of the nose, fatty degeneration of the infiltrated cells, the trophoneurotic theories, and finally, penetration of micro-organisms, Lowenberg's ozenacoccus, etc.

To trace in detail the origin of these theories would only be a needless tax on you. I will therefore state briefly that in 1896 in a paper on "The Treatment of Atrophic Rhinitis" which I read before the American Laryngological Association I reported a case which had been successfully treated with local applications of Lugol's solution in the nose together with large doses of the iodid of potassium and such operative measures as would open the accessory sinuses and give free outlet to all inflammatory exudates, pus collections, etc. An exhaustive discussion followed this paper and almost all the different methods of treatment since then have been based on that discussion. On account of the fact being noted that whenever inflammatory secretions from any portion of the lower respiratory tract came in contact with the external air, they became coagulated or gummy and finally hardened, generally with a more or less fetid odor. It seemed evident that practically the same process occurred with scab formation in the nose.

It was necessary therefore to select some drug which would maintain the fluidity of these secretions and thereby enable the patient to expel the accumulations and prevent the noisome odor. The well-known influence of potassium iodid in producing lacrimation and increasing the nasal secretion naturally suggested that drug as the most efficient for this purpose. It was found necessary, however, to give it in increasing doses until a very large amount was ingested daily before the desirable result was accomplished. Of course this amount varied greatly in different individuals. Many patients were found who would absorb from 600 to 900 grains a day before the nasal secretions would remain fluid and this without any noticeable ill effects whatever; in fact, on the contrary, the gain in flesh would be rapid and the improvement in the general health would be very marked. I desire to emphasize this fact and to state that in every case in which I have used these large doses, together with the operative treatment, the scabs have ceased to form.

---

* Read before the South Carolina Medical Association, April 19, 1910

RESULTS

The importance of the discovery of any method by which the formation of these scabs may be stopped by the therapeutic effect of any drug through the blood, together with such surgical measures as will assist in eliminating the morbific processes, will be recognized when I state that I know of no other process in the literature of the subject which has been credited with like results. In the gradually increasing doses up to the large amounts herein advised, there were but few of the well-known constitutional effects of the drug exhibited: no salivation, but little lacrimation, no apparent ill effects on the kidneys, and few or no symptoms of iodism on the skin. In the cases which I have reported there was no history or symptoms of syphilis. The only case in which there has been any return of the scab formation was that of a boy aged about fifteen, who had marked cardiac insufficiency. After a violent case of epistaxis with severe reactionary fever he was removed by his parents and further treatment refused. The drug was always administered with six or eight ounces of water taken after meals. In these extremely large doses it appeared to liquefy the blood and doubtless the same action took place on the coagula in the nose. Hare gives the maximum dose of potassium iodid as from 100 to 200 grains, but I have been informed of cases in which as much as 1,500 grains have been ingested daily without apparent ill effect. My custom has been to begin with 20 drops of a saturated solution and run the dose up rapidly until the secretions in the nose become so fluid that the scabs are easily expelled. During this time, however, I make every effort to open the sinuses as freely as possible so as to give free outlet to all inflammatory secretions.

We are all familiar, of course, with patients with constitutional syphilis who will not tolerate potassium iodid in any quantity. Hence the presence or non-presence of syphilis does not appear to influence the toleration for the drug in any way, and hence also the extreme toleration for it in the large doses above mentioned did not lead me to assign syphilis as the underlying cause. It has been a noticeable fact, however, that those who have the scabs in the nose are almost universally extremely tolerant of the drug. I am not prepared to say just what the underlying condition or diathesis in the blood is. It seems to be recognized by a great many authorities to be syphilitic in many instances, but it is certainly not so in a great number of cases, as mercury seems to have no influence on them whatever, even when pushed to the verge of salivation.

The following illustrative case of a patient recently under treatment I will report because of the gratifying result obtained, and also for its instructive value.

The patient was a young woman, aged 18, of Irish descent, with every appearance of the most robust physical health. Her complexion was of the peach-blossom variety and was without a blotch. Her family were all healthy people and had never shown any signs of the disease. Her father died of tuberculosis, but she herself weighed 150 pounds and showed not the least tendency towards that disease. She had had the scabs in her nose for about one year and was not aware of any special cause which produced them, except diphtheria, which she had in infancy. I found on examination that both nostrils would become impacted with scabs daily, and that it was only with great difficulty that she managed to extract them. She was put at once on potassium iodid and ordered to increase the dose as rapidly as possible. The anterior ends of both middle turbinates were removed successively so as to give free outlet to all inflammatory secretions, and the ethmoid cells were carefully curetted. The nostrils were also thoroughly cleansed twice or three times a week with a solution of mercury bichlorid and sodium bicarbonate. It is very gratifying to report that after each operation, and as the patient became more under the influence of the iodid, the scabs rapidly lessened until she had scarcely any at all and would go for days without the use of the douche. Subsequently the scabs have entirely disappeared. The largest amount of the iodid taken was only 180 grains daily.

85 Broad Street.

REPORT OF A CASE OF ANEURISM OF CORONARY ARTERY *

WALTER R. HEWITT, M.D.
Resident Physician, St. Louis City Hospital
ST. LOUIS

This case is interesting, first because of its rarity. (On examination of the literature to date, I was able to find only three reported cases, this one making the fourth and being the only case that showed involvement of the right coronary artery); and secondly, because diagnosis has never been made ante-mortem.

Patient.—C. R., permit No. 6622, a negro man, aged 27, single, laborer, entered the St. Louis City Hospital Nov. 8, 1909. Dyspnea had extended over a period of four weeks, and there was slight edema of both ankles. Examination of the cardiac area revealed a systolic and a diastolic murmur at the base, a systolic and presystolic murmur at the apex and also a loud, rubbing sound over the entire cardiac area. There was no marked distress at this time. The patient's mother died of dropsy; otherwise family history was negative. He had rheumatism in the right shoulder several years previously. The patient smoked and chewed tobacco in moderation, consumed large quantities of beer and whiskey. He denied emphatically of having had syphilis, although he had gonorrhea several times. The present illness had begun three months previously with vague pains in the abdomen and left chest. The patient stated that he had felt ill ever since. During the last week or ten days his stomach began to swell, as he terms it, and two days previous to his entrance into the hospital he noticed that his legs were swollen and about this time he also had a cough.

Physical Examination.—Patient was of fair development and nutrition. Epitrochlear and postcervical glands were distinctly palpable.

Respiratory Apparatus: Respiratory sounds were loud and jerky in character. Vocal resonance was exaggerated over the entire chest.

Circulatory Apparatus: The area of cardiac dulness was greatly increased superiorly and to the right of the sternum and extended well beyond the left mammillary line. The apex-beat was displaced one inch to the left of the left mammillary line and was in the fifth interspace. At the base of the heart could be heard a seesaw murmur, which was conducted into the left axilla. At one time, a presystolic murmur was heard, but this murmur was not present at this examination. The radial pulses were regular and equal, but the volume was not very good. Edema of the legs had disappeared at this time, two days after admission to the hospital.

Digestive Apparatus: The abdomen was smooth and slightly distended. The liver dulness extended $1\frac{1}{2}$ inches below the costal margin in the right mammillary line. The left lobe was markedly enlarged. There was no pulsation anywhere about the liver. There was some dulness over the flanks, probably due to ascites.

Genito-Urinary Apparatus: The urine was amber, acid and clear; specific gravity 1015; it contained few epithelial cells and leukocytes.

Nervous system was negative.

Clinical Diagnosis.—Adhesive pericarditis, cor bovinum, endocarditis and multiple valvular lesions.

---

* Read before the St. Louis City Hospital Alumnæ Society May 5, 1910.

Course of Disease.—Treatment consisted of elimination, cardiac stimulation and morphin. On November 28, twenty days after admission, the patient had a leukocyte count of 15,500. Repeated examinations of the sputum and physical findings had excluded tuberculosis. The patient at this time became very restless and complained of colicky pains in the stomach, especially well marked in the epigastric region. He assumed the knee-chest posture, as it seemed to relieve his pains somewhat.

On November 29 the patient complained bitterly of pain in the epigastric region in the median line. This pain had grown progressively worse during the past twenty-four hours. Palpation revealed a pulsating liver reaching down to the umbilicus. The pulsation was marked just below the ensiform cartilage. The patient assumed the knee-chest posture by preference. When seen on the morning of November 29, the patient was in great distress, the heart sounds being somewhat incoordinated. He soon became unconscious, with imperceptible pulse. He died quietly after vigorous stimulation had failed.

Autopsy.—This was held six hours after death. Rigor mortis was complete; body heat absent. There was slight distention of the abdomen, but no edema of the extremities. On making a longitudinal incision, there was a subcutaneous edema over the thorax and abdomen. About a liter of straw-colored, clear fluid was found in the abdominal cavity, but there was no peritonitis.

On lifting the sternum, it was found that the heart extended on the right side about 5 cm. beyond the middle line and reached the level of the second interspace. The apex was about two fingerbreadths to the left of the nipple line. The ascending arch of the aorta was dilated just above the aortic valves to the size of a goose-egg. Both auricles and ventricles were widely distended with blood. There were only 3 or 4 c.c. of pericardial fluid. Over the anterior surface of the right ventricle, there was a moderately fresh epicardial opacity, 3 cm. long by 3 cm. broad.

The left pleural cavity contained about 200 c.c. of blood-stained fluid, while the right pleural cavity contained about a liter of the same fluid. There were moderately firm pleuritic adhesions over both bases and the posterior surface of both lungs. The heart before being opened weighed 900 gm. After the expulsion of blood and clots, it weighed 600 gm. Both auricles and ventricles were filled with red blood and clots.

In the right interventricular wall there were two fluctuating dome-shaped tumors; one, arising just below the level of the pulmonary orifice, had a base 2.5 cm. and rose 1 cm. above the surrounding structures; the other mass was located a little below the tricuspid valve, about 3 cm. at the base, and was not so sharply elevated.

The overlying myocardium was grayish-yellow, with hemorrhagic spots scattered about the periphery. The pulmonary valve was free and translucent. The orifice measured 7 cm.

The left heart was dilated. The ventricular wall measured 6 cm. The mitral valve measured 11 cm. On opening the aortic ring, the knife passed through and opened a mass of old, brownish yellow, friable thrombus at the site of the auriculoventricular margin. This thrombus was about 4 cm. in diameter and communicated directly with the right coronary artery, the opening to which easily admitted the index finger. The center of this thrombus was filled with fresh, currant jelly-like blood-clot. The left coronary artery presented no anomaly.

The interventricular wall presented a slight bulging over an area that corresponded with the swelling noted in the right ventricle. The myocardium in this area was yellow and opaque. A few overlying vessels in the neighborhood were markedly congested. There was a marked yellow striation of the myocardium in the right ventricle, especially in the chordæ tendineæ, which microscopically showed fatty degeneration.

Above the aortic ring the aorta had a saccular dilatation 6 cm. in diameter with a depth of 3 to 4 cm. The wall of this aneurism contained secondary pockets, which varied from 1 or 2 mm. to 1 cm. in diameter. There was a marked thickening of the intima throughout the rest of the aorta, the surface being covered with rugæ throughout the entire length of the aorta. The aortic ring measured 8 cm.

The abdominal aorta showed a regularly folded and thickened intima.

The left lung weighed 250 gm., the right 275 gm. Both were air-containing throughout and presented no areas of consolidation, although there was moderate dependent congestion.

Each kidney weighed 184 gm., was unusually firm, and of a dark wine-red color. The capsule separated easily. The cut surface showed a uniformly dark colored cortex with distinct markings. The cortex was about 6 mm. in thickness.

The spleen was firm; its surface was smooth and dark slate-gray. The surface was firm and pulpy, was free, and the markings were distinct. It weighed 100 gm.

The liver was greatly congested and weighed 2100 gm. The cut surface showed a marked contrast between the fatty liver lobules and congested central vein.

The pancreas and adrenals were negative.

Anatomic Diagnosis.—Aneurism of the right coronary artery, thrombus of the coronary artery, acute necrosis of the myocardium, saccular aneurism of the aorta, fibrous pleuritis, pleuritic effusion, chronic passive congestion of liver, lungs, and spleen, and fatty degeneration of the heart.

THE STRAUSS REACTION FOR THE DIAGNOSIS OF GLANDERS *

B. L. ARMS, M.D.
Assistant Director of the Bacteriological Laboratory of the Boston Board of Health
BOSTON

Since Strauss[1] in 1886 discovered the fact that when material containing virulent *B. mallei* was inoculated into the peritoneal cavity of male guinea-pigs scrotal lesions developed, the method which bears his name has been very generally used.

A positive reaction followed by typical organisms and a typical culture is unfailing evidence of the presence of *B. mallei* in the material inoculated, while the failure to obtain the reaction is not proof that the horse from which the specimen was taken has not glanders. Hill and Burr,[2] and also Frothingham,[3] in 1901 called attention to the fact that frequently material from a horse which had glanders, as proved by autopsy, failed to give the reaction.

The bacteriologic laboratory of the Boston Board of Health makes free examination for any disease of a bacterial nature which is dangerous to public health. Our tests for glanders during the past four years have been respectively, 159, 208, 265 and 252, and of this number 301 or 34.4 per cent. were positive. The technic of examination is given in full that each step may be followed:

TECHNIC

Outfits consisting of a box containing two sterile swabs in a tube, together with a card with blanks to be filled out by the veterinarian, may be found at any of the culture stations, of which there are about fifty scattered over the city. After use, the outfits can be left at the culture station to be sent in by the regular station delivery, or, as is more frequently done, may be sent at once to the laboratory.

On receipt, about 3 to 5 c.c. of sterile water is added and the swabs are thoroughly soaked, then by rotation, together with pressure, against the side of the tube most of the material is left in suspension; the swabs are now used to inoculate a potato, after which a smear is made to show the kind and number of organisms present. They are then put in a pail containing 5 per cent. phenol.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Strauss: Compt. rend. Acad. d. sc., 1889, 108, p. 530.
2. Hill and Burr: Am. Pub. Health Assn. Report, 1901, p. 139.
3. Frothingham: Jour. Med. Research, 1901, No. 2, vi, 331.

With the suspension, two male guinea-pigs (those weighing at least 500 gm. being preferable) are inoculated intraperitoneally: one with 1 c.c. and the other with 0.5 c.c., unless there are myriads of organisms, or if streptococci are present, when half as much is used.

The reason for using two pigs is twofold, for frequently, as will be shown later, one pig will be positive and the other negative; and on the other hand, one pig may die of peritonitis, while the other will live and give the reaction.

All pigs under test for glanders are kept for a month, if negative, before a final report is made to that effect, although a tentative report is made at the end of a week.

All pigs under observation are examined at least twice daily for the first week, and when any change is seen the fact is noted on the card.

As soon as possible after the pigs show the Strauss reaction, autopsy is made, and all notes entered on the animal cards, which are then filed away with the original one filled out by the veterinarian. At autopsy, a culture is made from each testicle which shows a lesion, and when but one shows the reaction, two are made from that one, and smears are also made for microscopic examination.

SUMMARY

In summing up the work on glanders, I have first taken all the positives for the past four years, ending January 31, 1910, and second, all cases during the past year.

A summary of the 301 positive cases shows the following dosage:

Cases showing organisms and receiving 1, and 0.5 c.c.	258
Cases showing no organisms and receiving 1, and 0.5 c.c.	18
Cases showing myriads of organisms or streptococci, receiving 0.5 and 0.25 c.c.	25
	301

The result of the cultures made directly from the swabs, on receipt of the specimen, follows:

Culture negative in	132 cases
Culture positive in	32 cases
No notation on card	8 cases
No growth	3 cases
A mould present in	126 cases
Total	301 cases

It is noticeable that swab cultures from nasal cases are very apt to be overgrown by a mould.

The value of the swab culture is apparent from the fact that of the 32 cases in which the swabs gave a positive culture, 11 showed no lesion in the pigs by the third or fourth day, so were inoculated with a suspension from the surface of the potato, and in each instance there was a marked Strauss reaction on the second day following, and autopsy showed the characteristic lesions with typical organisms microscopically, and typical cultures were obtained from the lesions.

The location of the lesions in the 301 horses from which the specimens were taken is here shown:

Nasal	133 cases
Other than nasal	155 cases
Both nasal and lesion elsewhere	2 cases
Location of lesion not given	11 cases
Total	301 cases

Table showing cases, dosage and result of swab cultures by years:

	1906	1907	1908	1909	Total
Cases positive	51	75	93	82	301
Receiving 1 and 0.5 c.c.	51	73	88	71	283
0.5 and 0.25 c.c.	0	2	5	11	18
Streptococci present	2	1	7	10	20
Swabs positive, pigs positive	2	3	11	5	21
Swabs positive, pigs negative	0	2	3	6	11
Suspicious bacilli present in examination of smears	10	17	32	18	77
Followed by positive culture	1	2	3	2	8
Followed by negative culture	[illegible]	10	12	7	32
Overgrown by mould	5	5	17	9	36
Showing no growth	1	0	0	0	1

	1906.	1907.	1908.	1909.	Total.
Swab cultures negative	21	37	38	36	132
Swab cultures positive	2	5	14	11	32
Mould	20	30	41	35	126
No growth	3	0	0	0	3
No notation on card	5	3	0	0	8

During the year ending January 31, 1910, 232 specimens were examined for glanders. Of this number, in 193 instances the inoculation consisted of 1 c.c. and 0.5 c.c., while in the remaining 39 but half as much was used.

The life of the individual pigs together with dosage is rather interesting. In the 193 cases in which the pigs received 1 c.c. and 0.5 c.c.:

Both lived in	141 instances
The 1 c.c. pig died in	14 instances
The 0.5 c.c. pig died in	8 instances
Both died in	30 instances

In the remaining 39 cases, the inoculation was 0.5 and 0.25 c.c., and of these,

Both pigs lived in	15 instances
0.5 c.c. pig died in	8 instances
0.25 c.c. pig died in	4 instances
Both died in	12 instances

From the above will be seen the value of inoculating more than one pig, as in a total of 232 cases, there were 34 instances in which one pig died while the other lived. This is even more striking when we come to consider the individual pigs among the positive cases, as in only 33 instances did both pigs give a positive reaction.

For convenience I call the pig getting the larger amount the 1 c.c. pig, and the other the 0.5 c.c., even in the cases where they received 0.5 and 0.25 c.c.

Both pigs positive in	33 instances
1 c.c. pig positive, 0.5 c.c. pig negative in	20 instances
1 c.c. pig positive, 0.5 c.c. pig dead in	7 instances
1 c.c. pig negative, 0.5 c.c. pig positive in	8 instances
1 c.c. pig dead, 0.5 c.c. pig positive in	6 instances
Swab positive, pigs negative in	6 instances
Only one pig used in	2 instances

From this it appears that had the 1 c.c. pig only been used, but 62 positives would have been obtained, an error of 24 per cent., while had the 0.5 c.c. pig alone been depended on, there would have resulted but 49 positives with an error of 40 per cent.

Had a swab not been made, 6 cases would have been missed, an error of 7.5 per cent.

While the final positive result would undoubtedly have been obtained by submitting other specimens, it will be readily seen that this would have only been accomplished after a delay which in many instances might have exposed a number of horses to infection. In any large series of tests for glanders, lesions other than the typical Strauss reaction will occur, and a number of these were spoken of in a paper by the author[4] before the American Public Health Association in Winnipeg in 1908, and a number have since occurred.

The period from inoculation to development of lesions varies considerably. Thus, of the 1 c.c. pigs:

6 showed well developed lesions on 2nd day
23 showed well developed lesions on 3rd day
13 showed well developed lesions on 4th day
3 showed well developed lesions on 5th day

Three on the 6th, two on the 7th; one on each of the following: 8th, 10th, 17th, 22nd, 28th, 31st, 34th, and two on the 25th.

Of the 0.5 c.c. pigs:

6 showed lesions on 2nd day
11 showed lesions on 3rd day
11 showed lesions on 4th day
10 showed lesions on 5th day
1 showed lesions on 6th day
3 showed lesions on 7th day
2 showed lesions on 8th day

One each on the 9th, 18th, 23rd and 25th days, respectively.

Of the delayed cases, i.e., over 7 days, but two had a typical Strauss reaction, and in but two other cases was there any testicular involvement, and in each of these one testicle was converted into an abscess, there being but a thin wall, the interior being creamy pus, and *B. mallei* being recovered in pure culture.

---

[4] Arms: Am. Jour. Pub. Hyg., August, 1909, xix, 570.

There was a tumor at the inoculation site in 6 cases; twice an inguinal gland was involved; once a tumor was found in the omentum and once in the mesentery. In these freak cases none is considered positive without a culture and animal test with a typical Strauss reaction.

Three things are required for the diagnosis of glanders: typical Strauss reaction, typical organisms from the lesion, and typical cultures.

While there is a marked variation in the *B. mallei* on artificial media, the organisms direct from the lesions are characteristic, taking the stain (Loeffler's M:B) irregularly.

CONCLUSIONS

1. In the diagnosis of glanders by the Strauss method it is better to use more than one guinea-pig.
2. Before inoculating it is well to make a microscopic examination as a guide to dosage.
3. A culture from the swab often aids in the early diagnosis.
4. Pigs should be kept under observation for a month, and if a lesion of any kind is present, autopsy should be performed and cultures made.

30 Huntington Avenue.

A NOTE ON THE TREATMENT OF PERNICIOUS ANEMIA

ALFRED C. CROFTAN, M.D.
CHICAGO

UNDERLYING FACTS AND PRINCIPLES

Disturbances of the gastric function, varying from mild degrees of dyspepsia to complete achylia gastrica, almost invariably precede pernicious anemia and accompany it throughout. Whether the anemia (remaining undiscovered) is primary, the dyspepsia secondary, or *vice versa,* it is generally difficult to decide, and I am strongly inclined to the belief from a study of many case reports and from personal observations that gastro-intestinal disorders in the overwhelming majority of the cases usher in the disease. One could consequently imagine such cases of pernicious anemia to be the result either of chronic undernutrition or of a gastro-intestinal self-intoxication resulting from perverted digestive secretion, or both.

The fact that not every case of chronic undernutrition or of autointoxication develops into pernicious anemia calls for the inclusion of some specific factor or factors of hitherto unknown character, possibly of varying origin, of which the bothriocephalus toxemia, for instance, would be a prototype. Even without postulating the cooperation of any specific toxemia it is well to remember that any chronic malnutrition invariably produces secondary anemia; and I believe that any so-called secondary, or simple, anemia can ultimately develop into a so-called primary, or pernicious, anemia, in so far as any profound and persistent change in the quantitative composition of the blood can merge into a qualitative change in the blood composition, whenever, namely, the processes of regeneration become exhausted and degeneration from overtaxation sets in. Here a varying individual factor must be included, that is not a biologic constant and that is incalculable.

Since I have been paying attention to the gastric function in every case of profound anemia presenting the morphological characteristics of the pernicious type, I have observed either complete achylia gastrica or exceedingly low degrees of hypochlorhydria or complete achlorhydria. Several of the cases referred or seen in consultation were originally, in fact, interpreted as carcinoma of the stomach, owing to the lack of gastric acid, the dyspeptic disturbances and the profound anemia.

Here then is a definite point of attack in the treatment of this disease, viz., the restoration of nutritive equilibrium by artificial means, and, by implication, the prevention, so far as that is possible, of abnormal or excessive intestinal decomposition. The following method, after trials in various directions and the employment of different dietetic schemes, has proved itself to be most efficacious, leading, as will presently be shown, to a symptomatic (?) cure within a very short time in the three cases in which it has so far been consistently tried. When I record that all the other patients with pernicious anemia who have come under my observation in the last five years, who were not treated in this way, are dead or not at all improved, the justification of this preliminary note will be recognized

INTERPRETATION OF RESULTS

In interpreting therapeutic results in any case of pernicious anemia the greatest conservatism should be observed in two directions; namely, first, one should be altogether sure that one is dealing with a true pernicious anemia and not with a severe degree of simple anemia; second, one should be quite certain that any apparent improvement is not merely one of the spontaneous remissions that occur in so characteristic a manner in this disease, and quite independently of any treatment that may have been instituted.

The blood analyses to be recorded below, indicating in particular the appearance of degenerative types of blood cells, identify the cases as pernicious anemia in the present accepted sense. That the improvement was not due merely to spontaneous remissions is manifested by the fact that an upward turn occurred almost immediately in each case, was steady and progressive until normal conditions were attained in an astonishingly short time, accompanied by a striking gain in weight. The normal weight and the improvement in the blood condition have been maintained until the present writing, all of the patients being in an excellent state of health both in regard to their subjective sensations and their working capacity, as well as in regard to their blood. The gastric achylia or hypochlorhydria remain unchanged, and it is necessary to pursue a régime continuously appropriate to this deficiency.

PLAN OF TREATMENT

The treatment consists in the incorporation of the maximal amount of proteins administered in conjunction with artificial digestants to facilitate their assimilation in the gastro-intestinal tract and their proper absorption from the bowel. The diet consists in an abundance of meat, fish, eggs, milk, buttermilk, administered by mouth in a finely divided form and fed in comparatively small quantities at frequent intervals; so that the patients instead of receiving three large meals a day receive five or six smaller feedings in the course of the twenty-four hours. The selection of the particular kind of albuminous food and its mode of preparation depend somewhat on individual peculiarities that must be studied in each case: tastes and dislikes, cravings, idiosyncrasies. Meats are given in the form of broiled, roast and stewed preparations, never fried; or as meat juices, raw or slightly heated meat jellies, "peptones," gelatins; eggs, preferably raw or soft boiled, in large quantities each day, a dozen if possible; milk and milk preparations of all kinds *ad libitum,* raw, boiled, as cottage cheese, or in combination with eggs as eggnog, etc. The addition of a little alcohol each day to the diet has been found of value rather on account of the food value and the "sparing" properties of the latter than on account of any stomachic or generally stimulating effect. Fats are given moderately, because, when administered in combination with abundant albumens, they are apt to coat the albuminous particles in the stomach and prevent contact with the artificial digestive juices to be administered. Enough cereals, bread stuffs and vegetables, fruits, all administered in a soft and finely divided form, are allowed in addition, to make up a palatable meal.

Such an over-diet in which albuminous foods predominate is given both by mouth and by rectum; per rectum in the form of predigested clysmata, together with sodium bicarbonate, a little sodium chlorid and pancreas, with about 10 drops of laudanum (the latter to reduce expulsive peristalsis); by mouth, either in the same way (without laudanum), or, preferably by far, with very large quantities of hydrochloric acid. Here it is necessary to experiment a little. One must look on the stomach in these cases merely as a sac with no digestive function and generally with reduced propulsive powers, and one can either administer hydrochloric acid with the object of artificially creating conditions that resemble the normal gastric digestion, or can ignore the gastric digestion altogether and by administering pancreas and an alkali, so to say, transfer intestinal digestion backward into the stomach. The former plan, if it can be carried out, is by far the better, for the HCl, in addition to being a powerful digestant of albuminous pabulum, acts as a deterrent to the development of an abnormal gastro-intestinal flora. Pancreas-alkali, on the other hand, rather favors intestinal putrefaction as indicated by definite urinary and fecal phenomena. The acid plan, moreover, more closely approximates the normal. The pancreas plan permits of a more liberal feeding, especially of carbohydrates and fats, but I have found that the albumens count rather than the other food classes, so that in the particular class of cases under discussion nothing is gained by more food variety.

THE ACID PLAN

All of the patients reported below were treated on the acid plan. They were given 10 to 15 drops of strong hydrochloric acid fifteen minutes after each feeding, and again thirty minutes after each feeding. It is useless to administer the dilute acid. Much prejudice is encountered, especially on the part of the druggist who fills the prescription, to the administration of such large quantities of strong hydrochloric acid, but no harm ever accrues from its use, provided enough albuminous pabulum is given at the same time. In order to prevent mouth irritation the acid is best given in mucilage water; I have never seen any advantage from the simultaneous administration of pepsin, and consider it superfluous. Rectal clysmata of the character indicated above are given twice a day, or, if some rectal irritation results, only once a day. They are needed only in the beginning, that is, for a week or so. Occasionally a patient cannot tolerate them at all; in such a case it is best to omit them, only, however, after a persistent trial and after every attempt has been made to overcome the prejudice commonly existing against this form of feeding.

HOSPITAL METHODS

That this treatment should be begun in a hospital is self-evident. In the first place, the patients should be kept completely at rest in bed; in the second place, a trained dietitian is needed to prepare the food properly until the patient or his attendants have been taught how to prepare and administer the diet; in the third place the patient's blood condition, body weight and digestive function should be under daily control, so that the treatment may be arranged to suit individual peculiarities that may be discovered. More than a three weeks' hospital sojourn is rarely needed. Improvement rarely becomes manifest before the tenth to the fifteenth day; but from then on, in the cases observed so far, the improvement is rapid. There is often some discomfort in the beginning, and the hospital is the place to enforce persistence in a somewhat strenuous and not altogether agreeable plan, especially as all of the patients have been very irritable and cranky in the beginning and quite difficult to manage. And one of the most gratifying results observed early in the course of the treatment has been a change in their mood and spirits and disposition for the better as soon as proper nutrition was again fairly under way.

THYROID, ARSENIC

In addition to the above treatment the patients should have some thyroid extract, in doses varying from three to five grains of the extract, three times a day, by mouth or with the clysma by rectum. I am under the impression, enforced by certain special studies in this direction to be reported on in another place, that the administration of thyroid materially aids in the assimilation of proteins. In deference to a venerable plan all the patients also received in the beginning some arsenic, given in the form of sodium cacodylate dissolved in normal salt solution in the dose of one grain every day intramuscularly. Patients previously treated with arsenic alone never improved particularly, so that arsenic is considered merely an adjuvant, that certainly can do no harm and may possibly do some good along directions that we do not fully understand. Iron was not given as a drug; an overabundance of this element being incorporated in the meat juice ingested.

SYNOPSIS OF CASE REPORTS

Case 1.—Mr. K. M. M., referred by Dr. C. H. Wallace, of St. Joseph, Mo. Age 54. History of gastro-intestinal disturbances extending over several years. Rapid loss of flesh during last year. Entered Michael Reese Hospital Nov. 2, 1908. Pale, anemic, slightly edematous skin. Slight albuminuria, a few hyaline and granular casts. Temperature on admission 99.1 F. Gastric analysis after Ewald test meal shows complete achylia gastrica without motor insufficiency. Blood Analysis: Hemoglobin 30 per cent., red b.c. 1,180,000, white b.c. 7,400. Differential Count: Neutrophiles 67½ per cent., lymphocytes 30 per cent., large mononuclears 0, eosinophiles 1 per cent., transitionals 1.5 per cent. Red Cell Morphology: Poikilocytosis, megalocytes, microcytes, megaloblasts, microblasts, a few nucleated red cells, polychromatic degenerations. Weight on admission 132½ pounds.

Treatment instituted as above. Left hospital after three weeks, Nov. 23, weighing 137½ pounds, a gain of five pounds. Albumen and casts disappeared from urine. No edema. Color, strength and spirits greatly improved. Blood Analysis: Hemoglobin 65 per cent., red blood count 2,800,000. No megaloblasts or microblasts, a few nucleated red cells; poikilocytosis still present but less marked. Treatment continued conscientiously at home with steady improvement in general strength, and resumption of daily duties.

The following was the report of the blood examination at the expiration of 10 weeks: Hemoglobin 85 per cent., red b.c. 4,400,000, white b.c. 8,400. No abnormal red cells. No poikilocytosis. Increase in weight. Report on Feb. 9, 1910: "I am as good as ever." Weight in May, 1910, 147½ pounds.

The patient still continues the use of large doses of hydrochloric acid and is instructed to persist in its use indefinitely.

Case 2.—Mrs. K. L. C., Kansas City, Mo. Age 49. Seen first with Dr. Golden at Mercy Hospital and referred to Michael Reese Hospital Sept. 14, 1909. History of increasing weakness, severe digestive disorders and great loss of weight within a year. Patient in a state of profound prostration and unable to be out of bed. Exceedingly pale and slightly edematous skin. Slight albuminuria without casts. Temperature on admission 100.2 F.

Gastric analysis after Ewald test meal shows complete lack of hydrochloric acid, very slight peptic power and a little blood. No motor insufficiency. Blood Analysis: Hemoglobin 30 per cent., red b.c. 1,384,000, white b.c. 6,800. Differential Count: Neutrophils 72 per cent., lymphocytes 22 per cent., large mononuclears 2 per cent., eosinophils 2 per cent., transitionals 2 per cent. Red Cell Morphology: Poikilocytosis, many megalocytes and microcytes, a few megaloblasts, polychromatic degeneration types. The weight of the patient on admission was 199 pounds.

Treatment as described above. Discharged from hospital after four weeks, weighing 133½ pounds, i. e., a gain of 14½ pounds. Albumin disappeared from the urine. Skin color florid and no edemas. Almost normal strength. Blood Examination: Hemoglobin 60 per cent., red b.c. 3,400,000. No megalocytes or megaloblasts or polychromatophilia. Slight poikilocytosis. White count 9,100, differential normal. Referred to Dr. Logan Clendening, of Kansas City, Mo. Report from the latter Oct. 26, 1909: Hemoglobin 85 per cent., red b.c. 3,500,000. On Dec. 27, 1909: Hemoglobin 100, red cells 4,400,000. No abnormal morphology. Weight on Oct. 26, 1909, 146 pounds. This weight has been maintained to date, as well as the normal blood condition.

The following report was received from the patient in May, 1910: "I feel splendid, sleep well and have a good appetite. However, I am still taking the hydrochloric acid and would like to have you tell me if I must take it during the remainder of my natural existence." This querry was answered in the affirmative.

Case 3.—Mr. J. B., referred by Dr. I. C. Smith, of Stockton, Ill. Age 46. Entered Michael Reese Hospital Sept. 1, 1909. History of loss of strength and rapid loss of weight for the last seventeen months. Patient exceedingly weak, very pale and slightly edematous. Slight albuminuria and numerous hyaline and a few blood casts. Severe gastric distress with loss of appetite and nausea. Temperature on admission 100.4 F.

Gastric Analysis: Total acidity 9. Free hydrochloric acid absent. Slight degree of motor insufficiency. Slight peptic power. A few red blood corpuscles were found in the stomach contents.

Blood Analysis: Hemoglobin 40 per cent., red b.c. 1,800,000, white b.c. 8,200. Differential count normal. Red Cell Morphology: Severe poikilocytosis, megaloblasts, microblasts megalo- and microcytes, nucleated reds and polychromatophilia. Weight on admission 135 pounds.

Treatment as above. Discharged from hospital Oct. 2, 1909, i. e., after about four weeks, weighing 155½ pounds, a gain of 22½ pounds. Blood Analysis: Hemoglobin 75 per cent., red b.c. 2,400,000. Poikilocytosis slight and no other abnormal red cells.

Treatment continued at home with progressive gain in weight and strength and resumption of farming duties. Patient reported on May 12, 1910, weighing 157 pounds, and with an altogether normal blood picture.

100 State Street.

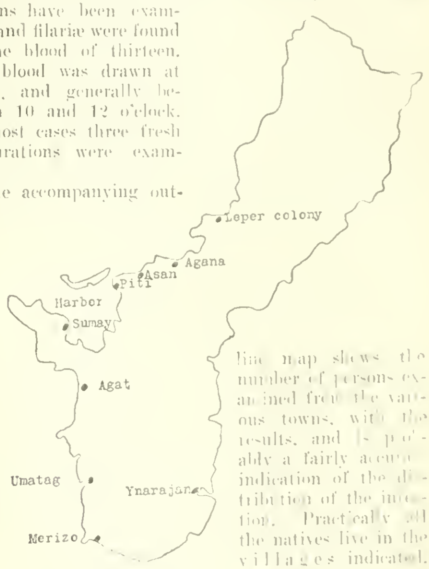
FILARIASIS ON THE ISLAND OF GUAM

GEORGE B. CROW, M.D.
Assistant Surgeon, U. S. Navy
U. S. NAVAL STATION, GUAM

Two months ago I found filariæ in a stained smear of sedimented blood which had been drawn from one of the arm veins of a native at 10 a. m. Investigation soon showed that the filariæ were present in the skin capillaries only at night, except that occasionally one or two would be found in a specimen obtained as late as 8 a. m. and sometimes as early as 5 p. m. They were most numerous near midnight. In size, structure and movements they were like *Filaria nocturna*. Their presence in the blood drawn at 10 a. m. can be accounted for by the fact that a comparatively large quantity of blood was drawn (10 c.c) and from a large vein.

A systematic examination of natives from various parts of the island was begun at once. Up to date 244 persons have been examined and filariæ were found in the blood of thirteen. The blood was drawn at night, and generally between 10 and 12 o'clock. In most cases three fresh preparations were examined.

The accompanying outline map shows the number of persons examined from the various towns, with the results, and is probably a fairly accurate indication of the distribution of the infection. Practically all the natives live in the villages indicated. Most of them go out to their agricultural pursuits during the day, but return to the villages at night.



Map of Island of Guam

The island is 31 miles in length and has an average width of 7 miles. The population is about 12,000. Agaña has a population of 7,000; all the other places are small villages.

TABLE OF EXAMINATIONS

Name of village	No. of examinations	No. pos.	No. neg.
Leper Colony	30	0	30
Agaña	75	2	73
Asan	7	0	7
Piti	8	0	8
Sumay	15	0	15
Agat	21	0	21
Umatag	5	0	5
Merizo	6	0	6
Ynarajan	58	11	47

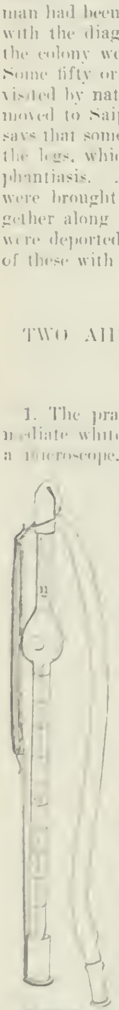
One of those who gave a positive test at Ynarajan is a Japanese who has been on the island for three years but lived in Agaña till one month before the examination. He came here directly from Japan and has never lived anywhere else. The other twelve patients are natives. The two in Agaña who gave positive tests are prisoners and are confined in the same building. One of these lived at Ynarajan before being sent to prison, three years ago. The other prisoner has been confined for two years and never lived outside of Agaña. It seems fairly certain that the first prisoner was the source of infection for the second, as the disease is apparently closely limited to the region of Ynarajan.

Filariasis has not been known to exist here. Its introduction must be fairly recent, as none of the thirteen patients as yet show any pathologic changes. How it came here is uncertain. Several months ago a diagnosis of elephantiasis was made on a Jamaica negro who lived on the island about twenty years, but this diagnosis was made from characteristic enlargement of feet and legs. Several blood examinations had been negative. This man had been confined in the leper colony for five years with the diagnosis of leprosy. The examinations from the colony were all negative, as were those from Agat. Some fifty or sixty years ago this island was frequently visited by natives from the Caroline group who had removed to Saipan. An intelligent old native priest here says that some of these visitors had great enlargement of the legs, which from his description was evidently elephantiasis. About 1870 some Carolinos (about 100) were brought here to cultivate cotton. They lived together along the beach near Agaña. The last of these were deported in 1901. No one remembers seeing any of these with any lesions which resembled elephantiasis.

TWO AIDS IN MAKING BLOOD COUNTS

STERLING BUNNELL, M.D.
SAN FRANCISCO

1. The practitioner is sometimes in need of an immediate white count when at the bedside and far from a microscope. Here is a quick, satisfactory and easy method by which it can be done in the patient's room and the result will be the same as if the counting were done through a regular microscope.



Stopper for blood pipette

Procedure.—Draw the blood into a pipette, dilute with acetic acid and place a drop in the Zeiss counting chamber in the usual way. Now hold the cover slip on the counting chamber with a rubber band. The chamber can then be held up to the light and the corpuscles will not slide across the field. The counting is done with a small pocket hand lens. A sixty cent lens will do, but there are more powerful lenses on the market that are hardly larger than a pea and are even better. A single frosted electric bulb gives the best light but a lamp or most any single light will do. The knack of seeing the corpuscles and lines well enough to count them lies in holding the counting chamber and lens absolutely steadily in focus. This is easily done by grasping both with both hands so that the same fingers are in contact with both the lens and the counting chamber, thus preventing any tremor between them. Hold to the light and count. Occasionally a counting chamber is found on which the lines are not sufficiently distinct. The acetic solution should be filtered. It is easy then to tell white blood corpuscles from platelets. The reds cannot be counted in this way.

2. If the blood is gathered in pipettes and carried to the laboratory to be counted, the rubber band which is generally used to hold the blood in the pipettes, is often perforated by the point of the pipette and it is found with dismay that the blood has leaked out. Here is a device which prevents leakage, is quick of application and will fit in the case (see accompanying illustration).

Description.—In the bottom of a BB cartridge, a disk of rubber is cemented. The cartridge fits over the end of the pipette and by its rubber false bottom keeps the blood from escaping. A straight wire with a hook at one end is soldered to the cartridge. Another piece of wire twisted into a ring and also with a hook on the end is slipped over the other end of the pipette. An ordinary rubber band connects the two hooked ends of the wires and pulls them toward each other.

Procedure.—To apply the device fill the pipette, bend the rubber tube back on it, slip the wire ring over the tube end and pull down the cartridge, stretching the rubber band till it slips over the pointed end of the pipette as in the diagram. There is a short lever arm to the wire with the ring, by virtue of which the ring squeezes the rubber tube tightly and prevents the escape of blood.

240 Stockton Street.

Therapeutics

THERAPEUTIC VALUE OF MEDICAL INSPECTION OF SCHOOL CHILDREN

It is not the object of this article to discuss the advisability of the various municipal governments assuming more parental care of children, but to show that regular inspection of school children, whether by physicians appointed by the local government, or by private physicians selected by the families, is of enormous value in preventing the development of disease and of abnormalities in children from seven to fourteen years of age. It requires no discussion to assert that if a community compels a child of school age to go to school, the same community must protect that child from harm while obeying the community's mandates. In other words, the light, temperature, ventilation, air space per individual, and height and character of the chairs and desks on the one hand should be as near perfect as possible, and on the other hand a child suffering from contagion of any kind or one who has been exposed to contagion and is therefore likely to become infected, should not be allowed to enter the school building. This primarily means that the building committee of every schoolhouse should have in its membership one or more medical men capable of passing on the requirements of a healthful building. Secondarily this presupposes the inspection of school children to prevent the spread of contagious diseases, and the establishment of such rules by the boards of health as is necessary to control a contagious disease and prevent its causing infection of others.

It also seems to require but little discussion that, when the authorities decide that a child should be compelled to use his eyes and ears systematically, it should know that these organs are in perfect condition, or made as near perfect as possible. In other words, the eyes and ears of school children should be inspected by some one competent to decide at least approximately whether the eyes or ears need scientific examination.

This still leaves open to discussion the advisability of the examination of children by medical inspectors appointed by the authorities, perhaps by the board of health, perhaps by the board of education, or by a combined committee from both boards, once or twice a year to determine the physical condition of each school child. This would mean briefly an examination of the bones for curvatures and other deformities that could be corrected orthopedically, to examine the heart and lungs, to examine the teeth for cavities that should be filled and for decayed roots that should be removed, to decide whether or not the child has adenoids or obstructed nares which should receive attention, and especially to decide as to the general physical condition of the child, viz., as to his health or debility.

One cannot see how there can be any question of the preventive value of such an examination. Whether such examination should be made hastily by a public inspector, or more carefully by the family physician is open to discussion, but, certainly, if we are to have a robust nation each child should be medically inspected regularly, early in the fall, before he starts on his school year. It may be ideal, but it is good sense that a child should not be received as a pupil until he brings a certificate of apparent health and ability to withstand the confinement of school hours for the succeeding year.

It is likely to be argued that the nation as a whole is a pretty well nation, and that such inspections have never been necessary. Such an argument is footless and without careful consideration of the facts of advanced civilization. Most diseases are as fatal (except tuberculosis and diphtheria) as they have ever been. It is not because diseases are not better and more scientifically therapeutically handled, but because the nervous and circulatory strength of the individuals is very much less than it used to be. The nervous strain and tension of our lives, and especially the lives of our children, has enormously increased, and with all the advance in medical science it is just as difficult to bring a patient through a serious illness now as it ever was, perhaps more difficult. If there was no more medical knowledge than there was a hundred years ago, and if patients were treated therapeutically as they were a hundred years ago, most patients would die. Therefore, although medical knowledge and science have advanced, the difficulties of caring for patients who are ill have increased. Hence every possible method of prevention of disease and of the development of a disability, and of the growth of a tendency to disease should be utilized.

In the crowded city schools the whole aim seems to be to push the child mentally and take but little notice of him physically. The crowded condition of the lower grades is the ever present stimulus to push a child up to the next grade and to push him mentally until he is able to take part in the work of that grade. Consequently, the age of graduates of each grade is growing younger, and a child that is kept back from sickness becomes ashamed to enter the grade of his mental knowledge. All this is economically a mistake. Every physician will testify to the difficulty encountered with the parents and the child when he urges the removal of a child from school because he or she is debilitated. The whole family urges that the child may be kept at school until the end of the term, lest he lose his class, and they suggest all sorts of subterfuges to get around the desire of the physician to keep the child in the fresh air, away from school and away from all school work. The results of these school methods and the foolish pride of families are shown by the large number of growing boys and girls just before and just after puberty who are far below par physically. A certain percentage of these children never regain their physical strength.

To offset the methods that tend to physical debility, school gymnasiums and athletics have become distinctive of this age. An enormous amount of good is done by such athletic work, but also a lot of individual harm is done by severe athletic work being undertaken without medical supervision or jurisdiction. A child physically not strong competes with its fellows who are strong, and the result is, sooner or later, a physical wreck. Also, the rapid growing child, especially the boy, competes with the boy who has grown slowly and sturdily. The circulation of the rapidly growing boy, the heart especially, has not grown as rapidly as the rest of the boy, and it is constantly working at a disadvantage to overcome the extra work required of it, and if severe athletic work is added to its requirements it is insufficient and soon shows injury. In the case of girls, they may not do as severe athletic work, but they take injudicious athletic exercise, such as bicycling and tennis at periods during their establishment of puberty which means future trouble and possibly life long harm. Also these girls, who by the nature of the conditions and the stimulation of the physiologic secretions which they have during the establishment of puberty, are nervous, irritable, and neurotic. To Nature's disturbances are added excessive school work and the stimulation of competitive work, with the addition of the home pride causing them to take up the study of accomplishments, music and dancing, all during the period when the girl should be resting both mentally and physically. Added to this is the ever increasing tendency of the young growing girls and boys (and it is the girls who receive the most harm) to have evening social gatherings and dances, even to late into the night; in fact everything in the amusement line at this early age, which leaves to the girl or boy of nineteen or twenty but little that is new in amusements. This causes many of our girls to be neurotic and perhaps neurasthenic for the rest of their lives, much to the discomfort and disturbance and unhappiness of their families.

General medical inspection and the advice that is simply a corollary of such medical inspection would soon educate the public to the better care of its children. The advice of the individual physician without the general consensus of opinion is not nearly of as much value as it would be if general inspection was required.

It would be time well spent for every physician who has not read the book on "Medical Inspection of Schools," by Dr. Luther H. Gulick and Mr. Leonard P. Ayres, to read it. This book is published by the New York Charities Publication Committee.

At a recent meeting of the New Haven Medical Association, Dr. J. W. Seaver, of New Haven, president of the Chautauqua School of Physical Education and former medical director of the Yale Gymnasium, opened a discussion on the subject of medical inspection in public schools as follows:

> There are few, if any, topics of more interest to the person who considers the welfare of the state than the training of the children, and for no one purpose do our citizens pay so large a tax, and no part of the general tax is paid so willingly. Of course there are a few people still permitted to reside in this part of the earth who think that for the public, the city, the town, to undertake to provide mental or any other form of training for the children within its borders is unjustifiable, but this coterie of antiquated intellectual maidens need not be considered as their objection is merely based on a natural timidity and a suggestion of socialism has thrown them into hysterics. Their condition is not as bad as it seems.

It must be assumed that the public school is here to remain and it behooves us to make the institution as helpful to the state as it can be made and to give it the thought and direction that so large an outlay in any direction should demand. This being a form of government where the initiative and control rests in the hands of the people, that is in our hands, it remains for us to make reasonable demands of our officers who are in charge of public organizations and to work for the formulation of these demands. I conceive this to be our purpose at this meeting. We are to create and crystalize sentiment, acting as citizens and as specialists in the subject of health.

What is a public school? It is an institution designed to give mental training to the children of certain ages at the expense of the people. Everybody being taxed for the support of the schools and the schools being utilized only by those who have children of suitable age, there must be some conceded benefit to the public from this expenditure to warrant the taxation. This has been estimated in terms of increased efficiency in the new prospective citizen and in some countries it is considered that the youth owes the state a certain definite service as a return, in part, of the expense that has been incurred on his account.

But while the manifest purpose of the school is to give mental training it has been found that this is only one phase of a complicated subject; that mentality of high order is not secured by mental gymnastics alone, but that it is a structure that is erected on a purely physical basis; that mental processes are strongest and most normal when they are accompanied by appropriate physical activities, and that a proper mental training is possible only when the body is kept in certain hygienic fitness by its functional activity.

No less an authority on education than G. Stanley Hall has said that for every thought there is a muscular response and that thought without previous sensory impressions is impossible.

If, then, we are to start with the idea of giving the best mental training to the boys and girls of our city we must coordinate the work of the teacher in the school room with that of the person who is trained to understand the correct hygienic environment of the pupil and to discover whether or not the pupils' receptive areas for sensory impressions are in normal condition, or in as near an approximation to that standard as is possible.

They must also be trained to appreciate the fact that a large number of the diseases from which humanity suffers are contagious or infectious in character, and understand the ways in which these disastrous diseases are prevented or restricted to the fewest possible under the general conditions under which we must live.

Up to the present time the only people who are thus trained are the doctors, and there is a burden of responsibility laid on them by the very fact of this training that we have not met by adequate activity and interest in the school problems of this city and state.

In the Winchester factory, near by, every part of the material is examined and every part is inspected and tested so that the finished product is as near perfect as the skill of man can produce, and the result is reliable service. Suppose the same persistent attempt to turn out the best possible product from our schools for the service of the world were to be established as a working principle in their management. Would not the quality of the product soon reimburse the slightly increased outlay? Obviously the same rules of administration will accomplish the same ends in either place.

What, then, would be the result of expert supervision of the school children and their housing and management during the school period of their lives?

In the first place we would not expect the impossible from the pupil but we would first examine the child to see if the various organs were in satisfactory condition for functioning according to the demands of the school life. Any error that could be corrected would be reported to the parent and its importance stated. If it could not be remedied the teacher would be made cognizant of the difficulty under which the child worked and would be able to meet his needs in a fuller and more sympathetic manner.

But suppose the parent is indifferent to the welfare of the child and ignores the advice. The parent is rarely indifferent but he is often suspicious and negligent. Often he is poor and helpless. It is all well enough to say to a parent, your child needs the care of an ophthalmologist, or a rhinologist, or a dermatologist, but that will not produce the fee that must be paid, nor will it drive the self-respecting parent to the dispensary. Something ought to be done, and it would seem to me the part of good economy in the manufacture of citizens to have these children cared for by the city when the parent does not meet the responsibility. To turn out a bright mechanic, or merchant, or policeman, is better than to turn out a poor day laborer without ambition or confidence in himself to struggle vainly for the necessities of life and finally have to fall back on the public for the care that his old age demands and that is given alike to the unfortunate and the incapable.

The work done by Dr. Cronin in New York when he examined the pupils in one of the truant schools shows the needs of this hygienic inspection, for over ninety per cent. of those children needed medical care. He took 87 of these children who were suffering from adenoids or enlarged tonsils, or both, and had them treated in one day, and only three of them lost time in school and many of them advanced in scholarship to the extent of three grades during the remainder of the school year. Those poor unfortunate children had been made to compete with children not so handicapped, and the result had been that they had become discouraged and played truant, for they did not like the feeling of continued disgrace. When they were set free they made ample return for the care that was given them, and as citizens, who can compare their probable worth with the forlorn, discouraged, incompetent group of mouth breathers that would have been the output of that school had nothing radical been done.

The eye is the tool by which mainly information is obtained in school, and to know that this implement is fitted for its work is of the highest importance. To expect a child with poor vision to do good work in school is like asking a mechanic to turn out well finished work with dull tools. We convict ourselves of stupidity when we expect it.

As to the guard against contagious diseases, I shall say almost nothing, for others will show what can be done and what has been done. Every disease that is detected in its incipiency is a saving of many lives and a greater amount of money than has ever been paid to any inspector. To neglect this side of the school life is the old penny wise and pound foolish policy. It costs no more energy to march in front than to drag along in the rear.

While a number of the cities have furnished valuable statistics obtained by medical inspection in schools, the following results obtained by Dr. W. Matthew Kenna, of New Haven, have not before been announced, and are well worth presentation. Besides the results of his inspection of 400 school children in a new and perfectly equipped school building, Kenna introduces his statistics with some thoughts worthy of consideration:

> The necessity for the medical inspection of school children in this country as yet has not been generally accepted. In but one state in the union has there been taken legislative action requiring all the pupils in the state to undergo medical inspection. That is Massachusetts.
>
> Including the cities and towns of that state there are only about 70 places in the United States which at the present time officially recognize the desirability of medical inspection and which make provision for such inspection to take place.
>
> As in every other matter of this kind, there are arguments for and against the institution. Those who are most conservative, realizing the always present danger of paternalism of any kind make protests which at best are of compromising nature. They believe either that the health of the school children should essentially be dependent upon the acumen and solicitude of the respective parents or others in intimate touch with the home life, or that at most the pupils should be inspected only so far as to protect them from the invasion of contagious disease.

Many more enthusiastic citizens, however, are of the opinion that not only should children specifically, while in attendance at school, have some kind of medical supervision, and not only should they be guarded from the dangers of contagious disease, but in addition that they should be looked after in the matter of constitutional defects—defects capable of retarding development, both physical and mental.

This idea has its application not alone in an expression of sympathy and interest in the child himself, not merely in the general protection to the community, but in an economic sense as well. For it is practical to consider (if we care to look at it from a mercenary standpoint) that much money is being wasted yearly upon the education of children who are retarded by physical conditions which if corrected would render them more amenable to the standard required.

We may take three view-points of the relation of the child to the matter in hand.

1. Has the child, while in attendance at school, any need of medical supervision?
2. The relation of the child to the community at large.
3. The consideration of the child as an individual.

Let us take up the first proposition. If we allow that the school is merely an incidental to the scholar's home, that his attendance at school is simply an excerpt from his daily life and that the parental surveillance is only temporarily obscured—if we look at the matter from this standpoint alone, then it is reasonable to assume that the care of the child's physical condition should devolve on the parents, and that there is no need for school medical inspection.

But it is easily recognized that there is a relation between school children and the community at large and that as carriers of contagious diseases they are a constant menace to that community.

Addressing ourselves to this, the second viewpoint, it is obvious that there is good reason for attempting to prevent as well as can be the dissemination of disease, both for the scholars' sake and for that of those with whom they may come in contact. And so if we grant the advantage to be gained from the mutual protection of the child and the community from contagious diseases it is not a far cry to the consideration of the third view-point, taking the child as an individual, and bearing in mind his possible constitutional physical defects.

How about the child himself? Is he entitled to supervision of a medical nature that may uncover bodily defects which otherwise might not be recognized and which might have a restraining effect on his fullest development? If we answer yes and accept this viewpoint then there is the fullest justification for a thorough and complete medical inspection in the school. Take, for instance, the matter of the common adenoids. It is undoubtedly true that many children suffering from these growths are never taken to a physician for treatment. This may be due to either ignorance or carelessness on the part of the parents. At any rate, there is lack of initiative on somebody's part and the children go through several years of their lives severely and unjustly handicapped.

Assuming that the tendency of such defects is to disappear as the child grows older, yet we must reflect how much better off he might have been had the lesion been eliminated. There is plenty of precedent for the adoption of a thorough medical inspection of our own schools. Several European countries as well as Japan have at the present time inspection which is national in its scope. There the inspection is rigid to an extreme degree, and there are many evidences of the benefit to be derived from the thorough examination of the school pupils. The very fact that these countries, like Germany, England, and Japan, are of the so-called military type throws out the hint that they are looking to the future with a practical as well as sentimental eye.

Medical inspection as related merely to the prevention of contagions and parasitic diseases has its value unquestionably. But the ideal inspection would be that which not only concerned itself with those diseases, but would also turn its investigating attention to the physical defects barring the child's school progress.

Here in New Haven, as you know, the medical inspection of schools relates more especially to the detection of contagious and parasitic diseases and the elimination of vermin. That some good has resulted may be emphasized by the fact that since the inception of the inspection, impetigo, which was formerly very prevalent among the children, has been practically stamped out.

Medical inspection to be of greatest value must be more or less of a cooperative nature. It involves the working together of the visiting nurse, the teacher, the parent, the family physician and the medical inspector. Without such cooperation there is apt to be a break in the link and no ultimate results follow. Simply to find out that a child has some physical defect and to do nothing to alleviate it, accomplishes little. The essential point is to have treatment instituted, and this will not be effected unless some kind of pressure is brought to bear on the parents and their eyes opened to the necessity for such treatment. Under these conditions thorough medical inspection of the pupils will have been worth while.

Recently (spring of 1910) I made an examination of 400 school children taken indiscriminately. The results of the examination are shown in the accompanying table. An attempt was made to make three degrees of severity where lesions were apparent, and "A" denotes that a defect was present, but did not require treatment; "B" denotes that treatment was advisable; and "C" that treatment was imperative. The physical condition of the children was divided into three groups, viz., "good," "fair," and "poor." The examination followed was practically that which is required in the medical inspection of the pupils of the New York City schools.

TABLE OF RESULTS OF EXAMINATION OF SCHOOL CHILDREN

	Good	Fair	Poor	Total
Apparent physical condition	171	104	125	400
	A	B	C	Total.
Adenoids	19	35	2	56
Anemia	31	16	0	47
Cardiac disease	5	10	0	15
Defect of nasal breathing	23	4	0	27
Defect of palate	0	0	1	1
Defect of teeth	60	68	59	187
Skin: Contagious	0	0	1	1
Parasitic	0	2	5	7
Vermin	2	2	52	56
Hypertrophied tonsils	64	46	1	111
Orthopedic defect	9	3	0	12
Pulmonary disease or tuberculous condition	1	4	0	5
Enlarged glands	15	2	0	17
Vision: Myopia or astigmatism	8	63	11	82
Conjunctivitis	7	0	1	8
Granular lids	8	1	0	9
Nervous diseases	13	7	1	21
Malnutrition	22	11	0	33
Defect of hearing	1	5	0	6
Backwardness	47	0	0	47

Formaldehyd Solution for Treatment of Appendix Stump.—Dr. A. Merrill Miller, Danville, Ill., writes. Whatever may be the ideal method of "treating the stump" of an appendix, well-informed and conscientious operators still entertain opinions widely divergent. Each group of men bases the treatment on their own, or perhaps a leading operator's, personal experience. The fact that equally good statistics, in use, are shown from the different methods, may make a suggestion in this matter appear superfluous. The septic mucosa is usually cut away, treated with phenol and alcohol, or inverted. Perhaps a combination of all three methods is used. Because the use of phenol is attended by necrosis, it seems that little is to be gained from this practice. Then, there is the additional loss of time in the application of alcohol. To overcome the objection of a chemical necrosis in the base, an ideal place, it seems, for the proximate intestinal bacteria to multiply, I have adopted the practice of mopping the stump with 16 per cent. formaldehyd solution. This favors mummification of the tissues, destroys the mucous membrane, and may tend to limit small hemorrhages if the stump is not tied. Certainly a dry mummified stump is a less desirable place for bacterial growth than the raw sloughing surface following the phenol application. Especially is this true if the stump is not inverted, or covered. The likelihood of adhesions from such tissues is less than by the use of any other method with which I am familiar. The amount of time—thirty seconds—consumed by this simple procedure is no reasonable objection to its use.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter]

SATURDAY, AUGUST 13, 1910

THE IMPORTANCE OF THE TYPHOID-CARRIER

Evidence is accumulating that the share of the typhoid-carrier in disseminating infection has not been overestimated. The intensive study of typhoid fever by German investigators in the Rhine provinces has been frequently referred to in THE JOURNAL and has definitively established the fact that in the rural districts of Alsace-Lorraine and the Palatinate the major part is played by contact infection. Much more general conclusions may now, however, be drawn. It is safe to say that a large part, perhaps the largest part, of the "residual" or "pro-odemic" typhoid observed in a community possessing a pure water-supply is to be attributed to contact infection. Even milk-borne epidemics are being traced in a surprisingly large number of cases to contamination of the milk by bacillus-carriers at the time of collection or in the course of distribution. The facility with which typhoid bacilli multiply in milk naturally renders this foodstuff a relatively common vehicle of disease, but the way contamination of the milk occurs is in many cases precisely similar to the mode of contamination of any other article of diet. There can, furthermore, be no doubt that a part of the disease lurking in open privies is due to their use by unrecognized carriers, using this term in the broad sense. Well-defined cases of typhoid are, of course, responsible for some scattering of infection of this character, but much also must be laid at the door of the "walking" patients, the healthy carriers and the obscure cases. To these are now to be added those individuals who, as shown by Conradi, Mayer and Drigalski, may be discharging typhoid bacilli in the stools or urine for as long as eight, eleven, or even twenty-five days before the malady has become clinically manifest. The recent discovery that children suffer not infrequently from a mild, ambulant, unrecognized form of typhoid[1] is also important in this connection. Several epidemics in western Germany have been traced to clinically unrecognized cases of this character. Altogether the living distributors of typhoid bacilli make up a formidable array.

It does not seem worth while to discuss the singular stand taken by Delorme in his recent communication to the French Academy of Medicine.[2] No one cognizant of the evidence can maintain to-day that drinking-water is, in all places, the chief vehicle of typhoid or that contact infection is rare and exceptional. The success of the German campaign against rural typhoid, already referred to, is a demonstration of the efficacy of measures undertaken to prevent spread by contact. The number of cases in the infected district, which in 1904 was 3,487, was reduced in five years, by the measures against contacts and carriers, to 1,648. It is equally idle to dispute over the relative share at the present day of water and other sources of infection. Water, especially in this country and in France, is too commonly the means of communicating typhoid fever. That this is so should not lead us to overlook or to minimize other and equally well-known possibilities of communication.

Perhaps one reason why typhoid fever does not diminish more rapidly when cities substitute a pure water-supply for a polluted one is that in such cases there is a legacy of carriers handed on from the days when water-borne disease prevailed excessively. The carriers produced by years of infected water-supply do not disappear at once, but linger on and generate new foci long after the original trouble has been removed. Every city that continues to tolerate a polluted water-supply is not only suffering present injury, but also is storing up for itself future trouble, by accumulating a crop of carriers which may continue for long years to plague it.

One thing at least is plain, that the problem of residual or pro-odemic typhoid is largely—perhaps mainly—the problem of the carrier. Difficult and often impossible to track to his lair, still more difficult when cornered to deal with fairly as an individual and rigorously as a public health danger, the carrier is coming to be more and more an object of serious concern in the fight against typhoid fever. A hopeful feature of the situation is that the effect of preventive measures is cumulative. Progress in the purification of water-supplies will in the long run decrease the number of carriers. The discovery and control of a single carrier, particularly in occupations such as the purveying of milk which involve special danger, may be the means of preventing the formation of many new carriers. It may be that the gradual elimination of the carrier is one reason for the steady diminution in the amount of typhoid fever observed during the last few decades, even in communities like Munich or The Hague which have long been blessed with uncontaminated water. At all events, the carrier cannot be lost sight of in any attempt to control typhoid fever at its source.

---

[1] [illegible] The Journal, July 16, 1910, [illegible]

[2] See Vaillard: Ann. d'hyg. pub., 1910, xiii, 5.

FARMERS' BULLETINS

One of the objections urged against the establishment of a national Department of Public Health has been that such work does not properly belong to the federal government. As a matter of fact, the national government is already carrying on exactly such work as would be developed by such a department, but it is being done under the authority of one or more of the existing departments. As has been already pointed out in the hearings before the house and senate committees, what is desired in the establishment of a specific health bureau or department of the national government is not so much the inauguration of any new work, as the extension, correlation and systematization of work already being done in various departments. This is well illustrated in a circular recently issued by the Division of Publications of the United States Department of Agriculture, giving a list of the "Farmers' Bulletins" issued by the department. In past years a large number of pamphlets containing valuable information by experts has been issued by the Department of Agriculture, being inaugurated originally to convey to the farmer the necessary information regarding animal and vegetable pests, etc. This work has since been expanded so as to include pamphlets on almost every subject that relates to the farmer's physical or material well-being. Whatever improves the health of the farmer and his family would also improve the health of the citizens who were not farmers; yet, as the Department of Agriculture has authority to issue bulletins to farmers but not to the citizens, these pamphlets are sent out as "Farmers' Bulletins." A glance at a few of the titles is interesting. No. 34, "Meats, Composition and Cooking;" No. 85, "Fish as Food;" No. 93, "Sugar as Food;" No. 121, "Beans, Peas and Other Legumes as Food;" No. 128, "Eggs and Their Uses as Food;" No. 182, "Poultry as Food;" No. 249, "Cereal and Breakfast Foods;" No. 375, "Care of Food in the Home;" No. 377, "Harmfulness of Headache Mixtures;" No. 391, "Economic Use of Meat in the Home," etc.

It would be difficult to show why the national government should be any more interested in the food of the farmer than in the food of any other citizen, or why pamphlets such as those cited above, if good for the farmer, are not good for all other citizens. It is also difficult to see how the publication and distribution of such pamphlets in any way interferes with "personal liberty" or "forces one to accept medical services which he does not desire." In fact, the effect of such publications would seem to be to diminish the need for medical services of any kind.

A number of the pamphlets are worth noting as showing the interest of the government in diseases of plants and animals. Some of these are: No. 28, "Weeds, and How to Kill Them;" No. 30, "Grape Disease on the Pacific Coast;" No. 82, "The Culture of Tobacco;" No. 91, "Potato Diseases and Treatment;" No. 99, "Insect Enemies of Shade-Trees;" No. 110, "Rice-Culture in the United States;" No. 113, "The Apple, and How to Grow It;" No. 120, "Insects Affecting Tobacco;" No. 127, "Important Insecticides;" No. 152, "Scabies of Cattle;" No. 155, "How Insects Affect Health in Rural Districts;" No. 177, "Squab Raising;" No. 205, "Pig Management;" No. 379, "Hog Cholera."

The independence and personal freedom of the farmer does not seem to have been invaded by the publication and distribution of these pamphlets, neither has their preparation been controlled by an "agricultural trust." If similar publications on child culture instead of asparagus culture, or on infant management instead of pig management, were prepared by a properly organized health department, would the liberty of the people be endangered? Why should the government prepare and distribute pamphlets on "Grape Diseases on the Pacific Coast" and yet have no information for its citizens on water diseases in the Mississippi Valley? The series of farmers' bulletins prepared by the Department of Agriculture is most praiseworthy and valuable, but the government should abandon the subterfuge of authorizing such life-saving work under the name of "Farmers' Bulletins" because it has a Department of Agriculture and not a Department of Public Health, and should establish instead a department adequately equipped to advise all citizens regarding matters affecting their health and well-being.

EHRLICH'S NEW REMEDY FOR SYPHILIS

A new remedy for syphilis, recently announced by Ehrlich and Hata, under the somewhat mysterious name "606," seems to have been received in Continental medical circles with unwonted enthusiasm. This is shown by reports already published in our Berlin letter and the communications of our Budapest and Berlin correspondents in this issue and by the abstract in our Miscellany Department. The new product is the result of a long series of experiments carefully planned with the end in view of finding a remedy which will destroy spirochetes, particularly those of syphilis.

It is claimed to be an example of the complete destruction of the pathogenic agents of a disease by a medicinal product acting within the organism. It consists of a compound of arsenic allied to arsenilic acid and possessing the composition indicated by the name dioxydiaminoarsenobenzol. Apparently it was selected out of a large number of similar compounds by experimental trials, and only after numerous successes on apes and other animals was tried on man. The results as described by Wechselmann,[1] Neisser,[2] and others, impress one as being little short of marvelous. The startling statement is made that spirochetes begin to disappear from chancres and condylomata in a few hours and

---

1. See page 617, this issue.
2. Berlin. klin. Wchnschr., July 4, 1910.
3. Deutsch. med. Wchnschr., June 30, 1910.

are completely gone in from twenty-four to forty-eight hours. Syphilitic lesions such as rupia, papules, ulcers, etc., we are told, heal with remarkable rapidity.

Considering the reputation and standing of the men who make the announcement, it seems possible that an agent more active and more powerful than mercury is about to be placed in the hands of the profession to be used against one of the most dreadful diseases from which humanity suffers. Considering its character it might be supposed that the remedy would be a dangerous one and yet it may not be. Arsenic is such a potent drug, however, that involuntarily the cautious think of the old saying: "Timeo Danaos et dona ferentes"—"I fear the Greeks even when they are bringing gifts."

The remedy is not yet on the market and probably will not be until the present uncertainties regarding dosage, mode of administration, etc., are cleared up by further investigation in hospitals. Meanwhile, it would be well to receive the various reports with due conservatism, bearing in mind the natural tendency to optimism on the part of those conducting such important investigations which seem so full of promise.

Current Comment

THE DRAMA OF SANITATION

A moving picture playlet illustrative of the dangers of impure milk is reported in preparation. Camera men have been snapping unhygienic farms to this end. The first scene represents the son of an old-fashioned, bacteria-despising farmer returning to the old homestead with his wife and little boy. The filthy cow-barns, the open pails of milk receptive to dust and flies are depicted with unsparing realism. The son, who has imbibed wholesome education in hygiene, protests passionately against the old order, but in vain, whereupon the young couple pack their trunks, leaving the old farmer in tears over the deserted baby-carriage of his grandson. The rural scene is then changed to an urban one. The formerly happy home of the old farmer's son is grievously distressed because of the baby's illness. The family doctor shakes his head and, pointing to the milk-bottle, indicates plainly the cause of the illness. The grief-stricken son writes to his father (letter flashed on the screen) who comes in haste, and finds, to his great anguish, that the bad milk has come from his own farm. Emotional climax! The play, however, ends happily; the farmer's barns are shown repainted and wonderfully refurbished, the cows washed, the dairymen in white suits presiding over now impeccably sanitary functions. The little patient? Evidently the family doctor has done something more than shake his head, for, miraculously restored to health, the little boy, held by his repentant grandparents, watches with interest the hygienic proceedings. Such a representation might amuse the highly intellectual, but it should certainly be of value in reaching that part of the community which would take it seriously and which would be impressed by the scientific lessons embodied in it. Of well-proven value is a similar moving picture representation of "the filthy fly," which is being shown in our cities under the auspices of the American Civic Association.

FILTH AND TYPHOID

There is usually more than one aspect to a disputed question. This is true even of the celebrated Budd-Murchison typhoid controversy, which is so often declared to have ended in the complete overthrow of Murchison, horse, foot, and dragoons. No one, of course, believes to-day Murchison's hypothesis that the typhoid virus is generated spontaneously or *de novo* in decomposing organic matter, but it is clear that his observations on the connection between typhoid fever and filth were in themselves quite sound. The modern discovery of the existence of healthy typhoid bacillus-carriers, who have never had the disease themselves, explains why it is sometimes impossible to trace every case of typhoid to an immediately preexisting case. Since the hunting down of all carriers is practically impossible, it is necessary to deal with fecal accumulations in general as if they were definitely infectious. The open privy or earth-closet in city or country must be regarded always as potentially dangerous. We should not forget that accumulations of filth of any character tempt to further additions. It is a waste of time to try to prove filth innocent. If we assume it to be guilty from the outset, we are taking no unnecessary chances.

IT PAYS

We learn from a Denver correspondent that one of the vice-presidents of the "National League for Medical Freedom" was in that city recently organizing a "branch" of this latest enterprise of the "patent medicine" interests. This gentleman, who when not more profitably engaged runs a small country newspaper, is going about the country organizing forces—as though they were not already organized!—to fight the wicked "doctors' trust." Our correspondent says that while in Denver the "organizer" engaged an expensive suite in the most expensive hotel in the city! Verily the lines of this "trust-buster" have fallen in pleasant places.

RATTLESNAKE BITE

Every little while some one makes the statement that the rattlesnake bite is not fatal. This time it seems to have been announced from a medical society in Colorado, and a mud poultice is said to be a remedy sufficient to prevent evil effects. It is probable that the small rattlesnake of the western states, the so-called massasauga, is comparatively innocuous; that is, its bite is not necessarily fatal. But anyone who will make the assertion that the bite of one of the larger species is not serious enough to be dreaded goes against the experience of the medical profession, many of whom can give instances of fatalities thus caused, and that, too, in spite of treatment.

A NEW FORM OF HUMAN TRYPANOSOMIASIS

Dr. Carlos Chagas, a physician of Brazil, is reported to have discovered a new form of human trypanosomiasis. It is caused by a trypanosome which he has named *Schizotrypanum cruzi*. The parasite was discovered by him in the hind gut of a large biting bug, locally known as "barbeiro," which infests in large numbers the hovels of the poorer working class, remaining hidden during the day and issuing forth in the dark. This bug belongs to the *Hemiptera heteroptera*, family *Reduvidæ*, genus *Conorrhinus*, is more than an inch in length and bites its human victim chiefly on the face. The course of the disease seems as yet imperfectly known. Children especially are attacked and the illness is characterized by extreme anemia, edema, general or partial enlargement of lymph nodes, thyroid and spleen, functional disturbances, especially of the nervous system, and frequent imbecility. The mortality appears to be great, death being often attributed to convulsions. The disease closely resembles ankylostomiasis, but is easily differentiated from this by an examination of the feces. The disease also differs from the African trypanosomiasis in that somnolence as a symptom is never present. A detailed report is contained in the sixteenth *Bulletin of the Sleeping-Sickness Bureau.*[1]

Medical News

ILLINOIS

Infant Mortality at Springfield.—The monthly report of Dr. George T. Palmer, health officer at Springfield, shows that during the month of July there was an increase in the death rate of infants under two years of age of about 35 per cent.

New Hospitals.—As a first step toward the establishment of a much-needed hospital at Sterling, the city council recently appropriated $500 to be used for hospital purposes.—The cornerstone of the new Monmouth hospital was laid August 2. J. B. Brown delivered the address.

Personal.—Dr. William M. Johnson, Johnsonville, nestor of the medical profession of Wayne County, has been elected president of the county medical society. Dr. Johnson is 81 years old.—Dr. Will H. Perry has been appointed pension examining surgeon at Sterling to fill the vacancy caused by the death of Dr. Alexander C. Smith.

Advocates Hygienic Experiment Station.—At the meeting of the Summer School at Havana July 26, Dean E. J. Townsend of the University of Illinois, in an address on "Science and Public Service," suggested a plan for the establishment of an experiment station of sanitary sciences and preventive medicine, to work alongside of the agriculture and engineering experiment stations of Illinois. He declared also that education of the public as to the sources of danger is equally important. He called attention to Chicago as a good illustration of what a scientific and efficient leadership in sanitation can accomplish, pointing out that Chicago has now the lowest death rate of any American city of more than 350,000. His plan for an experiment station included the following features: That it should supplement the work done by the state and municipal boards of health; that a laboratory of physiologic chemistry should be maintained, in which questions of human nutrition could be studied; for the conduct of a bacteriologic laboratory; for the creation of a laboratory of sanitary science in which problems arising from water supplies, sewage disposal, etc., and their relations to public health should be investigated; for the establishment of a department of medical research, not for teaching, but for inquiry into the cause and prevention as well as cure of such diseases as have not yielded to medical treatment.

Chicago

The Typhoid Campaign.—Dr Leslie L. Lumsden, who is conducting the campaign against typhoid fever in the city, requests a meeting of physicians to discuss the situation. The medical societies of the city have no regular meetings during the summer and it is desired that special meetings be called.

The Weather and Mortality.—According to the bulletin of the health department July had a 6 per cent. higher death rate than the average of that month for the last ten years, and 23 per cent. higher than for July, 1909. The weather during July averaged 3.6 degrees above the normal of the month. It was the hottest July in nine years, and the average temperature was exceeded only once in thirty nine years. While the death rate in infants was 42 during July this year, it was lower than the death rate in 1897 when it was 71 per 10,000 population, and lower than in 1901 when the death rate was 44, making the rate 45 per cent. lower than in 1897 and 5 per cent. lower than in 1901, in both of which years the temperature, though high, was not so high as in July of this year.

Plans Death to Flies.—John J. Davis, assistant state entomologist, in his experiments in the destruction of flies and fly larvæ, has found that a solution of iron sulphate is probably the best and cheapest agent. He advocates that experiments with this material in preventing the multiplication of flies should be conducted by the health authorities of Chicago in certain limited districts, and believes that a noticeable effect will be produced on the prevalence of intestinal diseases in the experimental area. In an experiment at Dunning a year ago, Dr. Pollock kept one ward screened from flies during the season. In that ward there was one case of intestinal trouble which lasted three days. In the next ward, which was not screened, there were seven cases in the same length of time and every one of these cases lasted from three to seven weeks.—A fly hatchery has been added to the city laboratory and Dr. John W. Viers is conducting experiments in the destruction of fly larvæ. Flies are being hatched in wire cages. It has been found that a phenol solution sprinkled on hatching grounds, on garbage and on manure will kill them.

Discuss Dumping Refuse in the Lake.—The question of the cooperation of the government in enforcing the law which prohibits dumping refuse in the lake within the eight mile limit, recently referred to the chief engineer of the United States Army, has been answered in a communication from General Bixby, chief engineer, in which he says that the city of Chicago must mark the zone within which dumping is illegal by buoys and must provide inspectors to see that the law is enforced, as no money has been appropriated by Congress to enable the War Department to assist in the matter

INDIANA

Personal.—Dr. Harrison Gabel, a physician at Centervill was seriously wounded by being shot by a Civil War vetera who is said to suffer from illusions.—Dr. William F. King Columbia City, has been selected by the State Board of Healt for special field duty in the study of epidemics or marked i crease in any disease in any part of the State. On each mission, he will take exhibits prepared by the State Board, showing methods of combating the disease.—Dr Clay A Ball Muncie, has been appointed deputy county health officer, to succeed Dr. Howard Drumm.—Dr. Jesse F Davidson, Crawfordsville, supreme medical examiner of the Tribe of Ben Hur has been selected as assistant to succeed Dr Royal H. Geran chief of the order. Dr. Alexander P. Fitch, formerly o Lebanon, has succeeded Dr. Davidson—Dr Adoniram Banker, Columbus, is critically ill.—Dr. Henry O. Bruggeman, Fort Wayne, who is now in Germany for study, has be elected president of the Anglo-American Medical Society i Berlin.—Dr. George H. Pendleton, physician at the Mario County Workhouse, has resigned, and Dr. Thomas Sulliva has been appointed to the position.—Dr. Samuel E. Smi superintendent of the Insane Hospital at Richmond, has b appointed on a committee of the American Medical Ass tion to welcome the International Prison Congress meets in Washington, D. C., in October.—Dr. H

---

[1] Chagas' preliminary report was published in the *Brazil Medico*, May 1, 1910.

Downey, Middletown, N. Y., has been appointed resident physician at the Indiana Home Hospital, Terre Haute.

MARYLAND

New Hospital for Hagerstown.—Hagerstown is to have a hospital to cost $60,000. It will be built under the direction of Dr. Henry M. Hurd, of Baltimore. It will be of brick and stone with concrete foundation.

Personal.—Dr. Richard S. Hill, Prince George's County, has been elected director of the Department of Farmers' Institutes at the Maryland Agricultural College and Experiment Station. Dr. Hill is a successful farmer and tobacco planter and has been special state tobacco agent for the last four years. He is also president of the Southern Maryland Agricultural Fair Association. The law requires that the incumbent of the office shall be a practical farmer.——Dr. Arlington G. Horine has been reelected mayor of Brunswick.——Dr. Ira J. McCurdy, health officer of Frederick, urges an incinerating and reducing plant for disposal of garbage and suggests a cemetery for animals.——Dr. Pedro de Figamiere, Zion, Cecil County, has been appointed to a government position in Alaska.——Dr. Thomas Z. Offutt, Granite, 80 years old, is recovering from a severe attack of pneumonia. He has practiced fifty years and was a surgeon in the Confederate Army.

Baltimore

Typhoid Fever.—Fifty cases of typhoid fever were reported for the week ending July 30, double the number of last year; 77 cases were reported for the week ending August 6, with four deaths.

Personal.—Dr. G. M. Linthicum, ex-president of the state society, has entered the Maryland General Hospital for treatment for supposed typhoid fever.——Dr. Summerfield B. Bond sailed for a trip to Norway and Sweden, July 30.——Dr. J. George Schmetzer has been motoring in England and Scotland.

Accidents During July.—During July twenty-three persons were injured by falling objects, as milk bottles, etc.; forty-six persons were bitten by dogs; thirty-three were burned; twenty five were overcome by heat; ten were accidentally shot; four took poison by mistake. The total of accidents was four hundred and eight.

More Provision for Infectious Diseases.—Dr. James Bosley, Commissioner of Health, says the provisions for the treatment of infectious diseases at the public hospital (Sydenham) are entirely inadequate. The ordinance founding it provided for the treatment of diphtheria, measles, scarlet fever and chicken pox. But the money appropriated was sufficient only for one ward. That has been divided into two sections, in which cases of diphtheria and scarlet fever are treated. Four wards are needed and it is proposed to ask the board of estimates for $60,000 to erect two new wards next year.

MINNESOTA

Free Dispensary for Duluth.—Efforts are being made at Duluth to provide a free dispensary, there being no such institution in the city at present.

No Appropriation for Tuberculosis.—The county commissioners at St. Paul are opposed to an appropriation of $91,000 asked for the support of a tuberculosis ward at the City and County Hospital.

Personal.—Dr. Clara M. Hayden, Clarinda, Iowa, has been made women's physician at the state hospital to take the place of Dr. Olive Thorne, resigned.——Dr. Carl B. Teisberg, St. Paul, has been appointed assistant physician at the county hospital.——Dr. Gustavus T. Newman, New London, has been appointed superintendent of the new hospital at the Minnesota State Prison.——Dr. William H. Rowe, mayor of St. James, has been appointed by the governor surgeon general of the state militia to succeed Dr. Alexander J. Stone.

Southern Minnesota Meeting.—The eighteenth annual meeting of the Southern Minnesota Medical Association was held at Winona August 1. Important action looking to consolidation of the Southern Minnesota Medical Association with the Minnesota Valley Medical Association was taken. Dr. William J. Mayo, among others, favored the plan of union and a committee was appointed to confer with a like committee from the other association on the matter. The following officers were elected: President, Dr. Theodore L. Hatch, Owatonna; vice-presidents, Drs. Hugh F. McGaughey, Winona, and John E. Crewe, Rochester; and secretary-treasurer, Dr. William T. Adams, Elgin.

MISSOURI

Hospital Interns Resign.—Within the last month three of the interns at the City Hospital, St. Louis, have resigned on account of dissatisfaction with the food, their sleeping quarters and their personal treatment by the management of the hospital.

Circulating Medical Library.—The field covered by the library of the University of Missouri is to be extended over the state. On request the state librarian will furnish county medical societies with books for local circulating libraries. The library has recently added to the list of reference books several hundred books and periodicals on medicine.

New Hospital.—Mrs. Jane Chinn has donated $100,000 for the erection and maintenance of a hospital at Webb City. The Jane Chinn Hospital Association has been incorporated, and a building committee has been organized with Dr. Charles E. McBride at its head. He is also president of the board of trustees. The building and equipment will cost $40,000.

Changes in Washington University.—The 1910 catalogue of the Medical Department of Washington University shows that radical changes have been made in the faculty. Ten prominent St. Louis physicians connected with the school for many years have withdrawn. Dr. George Dock, who has recently come from Tulane University, New Orleans, to Washington University, has been made dean of the medical faculty. Dr. Horatio N. Spencer has resigned.

Personal.—Dr. William G. Rowe has resigned as county physician at Blue Springs.——Dr. Arthur A. Hobbs, Kansas City, has been appointed superintendent of the county hospital. He will also act as county physician.——Drs. Oscar H. Elbrecht and Willard Bartlett have been appointed surgeons of the consulting staff of the City Hospital, St. Louis.——Dr. William P. Patterson, Springfield, has been appointed chairman of the committee to arrange for medical examinations of the schools of St. Louis, Kansas City and Joplin.

Recommendations by Health Commissioner.—Dr. Walter S. Wheeler, health commissioner of Kansas City, in his annual report complains of physicians who fail to report reportable diseases and recommends that they be fined for violating the ordinance. He recommends an incineration plant for the disposal of the city garbage and urges more thorough milk inspection and a thorough campaign of education of the public in regard to tuberculosis. He also finds that there are five mentally defective children in every hundred of the 25,000 pupils enrolled in the city. He recommends that a separate school be provided for such defective children.

MONTANA

Nurses' Home.—A nurses' home to cost $15,000 is in course of erection at the Montana Deaconess Hospital, Great Falls. Three nurses were graduated from the training school of the hospital in June.

Personal.—Dr. John T. Foley has been chosen assistant county health officer at Lewiston to act in the absence of Dr. Willard A. Long, who is in Europe.——Dr. Eugene G. Campana has been made city physician at Butte.——Dr. Francis M. Flinn has been appointed surgeon, with rank of captain, of the battalion of the national guard, composed of one company at Libby and two at Kalispell.——At the annual meeting of the Antituberculosis League, Dr. Sisson of Butte was elected secretary; Dr. Atwood, Helena, treasurer, and Dr. E. M. Hunter, Livingston, chairman of the executive committee.

NEW JERSEY

Personal.—Dr. D. W. Blake, Jr., was elected medical inspector by the Gloucester Board of Education.

Infant Paralysis at Burlington.—Six cases of infant paralysis are reported in Burlington. None of them has so far resulted fatally but all of the victims are believed to be incurably crippled.

Shower Baths.—The board of works of Newark, following an order of the board of health to close swimming pools in the public baths because they are considered unsanitary, have directed that shower baths be installed without further delay, and all public baths will be thus equipped.

Millville Fears Smallpox. The State Board of Health held a meeting at Millville August 4 to take steps to check an epidemic said to threaten the town. For the last two months, it is declared, there has been a score of smallpox cases wrongly diagnosed as chickenpox. Charges that physicians have been lax will be probed by the state board. A dozen homes have been placed under quarantine and wholesale vaccination has been begun.

Advocates Public School Clinic. Dr. George J. Holmes, medical supervisor of the Newark Public School, urges the establishment of a public school clinic. This, if centrally located, would enable public school physicians to keep in closer touch with cases coming under their care and would result in a saving of time. Special classes for defective children and for the blind, deaf and dumb were authorized by the Board of Education.

State Board of Health Report. The report of the State Board of Health for July shows that the increase of deaths from infantile diarrhea during the month is larger than for any corresponding period during the past five years, which is in line with the report from other states, amounting to 345 deaths as compared with the next highest figures, 202, for 1908. Typhoid fever deaths for July numbered 37, the average per month for the previous twelve months being 25. Six hundred and fifty-three specimens of milk were examined by the state laboratory, 609 of which were found to be above standard and only 44 below.

Decision Regarding Sewage.—The supreme court, in an opinion handed down July 20, holds that the Borough of Garwood may empty the effluent of its sewage disposal plant into the Rahway River. This action of the Borough of Garwood was approved by the state board of health under the provision of the law which gives state boards the same powers as were formerly held by the state sewage commission. In holding that the law is constitutional Justice Parker says that "the effect of the legislation is to make the state board of health *ex officio* the state sewage commission, as far as the sewage disposal plant and these proceedings are concerned."

NEW YORK

Medical Library for Schenectady.—A medical library consisting of 1,000 volumes has been loaned by the State Medical Association library at Brooklyn, to the medical society at Schenectady. It will be located in the public library building.

State Exhibit.—The state health department and the State Charities Aid Association have again arranged a schedule for the large state tuberculosis exhibit which will go first to Saratoga in September.

Temporary Tuberculosis Hospital.—The board of county supervisors at Rochester has established a tent colony on the county farm in Brighton for the care of tuberculosis patients from the County Hospital, on recommendation of the Rochester Public Health Association.

New President New York State Society. By the death of Dr. Charles Jewett August 6, Dr. Charles Stover, vice-president, succeeds to the presidency of the Medical Society of the State of New York. He is a prominent practitioner of Amsterdam and physician to the City and St. Mary's Hospitals.

Personal.—Dr. Isham G. Harris of Poughkeepsie has been appointed superintendent of the new Mohansic State Hospital near Peekskill.——Dr. Edward H. Fiske, Brooklyn, was operated on at Oswego for appendicitis, while away on his summer vacation.——Dr. W. O. Smith has been made health officer at Falconer.

New Hospital for Children.—At a meeting of the fraternal organization committee, Dr. Montgomery E. Leary, supervising director of the Rochester Public Health Association, outlined his plan for establishing a children's hospital by all of the fraternal organizations of the city, and a committee was appointed to report later on the feasibility of the project.

New York City

Typhoid Fever.—For the week ending July 23 there were 59 cases of typhoid fever with 6 deaths; for the week ending July 30 there were 91 cases with 17 deaths.

Deadly Record for July.—During the month of July there were 18 persons killed and 153 injured on the streets of this city; of these 13 were children under 12 years of age. During the first six months of the year there were 93 killed and 522 injured.

To Enlarge Tuberculosis Clinic. Plans have been filed for an addition to the tuberculosis clinic on the roof of the Vanderbilt Clinic at Amsterdam Avenue and Sixtieth Street. The addition will be a one-story structure. The laboratory of the clinic will also be enlarged at a cost of about $6,000.

Personal.—Drs. J. Morgan Howe, Alexander Lambert and W. K. Draper have sailed for Europe.——Dr. F. M. Shook, Medical Corps, U. S. Navy, has been detailed to conduct lecture and laboratory courses on tropical medicine at the New York Post Graduate Medical School during the months of August and September.

Death Rate Continues High. The death rate for the week ending July 23 was 18.80 per 1,000 population, while the rate for the corresponding week of last year was 16.96. The death rate in institutions was again higher, there being 608 deaths compared with 485 for last year. Dr. Lederle has appointed a committee to investigate the reasons for the high death rate in both public and private institutions.

Pure Food Laws Made Ineffective.—The ineffectiveness of the pure food laws is being attributed to the failure of the courts to impose as severe penalties as are warranted. There is no lack of industry on the part of those charged with the enforcement of the law in securing conviction for the offenders but the fines imposed are in many cases so trivial as to have no effect in securing obedience to the laws. For instance, in a sale of soothing syrup, guaranteed to be perfectly harmless but found to contain morphin, $10 was imposed; sales of four headache remedies, guaranteed harmless but found to contain acetanilid, resulted in fines of but $15 each; a fine of only $5 was imposed for selling a hair tonic and dye that was found to tend to the production of eczema. In a number of instances the court seems to have thought it has done its duty when it has ordered the destruction of the injurious articles.

New Plans to Care for Sick Children. It has been decided by the health board that communicable diseases would have to be treated further down the bay than at the new hospital erected on Ellis Island by the federal government, and in consequence an offer has been made to the city through Congressmen Goldfogle and Bennett that the city rent this hospital from the government for sick babies of the tenements. The mayor approves of the idea and is consulting with the commissioners of health and charities on the subject.——Dr. Lederle has issued a half a million posters entitled "How to Keep Baby Well," which he hopes will have an effect in decreasing the high infant mortality of the present season. These posters contain the usual advice and admonitions and are printed in several languages.——The dock commissioner has also come out with a plan to help sick babies. He wishes the unused space in the city terminal buildings at South Ferry used as open air hospitals. Each building has a space 75 by 100 feet which would be available and could easily be fitted up if the city would appropriate the money.——The health department will post the following placard in every place where milk is sold in the greater city: "For infant feeding use certified or guaranteed milk, or bottled pasteurized milk. If you use either bottled milk or milk from cans, either raw or pasteurized, the milk should be brought to a boil before feeding to the babies."

Buffalo

Personal. Dr. Charles G. Stockton has gone abroad.——Dr. S. Y. Howell spent two weeks in July at the seashore.——Dr. George Haller is taking a trip up the St. Lawrence.

Infantile Paralysis.—The Buffalo Academy of Medicine is making an investigation concerning cases of poliomyelitis in the vicinity. All physicians having cases to report are urged to notify either Dr. Irving M. Snow or Dr. Lesser Kaufman who will supply them with proper blanks.

Buffalo Selected. In a cablegram from Health Commissioner Fronczak, who is attending the International Congress on School Hygiene at Paris, the announcement was made that Buffalo was selected as the next meeting place in 1913. The convention is held every three years. The competing cities were Rome, Cologne, Prague, Brussels and Budapest.

Contagious Disease Hospital.—Another session of the board of common council has come and gone without a solution of the question of site for the proposed hospital for contagious diseases. In the meantime the epidemics, especially of scarlet fever and now of pertussis, go merrily on. The sum of $18,000 is to be used to make the present makeshift hospital at least habitable.

Action on Death of Dr. Wende. Resolutions adopted by the common council on the death of Health Commissioner Ernest Wende have been forwarded to Mrs. Wende by City Clerk Balliett. The resolutions are morocco bound and bear the signature of every member of the common council. It was also voted by the common council to name the proposed hospital for contagious diseases the Ernest Wende Memorial Hospital. The medical profession sincerely hopes that this hospital will be so located, so built and managed as to prove worthy of the name.

Concerning Erie County Hospital.—After a public hearing on the matter of the proposed Erie County Hospital the committee of the board of supervisors has by request of the sub-committee on public health of the Chamber of Commerce and Manufacturers Club consented to postpone the final letting of contracts for six weeks. The proposition of the Chamber of Commerce is to have the city build a municipal hospital on the Driving Park site, of 825 beds and to include the proposed hospital for contagious diseases. The citizens of Buffalo look favorably on the project.

Whooping Cough.—Following the exceedingly great number of cases of measles there has been added an epidemic of pertussis. The health department is sending out sanitary inspectors to watch all boats, play grounds and parks and will cause the arrest of all parents who break quarantine in cases of pertussis. There were 200 cases of pertussis reported to the department of health in July. This is a strong indictment against those who are opposing a hospital for contagious diseases because many of these cases are but a sequel of the tremendous epidemic of measles. During the past week there were seven deaths reported from whooping cough.

NORTH CAROLINA

Health Bulletin.—The Asheville City Board of Health, beginning May, has issued a monthly bulletin.

Shaw University Hospital.—Ground has been broken for the erection of a $20,000 hospital at Raleigh for clinical instruction of the students of the medical department of Shaw University.

Personal.—Dr. George A. Mebane, of Mebane, was a contestant for the democratic nomination for Congress in the Fifth North Carolina District, being defeated on the 438th ballot after a session of the convention lasting six days, by ex Lieut.-Gov. C. M. Stedman, of Greensboro.——Dr. Philip Norris, of the Rutherfordton Hospital, was recently presented with a silver loving cup as a token of appreciation by the Rutherfordton baseball team.

Osteopath as Expert Witness.—In the trial recently in the superior court at Asheville, Judge Justice presiding, an osteopath was admitted and qualified as an expert medical witness in a case for damages against the Southern Railway, brought by a man whose child was struck on the head five years ago by a falling transom inside a car. The testimony of two reputable physicians, one an ex president of the State Medical Society, who had examined the child recently, was that the child was in excellent health, bright, intelligent for his years, and they were unable to find anything of pathologic character warranting the maintaining of the action. The osteopath testified that as a "result of the blow and the shock induced thereby a thickening of the brain and a resulting dislocation of several vertebræ had induced '*petit mal*' with which the child is now affected, though not in a manifest form." The jury returned a verdict for $2,000 damages for the plaintiff.

PENNSYLVANIA

Personal.—Dr. B. Franklin Royer, Harrisburg, has been appointed chief medical inspector of the state, vice Dr. Arthur I. Moulton, resigned. Dr Royer has been associate chief medical inspector for the past eighteen months.

State Railroad Commission's Report.—The quarterly report of the State Railroad Commission for the three months ending June 30, shows that 271 persons were killed and 2,287 were injured on the steam railroads of Pennsylvania. There were during the same period 63 fatalities on the street railroads and 1,119 persons were injured. Of the fatalities on the steam roads, 89 were to employees, 11 to passengers, 143 to trespassers and 28 to others. The trolley lines killed 6 employees, 5 passengers, 7 trespassers and 45 others.

City Nurses Reduce Infant Death Rate.—Successful results have followed the city's campaign against infant mortality. Comparing the results in the second, third, fourth and fifth wards, where special efforts are being made to save the lives of babies, while the mortality last week was 7 per cent. higher than in the corresponding week of last year, as compared with the total increase of 50 per cent. for all the wards of the city, the work of the special nurses would mean a saving of 713 lives if it could be extended to all the wards of the city. In the second and third wards the mortality was 9 per cent. and 16 per cent. respectively, compared with 60 per cent. for the whole city; in the fourth and fifth wards it was 14 and 22 per cent., respectively.

Philadelphia

New Amphitheater for Woman's College.—Work will shortly be started on the new amphitheater for the Woman's Medical College on North College Avenue. The building will be used for clinical work and will consist of a two-story brick structure, 35 by 40 feet. The estimated cost is $17,500.

New Laboratory for the University.—Architects have completed plans for a new zoologic laboratory for the University of Pennsylvania. It is to be a three-story, fireproof building, occupying a lot 216 by 156 feet on Hamilton Walk, adjacent to the old biologic laboratory and its cost will be about $300,000.

Hospital Opens a Milk Station.—On July 28 a modified milk station was opened at the Mt. Sinai Hospital, to be maintained throughout the year as part of the general plan inaugurated for the better care of babies in the tenement districts. The station will be open daily from 9 to 11 a. m. and from 5 to 6 p. m. Special nurses will be on hand to advise mothers.

Another Baby Station Opened.—Another baby-saving station was opened by the city August 3 on the Race Street recreation pier, where a day nursery and hospital will be conducted by the department of health and charities. One end of the pier is equipped as a hospital for babies and a rest room for mothers, and the other is fitted up with a sand pile and playthings for older children.

Personal.—The following physicians have sailed for Europe: Dr. D. Riesman, on August 3; Drs. Walter C. Stillwell, Arthur Jackson Brewe and J. I. McGuigan on August 6.——Dr. Willis F. Manges has been named as chief of the Roentgen ray laboratory of the Philadelphia General Hospital to succeed the late Dr. Mihran K. Kassabian whose death was caused by *x*-ray burns. Dr. Manges has had charge of the *x*-ray laboratory at the Jefferson Medical College and will continue in that position.——Dr. Edward A. Leonard has been promoted to assistant physician at the Philadelphia General Hospital, made vacant by the resignation of Dr. Samuel Stern.——Dr. Joseph F. Dunn has also been appointed assistant physician at the Philadelphia General Hospital.——Dr. Joseph Price, who has been ill for six months from septic poisoning, has recovered and is again at work.

University Adds Course in Tropical Medicine.—Announcement was made August 5 that the University of Pennsylvania would add a series of courses in tropical medicine as an elective to undergraduates and as a special course to postgraduates. These courses will be under the charge of Dr. Allen J. Smith, dean of the medical department, and they will include instruction in medical climatology and geography; hygiene of ships and of the tropics; protozoology, anthropodology, helminthology and general medical zoology; diseases of the eye, skin and surgical diseases common to the tropics; pathology of tropical diseases and systematic and clinical tropical medicine. The full course will continue fifteen weeks and will include ten units of study. The teaching force of the department will include Drs. A. C. Abbott, William Pepper, George E. de Schweinitz, William B. Hartzell and M. H. Jacobs.

Druggists' Association Acts Against Soothing Syrups.—At a meeting held in the College of Pharmacy on August 5, the

Retail Druggists' Association passed resolutions condemning so-called soothing syrups containing morphin and cocain. Eleven hundred druggists, members of the association, will now refuse to sell syrups without a physician's order and are determined that any infringement of this rule shall be punishable by loss of membership in the society. Under the auspices of the state pharmaceutical board, an active campaign will be begun against the sale and manufacture of such pernicious drugs. The state legislature will be appealed to at its next session to eliminate from the statute books the present law which permits the sale of these drugs, providing that their contents are made clear on the labels of the bottles, and to insert in its place a clause which shall prohibit entirely the manufacture of the concoctions.

Campaign Against Tuberculous Meat. Dr. A. H. Schreiber, chief meat and cattle inspector of the Health Department, announced on July 25 that warrants would be issued this week for the arrest of persons charged with selling tuberculous meats. Of the dealers selling meats without a license, fourteen have been arrested and were arraigned before Magistrate Beaton, July 25. Each was fined $2.50 and costs and ordered to secure a license at once. Six slaughter houses in West Philadelphia have been closed by the Board of Health and fifty additional warrants issued for meat dealers because of the insanitary conditions which prevail and because they failed to meet the requirements of the law in slaughtering cattle, in the disposal of offal and in keeping the premises in clean condition. During one week since the inauguration of the campaign 1,500 pounds of beef and mutton were destroyed because it was unfit for food. Most of this was found on the counters of small dealers and was confiscated by the inspectors.

Women to Aid Phipps Institute Work. Alexander M. Wilson, sociological director of Phipps Institute, announced August 3 the appointment of three women assistants who will work in the social service of the dispensaries. They are Miss Janice S. Read, of Worcester, Mass., who for three years was head resident in the Jewish Sisterhood Neighborhood House, Newark, N. J.; Miss Lillian G. Elbridge, a graduate of Vassar College and formerly of the Girls House of Refuge, Philadelphia, and Miss Edith Dudley, Poughkeepsie, N. Y., graduate of Wellesley and also a worker in the House of Refuge. Their work at the institute is to attempt to better the conditions under which the dispensary patients live. They will see that children in families where there is tuberculosis are protected against infection, and if already infected, that they are placed under proper treatment. The help of the health department, of landlords, employers, churches and charities will be enlisted to obtain good surroundings and sufficient diet for the patients that come under their charge.

RHODE ISLAND

Medicolegal Society Meeting. The annual meeting of the Medicolegal Society of Rhode Island was held at Field's Point, July 22. Dr. Arthur H. Harrington, Howard, was elected president, and Dr. Carl R. Doten, Providence, secretary-treasurer.

Building for State Medical Society. The Rhode Island Medical Society, at its last annual meeting, appropriated $7,500 for a building for permanent headquarters of the society, and has purchased land at the corner of Hayes and Francis Streets, Providence, for the purpose.

State Health Officers Meet. The health officers of the cities and towns of the state met at the State Hospital, Providence, July 28. Quarantine and water supplies were the chief topics of discussion. Dr. John H. Bennett of the State Board of Health, spoke of the subject of fumigation, stating that from his experience, he believed the best kind of fumigation was that which brought into use fresh air, sunlight, hot water and soap and plenty of elbow grease. A committee was appointed consisting of one health officer from each county to draw up an acceptable and effective quarantine bill for presentation to the next legislature.

Work of the State Sanatorium. At the opening of the tuberculosis exhibit under the auspices of the Newport Association for the Relief and Prevention of Tuberculosis, Dr. Harry Lee Barnes, superintendent of the State Sanatorium, stated that the state sanatorium had saved lives with sufficient frequency to amply justify its establishment financially, even though the humanitarian consideration be ignored, and that investigation had shown that the annual earnings of patients discharged from the institution during or before 1908, and who are free from active symptoms of tuberculosis, had amounted to over $100,000.

WASHINGTON

State Medical Society. The Washington State Medical Association met at Bellingham July 26, 27 and 28. One of the sessions of the convention was held on a steamer, cruising among the San Juan Islands. Hon. Horace E. Hadley, justice of the supreme court of Washington, addressed the convention on "The Joint Responsibilities of the Lawyer and the Doctor." The following officers were elected: President Dr. Wilson R. Johnson, Spokane; president elect, Dr. Leon L. Love, Tacoma, vice presidents, Drs. Grant Calhoun, Seattle and J. Earl Elsie, Pullman; secretary, Dr. Curtis H. Thomson, Seattle, treasurer, Dr. Park W. Willis, Seattle, and delegates to the American Medical Association, Drs. James R. Yocom, Tacoma, and George W. Libby, Spokane. The next meeting will be held in Spokane.

WISCONSIN

Personal. Dr. Lewis F. Bennett, Beloit, has been elected president and Dr. John M. Beffel, Milwaukee, secretary of the State Board of Medical Examiners.—Dr. Frank F. Darling, registrar of vital statistics of the health department of Milwaukee, has resigned.

Nurses Call for Tuberculosis Instruction. The Wisconsin State Association of Graduate Nurses, at a recent meeting adopted resolutions calling on training schools to furnish adequate instruction in caring for tuberculosis patients in homes and in institutions. The action is approved by the Wisconsin Antituberculosis Association.

Milwaukee Health Conditions. During the week ended July 23, Health Commissioner William C. Rucker, reported that there were 222 cases of typhoid fever, a decrease of 19 since July 16. Forty nine new cases of typhoid were reported, five deaths were assigned to that disease and 63 recoveries. The work of gathering samples of water from the lake for the state hygienic laboratory has continued for the past six weeks. Water has been taken at intervals of from one mile to a distance of seven miles in the lake. Commissioner Rucker has been criticised for not making public the reports of the examination of water but the commissioner claims the blame is due to the fact that the reports are in the hands of the printer. The investigation conducted by George C. Whipple, an expert from the New York Sewerage Commission, with the assistance of the city engineering department has shown that there is no leak in the intake pipes near the shore. The reports of Commissioner Rucker and the reports of the analysis by the state hygienic laboratory are awaited by the public with much interest.—The recent test of ice cream shows that manufacturers are complying with the law regarding the standard for ice cream.—Health Commissioner Rucker has recommended that the department of Dr. George P. Barth, school physician, should be enlarged by providing visiting nurses to go to the homes and teach hygiene to the parents of the pupils.—The Seventh Street Isolation Hospital which has previously been condemned as unfit for hospital purposes, will be abandoned and the building in Kern Park will be used temporarily for isolating diphtheria, scarlet fever and measles.

TEXAS

New Wing at Insane Asylum. A new wing at the Southwestern Insane Asylum at San Antonio was opened recently and 100 additional white patients have been admitted. The completion of the new wing makes room for 300 more patients.

Salaries of Health Officers. The state board of health advocates better salaries and longer terms for the city health officers in the various cities of the state. The board believes that this should be conducive of more efficient work in health and sanitary matters.

GENERAL NEWS

Infant Mortality Association Meeting. The first annual meeting of the American Association for the Study and Prevention of Infant Mortality will be held in Baltimore Nov. 9 to 11. The sessions will embrace municipal, state and federal prevention. Dr. William H. Welch will preside. The following are chairmen of committees: Medical prevention, Dr. L. Emmett Holt; educational prevention, Dr. Helen C. Putnam; philanthropic prevention, Dr. Hastings N. Hart. There will be a large exhibit, embracing milk, work, clothing, diet, hot-weather care and recognition of early conditions of disease. Membership is open to all who are interested in the baby. Miss Gertrude B. Knipp, medical and chirurgical faculty building, Baltimore, is executive secretary.

Cost of White Plague War.—According to the report issued by the National Association for the Study and Prevention of Tuberculosis the average cost of caring for tuberculous patients in thirty semi-charitable sanatoriums scattered throughout the United States is $1.67 per day. The expense of maintaining the institutions in different parts of the country varies from 94 cents per capita to $2.56, being more than twice as high in the west and southwest as in the east. The aggregate expenditure was $1,364,000 and the receipts $1,548,000, 70 per cent. of which came from public appropriations and private benefactions and the remainder from patients. It is estimated that there are 300,000 indigent consumptives in the United States who should be cared for by the state, which at the rate named above would cost $50,000,000, though the economic loss from the incapacity of these afflicted persons is yearly $200,000,000.

FOREIGN

Seven Physicians in Hungarian Parliament.—Four new medical members were recently elected, making a total of seven physicians at present in the Hungarian parliament.

Italian Malaria Journal.—The Italian Antimalarial League has founded a journal, *Malaria e Malattie Affini*, to be devoted to work and news bearing on malaria. The address of the new journal is via Farini 62, Rome.

Hydrophobia Statistics in Argentina.—According to the *Semana Medica* of June 25, during the twenty-four years since the Pasteur Institute at Buenos Aires was opened, more than 10,000 persons have taken a course of treatment. 73 have died, a total mortality of 0.67 per cent.

Laboratory for Research on the Brain.—A Moscow medical society, whose aim is to promote the experimental sciences, has turned over to Professor Pawlow an endowment of several thousand dollars to equip a laboratory for special research on the brain.

Pensions for Widows and Orphans of Basel Professors.—On the occasion of the four-hundred and fiftieth anniversary of the founding of the University of Basel, Switzerland, an endowment of $70,000 was collected by the academic society for pensions for the widows and orphans of instructors at the university.

The Recklinghausen Endowment.—Professor von Recklinghausen retired in 1906 from the chair of anatomy at the University of Strasburg, after 35 years' incumbency, as mentioned in these columns at the time. His former pupils have been collecting subscriptions for an endowment to bear his name. The fund has now reached the sum of nearly $4,000 (14,500 marks), and was recently presented to him to apply as he sees fit.

Honors to a Belgium Practitioner.—The fiftieth professional anniversary of Dr. Cartier was recently celebrated at Herstal near Liége, the entire population joining in the demonstration. The *Gazette méd. Belge* says that the town was gaily decorated, bands played, the chimes were rung and crowds thronged the city hall all day long, all in honor of Dr. Cartier's fête. The local authorities, industries, charities, lodges and the medical profession each paid tribute to his half century of devoted service.

Memorial to Spanish Medical Officers.—A large memorial tablet commemorative of the Spanish military physicians who lost their lives in the recent wars, was unveiled June 25 in the presence of a large gathering including the royal family (Spain). The memorial is in the main hall of the military hospital and the *Siglo Medico* of June 25 gives the list of names of the physicians as inscribed on the tablet with their rank and place and date of decease from 1834 to 1895. After this date are the names of Dr. Molto, Noveleta, 1897, and Dr. Carracedo, 1898, corresponding to the date of our war with Spain and Don Pascual, Peñon de la Gomera, 1909, a total of 24 names in all.

LONDON LETTER

(From Our Regular Correspondent)

London, July 30, 1910.

Annual Meeting of the British Medical Association

The seventy-eighth annual meeting of the British Medical Association was held in London July 22 to 29. It is now 15 years since the association met in the metropolis, which offers unusual advantages for the purpose, among which is an unusually large attendance, on this occasion amounting to 3,000. The function was in every way—scientific and social—most successful. Among the foreign guests were Prof. Kocher (Berne), Dr. Lucas Championnière and Dr. Wickham (Paris) and the following Americans: Dr. J. H. Bryan, Dr. Bulkley, Prof. Crile, Prof. Tait Mackenzie and Dr. Edsall. The president, Mr. Henry T. Butlin, who is also president of the Royal College of Surgeons, delivered a very interesting address on "The Evolution of the Association and Its Work." The growth of specialism has increased the number of "sections" of the association to 21, which now includes such new ones as "Medical Sociology" and "Radiology and Medical Electricity." Ample accommodation was furnished by the spacious class rooms of the University of London. The sections were well attended and many papers of great interest and importance were read and discussed. In the Section on Surgery, Mr. Arbuthnot Lane advocated the operative treatment of simple fractures. His name has long been identified with this method and his views have been previously published in The Journal. The discussion revealed considerable difference of opinion. Dr. Lucas Championnière of Paris could not agree with the utility or necessity of the method in all cases. Mr. Gilbert Barling found it difficult to reconcile the divergent views now held as to the treatment of fractures. Some claimed that by non-operative methods it was possible to obtain a high percentage of perfect results; others that after an ordinary fracture treated by splints there was a depreciation ranging from 30 to 100 per cent. He suggested that a committee be formed to investigate the matter. A resolution in favor of this was passed by the section.

Dr. Louis Wickham of Paris gave a demonstration, illustrated by lantern slides, on the treatment of cancer by radium. He showed the remarkable effects of radium in causing the regression and even disappearance of cancerous growths but deprecated the use of the word "cure" which should rarely be used. In the great majority of cases radium should be associated with surgery. If a grave cancer was present the radium therapeutist should first consult the surgeon so that the patient be not deprived of the prompt help of surgery. On the other hand, if the surgeon has a case in which it is difficult to operate he should use radium to prepare the ground and diminish the virulence of the growth. He should also prepare the ground for the action of radium, by perforations, incisions, and by partial extirpations diminish the thickness of the tissues which the rays have to traverse.

In the Section on Dermatology Sir Jonathan Hutchinson read a paper on "Paleogenesis as Illustrated in Certain Affections of the Skin." This is an entirely new subject which this wonderful octogenarian has attacked with an energy and originality which show no sign of age. Paleogenesis is a name which he has introduced to signify inheritance from remote ancestors in the evolution of man from the lowest type. The term atavism has been used to signify inheritance from near progenitors. Paleogenesis is therefore atavism *in excelsis*.

For the ordinary visitor the most important and interesting feature of the meeting was the scientific exhibit which surpassed all previous exhibits in elaborateness. It contained over 3,000 specimens and was organized on a new plan, being divided into 19 sections, each under the care of an expert honorary curator, who selected a few subjects for illustration and collected from all available sources the most useful material. Thus the exhibit contained many series of exhibits rather than the usual miscellaneous items. Special attention was paid to methods, and as far as possible an ocular demonstration was offered of recent advances and of methods employed both in practice and in the laboratory for the diagnosis and treatment of disease. A novel feature was a section devoted to anesthetics in which many historical as well as modern anesthetic apparatus were collected. The number of microscopic specimens shown was unusually large, amounting to over 400. The section of protozoology was most interesting; many recently discovered parasitic protozoa were shown in the blood of man and animals. In the Section on Cancer Research the ethnologic distribution of the disease and cancer in animals, spontaneous and transplanted, were illustrated. A very interesting series of portraits with accompanying microscopic sections showing the condition in cases of cancer before and after the use of radium, was exhibited by Dr. Dominici of Paris. Under the influence of the radium the growths disappeared and on microscopic examination the epithelial cells of the cancer were shown in process of regression and replacement by connective tissue.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 28, 1910.

Pyelotomy for Removal of Renal Calculi

On July 26, Dr. Bazy, surgeon of the hospitals of Paris, read an interesting paper before the Académie de Médecine, showing that the removal of most renal calculi may be effected by pyelotomy, that is, the incision of the kidney pelvis alone without injuring the parenchyma of the kidney, without disturbing the functioning of the organ, whatever it may be, and without altering its functional value. Bazy believes that it is unnecessary in the great majority of cases to make patients undergo exploratory operations, which may be badly sustained or dangerous, in order to ascertain the functional value of the kidney. Pyelotomy may be performed on any person capable of undergoing an operation of average duration and of minimum gravity. It is entirely suitable in cases in which the kidney containing the stones is the only functioning one and therefore must be conserved. These conditions were present in two of Bazy's patients, women aged 48 and 58, respectively, and worn out by suffering. Pyelotomy may be employed in cases in which the kidney pelvis is infected. The reunion of the pelvis by first intention does not appear to be hindered by this complication. It may be ascertained in advance by radiography whether one should employ pyelotomy or nephrotomy.

Enlargement of Scope of Scientific Information Bureau

For about seven years there has been at the Sorbonne a bureau of scientific information for foreign students. Up to the present this service has been maintained by the municipality of Paris. To improve this service, an association has been recently formed to furnish to all, whether French or foreign, but especially the latter, by correspondence or orally, all useful information in regard to the means of study in France. It will organize tours of study for foreigners in France, will aid in the formation and development of special courses in the universities for the use of foreign students, and will organize outside of France, an active propaganda in favor of French instruction, through brochures, prospectuses, newspaper articles, diplomatic agents and special correspondents, etc. It will also encourage relations between professors and students in French and foreign universities. While up to the present, the bureau of information has been almost exclusively Parisian, the field of the new organization, which is called Office national des Universités et grandes Ecoles françaises, will cover the universities in the departments. The government has voted $2,400 (12,000 francs) in aid of this institution. [Address: Bureau des Renseignements Scientifiques, Sorbonne, Paris, France.]

Medals for Physicians Who Do Vaccination

It is customary each year for the Académie de Médecine to award gold, silver gilt, silver and bronze medals to physicians who do vaccination. These medals are transmitted to the minister of the interior and then sent to the prefects, who send them to the physicians thus honored. This year several medals did not arrive at their destination. Inquiry brought out the fact that certain prefects had confiscated the medals because the physicians to whom they had been awarded were not in agreement with the government. Indignant at this intrusion of politics into a matter with which it had no concern, the council of the Académie de Médecine brought the matter before the premier, M. Briand, who has energetically censured the culprits and has promised that the physicians who had been awarded medals shall very shortly receive them.

The Illegal Practice of Medicine by a Physician

According to French law, the physician who lends his countenance to a person practicing medicine without a diploma or who, without directing the treatment of the patients, uses his medical degree to lend sanction to the acts of such a person, becomes guilty of illegal practice of medicine. Recently the courts have decided that a physician who directs the treatment himself but who prescribes for many of the patients on the basis solely of replies to questions published broadcast, in the name of some institute or other, is thereby aiding the illegal practice of medicine.

The Period of Military Instruction to Students

Because of the inconvenience caused to students by the obligation of responding to the call to military instruction at the time of an examination, of a *concours* or of matriculation at a college, the minister of war has informed the generals commanding the army corps that it would be advisable for them to receive as favorably as possible the requests for delay made by students when the latter show that it would be impossible for them to absent themselves from their studies without serious detriment.

Election of Two Associates to the Academy of Medicine

The Académie de Médecine has elected as national associates Dr. P. Spillmann, professor of clinical medicine at the Nancy College of Medicine and Dr. Testut, professor of anatomy at the Lyons College of Medicine.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 20, 1910.

The Fossil Races of Men in Europe in the Glacial Period

Professor Klaatsch, the well-known Breslau anthropologist, delivered recently a very interesting address in the medical section of the Schlesische Gesellschaft für Vaterländische Kultur on the oldest races of men in Europe. By the recent discoveries the views regarding the relationship of man with the apes have been much modified. In many points the apes go beyond man. The long arms and strong canine teeth are phenomena of adaptation which developed after the path toward human development was closed to the ape. There must have been a common road from which the various paths of development separated. The hand with long thumb is the original form; even the four footed animals have developed from quadrumanous types. It is also established by the newest discoveries that the variety of races is an ancient phenomenon. Probably a continent between Asia and Africa has sunk and in that way a separation into the African type (gorilla) and the Asiatic type (orangutang) arose. The prehistoric man discovered at Aurignac appears to represent a younger race than the Neandertal man and the man of Le Moustier. A complete skeleton, beautifully preserved with petrified bones, was unearthed at La Chapelle France. It shows a complete burial with the face directed toward the south, and in addition some remarkable tools; also a shell ornament was found about the neck. The skeleton was that of a slender human being, but with primitive characteristics like those of the Australian race. The *Faustkeile* indicates the oldest period of the glacial drift at any rate older than the discovery of Le Moustier and Aurignac. The lecturer regards the Neandertal man as of African type and the man of Aurignac as of Asiatic type.

Ehrlich's New Syphilis Remedy, "606" *

Good results with the new remedy have been reported from some hospitals during the last week. Of greater importance is an improvement in technic which Dr. Wechselmann, the director of the dermatologic department of the Virchow hospital in Berlin, has made and will soon publish. Of the two side effects which have so far been observed after intramuscular injection of the remedy, namely, rise of temperature to 39 C. (102.2 F.) and the pains, the latter are more disagreeable, as the fever lasted only a short time, while, after an intragluteal injection, severe neuralgic pains in the region of the sciatic were felt for several hours and required repeated injections of morphin. In some cases pains persisted in the sciatic region, of a light or medium severity, for several days. The technic of Wechselmann is intended to avoid this disagreeable complication. The remedy "606" is dissolved in commercial soda lye by rubbing in a mortar; on addition of glacial acetic acid, drop by drop, a fine yellow precipitate falls which is suspended in some distilled water and the reaction of the liquid is made exactly neutral to litmus paper. The suspension is then slowly injected below the shoulder blade, the skin having been previously disinfected and painted with tincture of iodin. Sometimes a slight pain from the injection occurs for a few minutes and occasionally there is a slight swelling on the second or third day. No complaints of moment have occurred in from 60 to 70 cases and there has been no rise of temperature. The action of the remedy remains undiminished. This technic has the advantage that in case symptoms of arsenical poisoning manifest themselves, the site of the injection may be easily cleaned out.

---

* This subject is discussed editorially in this issue and also in the Budapest letter, page 610, and in the Miscellany Department, page 617.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, July 25, 1910.

An Acoustic Museum and Its Scientific Use

The royal and imperial Vienna Academy of Sciences (Akademie der Wissenschaften) the most renowned Austrian scientific corporation, has possessed for a few years a unique collection of phonograph records, which contain, besides the voices of remarkable persons, numerous records of ethnographic and scientific value. Some of the latest additions come from the voyage of Dr. Pöch, who has taken great pains to obtain characteristic sayings and songs of the Bushmen. The nature of their guttural language can be examined by means of the records by magnifying the vibrations produced by any small part of the cylinder, and observing the succession of vibrations by means of a reflecting mirror. Thus it could be shown that, for instance, the vowels of the language of the Bushmen differ from those of the Papuans, and that the note of the frog, which very much resembles the "ah" of the human voice, is caused by a succession of definite short acoustic impulses, not like the human "ah." The examination of voices in different pathologic conditions of the throat and larynx has also been undertaken by means of the graphophone, and the results of 1,000 various investigations will be published shortly.

The Ultimate Fate of Hereditary Syphilitics Among the Better Classes

Dr. Hochsinger at a recent meeting of the Gesellschaft der Aerzte in Vienna, discussed the results of a series of investigations, extending over twenty-five years, into the ultimate fate of children whose parents had contracted syphilis before the children's birth. Only the better classes of the population were considered and of these only families in which the doctor had opportunity of constantly observing parents and children for a long period. The results are rather unexpected. Altogether, 139 families with 569 children were observed. The 139 women had 263 syphilitic infants born alive, 253 dead babes and 53 living non-syphilitic children. Of the 263 affected children born alive, 55 died before reaching the age of 1, so that 208 individuals were the subjects of prolonged observation. Only 25 per cent. of all of them remained alive and without any attacks, and only 14 per cent. of the children died within their first year of life. All other patients have shown during their life, symptoms of disease traceable directly to syphilis. Apart from manifestations on the skin and the mucous membranes, especially affections of the nervous system together with moral insanity, were most frequent. The well-known fact that hereditary syphilis plays a prominent part in the etiology of these conditions is borne out very well. On the other side, it was shown that if hereditary syphilitic persons remain healthy up to the age of puberty, the expectation of a healthy future life is justified. Recurrences of syphilis have a very deleterious influence on the somatic resistance of the children; 79 children out of the 263 died during the observation; of course the majority of the deaths occurred within the first year. The most affected organs were the lungs and the alimentary canal. According to the statistics of hospitals with their badly fed unhealthy applicants 70 per cent. of all syphilitic babies die in their first year. Dr. Hochsinger's observations deal with better families, where every possible care was available for the children. The most frequently attacked organs were in the new born, the skin, the nose, then the viscera. The first-born child is generally more severely attacked than the second, this more than the third and so on. Also the number of recidives declines with the increasing number of children. Out of 123 first-born children, 93 (or 73 per cent.) had recurrences; out of 55 second-born babies, only 24 (or 45 per cent.) had recurrences, and out of 21 third children only 8 (or 38 per cent.) had recurrences. Where maternal lues was manifest, the children most often had developments of the disease, showing that the maternal manifest affection seriously influences the fate of the children. The characteristic feature of the late hereditary syphilis was always the gumma; infantilism and general maldevelopment were frequent. Chronic headache, migraine, is a very frequent concomitant, and very often a characteristic feature of hereditary syphilis. The absence of Hutchinson's symptom, as well as the fairly favorable results during the observations seem to show that an energetic long-continued antisyphilitic treatment may do much good for the unhappy offspring of a tainted family.

BUDAPEST LETTER

Budapest, July 14, 1910.

Outbreak of Typhoid in Budapest

A serious outbreak of typhoid fever has occurred in Budapest, and although officially the nature of the disease has been kept secret, the actual facts became known very soon. Last week over 500 cases were reported, of which 200 are in public hospitals; the remainder have been left in family care. The epidemic was not due to the condition of the water, as has been proved satisfactorily. The majority of the cases were caused by contamination of the milk imported into the city from certain districts; some were traced to the consumption of contaminated fruit, butter and soft cheese. Articles of food are brought to the market in Budapest in a scandalous condition, the danger of which has been often pointed out. Recently out of 200 samples of food taken from as many retail sellers, not less than 60 were found to be unfit for consumption and therefore the lot had to be seized and destroyed. Typhoid has always been present in the city during summer, but the cases were few, far apart and could easily be controlled. At present the epidemic is undoubtedly local, imported from the suburbs, and could be speedily checked if only the market authorities could exert the necessary control over the importation and sale of milk and fruit. Lately, but too late, draconic measures have been instituted in regard to cleanliness.

Ehrlich's New Remedy for Syphilis *

Perhaps nowhere has Ehrlich's discovery caused greater agitation than in Hungary. The dailies devote whole pages to it, not sparing epithets or adjectives in praise. One of the dailies even sent two doctors to Frankfort, where Dr. Ehrlich is working, in order to study the new methods.

As a result of the publicity thus given to this new method, physicians are besieged by patients, imploring to be cured. But, alas! Dr. Ehrlich has not yet brought his remedy to that stage of perfection which allows of its administration without danger, so that he feels himself obliged to confine its use to hospitals, where the patient is under uninterrupted observation, to the present exclusion of private practitioners. The most important Hungarian hospitals have already sent their representatives (some to Frankfort to Dr. Ehrlich and some to Berlin to Dr. Wechselmann) to study the manner of conducting the treatment in the hospitals there.

As I was one of those who called on Dr. Ehrlich, I am able to relate personal experiences regarding this discovery. When I was admitted to Prof. Ehrlich's laboratory I was surprised to see three men in a little cabinet writing at Ehrlich's dictation. I questioned him as to the reason of this. "You see," said he, "that although I feel very much flattered by the attention and confidence displayed in me by my brother physicians, yet I cannot reply to all the demands they make on me. I myself am not a practitioner, but the director of the Königliches Institut für experimentelle Therapie (Royal Institute for Experimental Therapeutics). I am investigating in my laboratory and have placed the experimenting and proving of this remedy into the capable hands of Dr. Wechselmann at the Virchow Hospital in Berlin, where he is studying cases under treatment. However, I wish if possible to answer all letters and telegrams (and they come by the basketful), and that is what you now see me attempting to do. There are some letters here that have had to wait for three or four weeks.

---

*This subject is discussed editorially in this issue and also in the Berlin letter, page 609, and in the Miscellany Department, page 617.

"As to the method of discovery, it has not been like so many other new discoveries, a matter of chance, but I have been working at it for some time past, knowing as I do how many are suffering under the fear and apprehension of this terrible disease, and that if I could succeed in alleviating this I should feel satisfied and consider that I had accomplished a beneficial work. As my friend, Dr. Wechselmann, says, referring to the treatment, one injection arrests the disease to as great an extent as more than a year's treatment by any other method.

"The most important point about this remedy is that one injection utterly destroys all the spirochetes, but is harmless to the animal tissues. In the course of my investigations I have made hundreds of mixtures with which to accomplish this, but only after several years of experiments did I, in company with Dr. Hata, in November last, discover the present medicine 'dimethyldioxiarsenobensoldichlorhydrat' and the cure 'sterilisatio magna,' so called because of its great effect of killing all parasites at once. In March last, being so satisfied with the results of my trials on animals, I decided to apply the medicine to human beings, but having no hospital under my control, I asked my friend, Dr. Wechselmann, to undertake the conduct of the experiments, and he, I am sure, will be very pleased to show you the method and the results if you go to Berlin."

I went to Berlin to the great Virchow Hospital, where Professor Wechselmann has charge of the venereal section. Wechselmann's section was located by the innumerable eye-glassed gentlemen who were standing before the door of a large building. It was not difficult to find out that these doctors were waiting for Wechselmann. It was then 9:40 a. m. Exactly at 10 o'clock Professor Wechselmann came. He is a man about 50, who displays all the external features of a learned man. He was glad to see, he said to me, after my introduction, that the Hungarian doctors are so keen in appreciating the epoch making importance of Ehrlich's new remedy. "The lay press," he said, "is in great measure responsible for this extraordinary interest. You are the thirteenth Hungarian to come to see our work here." Then he showed us his wards, which are the model of a modern hospital. Large spacious halls of spotless cleanliness, glazed, tiled, cornerless walls, electric ventilation, good light; in short it is the acme of hygiene we see here. He led us into a separate compartment where about 12 patients were located, all treated with Ehrlich's remedy. He showed us one case, which was admitted 6 days previously, with a fresh syphilis, papules, swollen glands and mucous plaques in the throat. All these symptoms had disappeared after one injection of the Ehrlich remedy, which was administered four days before. And this is not an exceptional case, he said, because all patients who were treated with amido-arseno-benzol, were just as favorably influenced by this remedy. It is true that some of the patients complained of great pains, and in some exceptional cases even urticaria-like rashes made their appearance, and even for three or four hours after the injection fever may occur; however the patients do not mind such little inconveniences considering the great advantage they derive from the injection. "As yet," he said, "I have tried the remedy, almost without exception, in fresh cases, so that for the time being I am unable to say anything definite about old neglected cases. However, I heard from a friend of mine, who has charge of over 200 syphilis cases, that he has had good results with tertiary lues cases, too. At the Neppspringe Lunatic Asylum, for patients whose nervous break-down could be traced back to a syphilitic origin, Ehrlich's remedy was applied with the most surprising results." He finished this very interesting lecture and demonstrations with the assertion that he would not give Ehrlich's remedy into the hands of private practitioners until 3,000 cases were reported on, which is probably nearly at hand, because nearly 2,500 phials were already distributed, and Ehrlich does not give his remedy to anybody without an agreement in writing that the physician will send him a report of the results. "Mention me to your science-loving countrymen," he said, in finishing his interesting discourse.

Dissatisfaction with a University Appointment

Considerable dissatisfaction has been manifested in the medical and lay press, as well as by the public, toward the appointment of L. Nekam to the chair of dermatology in the University of Budapest on the recommendation of Count Fichy, minister of public instruction, whose appointment has been sanctioned by Emperor Francis Joseph. The committee of the medical faculty had proposed the names of Drs. Torok and Marschalko, to the general board whose duty it was to investigate and report on the applicants. This body entrusted this duty to a theologian, who ignored the proponents of the medical faculty and appointed Dr. Nekam, with the resulting dissatisfaction.

Creation of Five New Universities

At the present time there are only two universities in Hungary, those at Budapest and Kolozsvar. The former is so crowded with students that proper attention cannot be given them. The authorities have been endeavoring for many years to have different cities assist in establishing other universities, but the matter has never taken practical shape. It is the intention of the present legislative body to establish five universities at once in different parts of the country, two of which shall have medical faculties. These will be built in Szeged and Kassa, two flourishing towns in opposite corners of Hungary, lying outside the circles of the two existing universities. It is hoped that this will relieve the crowded condition of the University at Budapest, which has 1,800 medical students, with accommodations for only 1,200. The two new universities having medical departments are expected to be ready by September 1, 1912.

Yaws and Syphilis. Henry J. Nichols, Medical Corps U. S. Army (*Proc. N. Y. Path. Soc.*, February and March, 1910), states that in 1905 Castellani while examining smears from a case of yaws discovered a spirochete which when afterward stained with Giemsa stain seemed to be identical morphologically with the *Spirochæta pallida*, and this opinion was confirmed by Schaudinn. Castellani named this *Spirochæta pertenuis* or *pallidula*. Castellani inoculated three monkeys, and in one after sixteen days, at the site of inoculation, a yaw-like lesion developed which repeatedly showed *Spirochæta pertenuis*. Although Castellani and Schaudinn found no morphologic difference between the *pertenuis* and the *pallida*, Prowazek believes that there are certain differences between them. The *pertenuis* is slightly thicker and less rigid; the twists are not so regular; there is more of a tendency for the ends to curl up; the forms with longitudinal divisions are more numerous. After careful study and experimentation the evidence against the identity of the disease with syphilis seems to be as follows: 1. Geographical distribution: yaws is confined to certain tropical regions; it exists where there is no syphilis, and has also died out while syphilis remained. 2 Yaws and syphilis may occur in the same person, and there is no immunity from one disease to the other. 3. The lesions in yaws are always the same, not pleomorphic. 4 The lesions of yaws affect principally the epithelial, not the connective tissue. 5. Yaws is principally a disease of children but is neither hereditary nor congenital. 6. The lesions are extragenital and sexual transmission is practically unknown. 7 Constitutional symptoms are not the rule in yaws. 8. The treponemas may differ morphologically.

Marriages

Hugh O. Jones, M.D., Chicago, to Miss Nettie Perry, of Oshkosh, Wis., July 27.

George Gill, M.D., to Miss Adele Hieber Bassett, both of Elyria, Ohio, July 25.

John Bushrod Schwatka, M.D., to Miss Nina M. Duvall, both of Baltimore, July 30.

Daniel E. Ricardo, M.D., Chicago, to Miss Justine Theresa Friend, of Cincinnati, August 1.

Morris I. Baylin, M.D., Baltimore, to Miss Pauline Shulman, of New York City, July 17.

Frank Blair Lovell, M.D., Gibson City, Ill., to Miss Helen Lewis Brewster, of Wheaton, Ill., June 30.

Walter Andrew Bloedorn, M.D., U. S. Navy, to Miss May H. Howard, of Washington, D. C., July 25.

William Scott Wadsworth, M.D., Philadelphia, to Miss Frances Elizabeth Diel, of Syracuse, N. Y., August 4.

Deaths

Charles Jewett, M.D. College of Physicians and Surgeons, New York City, 1871; a member of the American Medical Association; American Academy of Medicine; American Gynecological Society; International Periodical Congress of Obstetricians and Gynecologists, and British Gynecological Society; president of the Medical Society of the State of New York; gynecologist and obstetrician to the Long Island College Hospital; consulting obstetrician to Kings County Hospital; consulting surgeon to St. Christopher's Hospital; consulting gynecologist to Bushwick, Swedish and German Hospitals and Bushwick and Eastern District Dispensaries, Brooklyn; professor of obstetrics and gynecology in Long Island College Hospital; died at his home in Brooklyn, August 5, of apoplexy, aged 71. Dr. Jewett was at the time of his death president of the Medical Society of the State of New York and of the Kings County Medical Society and had been one of the most prominent practitioners of Brooklyn for many years. Although 71 years of age he was in active practice up until a few days ago.

James Albert Hawke, M.D. University of Pennsylvania, Department of Medicine, 1863; a veteran of the Civil War; who entered the U. S. Navy June 24, 1867, as assistant surgeon; was promoted to the grade of passed assistant surgeon on February 26, 1873; was promoted to surgeon, May 1, 1879; to medical inspector in 1895, and to medical director Sept. 24, 1899, after fourteen years' sea service and eighteen years and two months' land service, and was placed on the retired list with rank of rear admiral, on reaching the age limit of 62 years, on January 31, 1903; but was retained on active duty until April 1, 1903; senior medical officer of the navy yard, New York, during the Spanish-American War; died at the United States Naval Medical School Hospital, Washington, D. C., July 25, aged 69.

Ira Brown, M.D. University of Michigan, Department of Medicine and Surgery, 1858; Vanderbilt University, Medical Department, Nashville, 1876; a member of the Illinois State Medical Society; a veteran of the Civil War; a member of the board of pension examining surgeons at Watseka; died at his home in Milford, Ill., July 21, from heart disease, aged 78.

Luther A. Grizzard, M.D. Medical Department of the University of Nashville, Tenn., 1872; Medical Department of the Tulane University of Louisiana, New Orleans, 1876; a member of the American Medical Association; for a number of years surgeon for the Texas and Pacific Railway Company at Mabank, Texas, died in a sanitarium in Fort Worth, July 27, aged 60.

James Young Crawford, M.D. University of Tennessee Medical Department, Nashville, 1879; a member of the Tennessee State Medical Association; a Confederate veteran; president of the faculty and professor of clinical dentistry in the University of Tennessee Dental Department; died at his home in Nashville April 5, from angina pectoris, aged 62.

William Hudson Hopwood, Jr., M.D. Jefferson Medical College, Philadelphia, 1906; a member of the American Medical Association; formerly physician for the Pittsburg Coal Company at [illegible], Pa.; died at the home of his mother in [illegible]town, W. Va., July 25, from tuberculosis, aged 28.

Julius F. Menestrina, M.D. Washington University, Medical Department, St. Louis, 1890; a member of the American Medical Association; a veteran of the Spanish-American War; formerly of Iron Mountain, Mich.; died at his home in St. Louis, Mo., July 28, from paralysis, aged 43.

Perry W. Welker, M.D. Eclectic Medical Institute, Cincinnati, 1875; health physician of Alliance, Ohio, for more than seventeen years; died suddenly in his stateroom on the steamer City of Mackinac while on his way to Petoskey, Mich., July 27, from heart disease, aged 58.

David Flavel Woods, M.D. University of Pennsylvania, Department of Medicine, 1864; formerly a member of the American Medical Association; a member of the staff of the Presbyterian Hospital, Philadelphia; died at his home in that city, July 28, from angina pectoris, aged 72.

George W. Chisholm, M.D. Detroit (Mich.) College of Medicine, 1904; a member of the Michigan State Medical Society; a prominent practitioner of Pontiac; died at Harper Hospital, Detroit, where he had gone for treatment, July 29, from leukemia, aged 42.

George Murray Stuart, M.D. College of Physicians and Surgeons, Baltimore, 1905; a member of the Medical Society of the State of Pennsylvania; is said to have been shot and killed in his apartments at Pittsburg, Pa., August 1, aged 27.

Charles N. Denison, M.D. Cincinnati College of Medicine and Surgery, 1861; surgeon of the Eighth Illinois Volunteer Infantry during the Civil War; died at his home in Argenta, Ill., July 25, from papilloma of the bladder, aged 74.

William Varner Robertson, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; was found dead in his room at Athens, Ga., July 14, from the effects of an overdose of some narcotic taken accidentally, aged 49.

Delos Walker, M.D. University of Michigan, Department of Medicine and Surgery, 1864; a member of the American Medical Association; died at his home in Oklahoma City, Okla., July 30, from heart disease, aged 78.

Charles R. Strong, M.D. Detroit (Mich.) College of Medicine, 1903; a member of the Michigan State Medical Society; of Detroit; died at the Red Cross Hospital in that city, August 1, following an operation for appendicitis.

Benjamin Dabney, M.D. New Orleans School of Medicine, 1869; a Confederate veteran; formerly of Bonham, Texas; a resident of Dallas for the last two years; died at Fort Worth, July 30, aged 63.

Alexander L. Murphy, M.D. Jenner Medical College, Chicago, 1909; of Chicago; was killed by a Pere Marquette train at Benton Harbor, Mich., July 23, while on his way to Bangor, Mich., aged 36.

Albert E. Shimmel, M.D. University of Michigan, Department of Medicine and Surgery, 1880; formerly of Berlin, Mich.; died at his home in Grand Rapids, Mich., July 30, aged 54.

Virgil W. Blanchard, M.D. University of Vermont, College of Medicine, Burlington, 1859; of New York City; died at his summer home in Middlebury, Vt., July 30, aged 79.

Irvin Baird Brittingham, M.D. University of Louisville (Ky.) Medical Department, 1846; died at the home of his son in Madison, Wis., July 23, from senile debility, aged 85.

Abraham Nestor Fretz, M.D. University of Pennsylvania, Department of Medicine, 1863; a veteran of the Civil War; died at his home in Fleetwood, Pa., July 28, aged 70.

Frederic W. Lilienthal, M.D. University of Berlin, Germany, 1858; of New York City; died at his country estate in the Catskills, July 28, from heart disease, aged 77.

Richard Henry Stone, M.D. College of Physicians and Surgeons, New York City, 1866; died suddenly at Brooklyn, N. Y., July 27, from cerebral hemorrhage, aged 74.

Horace Stanwood Everett, M.D. Harvard Medical School, Boston, 1870; a veteran of the Civil War; died suddenly at his home in Boston, July 26, aged 60.

Frederick Kidder, M.D. College of Physicians and Surgeons, New York City, 1868; died at his home in Alton, Mo., July 26, from cancer of the liver, aged 66.

Benjamin Franklin Emrick, M.D. College of Physicians and Surgeons, Baltimore, 1881; died at his home in Carlisle, Pa., July 26, from heart disease, aged 50.

George Baillie Simpson, M.D. Bellevue Hospital Medical College, New York City, 1887; died at Sheridan, Wyo., July 4, from heart disease, aged 50.

Leander S. Porter, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1880; of Port Clinton, Ohio; died at Dayton, July 26, aged 80.

J. Warren Royer, M.D. University of Pennsylvania, Department of Medicine, 1845; died at his home in Trappe, Pa., July 25, aged 90.

James I. Wright, M.D. Jefferson Medical College, Philadelphia, 1852; died at his home in Philadelphia, July 27, aged 78.

Ellis Holmes Cornish, M.D. Harvard Medical School, Boston, 1867; died at his home in Carver, Mass., July 25, aged 69.

Correspondence

Neurologic Hospitals and Neurologic and Psychiatric Wards in General Hospitals

To the Editor: The timely and instructive article, "The Dependence of Neurology on Internal Medicine: Plea for the Establishment of Neurologic Hospitals and of Neurologic Wards in General Hospitals," by Drs. Joseph Collins and Pearce Bailey of New York (The Journal, July 30, 1910, p. 393), seems worthy of more extended comment than would be feasible in the brief period allotted to discussion at the Section meeting. The contention of the writers that this important branch of medicine has received scant recognition in the past from the philanthropic founders of medical laboratories and institutions may be true, in a general sense. The statement, however, that "in all America there is scarcely a general hospital with neurologic wards worthy of the name, with the exception of a few hospitals and inaccessible city almshouses in which cripples and dotards are crowded together under the care of untrained house staffs without laboratory facilities," seems a little broad. I do not presume to question its approximate accuracy as regards the country at large. From a local (Cincinnati) standpoint, however, it seems only just that we should appreciate more fully the actual advantages that we already possess for caring for neurologic and psychiatric ills as well as for teaching the subjects to the members of our medical classes in the University of Cincinnati. It is worthy of note that, owing to the advanced stand taken by the governing bodies of our Cincinnati Municipal Hospital, for some sixteen years past, a distinct and separate department of neurologic medicine has been in operation, both in the wards and in the clinical amphitheater, where the teaching is open to all medical students in the city at a merely nominal fee. This department comprises some forty beds on an average, bed-side teaching to small classes of senior students being also a regular feature. Separate wards are allotted to neurologic patients, the female occupying a portion of a general medical ward. Incidentally, detached rooms have been available for a limited number requiring them; also a closed ward for more disturbed cases. These wards are served by two regular staff members, whose official rank and authority are on a par with those of any other of the staff. These chiefs of staff in the neurologic service alternate with each other in terms of four months each, and the courtesy of allowing either member to retain charge of any important case or cases, after his regular term expires, has always obtained. There have recently been added to the staff two members, with the rank of junior neurologists, whose duty it is to serve in place of or in addition to, the chief of service whenever requested. These junior staff officers also take an important part in the bedside teaching given in the wards regularly to the senior students. A separate intern is allotted to the neurologic service. More important still, this clinical organization is complemented in a most efficient manner by a special laboratory of neuropathology presided over by two salaried members of the university faculty. It may be seen from the above that the strictures of the article referred to, on the prevailing shortcomings for the teaching of neurologic medicine in America, do not apply to the situation in Cincinnati.

A still more important forward step in clinical organization and teaching facilities has just been taken with reference to the department of neurology and psychiatry. Owing to the wisdom and foresight of the efficient and self sacrificing members of the commission for the construction of our new municipal hospital (750 beds) now in course of erection, special provision is made for a separate, isolated and modern neurologic building, to contain also departments for acute psychopathic cases, male and female. Its capacity is to be fifty patients, with provision for expansion as required. This will enable us to avoid the undesirable feature of having neurologic and psychopathic cases, distributed over various parts of a general hospital.

F. W. Langdon, Cincinnati.

Pharmaceutical Manufacturers and the Great American Fraud

To the Editor: In commenting in your issue of July 30, on Dr. Patek's letter concerning "Pharmaceutical Manufacturers and the Great American Fraud" you say that "the whole history of human progress shows that practically everything we now pronounce necessary to our comfort and material happiness has been brought into being for selfish reasons—that of bringing the inventor or discoverer riches or honor." The sentence might, I think, well be rounded off by adding "or the pleasure of following a congenial vocation." (Recall Bacon's "Happy men whose natures sort with their vocations"). The suggested addition would perhaps justify the toning down of the word "selfish" to "self regarding."

A very brilliant author of our day somewhere says that all labor done for hire, which would not be done had the laborer an otherwise assured means of livelihood, is prostituted labor; and his epigrammatic phrase seems to reflect the views of authors like John Ruskin and William Morris. True or not, I cannot help thinking that true leaders in pharmacy as in other scientific lines must, after all, have some real love for their vocations, and that this has been a more potent factor in invention and discovery than the desire of "riches or honor."

This love for a vocation is probably intensified by the desire to render service (an altruistic, not selfish or even self-regarding motive); and the essence of our grievance against these great pharmaceutical houses lies in the tendency of their narrow commercial self seeking to degrade the skilled employee, whose pride and happiness should be in fruitful work and research, to the level of the hireling.

W. R. Tymms, M.D., Orting, Wash.

Extreme Sensitization From Prophylactic Dose of Diphtheria Antitoxin

To the Editor: Four years ago I administered to a young man 750 units of antidiphtheritic serum as an immunizing dose and within a few moments he was in a serious condition, suffering from dyspnea, general urticaria, rapid pulse, vomiting, etc. He recovered within twelve hours and since that time had been unable to be about horses even for a short time. The emanations from the hairy coat give him severe attacks similar in every way to hay fever, which may become bronchitis secondarily. This patient had no previous personal or family history of asthma or hay fever.

How long is this susceptibility liable to continue, and if he should contract diphtheria, is there any serum that may be used?

I. Simpson, Rochester, N. Y.

More New Terms

To the Editor: I want to thank Dr. Henry Freeman Walker for his communication in The Journal, July 2, 1910, page [illegible], suggesting the word "vipoid" as a generic term for the biologic specifics (toxins, bacterial cultures, bacterial products, lymph, serum, etc.) used in [illegible]. I have adopted the word; and my own suggestion of "bactetin," "microbin" and [illegible] can now become specific names under the name "vipoid."

I would also call attention to two other terms I am about to introduce, for which there seems to be much need:

pathogen, meaning a material morbific agent of any kind, and *antipathogen*, meaning a pharmakon of any kind which acts against pathogens in general.

S. Solis Cohen, Philadelphia.

Correction in Abstract on Bone Lesions

To the Editor: In the abstract of my article on bone lesions in The Journal, July 30, page 436, the following error was made: "Syphilitic epiphyseal enlargement is bilateral." It should read: "Syphilitic epiphyseal enlargement is unilateral; rachitic epiphyseal enlargement bilateral."

Alexander E. Horwitz, St. Louis.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FORMULA FOR OLEUM CINEREUM

To the Editor: Kindly furnish me the formula for preparing oleum cinereum. A. E. Conter, Apalachicola, Fla.

Answer.—A number of formulas for this preparation have been given, differing chiefly in the excipient used. The following is given by the British Pharmaceutical Codex:

Mercury	40.00
Wool fat	10.00
Liquid paraffin, sufficient to produce (by weight)	100.00

Melt the wool fat, pour into a warm mortar, and, when it is nearly cold but still liquid, add the mercury and triturate until a homogeneous mixture is obtained; then add the liquid paraffin.

DETERMINATION OF FAT IN MILK

To the Editor.—Please state where I can find the method for determining the fat in milk by means of amyl alcohol and hydrochloric acid. F. E. Clough, Lead, S. Dak.

Answer.—The method is described in Leffmann and Beam's "Food Analysis," pages 205-207 (P. Blakiston's Son & Co., Philadelphia).

The Public Service

Medical Department, U. S. Army

Changes for the week ended Aug. 6, 1910:

Clayton, Jere B., major, will proceed from Vancouver Barracks, Wash., to Camp of Instruction, American Lake, Wash., for duty.

Reynolds, F. P., major, granted 10 days' leave of absence.

Stallman, George L., dental surgeon, ordered to proceed to the Leon Springs Target and Maneuver Reservation, Tex., for duty during the encampment.

Griswold, W. Church, M. R. C., relieved from duty at Fort Oglethorpe, Ga., and ordered to Philippine Islands, for duty on transport sailing from San Francisco about Nov. 5, 1910.

Brown, Wilmont L., M. R. C., sick leave of absence further extended 3 months.

Williams, Harry B., M. R. C., granted 15 days' leave of absence about Sept. 15, 1910.

[illegible], M. R. C., ordered to proceed from Fort Crook, Neb., to Fort Mackenzie, Wyo., for temporary duty.

Banister, William B., lieut.-col., detailed for duty at the Camp of Instruction, Maneuver Reservation, Sparta, Wis.

Ebert, Rudolph G., lieut.-col., left Headquarters, Dept. of Columbia; Vancouver Barracks, for duty at Camp of Instruction, American Lake, Wash.

Roberts, William M., [illegible], left Camp of Instruction, Gettysburg, Pa., en route to Saratoga, N. Y., and Pimlico, Md., on detached duty.

Clark, John A., leave of absence granted in S. O. No. 143, June 2[illegible], 1910, War Department, is extended 15 days.

[illegible], Francis A., major, ordered to proceed to New York City for consultation with the medical supply officer in that city with reference to the purchase of medical supplies, etc.

Yemans, Herbert W., M. R. C., ordered to repair to this city at the proper time and report in person Aug. 21, 1910, to the Chief of Staff for temporary duty.

[illegible], capt., relieved from duty at Schofield Barracks, H. T., and will proceed to San Francisco, and on arrival report by telegraph to The Adjutant General of the Army for further orders.

Murray, Alexander, capt., on arrival at Seattle, Wash., in compliance with orders heretofore issued, will proceed to Fort Casey, Wash.

Smith, Herbert M., capt., relieved from duty at Fort Casey, Wash., and will proceed to Philadelphia, Pa., for duty as attending surgeon in that city.

Shephard, John L., leave of absence extended 15 days.

Davis, William T., capt., in addition to his present duties will report in person to Colonel Louis A. LaGarde, Medical Corps, President of the Faculty, Army Medical School, for duty as assistant instructor in ophthalmology and optometry at that school.

Wickline, William A., capt., in addition to his duties with Co. C, Hospital Corps, will report in person not later than Oct. 1, 1910, to Colonel Louis A. LaGarde, President of the Faculty, Army Medical School, for duty as instructor in Hospital Corps and first aid, at that school, relieving Major Charles R. Reynolds, Medical Corps.

Vaughan, Milton, contract surgeon, reported for duty at Fort Logan H. Roots, Ark.

Long, Charles J., dental surgeon, left Fort Adams, R. I., en route to Pine Camp, N. Y.

Pomeroy, William H., contract surgeon, granted 21 days' leave of absence.

Whinnery, J. C., dental surgeon, died at Zamboanga, Mindanao, P. I., July 29, 1910.

Schreiner, E. R., major, left Fort Walla Walla, Wash., for duty at Camp of Instruction, American Lake, Wash.

Truby, Willard F., major, left Fort Worden, Wash., en route to Camp of Instruction, American Lake, Wash.

Van Poole, G. McD., major, and Mount, James R., lieut., report for duty at Camp Emory Upton, Sparta, Wis.

Clayton, George R., M. R. C., reports at Camp Bruce E. McCoy, Maneuver Reservation, Sparta, Wis.

Talbott, E. M., capt., and Haverkampf, C. W., lieut., report at Camp Bruce E. McCoy, Maneuver Reservation, Sparta, Wis.

Larney, Charles N., major, granted 30 days' leave of absence about Sept. 1, 1910.

Whitmore, W. C., contract surgeon, reported for duty at Fort McKinley, Me.

Burkett, John A., lieut., left Fort Riley, Kan., with the 6th Field Artillery, on practice march.

Fox, James S., lieut., reported for duty at camp, Leon Springs, Tex.

Medical Corps, U. S. Navy

Changes for the week ended July 30, 1910:

Rhoades, G. C., asst-surgeon, ordered to duty at the Naval Hospital, Norfolk, Va.

Bloedorn, W. A., asst-surgeon, ordered to the Navy Yard, Mare Island, Cal.

Downey, J. O., asst-surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to duty at the Naval Hospital, Naval Home, Philadelphia.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended Aug. 3, 1910:

Banks, C. E., surgeon, granted 7 days' leave of absence from Aug. 1, 1910.

Wertenbaker, W. P., surgeon, directed to proceed to Richmond, Va., on special temporary duty.

Fox, Carroll, P. A. surgeon (on leave), directed to report at the Bureau on special temporary duty.

Korn, W. A., P. A. surgeon, directed to proceed to Point Pleasant, N. J., for the purpose of making examination of keepers and surfmen of the Life-Saving Service.

Sweet, Ernest A., P. A. surgeon, granted 4 days' leave of absence from July 21, 1910, under paragraph 191, Service Regulations.

Spratt, R. D., P. A. surgeon, granted 5 days' leave of absence from July 23, 1910, on account of sickness.

Frost, W. H., P. A. surgeon, directed to proceed to Des Moines, Iowa, on special temporary duty.

Mullan, E. H., P. A. surgeon, granted 2 days' leave of absence from July 30, 1910, under paragraph 191, Service Regulations.

Preble, Paul, asst surgeon, granted 1 month's leave of absence from Aug. 8, 1910.

Kearny, Richard, asst surgeon, directed to proceed to San Francisco, and report to the medical officer in command for duty and assignment to quarters. Directed to report to the medical officer in command at Chicago, for temporary duty en route to station.

Draper, Warren F., asst. surgeon, directed to proceed to Angel Island, Cal., and report to the medical officer in command for duty and assignment to quarters.

Gillespie, Julian M., asst surgeon, directed to proceed to Honolulu, Hawaii, and report to the Chief Quarantine Officer for duty. In addition to present duties, directed to report to commanding officer, Revenue Cutter *Thetis* from time to time for temporary duty.

Stiles, C. W., professor, detailed to represent the Service at the meeting of the International Zoologic Congress at Gratz, Austria, Aug. 15-20, 1910.

Blanchard, J. F., acting asst.-surgeon, granted 3 days' leave of absence from July 11, 1910.

Greaves, F. H., acting asst surgeon, granted 3 days' leave of absence from July 28, 1910, under paragraph 210, Service Regulations.

[illegible], J. M., acting asst surgeon, granted 7 days' leave of absence from July 26, 1910, under paragraph 210, Service Regulations. Granted [illegible] days' leave of absence from July 24, 1910.

Duffy, Francis, acting asst surgeon, granted 6 days' leave of absence from Aug. 3, 1910.

Hackin, I. McD., acting asst surgeon, granted 14 days' leave of absence from Aug. 1, 1910.

Hamilton, H. J., acting asst surgeon, leave of absence for 4 days from July 19, 1910, amended to read 4 days from July 26, 1910.

Onuf, B., acting asst surgeon, granted 7 days' leave of absence from July 22, 1910, under paragraph 210, Service Regulations.

Scott, J. F., acting asst surgeon, granted 24 days' leave of absence from June 5, 1910.

Stevenson, J. W., acting asst surgeon, granted 30 days' leave of absence from Aug. 3, 1910.

State Boards of Registration

Arkansas Eclectic May Report

Dr. G. A. Hinton, secretary of the Arkansas Eclectic Medical Board, reports the written examination held at Little Rock, May 11-12, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The 5 candidates all passed.

PASSED

College	Year Grad.	Per Cent.
Eclectic Medical University Kansas City	(1910)	76.8, 78.7, 81.7, 85.3, 88.7

Michigan May Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Detroit, May 19-21, 1910. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75, and not less than 50 per cent. in any subject. The total number of candidates examined was 35, of whom 33 passed and 2 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Detroit College of Medicine	(1909)	79.6; (1910) 75.2, 77.1, 80.6, 80.7, 80.9, 81.5, 81.8, 82, 82.2, 82.9, 83.8, 84.1, 84.5, 85.4, 85.7, 86.1, 86.4, 86.8, 87, 87, 87.4, 87.7, 88.5, 89.1, 89.9, 91, 90.2, 90.5
Detroit Homeopathic College	(1910)	76.3, 82.5
University of Michigan, Homeopathic College	(1910)	82.6

FAILED

College	Year Grad.	Per Cent.
Detroit Homeopathic College	(1910)	66.9
Detroit College of Medicine	(1910)	68

Nebraska May Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, May 11-12, 1910. The number of subjects examined in was 13; total number of questions asked, 130; percentage required to pass, 75. The total number of candidates examined was 6, all of whom passed. Twelve candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Ensworth Medical College	(1910)	75, 78.8, 81.8, 85.5, 87.3, 88.8

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern Univ. Med. School..(1898) Wis.;	(1909)	Illinois
Rush Medical College......(1881) Minnesota;	(1908)	Wisconsin
College of Phys. and Surg., Chicago....(1903)	(1904)	Illinois
University of Louisville	(1907)	W. Virginia
Central Medical College, St. Joseph	(1898)	Missouri
Ensworth Medical College.....(1908) Kansas;	(1890)	Missouri
Creighton Medical College	(1907)	Iowa
McGill University, Canada	(1908)	Illinois

Delaware June Report

Dr. H. W. Briggs, secretary of the Medical Council of Delaware, reports the written examinations held by the Delaware State Medical Society and the Homeopathic Medical Society respectively at Dover and Wilmington, June 21-23, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75.

At the examination held by the Delaware State Medical Society, the 6 candidates all passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Jefferson Medical College.........(1909) 86.7;	(1910)	86.8, 91.5
University of Pennsylvania.........(1901) 85.1;	(1910)	90.3
University of Virginia	(1910)	91

At the examination held by the Homeopathic Medical Society, the 5 candidates all passed.

PASSED

College	Year Grad.	Per Cent.
Atlantic Medical College	(1908)	81.5; (1909) 79, 82.6; (1910) 84.2, 87.2

Minnesota June Report

Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 14-17, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 42, of whom 27 passed and 15 failed. Thirteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
College of Physicians and Surgeons, Chicago	(1910)	80.1
Northwestern University Medical School	(1910)	79.2
University of Minnesota, College of Medicine	(1910)	77.6, 78.5, 78.8, 79, 80.3, 80.5, 80.8, 81.4, 82.3, 82.4, 82.1, 82.5, 83.8, 84.9, 85.7, 86.1, 86.5, 86.6, 87.3, 88.5, 88.7, 90.1
Hamline University	(1910)	78.4
University of Pennsylvania	(1908)	75.2
Jefferson Medical College	(1910)	88.7

FAILED

College	Year Grad.	Per Cent.
Northwestern University Medical School	(1910)	63.1, 67.9
Chicago College of Medicine and Surgery	(1909)	46.5
Louisville and Hospital Medical College	(1908)	52.5
University of Minnesota....(1909) 72.8;	(1910)	75.8,* 76.5,* 76.8*
Hamline University	(1909)	69.1
Barnes Medical College	(1905)	52.4
Jefferson Medical College	(1909)	65.5, 73.2
Hahnemann Med. Coll. and Hosp., Philadelphia	(1910)	77.5*
Marquette University, Milwaukee	(1910)	72.3, 75.8

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Rush Medical College	(1900)	Illinois
Northwestern University Medical College (1908)	(1909)	Illinois
Hahnemann Med. Coll. and Hospital, Chicago	(1906)	Illinois
Bennett College of Eclectic Med. and Surg.	(1897)	Iowa
Medical College of Indiana	(1902)	Illinois
Drake University	(1909)	Iowa
St. Louis University	[illegible]	Illinois
Wisconsin College of Physicians and Surgeons	(1907)	Wisconsin
Marquette University, Milwaukee	(1908)	Wisconsin
University of Toronto, Ontario	(1908)	Delaware
Trinity Medical College, Canada	(1905)	Maine
Royal University of Naples, Italy	(1892)	Illinois

* Fell below 75 per cent. in one or more major branches.

New Hampshire July Report

Mr. H. C. Morrison, regent of the New Hampshire Board of Medical Examiners, reports the written examination held at Concord, July 6-7, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 30, of whom 24 passed and 6 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Louisville	(1910)	75
Medical School of Maine	(1906)	85
Baltimore Medical College	(1910)	81
Tufts Coll. Med. School (1907) 76; (1909) 75, 81;	(1910)	86
Harvard Med. School (1888) 79; (1903) 83; (1908) 86;	(1910)	82
Dartmouth Med. School (1908) 80, (1909) 78, 78	(1910)	80, 83, 85
Cornell University	(1910)	86
University of Vermont, (1906) 75...	(1909)	77
Laval University, Canada, (1906) 75	(1909)	75, 75
McGill University, Canada	(1909)	84

FAILED

College	Year Grad.	Per Cent
Baltimore Med. College	(1909)	63
College of Physicians and Surgeons, Boston	(1908)	68
Tufts College Medical School	(1908)	74
Dartmouth Medical School	(1897)	62
Laval University, Canada (1908) 70.	(1909)	69

Utah July Report

Dr. G. F. Harding, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 1-5, 1910. The number of subjects examined in was 23; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 17, of whom 14 passed and 3 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Rush Medical College	(1910)	80.9
Chicago College of Medicine and Surgery	(1910)	81.7
Northwestern University Medical School	(1910)	78.8, 81.1, [illegible]
College of Physicians and Surgeons, Chicago	(1908)	79.5
University of Louisville	(1907)	76.9
College of Phys. and Surgs., Baltimore	(1910)	79.1
Univ. of Md., Dept. of Med. and Surg.	(1909)	80.6
Long Island College Hospital	(1910)	85
Cleveland Homeopathic Medical College	(1903)	78.8
Jefferson Medical College (1908) 82.2; (1910) 85.1		
Medico-Chirurgical College, Philadelphia	(1910)	81.8

FAILED

College	Year Grad.	Per Cent.
St. Louis College of Physicians and Surgeons	(1910)	69.9
Medical College of Ohio	(1902)	54.2
Medico-Chirurgical College, Philadelphia	(1910)	73.7

Book Notices

Nervous States, Their Nature and Causes. By Paul Dubois, M.D., Professor of Neuropathology at the University of Berne. Authorized Translation by Edward G. Richards. Cloth. Price, 75 cents. Pp. 101. New York: Funk & Wagnalls Co., 1910.

This is Dubois's fourth work on the same general subject, namely the class of diseases that have been usually considered as on the border land between the organic and the functional nervous disorders, and their psychotherapy. The term "neurasthenia," he holds, has grown in general usage to include a far larger class of nervous symptoms than is altogether proper and is misleading to the extent that it implies that the nerves are at fault. It is not a distinct morbid entity by itself, at least in its usual application, but should be included with psychasthenia, hysteria, hypochondria and simple melancholia in the great class of central neuroses or psychopathic conditions; and these form the subject of this little volume. The author does not fall in with the more modern classification of morbid mental states completely, and especially protests against the materialistic conceptions which would associate these symptoms necessarily with other bodily conditions such as impaired nutrition and intoxications, etc. The psychasthenic individual is an hereditarily weakened one who as a rule belongs to a psychopathic family. There is a degenerative state at base, though not of a kind usually seen with gross physical stigmata. When one recognizes this fact of a primary mental weakness one sees the advantages to be obtained by mental training and therapeutics. The neurasthenic patients are those in whom the symptoms of fatigue, exhaustion and incapacity predominate. In the psychasthenics, in the narrower sense, the obsessions, tics and manias are characteristics, while in the hysterical states there is exaggerated autosuggestibility and a weakened mental synthesis. The hypochondriac and the simple melancholiac differ in their preoccupations. The one is concerned about his state of health and the other regards exterior circumstances with sadness or his person and conduct with self-accusation. In all of these, there is a fundamental inferiority which is the primary trouble, but this not of the first importance as regards treatment or prognosis. The form the psychoneurosis takes depends on the individual mental peculiarities. The therapeutics of these conditions are not comprised in physical exercises, rest and hypernutrition, except so far as these are demanded by the physical condition, but are more largely in the cultivation of moral ideas and self control. The patient should be taught the harmfulness of indulging in worry and fear, or of cultivating egoism. The task is the same, in short, as the education of normal people and is possible even in the uneducated so far as the combating of these nervous states is concerned.

Light Therapeutics. A Practical Manual of Phototherapy for the Student and the Practitioner. With Special Reference to the Incandescent Electric Light Bath. By J. H. Kellogg, M.D., Author of Rational Hydrotherapy, the Art of Massage, etc. Cloth. Price, $2.50. Pp. 217, with 67 Illustrations. Battle Creek, Mich.: The Good Health Publishing Co., 1910.

The title of this book is misleading, because the work is not on phototherapy at all but on thermotherapy as administered by the electric-light bath or reflected electric light. It practically does not consider phototherapy, in the established sense as applied to the method of use of actinic light and as the method was worked out by Finsen and his followers. This misleading title is merely an oversight, however, for the author says in the first sentences of his preface: "The work does not profess to be an exhaustive treatise on the subject of light therapy. It is intended rather to serve as a practical manual for the efficient use of the electric light bath in its various forms. . . ." He considers at length the physiologic and therapeutic effects of radiant heat from intensely luminous sources of high temperature and this part of the work is thorough and interesting. He makes out a good case for the electric-light bath as a therapeutic measure. He also gives rational explanations for the therapeutic value of the arc light as used by him for the application to circumscribed areas of radiant heat. The combined use of these measures with hydrotherapy also comes in for full consideration. All that part of the book, which constitutes more than half of it, dealing with the principles and technic of the method is suggestive and useful. The part directed to the clinical application of the methods in various diseases is less logically worked out and less convincing. Many of the suggestions are a shock to one's pathologic conceptions and lead one to feel that there is danger of the method degenerating into a sanitarium routine. But on the whole the book is a good statement of its subject from the standpoint of an advocate.

The Surgery and Pathology of the Thyroid and Parathyroid Glands. By Albert J. Ochsner, M.D., Professor of Surgery in the Medical Department of the University of Illinois, and Ralph L. Thompson, M.D., Professor of Pathology in the St. Louis University School of Medicine, St. Louis. Cloth. Price, $6. Pp. 391, with 97 Illustrations. St. Louis: C. V. Mosby Company, 1910.

Surgeons, pathologists and internists are alike interested in every addition to our knowledge of goiter and its complications. With the exception of Dock's chapter in Osler's book no treatise has heretofore appeared giving adequate descriptions of the parathyroid glandules. Numerous articles in various languages contained all that was really important in the newer surgery and pathology of goiter until this admirable treatise made its appearance. The latest research in the physiology and pathology of those somewhat mysterious bodies, the parathyroid glandules, is carefully collated in this work and together with the pathology of the thyroid gland this is the work of the junior author (Thompson). The senior author (Ochsner) has contributed the chapters on technic and the whole thyroid gland section except the chapters on pathology. The whole subject of the operative treatment of goiter may be said to belong to the last quarter of the nineteenth century and the first decade of the twentieth. The book also represents much original work, mainly that of Professor Wilson of St. Louis. Post-operative tetany, cachexia thyreopriva, cretinism and hyperthyroidism are each elaborately covered in the latter half of the work. Thirty full page plates minutely illustrate the successive stages of thyroidectomy, and if surgical technic could be learned from half tone pictures the novice could learn to operate by the use of this work.

Living Anatomy and Pathology. The Diagnosis of Diseases in Early Life by the Roentgen Method. By Thomas M. Rotch, M.D., Professor of Pediatrics, Harvard University. Cloth. Price, $6. Pp. 227, with 303 Illustrations. Philadelphia: J. B. Lippincott Co.

The anatomy of the living child, and the diagnosis of disease in early life as it may be studied by the Roentgen ray, are considered by the author in a systematic treatise containing more than 300 illustrations, and combining in the highest degree the art and science of Roentgenology. The distinction between anatomic and chronologic age—a distinction for which we are indebted to the author—is convincingly presented.

The assistance that may be afforded by the rays, not alone in detecting the presence of foreign bodies or anomalies of the osseous system, but in revealing pathologic changes in the soft tissues, more especially of the thoracic or abdominal organs is graphically portrayed by many illustrations. To select one example, the differentiation between dilatation of the heart and pericarditis with effusion can be made from the Roentgenograph by the consideration of the cardiohepatic angle. The book deserves high commendation and should be possessed by every clinician.

Elements of Medical Electricity and Radiography. By [illegible] R. Morton, M.D., Vice-President, Electro-Therapeutical Section, Royal Society of Medicine. Second Edition. Cloth. Price, $1.75. Pp. [illegible], with 140 Illustrations. Chicago: Chicago Medical Book Co., 1910.

This is an excellent manual. The first 210 pages are given to medical electricity; the last 240 to radiography; radiotherapy is not a part of the volume. The whole work is well done. The apparatus and the physics of both subjects are adequately considered; and the application of the agents to medicine are plainly given, with reasonable conservatism. The book is thoroughly worthy of recommendation.

Emergencies of General Practice. By Percy Sargent, M.D., Surgeon to Out-Patients, St. Thomas' Hospital, and Alfred E. Russell, M.D., Physician to Out-Patients, St. Thomas' Hospital. Cloth. Price, [illegible]. Pp. 364, with 94 Illustrations. New York: Oxford University Press, 1910.

This is a concise and practical manual, clearly written and well arranged, freely illustrated and of great practical value. The authors confine themselves very properly and rather uniformly to the subject matter at hand and do not roam far afield into the domains outside of emergencies.

Miscellany

THE EHRLICH REMEDY FOR SYPHILIS *

At a meeting of the Berlin Medical Society, June 22, 1910, W. Wechselmann reported his experiences with Ehrlich and Hata's new remedy for syphilis and discussed the following questions: 1. Is it a specific in syphilis and is it superior to previously known remedies? 2. Does it cure syphilis? 3. Are the dangers of the remedy proportional to the importance of its action.

Wechselmann believes that the most skeptical will admit that the new remedy acts on the symptoms of syphilis in all their infectious forms, with a rapidity and thoroughness which cannot be approached by any other known remedy. He has tested it in eighty cases and states that the action occurred with the certainty of an experiment. Eruptions and ulcerations rapidly heal; in the case of indurated chancres, the surface becomes rapidly clean, but the final healing takes somewhat longer on account of the absorption of the infiltration. It is found that symptoms which do not heal under mercury heal rapidly under the new remedy. The patients begin almost immediately to exhibit an improved general condition and increase rapidly in weight. In one case of visceral syphilis affecting the testicle and also probably the brain, the patient was apparently cured in two weeks with a gain in weight of two pounds. He has observed no relapses, although the period of observation is too short for certainty on this point.

According to his observation the remedy has shown no toxic action. In the case of a patient very much reduced by pernicious anemia, depending on a recent syphilis, an injection of 0.3 gm. (5 grains) temporarily increased the strength, although it was impossible to save the patient's life. No injurious action on the optic nerve has been observed. In infants with hereditary syphilis, which is nearly always fatal, Wechselmann has been able to save two out of five who were treated with this remedy. In the other three the external symptoms disappeared, but death occurred from the affection of the internal organs. Wechselmann prefers the intragluteal injection, its only disadvantage being the severe local pains. (*Berl. klin. Wchnschr.*, July 4, 1910, p. 1261).

Wechselmann has recently improved the technic by dissolving the remedy in sodium hydroxid solution, adding glacial acetic acid until a precipitate occurs, suspending this in distilled water and carefully neutralizing. In this way the pain is greatly mitigated (*Deutsch. med. Wchnschr.*, July 28, p. 1395).

At the meeting of the Berlin Medical Society, at which Wechselmann's paper was read, L. Michaelis reported several cases, confirming the statements of Wechselmann. At the same meeting Alt reported the results in the treatment of nervous cases. After trial on the higher animals he tried the remedy on fifty syphilitics. His results were very favorable. He reports one case of very severe syphilitic icterus which disappeared in about nine days after the injection of 0.4 gm. The remedy was tried in a number of relatively recent cases of tabes and in six cases he observed not only a marked retrogression of the subjective symptoms but also an improvement in the objective symptoms and in the general condition. He reports favorable results in the treatment of epilepsy depending on syphilitic taint. He finds that the excretion of the arsenic takes a somewhat longer time than was formerly supposed. He has seen cases in which arsenic was still being excreted ten to twelve days after the injection.

Neisser writes to the *Deutsche medizinische Wochenschrift* (June 30, 1910, p. 1212), that it is yet too early to give a definite opinion, as an insufficient number of cases have been treated, but he says that it can be affirmed with certainty that the new remedy exerts a remarkable, even surprising action on the spirochete, as well as on the syphilitic products themselves. Spirochetes disappear in very many cases after from twenty-four to forty-eight hours from primary lesions and condylomata in which they were abundantly present before administration. It produces a local reaction in papules and other cutaneous lesions. As to the syphilitic processes, so rapid a retrogression of primary lesions, papular syphilides and especially ulcers can be observed so as to leave no doubt regarding the specific character of the remedy. He reports a prompt relief of symptoms in a case of brain syphilis. He has obtained a reversal of the seroreaction in only about 10 per cent., but thinks that this may be due to the use of too small doses. The cases in which this reversal of reaction occurred were those which came under treatment soon after infection. It does not always prevent the progress of the disease, however, even when applied in cases of primary lesion before the seroreaction is positive. It seems, however, when given to apes, to delay and mitigate the primary lesion. He thinks that the remedy will be especially useful in cases in which mercury treatment has failed or cannot be applied. He advises private practitioners to delay the use of the remedy until present uncertainties regarding dosage and the number and repetition of the injections are settled.

Schreiber and Hoppe (*Munchen. med. Wchnschr.*, July 5, 1910, p. 1430), report their experience in a number of cases. They resort to the intravenous injection and in the treatment of 30 cases found no unpleasant side effect. The rise of temperature which has been observed in cases in which intramuscular injections were made did not occur in the intravenous injection. They noted no injurious effect on the kidneys nor on the digestive organs. In two cases they noted a scarlatina-like eruption which came on ten days after the injection and lasted three days.

In fifty two cases they found that the Wassermann reaction became negative in 92.3 per cent. This occurred in the earliest case, four days, and in the latest, seventy days after the injection, but in most cases within fourteen days. They noticed a leukocytosis in most cases. No toxic symptoms were observed by them and they call attention to the fact that the highest dose which they had employed was 0.0096 gm. per kilo, and the toxic dose as shown by animal experimentation is 0.15 gr. per kilo, so that the doses in present use could be considerably increased. For this reason they have increased the dosage from 0.3 to 0.7 gm. They concluded that the remedy has an absolute specific action in syphilis which is manifest after a single injection. They consider it as contraindicated in severe diseases of the circulatory organs, the kidneys and the eyes.

H. Loeb (*München. med. Wchnschr.*, July 26, 1910, p. 1580), reports thirty-five cases with very favorable results. He saw no toxic symptoms and noted in cases in which roseola was present an intensifying eruption (Herxheimer's reaction). One patient relapsed; but he attributed this to an insufficient dose (0.14). The Wassermann reaction was only slightly affected in his cases. But he thinks the time is too short in which to form an opinion.

G. Treupel reports nine cases which confirm the reports of other observers (*Deutsch. med. Wchnschr.*, July 28, 1910 p. 1393).

Fischer and J. Hoppe have investigated the excretion of arsenic (*München. med. Wchnschr.*, July 19, 1910, p. 1531). In the use of this remedy they found that the excretion in paralytics required from twelve to fourteen days and the amount excreted in the urine was quite variable. In the case of epileptics with healthy kidneys, the excretion of arsenic lasted only about three days. This is true also of ordinary syphilitics. Generally the excretion was completed sooner after the intravenous injection than after the intramuscular injection. They found that the preparation was not absorbed to any great extent by the rectum, but a considerable amount of arsenic was excreted in the stool after intramuscular or intravenous injections. The excretion per rectum continued longer than by the kidneys. They found also that after an intramuscular injection a considerable amount of arsenic remained for a long time in the muscular tissues. Thus in cases which came to autopsy they found arsenic in the gluteal muscles, in one case after fourteen days and in another after thirty six days.

---

* This subject is discussed editorially in this issue and also in the Berlin Budapest letters, pages 609 and 610.

Gall-Stones Containing Typhoid Bacilli.—An instance of the formation of cholesterol gall-stones containing typhoid bacilli within sixty-eight days of the onset of typhoid fever is reported by Hertz and Adams (*Proc. Roy. Soc. Med.*, May, 1910). A woman, aged 24, had always been constipated, her bowels never moving more than twice a week, and then only with the aid of purgatives. For three years or over, since the birth of her child, she had occasionally suffered from a dull aching pain in the epigastrium, which began immediately after food and was occasionally relieved by vomiting. It was not sufficiently serious to cause her to take medical advice. She had not had typhoid previously. The typhoid fever ran a typical course from Dec. 2, 1909, to Jan. 14, 1910, when she had a relapse, with fever and rash, which lasted until January 24. February 1 she complained for the first time of pain in the epigastrium and back, and vomited. The gall-bladder was found to be enlarged and slightly tender. There was no jaundice or pyrexia. The pain persisted and attacks of bilious vomiting occurred from time to time. On February 18 the temperature rose to 99.4 F. and the patient was sent to the hospital and from the symptoms suppurative cholecystitis was diagnosed. The patient was operated on the same evening. The gall-bladder was distended, tense and adherent to surrounding structures. It was opened and 4 ounces of clear fluid escaped and half an ounce of pus was evacuated. Twenty-five faceted gall-stones were removed from the gall-bladder, which consisted of slightly pigmented cholesterol of the usual hardness. The clear fluid and pus both contained pure culture of *B. typhosus*. The same organism was isolated from the center of some of the gall-stones. As this was the patient's first attack of typhoid fever, and the *B. typhosus* was found in the center of the gall-stones, it is clear that they must have been formed between the onset of the typhoid fever on December 12 and the operation February 18, a period of sixty-eight days.

Recognition of the Individual by Hemolytic Methods. Dr. C. Todd and R. G. White reported to the Royal Society, June 16 (*Nature*, June 23), experiments which they sum up as follows: "1. The immunization of the ox with the red blood corpuscles of other oxen gives rise to the formation of a hemolytic amboceptor in the blood of the immunized animals. 2. The amboceptor so formed is an isolysin, but not an autolysin. 3. The race of the animal appears to have very little influence on the resulting hemolysins. 4. The serum of an animal so treated acts very differently on the red blood corpuscles of different individual oxen. 5. The serums of different individuals similarly immunized differ from one another in their action on the corpuscles of different individuals. 6. If the serum of a single immunized animal be 'exhausted' with excess of the corpuscles of one other individual, the serum loses its power of hemolyzing the corpuscles of this individual, while retaining the power of hemolyzing the corpuscles of many, but not all, other individuals. 7. If, however, a polyvalent serum be made by mixing the serum of a large number of immunized animals, and this serum is exhausted with the corpuscles of any one individual, the serum entirely loses its power of hemolyzing the corpuscles of this individual, but remains strongly hemolytic for all other individuals not closely related to the individual the corpuscles of which were employed for the exhaustion of the serum. (N. B. It is possible that exceptions may be found.) 8. The red blood corpuscles of any individual are thus characterized by a definite individuality of their own, and can be distinguished from those of any other individual of the same species."

The Influence of the Operation of Resection of the Kidney on Function. The experimental work which forms the basis of this preliminary report by Cunningham (*Bull. H. Med. School of Harvard University*, April, 1910) was suggested by an operation on a young woman with but a single kidney, which contained calculi. The kidney was exposed and split in Brödel's line and three calculi of medium size removed from the kidney and another the size of a pea from the ureter through the pelvis of the kidney. The ureter was then proved to be patent. The incision in the pelvis was closed with fine silk and in the substance with mattress suture of catgut. Following operation about 1 ounce of bloody urine was removed by catheter. The patient was catheterized one hour later and then every half-hour subsequently, but no urine was obtained from the bladder until eight and one-half hours after operation. At that time a little more than 1 dram of slightly bloody urine was obtained. The amount of urine then increased gradually to the normal amount. The question to be determined by Cunningham's experiments was: Does a kidney which is subjected to an operation, temporarily cease functioning, (a) when the wound is closed by sutures, (b) when the kidney wound is drained, by a rubber tube or by gauze. Rabbits were used in the experiments and methylene blue was injected into the stomach hypodermically. The findings and conclusions were as follows: The rabbit normally urinates about every three hours. After a left-sided nephrectomy, urine was not voided for from ten to eighteen hours, except in one instance, when a blue urine was voided in from four to six hours. After resecting a portion of the remaining kidney, opening into the renal pelvis and closing the wound entirely, urination did not take place for between thirty-eight and forty-three hours, and in one instance between forty-three and forty-four hours. After resecting a portion of the kidney and draining it with a rubber tube through the loin, urine was secreted in every animal before eight hours, and in most between six and seven. After resecting a portion of the kidney and draining it with gauze through the loin, urine was secreted in all the animals between six and seven hours except in one which showed a blue fluid between four and five hours. The urine drained through the loin and also through the ureter into the bladder. Cunningham says that it will thus be seen that following the operation of kidney resection and closing the wound in the kidney entirely, there results a temporary arrest of the kidney function; that performing the same operation and draining the kidney pelvis, not closing the kidney wound entirely, does not cause a suppression of kidney function, in the same degree at least; that when the kidney pelvis is drained by a rubber tube, the drainage through the loin is freer than when the gauze is employed. He is not able to explain any of the facts stated.

The Nervous Child. It is a lamentable and disquieting fact that nervousness in childhood is increasing, says A. Roos (*Layman's Med. Jour.*, May, 1910). Nervous children are present in all classes of society, in the country as well as in the cities. Even shortly after birth may be observed a peculiar smile, distortion of features, spasmodic rolling of the eyeballs and incoordinate movements, the primary cause of which may be some trivial disturbance of digestion indicating a state of nervous morbidity. Convulsions are common a few months later during dentition; also sleeplessness, irritability and periods of crying and screaming without adequate cause. In pneumonia the nervous symptoms may be of sufficient intensity to mask the symptoms of the primary disease and they may resemble meningitis. Two distinct types of nervous temperament are recognized, psychic hyperesthesia and psychic hypesthesia. To these should be added a third condition characterized by periods of depression and dulness alternating with intervals of excitability. In the class of the first type are the children of delicate, spare build, mentally too far advanced for their age. The children of the apathetic class are less frequent, are usually well nourished, with an abundance of adipose tissue, phlegmatic and indifferent to external stimuli. Those of the changeable temperament are most frequently observed. They are apt to be effusive in their fondness for others at one time, and at another without cause indifferent, offensive and quarrelsome. They are enthusiastic in their play or school work, or again apathetic, indolent and discouraged. In the nervous child the resistance to external influences is diminished so that trivial causes, such as sudden excitement, a thunderstorm or the sight of a wound or drop of blood produce a psychic effect influencing the entire nervous system and the vasomotor system, producing pallor or vertigo, faintness and unconsciousness, or the influences may be transmitted to the motor nerves and we see the child uninterruptedly in motion. Standing, walking, sitting positions rapidly succeed each other, the fingers, hands and feet are never at rest; nervous twitching of the facial muscles is not uncommon; the internal organs are not infrequently affected and there are palpitation, cramp-like pains in the region of the bladder and a desire to evacuate this organ or the bowels. Frequent and prolonged headaches are common. Nervousness in both parents is transmitted to offspring, but nervousness on the paternal side alone less frequently, unless it amounts to a neurosis. Nervousness on the maternal side is more frequently transmitted. Indifference, disrespect, contempt, etc., on the part of the parents, or alcoholism of the latter, will have effect on the children of such a union. Acquired causes of nervousness may be pathologic, as concussion or contusion of the brain from accident, acute congestion of the brain from infectious diseases, sunstroke, etc., and acute encephalitis or meningitis. In addition, are reflex causes, such as eruption of teeth, worms, constipation and localized pains, and constitutional diseases, such as anemia, albuminuria, diabetes, rickets, autointoxication, suppurative conditions, etc. Physiologic causes may be attributed to deficiencies in connection with the bringing up of the child, and may refer to the physical condition, the mental and moral state. Impressions on the extraordinarily sensitive brain of the first and second stages of childhood may become permanent and indelible, and should therefore be correct. Improper literature should be strictly avoided. Evening dancing parties, the theater, etc., for the very young are harmful, because they interfere with the regularity of habit and sleep. Remorse, injustice, jealousy, anger, are powerful causes of excitability. A systematized, regular method of living is of extreme importance, and should be begun immediately after birth and strictly adhered to. Errors in mental education are made not only in school, but more frequently in the home. Few parents devote themselves to the education of their children by the application of thorough discipline and a definite system or method. Some parents are authoritative and unnecessarily rigorous, avoiding explanations; others are indifferent, indolent and excessively indulgent. The child is without guide, is conscious of its power and the effect of its tears, is a veritable tyrant and abuses its power in order to obtain increased privilege. The inevitable consequence of this kind of training is pronounced nervousness. A sane method must be adopted in bringing up children and such a system must be adhered to.

Typhoid and the Milk-Supply of Washington Hospitals. The Washington Milk Conference of 1907 decided that the limit of safety for milk to be consumed raw required that it should contain not more than 100,000 bacteria to the centimeter, and that all milk containing more should be pasteurized (*Wash. Med. Ann.*, ix, No. 1). The high mortality from typhoid fever in the hospitals of the District of Columbia and its possible connection with the milk supply led the Hygienic Laboratory of the U. S. M. H. Service to collect samples of milk as found in different localities in Washington, with the result that the minimum count showed 340,000 bacteria per cm., running from that to 2, 3, 4, 5, 10, 15, 50 and up to 111 million per centimeter, and among these samples were some from a half dozen prominent hospitals and asylums. The average mortality from typhoid fever in the United States is 10 per cent., but the mortality in the Washington hospitals sometimes reaches the appalling rate of 16, 18, 20 and even 25 per cent., and in only one was it as low as 7 per cent. The danger from raw or improperly pasteurized cream is even greater than from improperly pasteurized milk, as it is found that the cream contains about 60 per cent. of the bacteria, although constituting but one-twentieth of the whole milk. Those who are studying the problem believe that nothing short of proper pasteurization will ever accomplish a reduction in the death-rate, and they urge municipal control over pasteurization plants so that the people may not be lured into a false sense of security by the mere word "pasteurized," since commercial pasteurization is often done so imperfectly as to be worse than none at all. Because milk offers a good supply of nourishment bacteria increase at an amazing rate, but the rate of increase is approximately seventy times greater at 60 F. than at 50 F., and this explains the high mortality in the summer time of infants fed on raw or improperly pasteurized milk.

Medicolegal

Liability for Malpractice in Case of Inexplicable Burn in Administering Static Electricity

The Supreme Court of Minnesota says, in Frisk vs. Cannon & Balcome (126 N. W. R., 671), that the plaintiff charged the defendants, as partners engaged in the practice of medicine, with having negligently treated her with static electricity, to her injury, but the trial court was justified in concluding that the defendants were not partners, and that the defendant Cannon was not liable for the alleged negligence of the defendant Balcome.

The plaintiff alleges that she was placed on an insulated platform connected with the electrical machine, a conical cap was put above and in front of her head, and static electricity was caused to be discharged by the machine through the cap on her head; that the defendant then left the room, and no attendant was present. After the lapse of eight or ten minutes the plaintiff screamed. The defendant immediately entered the room, and discovered that her head was smoking. A large portion of the top and sides of her head was seriously burned. Five thousand dollars damages were claimed and a verdict of $1,200 was returned in the plaintiff's favor, against the defendant Balcome, judgment for which is affirmed.

The statement by the court is very brief, but much that physicians will be interested in knowing about the case is contained in the dissenting opinion of Justice Jaggard. He says that the defendant called a number of well known experts of the highest character. The effect of their testimony was: The amperage or the quantity of electricity generated by the machine in question was infinitesimal. It figured at some one millionth of an ampere; but the electro motive force was large, The effect resembled shooting a piece of eider down from a gun. There was great force, but the missile was so slight in character that it could do no harm. No case had ever been known of injury to a person by a static machine, nor was one known in the literature of the profession. The occurrence was "unique in experience," "a perfect mystery, contrary to all laws of physics." It could not be accounted for by any action of the static machine. A physician who had been using one in his practice daily since 1885, and had given perhaps 100,000 treatments, gave similar testimony. Another physician, with 17 years' experience in the use of the machine, testified that he knew of nothing which could have produced this injury by this machine and he knew of nothing which could have prevented it.

The way in which the conical cap, described as an inverted crown or sunflower, was placed near the plaintiff's head, the one suggested explanation of how the accident happened, was not shown to have been its cause. According to the plaintiff, that cap was placed within two or three inches from her head, instead of six or eight inches away, as at other times. The decrease in distance tended to increase the strength of the current communicated to the patient's head; but it had never been known to produce the effect here complained of before the accident. It was shown by uncontradicted and unimpeached testimony that the force of the charge or amount of electricity used or turned on the plaintiff in its usual operation would have been absolutely harmless, however the cap had been adjusted; that if the cap had been placed immediately on top of her head, it might have produced unpleasant sensations, but according to all known experience would not have injured the plaintiff. "Good practice requires that it should just clear the head; that is all." The patient could perceive the cone in front of her, so that, if there had been a spark, she would have seen it, but did not see it. Moreover, it is the universal experience that there might have been a spark without possible harm. It was also to be noted that it was the back of the head which was burned.

Nor was the absence of any assistant in the room with the plaintiff shown to have been a material factor. How such person, if present, could have prevented the harm, did not appear. If he had, for example, turned off the electricity which operated the machine, its wheels would have revolved for some time from momentum. Nor was it suggested how any interposition could have been effective to have stopped the passage of the current, which the plaintiff said took more time than a second, but which must have been practically instantaneous. It appeared that the presence of a physician or an assistant was not required by good medical practice, nor that there was any reasonable anticipation of harm which suggested it. Neither the facts in the record nor any conjecture reasonably founded thereon tended to show that the failure of the physician to give the plaintiff any directions concerning the use of the machine, or to be present in person or by representative, was the proximate cause of the harm complained of.

The defendant had a right to rely on the presumption of the uniformity of the operation of natural forces. He was not bound to anticipate that a certain exceptional phenomenon, beyond the range of invariable and extensive experience, would happen. This accident was like a flash from a clear sky.

For such reasons Justice Jaggard says that he is compelled to conclude that the plaintiff suffered from the results of a physical force partially known and in some measure unknown, whose particular potentiality for harm could not have been reasonably foreseen, and for which the defendant was not responsible.

But the Supreme Court holds that the plaintiff made out a prima facie case of negligence. It says that her only expert testified that, if the cap were brought close to the head and there was volume enough, there would be a continuous spark and harm would result. His testimony to the effect that the distance the cap was placed from the plaintiff's head would determine whether a burn was likely to occur, together with the testimony of the plaintiff that it was not adjusted as on former occasions, and also the conduct of the defendant in leaving the plaintiff in the room unattended, while the machine was working, for the space of ten minutes, during which time the burn occurred, in connection with the other evidence in the case, was sufficient to take the question of the defendant's negligence to the jury, with the result already stated

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 30

1 Ventilation in Schools. W. A. Evans, Chicago.
2 Tendon Transfer for Correction of Spastic Hand Deformity. C. N. Dowd, New York.
3 *The Use of Vaccines, Serum and the Hiss Extract of Leukocytes in the Treatment of Eye, Ear, Nose and Throat Affections. J. G. Dwyer, New York.
4 A Simple Complement Fixation Technic in Syphilis. A. Fleming and L. J. Clemenger, London, Eng.
5 In What Way Can Laryngology Aid in Making the Diagnosis of Incipient Pulmonary Tuberculosis? W. Freudenthal, New York.
6 Pellagra in Illinois. W. F. Waugh, Chicago.
7 *A Useful Accessory in the Treatment of Varicose Ulcers. E. H. Pool, New York.
8 [illegible] Caused by the Sun's Rays. R. F. Ochs, New York.

3 Published in *Annals of Otology, Rhinology and Laryngology*, for June 1910.

7. **Treatment of Varicose Veins.**—The procedure followed by Pool is as follows: At the time of the dressing, three times a week, the patient is made to lie on the back on the operating table with both legs elevated almost to a right angle and supported against the wall. The patient lies in this position for about 15 minutes. For the first few treatments massage is administered, stroking the limb toward the trunk. Before lowering the legs they are cleansed and dressed in an appropriate manner by strapping, medicinal applications, etc., and a muslin bandage is applied tightly and smoothly. The patient is instructed to resume this position three times a day for fifteen minutes each time, and at other times if the bandage feels too tight. Pool says that no complaints have been made concerning the discomfort of the bandage and very few as to the tightness of the bandage. All the patients have expressed themselves from the outset as very much pleased with the results, stating that the legs are not only more comfortable, but show a more marked disposition to heal than by other methods. By this method the engorgement of the veins and lymphatics is prevented, and the edema diminished, as is evidenced by rapid diminution in the diameter of the legs after a brief period of treatment. Occlusion of the deep veins contraindicates the tight bandaging.

Pool emphasizes that the method is intended to supplement and not as a substitute for other procedures. It will simply expedite the response of the tissues to curative agents. Appropriate local treatment must be as assiduously pursued as when this method is not followed. The only departure from the usual routine here suggested is the detail of elevation which seems to enhance the effect of the bandaging.

New York Medical Journal

July 30

9 Lichen Planus. C. A. Kinch, New York.
10 Spondylitis Deformans. A. M. Crispin, New York.
11 The Borderland Between Medicine and Surgery. R. Hill, St. Louis.
12 Diagnosis and Treatment of Cancer of the Uterus. X. O. Werder, Pittsburg.
13 *The Spirit of Prophylaxis in Relation to Psychiatry. H. W. Wright, New York.
14 *A Method of Anesthetizing to be Employed in Operating on the Aged. J. H. Gleason, Manchester, N. H.
15 Nontraumatic Gingival Hemorrhage. H. Illoway, New York.
16 Does Internal Medication Tend to Abort or Cure Abscess and the Tendency Thereto? R. E. Coughlin, Brooklyn.

13. **Prophylaxis in Psychiatry.**—Summing up his conclusions of the future of psychiatry as a factor in the field of social service, Wright says that cooperative education is the keystone in the arch of prophylaxis. Cooperation which is not merely abstract, in the nature of annual conferences and reports between one profession and another, but direct personal cooperation, such as is now obtainable between the worker in the charitable relief agencies and the physicians and nurses of hospital dispensaries; cooperation with the schools, the social settlements, charitable relief organizations, the courts and the clergy; education in the schools, from public platforms, through the direction of the public library and the press, and more directly in the clinic and the home in matters pertaining to mental hygiene, by those properly qualified in psychopathology.

If this can be accomplished, statistics of the etiology of insanity will not, as now, he says, represent much labor lost, except as resulting in a vast array of ambiguous uncorrelated statements, but more and more efficient labor with a clearer insight; while the benefit to the unfortunate patient and his relatives, which after all is the chief thing to consider, will be immeasurable by any statistical method.

14. **Anesthesia in the Aged.**—After having used a combined partial scopolamin anesthesia with local anesthesia, using 0.1 per cent. cocain for six years, Gleason now uses partial scopolamin anesthesia, combined with local sterile water infiltration anesthesia in operating on the aged. He says that the aim should be to produce complete sensory paralysis of the part. Satisfactory results in the matter of producing regional anesthesia are dependent on the technic, and in order to become proficient in this, practice and experience are essential. The operator must be familiar with the anatomy of the parts, especially of the sensory nerves. The injections may be thus made with accuracy where they will be most beneficial and without unnecessary insertions of the needle. To gain control of the field it is necessary to block the nerves by depositing the sterile water around and in close proximity to them. Gleason places emphasis on the necessity of producing the condition of absolute nerve block in order to obtain the best results. Considerable fluid and some force must therefore be used.

The degree of anesthesia produced is governed by the accuracy with which the location of the nerves is determined, the amount of fluid injected, and the degree of force used. It is in this particular that experience and the resulting judgment which is developed is most valuable. Gleason is convinced that by this method the management of surgical diseases in old people may be made comparatively safe, the mortality much reduced, and seemingly inoperable cases made operable and curable.

Boston Medical and Surgical Journal

July 28

17 Gynecologic Operations on Neurasthenics: Advantages and Disadvantages. E. Reynolds, Boston.
18 *Nephritis without Albumen. C. A. Howland, Fall River.
19 *Drugs in Practice. M. V. Tyrode, Boston.
20 The Sputum of Typhoid Patients as a Possible Source of Infection. E. S. Tenney, Fort Strong, Mass.
21 The Nasal Septum: Important Points in Anatomy and Submucous Resection. O. A. Lothrop, Boston.
22 *The Use of Tuberculin at the Sharon Sanatorium. W. A. Griffin, Sharon, Mass.

18. **Nephritis Without Albumen.**—That gross and severe lesions of the kidney may exist without albumen being present in the urine, or at least without being discernible by the methods ordinarily used in hospital and office work, is the conclusion at which Howland has arrived. From April 1 to December, 1909, he examined 550 specimens of urine. All urine was centrifuged from three to six minutes in an electric centrifuge giving from 1,000 to 1,800 revolutions to the minute. The sediment was removed by a thoroughly clean small pipette, the finger being held over the end and the point lowered until just over the sediment. The finger was then removed from the outer end sufficiently to allow only a small amount of the sediment to be admitted into the pipette, which was then held there by replacing the finger on the outer end. The sediment was placed on a glass slide and spread out over at least one square inch of surface, the slide being then placed under the microscope and held in position on a moving stage. The sediment was then examined under low power with closed diaphragm, and by means of the moving stage a systematic search of the whole field made. Heller's nitric acid test was used in all cases, with filtered urine, and the result tested before a dark background. As a rule, only morning specimens were used. The average amount was from 6 to 8 ounces, and the specimens were not over twelve hours old.

In many of the cases recorded numerous examinations were made and several methods employed. In cases in the acute stages which showed casts the urine was examined every few days, and in chronic conditions once or twice a week. Howland reports 21 cases which illustrate the presence of nephritis without the presence of albumen. All cases which showed granular in addition to hyalin casts are included, but not those cases which showed one or two hyalin casts only. Casts without albumen were found in a large proportion of those patients who were suffering from conditions such as appendicitis, typhoid, peritonitis, gangrene and evulsion of the scalp. In these patients the toxins incident to these troubles doubtless had a pathologic effect on the kidney without producing albumen.

19. **Drugs in Practice.**—Tyrode cites a few instances to show what can be done by the proper use of drugs. He praises the work done by the Council on Pharmacy and Chemistry, directing attention to its various publications which he urges practitioners of medicine to read. Speaking of new drugs, he says that there is no doubt that this flood of new drugs and combinations has its chief value in increasing the income of the manufacturers rather than advancing the art of therapeutics, for it is not so much a large number of a certain class of medicinal agents which we need, but rather a better understanding of the already known ones. It is true that we must place great hopes in the development of synthetic pharmacology, i. e., the building up of new compounds having certain desirable actions but not possessing certain undesirable ones at the same time. For instance, of the hundreds of newer coal tars as antipyretics and analgesics none have really surpassed some of the older compounds. The newer artificial morphin derivatives have not proved themselves as valuable as morphin and codein. The new bromid substitutes are not equal to potassium bromid. Chloral still remains the most powerful hypnotic of the fatty acid series and is far superior in activity to any of its substitutes, and frequently not much more dangerous.

A physician who pretends to treat patients should know how to mix drugs in a prescription himself without the suggestions of a patent medicine house, and furthermore, if he desires any ready-made mixtures, he can find all sorts in the United States Pharmacopeia and National Formulary. Much better results at lower cost will be obtained by using home-made beef juice, scraped beef, etc., instead of the patented beef preparations; likewise arrow-root, cornstarch, blanc-mange, barley water, tapioca and rice will advantageously fill the place of the patented cereals, as the malted milks and infant foods. Instead of the patented fats, as various emulsions of cod liver oil, and some particular frauds claiming to contain the active principles of cod-liver oil without the disagreeable fat, far better results may be reached by the employment of cream, buttermilk and olive oil. If one wishes to use alcoholic preparations, the ordinary good brands of wine, beer, ales and spirits will not only equal but excel any patent wines or malt extracts. The farcical use of uric acid solvents, as patented lithia waters and certain piperazin compounds, can be advantageously substituted by the use of large amounts of ordinary water with simple alkaline salts, as potassium citrate and sodium bicarbonate.

22. **Tuberculin at the Sharon Sanatorium.**—Tuberculin has been used at the Sharon Sanatorium for diagnostic purposes for 8 years, and as a therapeutic measure for 5 years. One hundred and nineteen patients have been tested by it, and 36 have had it as treatment. 14 have been discharged less than a year ago from the sanatorium ,and these are not considered in Griffin's report, which is intended to be, in part, a record of the present condition of those patients who have received tuberculin. This leaves, then, to be considered, 83 patients who have been tested and 28 who have been treated. Of those tested, 4 are known to have died, but only one of these died of tuberculosis. Griffin says that it is wise and safe to test all patients with signs in the chest who do not present tubercle bacilli in the sputa, using for this test the submucous method. If disease is found, a cure should be begun and the patient should be taught sanatorium methods. Neither does there seem any harm in using as high a dose as 10 mgm. since, when this dose is worked up to gradually, it does not cause a severe reaction. And, further, if a less dose were taken as the limit of use, some cases would fail to be detected which might need sanatorium treatment.

Treatment with tuberculin was begun rather experimentally on 3 patients who were moderately advanced and who had apparently come to a standstill in their improvement under general hygienic conditions. They seemed peculiarly fitted, therefore, to test the value of some treatment in addition to the regular sanatorium régime. These first three cases were so encouraging that each year more have been given tuberculin treatment, until at present there are ten having it, or nearly half the capacity of the sanatorium. In all cases either old tuberculin or bouillon filtrate have been used.

Of the 28 patients who have received the treatment, 6 have died. Two of these were far advanced at the start and were given injections at their own request. Three others who were not favorable cases were given tuberculin on the chance that it might help when all probability of help by ordinary means seemed futile. The sixth patient did well and left the sanatorium in good condition, dying about a year later of a sudden hemoptysis. Two others of the 28 returned to a poor environment, contrary to advice, and are not doing well. Two more have relapsed in spite of care. These last cases may improve in the future and from what can be learned they are certainly not hopelessly sick. This leaves 18 who are in good condition. From his experience at Sharon Griffin feels that tuberculin when carefully given is not likely to do any harm and that it frequently is of great benefit, affecting a cure in some patients that would not be expected to do well under ordinary methods of treatment, and, finally, that no patient with frank tuberculosis should be denied the privilege of tuberculin treatment if they desire to have it.

Medical Fortnightly, St. Louis

July 11

23 Intestinal Obstruction from Appendiceal Adhesions. C. R. Dudley, St. Louis.
24 Problems of the Twentieth Century Physician. J. T. Woodward, Elkhart, Ill.

Lancet-Clinic, Cincinnati

July 23

25 Syphilitic and Cancerous Manifestations of the Oral Cavity from the Standpoint of the Dentist. C. J. Broeman, Cincinnati.
26 Pitfalls of the Anti-tuberculosis Crusade. C. G. Randall, Harveysburg, Ohio.
27 *Prolapse of the Urethra. M. A. Tate, Cincinnati.

27. **Prolapse of Urethra.**—A woman, aged 54, married some 20 years, never pregnant, gave a history of painful micturition and presence of protruding mass of indefinite induration at urethra. On examination a provisional diagnosis of a primary carcinoma of the urethra was made from the symptoms and the feel of the prolapsed mass. The family history of the patient was very good and positively free from tuberculosis and carcinoma. A wide removal of the mass was made and microscopic examination showed it to be an angioma. For a period of one week catheterization had to be practiced. The subsequent history after one week was that the patient had good control, urination was painless, and from appearance, recovery was complete.

Kentucky Medical Journal, Bowling Green

July

28 The Nurse. W. E. Senour, Bellevue.
29 Pellagra, with Exhibition of Case. R. L. Bone, Madisonville.
30 The Physician as the Public Benefit. O. R. Kidd, Paducah.
31 The Puerperium or the Puerperal State: Derivation and Classification. W. B. Gossett, Louisville.
32 Hydatidiform Mole. C. C. Garr, Lexington.

Journal Experimental Medicine, New York

July

33 *The Cutaneous Trichophytin Reaction. S. Amberg, Baltimore.
34 *Latent Life of Arteries. A. Carrel, New York.
35 *Studies in Edema. M. S. Fleisher and L. Loeb, Philadelphia.
36 *Idem. M. S. Fleisher and L. Loeb, Philadelphia.
37 *The Origin, Distribution and Significance of Fuchsin Bodies, with Special Staining Technic. W. H. Brown, Madison, Wis.
38 An Extremely Pure Preparation of Ricin. C. W. Field, Louisville.
39 *Neurocytoma or Neuroblastoma, a Kind of Tumor not Generally Recognized. J. H. Wright, Boston.
40 Subcutaneous Reaction of Rabbits to Horse Serum. J. H. M. Knox, W. L. Moss and G. L. Brown, Baltimore.

33. **Cutaneous Trichophytin Reaction.**—Patients suffering with trichophytia profunda respond to subcutaneous injections of culture filtrates of different strains of trichophyton, called trichophytin, with local and general reaction. The local reaction occurring at the point of injection gives rise to inflammation and infiltration. Besides this reaction at the point of injection, but less constantly and less pronounced, there occurs another local reaction in the diseased area. The general reaction consists of malaise, headache, muscular pains, rise of temperature, etc. Superficial cases of trichophytia do not give any reaction under the usual conditions. The analogy of this reaction with the tuberculin reaction in cases of tuberculosis is very striking. The trichophytin reaction is just as specific as the tuberculin reaction in the sense that it is not observed in healthy individuals or in patients suffering with diseases not due to an infection with hyphomycetes belonging to the trichophyton group. It is of interest that trichophytin prepared from different types of trichophyton derived from clinically different cases act alike so that the reaction cannot be utilized for the differentiation of different trichophyton infections.

The total number vaccinated by Amberg with trichophytin was 151. Of these 107 were vaccinated simultaneously with tuberculin, bouillon treated exactly like the tuberculin but without any bacteria, and trichophytin. The bouillon vaccinations were made in order to see whether it might give reaction by itself. In one case only, a doubtful reaction occurred and this was at the point where the bouillon was inoculated. All the other cases showed a completely negative result. Besides these 107, ten were vaccinated with tuberculin and trichophytin, one with bouillon and trichophytin, and 33 only with trichophytin. The tuberculin vaccinations did not give any results not noted before. Amberg concludes from his observations that there exists a far-reaching analogy between the cutaneous trichophytin reaction and the cutaneous tuberculin reaction. Both indicate that the organism is the seat of a definite infection or that it has passed through such infection. Both may persist for a long time after the active disease has come to rest, indicating that the infection has left the organism in a state of altered reactivity—allergy. Under certain conditions both may be of diagnostic value, but since the reaction persists for a long time after the infection has passed, the negative reaction may be of greater value, excluding the existence of a specific infection. The analogy of the trichophytin reaction with the tuberculin reaction is not only limited to the obvious clinical manifestations, but, as in the tuberculin reaction, it can be shown that with uniform concentration of antibody the intensity of the reaction is dependent on the concentration of the trichophytin. A tentative explanation of the halo formation is offered by Amberg, based on a rapidly renewed formation of antibody stimulated probably by the entrance of a small amount of allergen into the general circulation.

34. **Latent Life of Arteries.**—Carrel has found that when a segment of artery, killed by heat, formalin or glycerin, is transplanted, it undergoes a rapid degeneration. Its muscle fibers disappear while the tissue of the host reacts by building a new wall of connective tissue. When the transplanted vessel has been preserved in a condition of latent life, no degeneration of the wall occurs, or the wall undergoes only partial degeneration. The muscle fibers can keep their normal appearance, even for a long time after operation. It is, therefore, demonstrated that arteries can be preserved outside of the body in a condition of unmanifested actual life. The best method of preservation consists of placing the vessels, immersed in petrolatum, in an ice box, the temperature of which is slightly above the freezing point. From a surgical standpoint, the transplantation of preserved vessels can be used with some safety. When the arteries were kept in defibrinated blood or petrolatum and in cold storage, the proportion of positive results was 75 and 80 per cent., and this can probably be increased.

35. **Studies in Edema.**—In order to determine further the factors which influence absorption from the peritoneal cavity, Fleisher and Loeb studied the absorption in nephrectomized animals and in animals injected with uranium nitrate, 20 and 72 hours after injection. In the experiments recorded the influence of the osmotic pressure of the blood on absorption of fluid from the peritoneal cavity becomes apparent. Nephrectomy, removal of the adrenals, and other operations increase the osmotic pressure of the cavity. On the other hand, ether narcosis, at the period at which the authors tested its influence, causes neither an increase of osmotic pressure of the blood nor an increase in the absorption of fluid from the peritoneal cavity. The increased osmotic pressure and increased absorption of fluid in nephrectomized animals is to a great extent not a specific effect of the removal of the kidneys, but approximately the same conditions can be observed after incisions of the skin and muscles. After poisoning with uranium nitrate and in cases of peritonitis, complicating factors come into play, and under such conditions the absorption from the peritoneal cavity is not increased, notwithstanding the higher osmotic pressure of the blood.

In conditions in which the osmotic pressure of the blood is very high before the injection of sodium chlorid solution into the peritoneal cavity, nephrectomized rabbits or rabbits injected with uranium nitrate 3 days previously, adrenalin causes no increase, or only a very slight one, in the absorption of peritoneal fluid. On the other hand, one day after the injection of the uranium nitrate the osmotic pressure of the blood is only slightly increased before the injection of the sodium chlorid solution into the peritoneal cavity, and here adrenalin causes a marked increase in absorption of fluid from the peritoneal cavity. In animals injected with uranium nitrate the retention of sodium chlorid and other osmotically active substances in the blood is not entirely due to interference with the functions of the kidney. This retention may be explained either by an inability of the tissues to bind the sodium chlorid and other osmotically active substances or to a diminished permeability of the blood vessels for such substances.

While in nephrectomized animals the elimination of sodium chlorid from the peritoneal cavity and also from the blood is increased, in animals injected with uranium nitrate such an elimination is diminished. This increase in the sodium chlorid content of the peritoneal fluid in animals treated with uranium nitrate is accompanied by a decrease in the diffusion of other osmotically active substances into the peritoneal cavity. While in nephrectomized animals and in animals injected with uranium nitrate one day previously, adrenalin causes a diminution of the fluid retained in the blood-vessels similar to the diminution noted in normal animals, adrenalin no longer exerts such an effort at a later stage of the uranium nitrate poisoning. At this period after the administration of uranium nitrate, the retention of fluid in the blood vessels is apparently equal in experiments with and without the injection of adrenalin, and following the absorption of fluid from the peritoneal cavity, the retention of fluid in the blood vessels in the uranium nitrate animals is increased comparatively to a greater extent than in normal animals.

36. **Id.**—In this paper Fleisher and Loeb record their observations on the influence of caffein on absorption from the peritoneal cavity and the influence of diuresis in edema. In normal animals the injection of caffein slightly diminishes the absorption of fluid from the peritoneal cavity, in spite of the fact that the amount of fluid and sodium chlorid eliminated through the kidneys is markedly increased. The lessened absorption of fluid is due to a slight lowering of the osmotic pressure of the blood. In nephrectomized animals caffein increases the absorption of fluid from the peritoneal cavity; the increase in absorption is greater in nephrectomized animals which received caffein than in nephrectomized animals which did not receive this substance, and it is due to additive increase in the osmotic pressure of the blood. In animals injected with uranium nitrate three days previously, caffein diminishes the absorption of fluid from the peritoneal cavity, notwithstanding the high osmotic pressure of the blood observed in such animals.

At the time of the conclusion of the absorption experiments, the amount of fluid retained in the vessels was found to be diminished in each series in which caffein was used. Only in certain cases can this be due to the increased amount of fluid leaving the blood vessels through the kidneys; in other cases it can only be due to a movement of water from the blood vessels into the tissues caused by the injection of caffein. In normal animals, in nephrectomized animals and in animals in which an operation not directly affecting the kidneys had been performed, caffein caused an absolute and relative increase in the elimination of sodium chlorid from the peritoneal fluid, as a result of which the remaining peritoneal fluid shows a lessened content of sodium chlorid. Caffein causes also a decrease in the sodium chlorid content of the blood.

Summarizing all experiments in which they studied the absorption from the peritoneal cavity, Fleisher and Loeb state that changes in the osmotic pressure of the blood represent the principal factor in explaining the variations in the rate of absorption of fluid from the peritoneal cavity. There exists no direct relation between an increase in the rate of absorption of fluid from the peritoneal cavity and an increase in the amount of urine secreted. If it should be found that even at a period following the injection of caffein, later than that at which we have studied the absorption, a rise of the osmotic pressure of the blood does not appear, then we may state that the diminution in the amount of edema in the body cavities resulting from the administration of caffein is entirely due to an inhibition of the production of edema and not to an increased absorption of fluid from the serous body cavities.

37. **Fuchsin Bodies.**—The material used by Brown included over 200 distinct specimens representing nearly all the organs of the body and a great variety of pathologic conditions as well as some normal tissues. This material was selected partly at random and partly from lesions in which Brown felt sure of finding fuchsin bodies. He believes that he is justified in assuming that the fuchsin body represents a type of body subject to wide variations in morphology and in staining reaction. Though more frequently associated with plasma cells than with any other cell type, these bodies may and do occur in a great variety of cells, and also within blood vessels; some of these bodies are true hyalin thrombi, while others are due to autolytic changes in the red blood corpuscles. Fuchsin bodies are most numerous in granulation tissue and lymphoid areas. In the former, they follow closely the distribution of capillaries and show a parallel with the changes in the extravascular and intravascular red blood corpuscles. The number and type of fuchsin bodies in tissues can be influenced by methods of fixation, the number of typical bodies being inversely proportional to the rapidity and degree of fixation of the red blood cells. The type of body found after the best fixation is not, as a rule, what is considered the typical form, but an irregular fragmentary type or the fuchsinophilic granular form. The identity in staining reaction, the constant association with changes in red blood corpuscles, the relation to distribution of capillaries in granulation tissues, the occurrence in hemorrhagic lesions associated with pigment, the intravascular occurrence, and, finally, the close relation to pigment deposits, all indicate conclusively that fuchsin bodies arise from red blood corpuscles.

No theory of origin from plasma cells, or other granular cells, offers an adequate explanation for the origin of fuchsin bodies, nor can any theory prove adequate which does not take into account the red blood corpuscles. The peculiar association of plasma cells with fuchsin bodies and hemosiderin seems explainable on the assumption that the plasma cell in such instances is the active factor in a metabolic process, the fuchsin body representing a stage in the metabolism of hemoglobin by an intracellular enzyme, and hemosiderin, one of the products of the process.

39. **Neurocytoma or Neuroblastoma.**—Wright calls attention to a group of tumors the nature of which he believes has hitherto escaped general recognition. These tumors are rich in cells which may vary much in size and shape. They may be perverted by connective tissue by which the cells are arranged in more or less definite alveoli. Blood vessels accompanied by connective tissue are also present. The essential cells of the tumor are considered to be more or less undifferentiated nerve cells or neurocytes or neuroblasts, and hence the names neurocytoma and neuroblastoma. Wright cites briefly 12 cases seen by him or recorded in the literature.

Iowa Medical Journal, Des Moines

July

41 The Present Status of Opsonic Therapy. J. C. Oh[illegible], Independence.
42 Management of Severe Burns of the Eyes. H. C. Longworthy, Dubuque.
43 Epilepsy. W. Pfannebecker, Sigourney.

Colorado Medicine, Denver

July

44 The Sanatorium in its Application to Tuberculosis. S. G. Bonney, Denver.
45 Intubation of the Larynx, with Suggestions Regarding Anaphylaxis. F. E. Waxham, Denver.
46 Acute Yellow Atrophy of Liver, Report of Case; Recovery. F. W. Kenney, Denver.
47 Diagnosis of Gall-stone Disease. J. N. Hall, Denver.
48 Intestinal Obstruction. F. Finney, La Junta.

New York State Journal of Medicine, New York

July

50 Status Thymo Lymphaticus and Its Relation to Sudden Death. G. H. Cocks, New York City.
51 Experimental Poliomyelitis. S. Flexner, New York.
52 The Vestibular Nerve in Relation to Equilibrium and [illegible] Disturbances. P. Fridenberg, New York.
53 Traumatic Esophageal Stricture in a Two-year-old Child, with Radiograph. G. W. Ross, Port Ewen, N. Y.
54 The Sanitation of Summer Resorts. C. F. Low, Pulaski.
55 The Duty of the Medical Profession Toward the Cancer Problem. G. D. Gregor, Watertown.
56 Acute Suppurative Otitis Media. R. A. Richards, Rochester.
57 Paroxysmal Tachycardia. W. T. Mulligan, Rochester.
58 The Value of the "Negri Bodies" in Diagnosis of Hydrophobia. S. R. Klein, New York.
59 The Hunger Strike and a Tube-fed Case. A. J. Cap[illegible], Kings Park.

Providence Medical Journal

July

60 Meningitis with Special Reference to the Danger of Administration of the Serum. F. T. Fulton, Providence
61 Value of Lumbar Puncture in the Diagnosis and Treatment of Infectious Diseases of Childhood. H. G. Calder, Providence.
62 Cretinism. N. L. Niles, Providence.
63 Influence of Progressive Medicine on the Law. W. L. Chapman, Providence

Journal of Nervous and Mental Disease, Lancaster, Pa.

July

64 *Deafness Due to Lesions in the Brain. M. A. Starr, New York
65 *Friedreich's Ataxia. W. G. Spiller, Philadelphia.

64. **Deafness Due to Lesions in the Brain.**—Owing to the course of the acoustic tract, Starr says it is to be expected that lesions in the pons Varolii and in the tegmentum of the crura cerebri which affect the lemniscus should produce deafness, but cases of this kind appear to be extremely rare. He reports a case, one of an apoplectic attack characterized by alternating paralysis of motion and of sensation, by dysarthria, and by total deafness in both ears. The patient, whose arteries had become markedly atheromatous, from a long-continued abuse of alcohol, had a slight attack of right hemiplegia and aphasia in the year 1900, when 42 years old. The symptoms rapidly subsided and as the attack was not attended by loss of consciousness, it seemed probable that it was due to a thrombosis in a small vessel, leaving a focus of sclerosis of small extent and without permanent effects.

In June, 1901, a second apoplectic attack, however, occurred, more severe in character, the permanent symptoms of which remained until her death in 1909. In this attack she became unconscious and remained so for two days, after which time it was apparent that the right side of her face and the left arm and leg were paralyzed. Sensation in the right side of the face was markedly impaired to touch, temperature and pain, and the same loss of sensation was apparent in the left arm and left leg and on the left side of the body as high as the collar. In addition to the alternating paralysis and anesthesia, there was a very marked loss of muscular sense in all four extremities, being more marked on the left side. The patient was unable to swallow and choked at any attempt, so that she was fed for a month with difficulty. She was entirely incapable of pronouncing words distinctly and as time went on, this difficulty increased, being intensified by her total deafness. From the day of the attack until her death she was totally deaf in both ears. The deafness was complete for all sounds, high or low, and there was no bone conduction of sound. There was no disease of the ears. This condition was present for eight years. There was apparently no return of hearing whatever.

65. Abstracted in THE JOURNAL, July 16, 1910, p. 247.

Washington Medical Annals

July

66 Paranoia. H. F. Hickling, Washington, D. C.
67 Aphasia and Some Other Diseases of Speech. T. A. Williams, Washington
68 Laennec and the Stethoscope. J. D. Morgan and D. S. Lamb, Washington
69 Bone Grafting and Osteoplasty. E. P. Magruder, Washington, D. C.
70 Rational Treatment of Retrodisplacement of the Uterus: Special Reference to the Baldy-Webster Method of Shortening the Round Ligaments. H. D. Fry, Washington, D. C.
71 *Fracture of the Patella. The Operation of Choice Demonstrated. E. P. Magruder, Washington, D. C.
72 Acute Pancreatitis. G. T. Vaughan, Washington, D. C.

71. Abstracted in THE JOURNAL, June 4, 1910, p. 1843.

Mississippi Medical Monthly, Vicksburg

July

73 *How Should the Health of the Future Wives and Mothers be Safeguarded? J. W. Young, Grenada
74 *Conservatism in the Surgical Treatment of Gynecologic Cases. H. S. Page, University
75 *The State's Care of the Tuberculous Poor. J. R. Tackett, Meridian
76 *[illegible]? J. W. Gray, Clarksdale

73 to 76. Abstracted in THE JOURNAL, May 14, 1910, pp. 1652, 1653.

Archives of Pediatrics, New York

July

77 Experimental Epidemic Poliomyelitis and Its Relation to Human Beings. S. Flexner, New York.
78 *The First Heart Sound in Children. F. Forchheimer, Cincinnati.
79 The Hygienic Care and Management of Nervous Children. W. B. Pritchard, New York.
80 *Biologic Variations in the Higher Cerebral Centers Causing Retardation. E. B. McCready, Pittsburg.
81 Problems of Nutrition in Early Life. F. S. Meara, New York.
82 *Retained Intubation Tube (Second Intubation): Diphtheritic Paralysis: Recovery. W. P. Northrup, New York.

78, 82. Abstracted in THE JOURNAL, June 11, 1910, pp. 1906, 1907.

80. **Biologic Variations.**—Clinical evidence, says McCready, would seem to warrant the assumption that there are a large number of children retarded in their mental development on account of insufficient activity caused by biologic variations of the special centers making up the zone of language. These children are likely to be considered feeble-minded and they may eventually become so unless their condition is recognized and proper treatment instituted.

Annals of Otology, Rhinology and Laryngology, St. Louis

June

83 Some of the Newer Therapeutic Measures in Ear, Nose and Throat Affections. J. C. Beck, Chicago.
84 Brain Abscess in the Frontal Lobe, Secondary to Ethmoiditis and Frontal Sinusitis. J. McCoy, New York.
85 The Pathologic Conditions of the Nose and Throat; Special Reference to the Tubal Regions, Associated with Chronic Catarrhal Otitis Media. H. Hays, New York.
86 The Classification of Middle and Internal Diseases. S. J. Kopetsky, New York.
87 Obstinate Stenosis of the Larynx Following Diphtheria. D. J. G. Wishart, Toronto.
88 Laboratory Methods as Aids to Diagnosis of Nose, Throat and Ear Affections. J. C. Beck, Chicago.
89 Atresia of the External Auditory Canal. E. A. Forsyth, Buffalo.
90 X-ray Technic in the Treatment of Laryngeal Papillomata in Children. A. L. Gray, Richmond.
91 Removal of a Rhinestone from the Middle Ear of a Child: Exhibition of Specimen. C. F. Theisen, Albany.
92 Thrombosis of the Jugular Bulb without Apparent Involvement of the Lateral Sinus; Unusual Blood Count; Metastasis; Paralysis of External Rectus Oculi. J. R. Page, New York.
93 The Serodiagnosis of Syphilis in Its Relation to Disease of the Ear. E. P. Fowler, New York.
94 Thrombosis of the Lateral Sinus: When to Operate and What Type of Operation to Choose. E. A. Crockett, Boston.
95 Cerebral Abscess Occurring in Connection with Chronic Middle Ear Suppuration. H. B. Blackwell, New York.
96 Latent Mastoiditis with Epidural Abscess. A. Braun, New York.
97 Lateral Sinus Thrombosis Treated, Postoperatively, with Hiss' Extract of Leukocytes. S. McCullagh, New York.
98 Use of Vaccines, Serums and the Hiss Extract of Leukocytes in the Treatment of Eye, Ear, Nose and Throat Infections. J. G. Dwyer, New York.

Northwestern Medicine, Seattle

July

99 *Hemorrhage from the Kidney: Significance and Treatment. P. M. Pilcher, Brooklyn.
100 Epibulbar Sarcoma. C. A. Veasy, Spokane, Wash.
101 Indigestion. A. T. Heavenrich, Seattle.
102 *Diagnosis of Chronic Stomach Troubles. K. Winslow, Seattle.
103 Acute Colitis in Children. J. B. Bristow, Portland, Ore.
104 Pain in the Lower Part of the Back, the Hip and Extending Down the Thigh. J. C. Schapps, Butte, Mont.
105 The Open or Surgical Treatment of Fractures. G. P. Thomas, Spokane

99. Published in the *Boston Medical and Surgical Journal*, July 7, and abstracted in THE JOURNAL, July 23, 1910, p. 347. Also published in the *Long Island Medical Journal*, July, 1910.

102. **Chronic Stomach Troubles.**—Winslow emphasizes the following points: 1, That chronic so-called stomach troubles are mostly not stomach troubles; 2, that the importance of laboratory findings of the gastric contents in so-called stomach troubles is greatly exaggerated; 3, that a careful clinical history gives the clue in most cases and is the chief aid in diagnosis of so-called stomach troubles; 4, that, excluding the neuroses, the so-called chronic stomach troubles resolve themselves commonly into chronic gall-bladder disease, chronic appendicitis, duodenal ulcer, gastric ulcer and cancer. There is probably about 25 per cent. of chronic stomach troubles in which no one can make a positive diagnosis. The chief object will then be to decide whether the case warrants surgical exploration. If exploration of the abdominal and pelvic organs were done in every case where the abdomen was opened for chronic trouble, there would be less operating on the same patient and less neurosis.

Maryland Medical Journal, Baltimore

July

106 Mental Characteristics of Chronic Epilepsy. E. Jones, Toronto.
107 Lactic Bacillus Planting. A. K. Bond, Baltimore.
108 Oral Hygiene in Relation to Tuberculosis. B. B. Bennett, Baltimore.
109 Sir James Young Simpson. H. M. Cohen, Baltimore.
110 Early Diagnosis of Syphilis. H. W. Stoner, Baltimore.

Journal of the Kansas Medical Society

June

111 Public's Knowledge of the Medical Profession. O. J. Furst, Peabody.
112 Effects of Modern College Athletics on the Heart. W. M. McVey, Topeka.
113 Hyperemia. N. C. Speer, Osawatomie.
114 Significance of Uterine Hemorrhage in Surgical Diagnosis. H. L. Snyder and L. A. Jacobus, Winfield.

Journal Oklahoma State Medical Association, Muskogee

July

115 Insanity of the Puerperium—Causation. J. W. Duke, Guthrie.
116 Observations in Connection with Appendicitis. L. Long, McAlester.
117 Laryngeal Diphtheria. A. B. Montgomery, Muskogee.
118 Steps Toward the Prevention of Postoperative Exudates. W. E. Dicken, Oklahoma City.
119 Auto-intoxication. L. S. Willour, Atoka.
120 Pneumococcus in the Eye. J. H. Barnes, Enid.
121 Medical Ethics. A. N. Lerskov, Claremore.
122 Chronic Nephritis: Associated Circulatory Changes. A. W. White, Oklahoma City.
123 Elimination of Sectional Lines. J. S. McAllister, Sapulpa.

Western Medical Review, Omaha

July

124 *Chorio-epithelioma. E. C. Henry, Omaha.
125 Principles of Surgery in Emergency Cases. A. C. Stokes, Omaha.
126 Some Critics of the Medical Profession. H. W. Orr, Lincoln.
127 Recent Developments in Medical Education. R. H. Wolcott, Lincoln.

124. **Chorio-epithelioma.**—Henry reports 3 cases. Operation was performed in each case, but owing to advanced disease, one of the patients died. In this case examination showed a uterus only slightly enlarged, and in about normal position. Situated on the anterior and posterior wall of the vault of the vagina were two vascular soft tumors about the size of a pigeon's egg, so located that the opinion was expressed that one was transplanted from the other. The woman was anemic from loss of blood which had been going on for two or three weeks. The primary tumor was found in the body of the uterus, not so large as the two secondary growths. The second patient had a small tumor the size of a large hazelnut in the uterine wall, apparently of malignant structure. The microscope showed it to be chorio-epithelioma. The mucous membrane and the rest of the body appeared to be normal. The patient made a good recovery. The third patient was supposed to be 3 months pregnant when hemorrhage began and she was apparently threatened with a miscarriage. On account of her hemorrhages, albumin in the urine, and rapid heart, the consultaant advised emptying of the uterus. On examination he found a delicate young woman with a pulse of 140, temperature 101, but on putting his hands on the abdomen he found the uterus extending to the umbilicus, vagina filled with blood clots and os patulous. On thoroughly dilating and passing in a Thomas spoon a great quantity of cysts began to come away. Eight weeks later her pulse became rapid again, temperature had gone up to 101 and 102, but a blood count did not show the septic factor and was accordingly ruled out. On curetting the uterus to clear up the diagnosis, such a furious hemorrhage set in that Henry tamponed the uterus. The curetting showed a malignant condition and three days later, after direct transfusion, the uterus was rapidly removed. The tumor had penetrated the walls of the uterus and was just starting into the broad ligament. A year later the woman was in perfect health.

Louisville Monthly Journal of Medicine and Surgery

July

128 The Doctor and Habit-forming Drugs. G. L. Servoss, Fairview, Nev.
129 Medical Milk Commissions and Bovine Tuberculosis. E. C. Schroeder, Bethesda, Md.
130 Angioneurotic Edema. J. E. Hays, Louisville.
131 "Just Mumps." S. J. Meyers, Louisville.

New Mexico Medical Journal, East Las Vegas

July

132 Myxedematous Degeneration of the Chorionic Villi. T. C. Sexton, Las Cruces.
133 What the County Medical Society May do to Prevent the Spread of Tuberculosis. T. W. Laws, Lincoln.
134 Surgery of the Knee Joint. W. G. Hope, Albuquerque.
135 Diagnosis of Pelvic Inflammation. H. A. Ingalls, Roswell.

Vermont Medical Monthly, Burlington

July

136 Cancer of the Uterus. H. C. Tinkham, Burlington.
137 The Physician and Quarantine. J. W. Jackson, Barre.
138 Appendicitis—When to Operate. J. P. Gifford, Randolph.

Therapeutic Gazette, Detroit

July

139 *Difference Between Systolic Pressure in the Arm and in the Leg in Aortic Regurgitation. H. A. Hare, Philadelphia.
140 Plaster of Paris Dressings for Fractures of the Shaft of the Humerus. S. W. Moorhead, Philadelphia.
141 Osteopathy. Does it Offer Anything New? N. S. Yawger, Philadelphia.
142 Placenta Prævia. W. H. Wells, Philadelphia.

139. **Difference between Systolic Pressure in Arm and Leg.**—The results which Hare has obtained in making comparative studies of the blood pressure in the arm and leg of cases of aortic regurgitation have not only confirmed Hill's conclusions that in aortic regurgitation there is a remarkable difference in systolic pressure found in the arm and leg, but have given greater variations than he records, and Hare is prepared to agree with Hill that this extraordinary difference between the systolic pressure in the arm and leg is a pathognomonic sign of aortic incompetence, as it is not present in other valvular lesions. In one of Hare's cases this method of reaching a diagnosis of aortic regurgitation proved most helpful because the ordinary characteristic symptoms of this disease were not well marked. The pulse was somewhat trip hammer in character but not sufficiently so to be typical. Auscultation revealed a double murmur, very feeble in character, and equally well heard in the mitral and aortic areas. There was a systolic murmur transmitted into the carotid, but the diastolic murmur could not be separated from that of mitral stenosis or Flint's murmur. In this case it was found that the systolic pressure in the arms was 160 and in the legs 260. On taking the patient where there was a good light, Quincke's capillary pulse was found in the skin and in the lips. In another case the arm pressure was 170; the leg pressure 265.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

July 16

1 Epilepsy. W. A. Turner.
2 *Behavior of the Leukocytes in Infection and Immunity. F. W. Andrewes.
3 Aspects of Disease. W. Haward.
4 Administrative Control of Pulmonary Phthisis in Scotland. W. L. Mackenzie.
5 Preventive Measures and the Administrative Control of Tuberculosis. E. W. Hope.
6 Idem. H. Scurfield.
7 Pulmonary Tuberculosis as a Problem of Administration: the Economics of Phthisis. A. K. Chalmers.
8 Recruiting Officer's Notes on the Prevalence of Certain Diseases in Egypt. G. W. G. Hughes.

2. **Leukocytes in Infection and Immunity.**—The observations made by Andrewes on the bone marrow of the rabbit in staphylococcal infections are in complete accord with those of Roger and Josué and of Muir. He employed the intravenous route of infection and when death occurred rapidly, in 40 hours or less, from acute septicemia he found no leukoblastic reaction in the marrow [illegible] of the tissue in respect of its neutrophile cells. These are the cases which show a circulatory leukopenia as the end approaches. But in every case in which life has been prolonged for four days or more he found a neutrophile leukoblastic reaction in the marrow; these are the patients who show during life a persistent if variable, polynuclear leukocytosis, and after death, local foci of tissue infection. He further found that the longer the animal survives the more pronounced is the neutrophile transformation of the marrow

From these facts, Andrewes draws two conclusions. It would seem that the "plant" for the production of polynuclear leukocytes present in normal marrow, though it may suffice for a high transitory leukocytosis, is quite inadequate for the maintenance of high leukocytosis. In presence of a grave pyogenic infection steps are at once taken to increase the plant necessary to keep up a due supply. In spite of this the patient or the animal may die, but it is permissible to assume that in every case showing a sustained circulatory leukocytosis this marrow reaction is present and that when, as is commonly the case, recovery occurs, the reaction has been part, and, he thinks, a very important part, of the machinery by which the body has overcome the infection. The prognostic value of the leukocyte count in such human diseases as pneumonia rests on a definite anatomic basis.

The second conclusion is that of the vast importance of the polynuclear leukocyte in the bodily struggle against invasion by the pyogenic cocci. The immediate steps which seem to be taken to provide an increased supply of these cells in presence of such invasion, and the disastrous results which seem to attend failure of the supply, can bear only one interpretation, according to Andrewes. If, in any given bacterial infection, a sustained polynuclear leukocytosis is found during life, and, after death, a neutrophile leukoblastic reaction in the bone marrow, we are fairly entitled to conclude that the defense of the body against the microbe in question, rests largely, perhaps entirely, with the polynuclear leukocytosis, and is probably phagocytic in essence. In a rabbit which had been three times treated intravenously with a vaccine of *Streptococcus fecalis*, and which died for no apparent reason, Andrewes found 315,000 neutrophile cells per cubic millimeter of bone marrow, but in another animal killed after similar treatment the number was only 138,000, and in a third, which died much wasted, the number was 128,100. In an animal killed after two intravenous inoculations with *Micrococcus citreus ocdlis*, Andrewes found no leukoblastic reaction in the marrow; the neutrophile count was 134,000 per cubic millimeter. He says that the body reacts differently according to the species of bacterium by which it is invaded or against which it is vaccinated.

The clinical facts in relation to different human infective diseases have long suggested this and the more closely the cytologic changes in the blood and the humoral properties of the serum are studied, the more apparent is the fact that the body has several means of defense. There is a great difference between these infections and those due to the pyogenic cocci as regards the changes seen in the blood and in the bone marrow. In experimental rabbits treated with intravenous doses of living and dead colon bacilli, Gärtner's bacillus and *B. typhosus*, Andrewes regularly noted a polynuclear leukocytosis, often a high one, following the anaphylactic leukopenia, but it is a transient affair, and he believes it to be a reaction following the leukopenia, rather than a serious attempt at phagocytic defense. He has never found a leukoblastic reaction in the marrow of animals thus treated. The pyogenic cocci the members of the colon bacillus group, and the microbes of tubercle and probably also of syphilis, are examples of micro-organisms against which the body seems to defend itself in very different fashion. So far as the polynuclear leukocytes are concerned, Andrewes concludes that these cells are of fundamental importance in defense against the pyogenic cocci, of merely secondary importance in the case of the colon group, while in tubercle and syphilis they seem to play almost no part at all.

British Medical Journal, London

July 16

9 *True Aims of a United Medical Profession and the Handicap of the Trade Union Bogey. L. L. Shaw.
10 Principles of Practice in Relation to Our Patients. R. J. Pye-Smith.
11 Fifty Years of Medical and Surgical Progress and the Part Played in It by Experimental Research. C. H. Allfrey.
12 After Ten Years. W. H. Maidlow.
13 *The Country Practitioner of To-day. S. H. Puckle.
14 Working of the Workmen's Compensation Act of 1906. W. H. B. Brook.
15 Doctor and the Public. S. N. Scott.
16 Future Prospects and Position of the Medical Profession Under Poor Law Commission Reports and Proposals and a Public Medical Service. M. Lewai.

9. **A United Medical Profession.**—Medical education is discussed briefly by Shaw. He suggests the creation by the British Medical Association of a section dealing with the subject of medical education. Here, he says, there would meet together on equal grounds, as members of the profession, the teachers and the taught, and much might be done toward forming a sound opinion on certain principles of education. The taught might bring home to the teachers that teaching is an art that might well be learnt by those who propose to practice it. The medical teachers' faith in examination as a means of education might in such open discussion be advantageously shaken.

13. **The Country Practitioner of To-day.**—Puckle pleads for hearty and unselfish cooperation and combination within our ranks as being the only way of successfully confronting the numerous forces attacking us from without. It is useless, he says, for a few to make a stand against encroachment on their right to a place in the sun at the hands of private patients and public bodies, if within their ranks are to be found those who are willing to accept what others with the true interests of the profession at heart indignantly reject. It is no use presenting a bold front to the common foe if you know that you will probably be stabbed in the back by a so-called friend.

We must live, and, when all is said, the laborer is worthy of his hire. Surely, therefore, in the common interest, it should be possible for neighboring colleagues to put a stop to underselling, by mutually agreeing on a scale of charges suitable to each district, and based on occupation and mileage, and loyally keeping to it. That is one line our combination might take, and though more or less a sordid detail, is none the less an important one. That "union is strength" has been true for all ages, and now that the struggle for existence is daily growing fiercer has passed beyond the region of platitude.

Medical Press and Circular, London

July 6

17 Intracranial Tumors. J. Taylor.
18 Prevention of Mortality after Pelvic Operations. H. Macnaughton-Jones.
19 Treatment of Placenta Prævia. J. Veit
20 The Difference Between Suggestion and Persuasion—The Importance of the Distinction. T. A. Williams.

July 13

21 Malta Fever. F. M. Sandwith.
22 *Eighty Consecutive Cases of Wasting Infants Fed on Undiluted Citrated Milk. F. Longmead.
23 Treatment of Placenta Prævia (concluded). J. Veit.
24 The Heart in Pulmonary Tuberculosis. J. Hay.

22. Abstracted in The Journal, July 9, 1910, p. 150.

Clinical Journal, London

July 6

25 Carcinoma of the Rectum Treated by the Abdomino-perineal Method. H. J. Waring.
26 Asthma. A. F. Hertz.

July 13

27 Femoral Ruptures and Their Management. C. B. Lockwood.
28 Pleurisy. W. C. Bosanquet.
29 Lupus Erythematosus. G. Pernet.

Journal of Tropical Medicine and Hygiene, London

July 1

30 *Etiology of Blackwater Fever. P. F. Foran.
31 Diptera of the Congo-Zambesi Watershed. A. Y. Massey.

30. **Blackwater Fever.**—In practically all the cases Foran examined, small active coccus-like bodies or "blood dust" were to be seen. They varied much in number, but in two cases, both young native children, with anemia and enlargement of the spleen, they were present in such extraordinary numbers that, on looking at the fresh film, the plasma seemed to be seething with them. On staining, however, there was no trace of them. Foran found this parasite in many young native children and in a fair number of Europeans. Of the former, some were suffering or had suffered from symptoms closely resembling mild attacks of blackwater; and of the latter two had had blackwater, and the others were suffering from anemia and irregular fever. Some of the cases appeared to be purely infections; others had undoubtedly a malarial element. In a few young children with acute symptoms, he found remarkably rich infections, 1 in 3 or 1 in 4 of the

red cells invaded. In others, and in the Europeans, the parasite appeared to be latent, with only a few free forms and still fewer intracorpuscular.

Foran suggests that the parasite described is a piroplasma, and that it is the cause of blackwater fever. The intracorpuscular forms closely resemble malaria, and may have been confounded with it. During the attacks of blackwater fever in Europeans the parasites may not appear in the peripheral circulation at all; they may congregate and multiply chiefly in the organs, and there invade the red cells, and these invaded cells, being, perhaps, especially susceptible, may get broken down before reaching the peripheral capillaries. The absence of pigment would render it difficult to demonstrate the presence of the parasite in sections.

Dublin Journal of Medical Science

July

32 Dyspepsia. B. G. A. Moynihan.
33 Responsibilities in the Prevention of Inherited Syphilis. S. Shelil.
34 *The Rotunda Hospital. E. H. Tweedy, B. A. H. Solomons and J. R. Freeland.

34. **Rotunda Hospital.**—During the year 1908-09 there were 2,369 admissions in the maternity wards of the Rotunda Hospital and 2,045 deliveries, which is 15 less than the previous year. Tweedy's cases of eclampsia up to date number 73. This is not only the largest series of cases published by one observer in Ireland, but surpasses the combined number of his two predecessors. A close inspection of former reports will, according to Tweedy, demonstrate the fact, which has been repeatedly noted by other observers, that the incidence of eclampsia is apparently in the nature of an epidemic. This fact is worthy of more than a passing notice, for it is possible that it may serve as a clue to the recognition of the cause of the disease.

In respect to contracted pelves, Tweedy enters a plea for their estimation in inches rather than centimeters. Thus, if starting with 4½ inches as the normal conjugate, one can divide the different contractions into 5 degrees, the first four separated from each other by half inch measurements, the fifth degree comprising all pelves with a true conjugate less than 2¼ inches. This presupposes that a simple flat pelvis is being dealt with; in the presence of general contraction the condition must be considered worse by half an inch. Tweedy also pleads for precision in pelvic measurement in carrying out scientific methods of treatment; that this precision can be obtained only by Skutsch's pelvimeter, the use of which requires considerable practice; that treatment based on the known size of the pelvis will yield better results than that obtained by any other single method. Of other methods, the most important is Professor Muller's, which is of immense utility, but not of universal application. It often fails in obese women, or when the child lies in the third or fourth position with the head extended.

He no longer considers it justifiable in a well appointed hospital to induce premature labor or to perform prophylactic version as a treatment for contraction without complication. These women may be allowed to fall into labor and deliver themselves naturally, provided that the narrowing is not greater than the first or second degree. Delivery by forceps or by enlargement of pelvis should not be delayed when once material or infantile symptoms of distress have appeared, and for these a careful and continuous watch should be kept. In contractions of the third degree the patient's powers should not be wasted by a prolonged second stage, for an enlarging operation will nearly always be necessary for delivery. In the fourth degree of contraction Cesarean section, intraperitoneal or extraperitoneal, is the operation of necessity, if the child is alive, while craniotomy with cleidotomy if necessary, can be relied on for delivery, if the child is dead. In the fifth degree, whether the child is dead or alive, it is best extracted by Cesarean section. Two Cesarean sections were performed during the year.

Labor was induced 11 times—for a dead child 4 times, for albuminuria and edema once, for hydramnios once, for myoma once, and for ante-partum hemorrhage, once. There remain three cases in which labor was induced at full term because of fetal death on former occasions from unexplained causes when labor occurred spontaneously. Live children resulted in these cases. There were 34 cases of post-partum hemorrhage, during the year; 22 cases occurred before the placenta left. In 12 of these the placenta was expressed directly from the uterus; in the other 10 a portion or all of the placenta was adherent necessitating manual removal—three times, of pieces of placenta left after expression; seven times of the whole placenta. Six of the 34 cases followed operative delivery, necessitating an anesthetic. The treatment was as follows: Intrauterine douche followed by a gauze plug, 11 cases; intrauterine douche, 8 cases; repair by catheterization, expression of placenta, massage, manual control, and the administration of ergotin.

Annales de Gynécologie et d'Obstétrique, Paris

June, XXXVII, No. 6, pp. 321-384

35 Twin Pregnancy Complicated with Vesicular Mole. (Grossesse gémellaire compliquée de môle hydatiforme.) A. Herrgott.
36 Drainage of the Abdomen in Gynecology. H. Hartmann and M. Metzger.
37 *Evolution of the Stump of the Cervix after Subtotal Hysterectomy. (Evolution du moignon cervical après l'hystérectomie subtotale.) M. Mériel.

37. **Fate of the Stump after Subtotal Hysterectomy.**—Mériel reviews the various mishaps liable to occur after incomplete hysterectomy. Leucorrhea is the rule for a week or a month afterward, and it may persist to such an extent as to require removal of the stump of the cervix later. The glands in the cervix develop excessive secretion under the influence of the operative traumatism; in rabbits Burkhardt found the stump transformed into a cystic tumor at the end of a few months. This excessive secretion in the cervical glands might be avoided by making the amputation lower down, close to the vagina, thus leaving fewer glands to secrete. The records show further that in from 3 to 6 per cent. of the cases the stumps develop malignant degeneration. Richelot compiled 22 cases in 1905 and the list is much longer now. The cervix may have already contained a cancerous growth at the time of the operation or the supposed fibroma may have been a sarcoma. For these and other reasons Mériel advocates total hysterectomy, not leaving any stump, and presents statistics to show that the mortality of the two technics does not materially differ. The danger of infectious complications by way of the vagina can be obviated, he thinks, by swabbing the vagina with dilute tincture of iodin and curetting the cervix the night before the operation to remove accumulations of mucus. French surgeons in general, he says, seem to be discarding the subtotal for total hysterectomy more and more.

Annales des Maladies des Org. Génito-urinaires, Paris

June 1, XXVIII, No. 11, pp. 961-1056

38 *Bismuth Paste in Urology. (Des injections de pate bismuthee en chirurgie urinaire.) Heitz-Berger and Moreno.
39 Anatomic-Clinical Classification of Ureter Deformities Based on 251 Cases on Record. (Sur les anomalies uretérales.) J. and P. Delmas.

June 15, No. 12, pp. 1057-1152

40 Operative Treatment of Vesicovaginal Fistula with Participation of the Ureter in the Fistula. Rochet and Muller.
41 *Non-Gonorrheal Urethritis. B. Motz.
42 Technic of Section of the Urethral Meatus. J. de Sard.
43 *Indications for Various Operative Methods with Hypertrophy of the Prostate. Bensa.
44 *Case of Rapid Postoperative Recurrences of Traumatic Urethral Stricture. M. Palazzoli.

38. **Bismuth Paste in Urology.**—This communication from the Paris Necker hospital relates the application of Beck's bismuth paste in 10 cases of fistula resulting from removal of a tuberculous kidney and another of a fistula with a simple pyonephrosis with concretions. Nine articles on the use of the bismuth paste have been published in France. The paste used was a mixture of 10 parts bismuth with 10 parts each of paraffin and lanolin and 20 parts of vaselin. The amount injected was only from 5 to 10 or 12 c.c. except in a single case. In other points Beck's technic was followed and although such striking results as he has reported were never observed, yet on the whole the verdict is favorable. A cure was attained in some cases in which the process had proved rebellious to all other measures. The suppuration is materially reduced by the paste which renders it unnecessary to change the dressing as often as otherwise.

41. **Non-Gonorrheal Urethritis.**—Motz classifies non-gonorrheal urethritis aside from the venereal form as of traumatic, clinical or spontaneous origin or consecutive to descending infection of kidney or bladder, and he then discusses the therapeutic indications for these five types when the trouble is recent. Some do better with mild disinfectants, while the primary venereal urethritis may require stronger measures and the urethritis due to the presence in the urine of certain irritating salts or toxins demands general treatment before instituting local measures.

43. **Indications for Operative Treatment of Hypertrophy of the Prostate.**—Bensa determines by cystoscopy (1) the shape of the hypertrophy, (2) its consistency by palpation through the rectum and its nature in general by the hematuria and the various secretions, and (3) the state of the general health, especially that of the lungs, heart and kidneys, testing for urea, albumin and sugar. Total transvesical prostatectomy he reserves for fibroadenomatous hypertrophy of the lateral lobes in younger and only slightly infected patients, and it is done in two sittings with a temporarily infected patient. Partial transvesical prostatectomy is applicable for a pedunculated middle lobe. Perineal prostatectomy is preferable when there is suppuration—on account of the facility of drainage, and possibly for the lower hypertrophied lobes. The Bottini operation may be applied for soft hypertrophy of the lateral lobes, which it is difficult or impossible to enucleate, for "bar" hypertrophy of the middle lobe and stenosis of the neck of the bladder; also when the patient refuses an abdominal operation or is too weak for any other technic. This Bottini operation removes the part of the prostate obstructing the posterior urethra and neck of the bladder. The results are certain, permitting almost without any danger the removal of the obstacle to urination. Suprapubic cystotomy is advised in the hemorrhagic forms or when there is infection of long standing; it should be supplemented by deep cauterization of the protruding lobes or bands in the neck of the bladder. In some cases the cystotomy alone is all that is indicated to relieve and soothe the bladder by diverting the urine, and this treatment thus forms the last resort when all the ramifications of the urinary apparatus are distended and infected.

44. **Recurring Stricture.**—Palazzoli emphasizes the fact that a stricture cannot be regarded as cured until the underlying cause has been definitely removed. In the case reported the inflammation was the result of injury from a concrement and the stricture constantly recurred after dilatation. This persisting inflammation can generally be detected and cured only by palpation and massage over a large bougie in the urethra, possibly supplemented with electrolysis.

Archives des Maladies de l'App. Digestif, Paris

June, IV, No. 6, pp. 305-368

45 *Six Cases of *Trichocephalus dispor* Enteritis. A. Cade and C. Garin.
46 Mechanism of Action of Secretory Stimulants Introduced by Way of the Rectum in Dogs with Pawlow Fistula. Wasserthal.
47 Evacuation from the Stomach of Cold Mineral Waters Ingested Fasting. A. Mousseaux.

45. **Enteritis Due to the Trichocephalus Dispar.**—Cade and Garin's patients were between 25 and 40 years old and the syndrome varied in each case but the diarrheic form with invisible hemorrhages was most common, persisting for months and years. In some cases periods of constipation intervened, and in some the tenesmus and colics simulated dysentery, or the false membranes in the stools suggested mucomembranous colitis. The trichocephalus locates by preference in the right iliac fossa, and the symptoms may include a spasm of the bowel suggesting a pathologic induration in this part of the intestine. In some of the patients gastric symptoms predominated, the clinical picture simulating then nervous or neurasthenic dyspepsia. Headache, dizziness and weakness were constant symptoms and a temperature at times up to 38 C. or still higher for a few days was sometimes noted. The discovery of occult blood in the stool and of eggs of the helminth are important aids in differentiating, as also the lingering nature of the symptoms and their flaring up especially in summer. In one of the cases cited the diagnosis had long been tuberculous enteritis but the occult blood and the trichocephalus in the stool and the improvement under thymol confirmed the assumption of helminthiasis. They gave thymol in 15 grain doses three or four times a day for three or four days, following with a saline purgative, the patient abstaining in the meanwhile from alcohol, wine and oil. This course was repeated after an interval of a few days. It does not always abolish the helminths entirely, even with several courses, but great improvement in the condition was always manifest and no untoward by-effects were noted in any instance.

Archives de Médecine des Enfants, Paris

July, XIII, No. 7, pp. 481-560

48 *The Heart in Acute Articular Rheumatism in Children. P. Nobécourt.
49 Anaphylaxis for Cow's Milk in Infants. (Anaphylaxie pour le lait de vache chez les nourrissons.) Barbier.
50 *Inflammatory Nature of Stenosis Ascribed to Muscular Hypertrophy of the Pylorus in Infants. E. Weill and Péhu.
51 *Epidemic of Whooping-Cough with Gastro-intestinal Complications. (Considérations sur quelques complications d'une epidémie de coqueluche et sa disparition brusque à la suite d'une cause météorologique.) N. B. Nicoletopoulos.

48. **The Heart in Acute Articular Rheumatism in Children.**—Nobécourt advises keeping a child in bed and giving sodium salicylate even in the very mildest cases of acute rheumatism, enforcing bed rest with especial insistence with any signs of complications on the part of the heart; if the myocardium is involved even the slightest movement may bring on syncope. He also advises an exclusive milk diet or milk or vegetable diet, keeping the bowel function regular with enemas and laxatives and applying sinapisms and dry or wet cupping over the heart if there is much pain. In this case and also if the myocardium shows signs of weakness, he keeps cold wet compresses or an ice bag over the heart. The majority of physicians keep up the salicylate even with myocardium trouble; the drug does not seem to have the depressing action that used to be feared from it, and it may have a favorable action on the serosa. Weill tried subcutaneous injections of sodium salicylate in parenchymatous myocarditis but without apparent effect. On account of the analogies between the virus of the disease and lactic acid, alkalines have been given in treatment by some and they do not seem to do harm, to say the least. After subsidence of the acute phase, the patient should be kept under supervision and exercise, arsenic, iron and iodids and a course of mineral waters ordered as indicated. He cites a number of cases from his experience to show the various types of heart trouble liable to be encountered, including two cases of functional mitral insufficiency and some cases in which the endocarditis, pericarditis or myocarditis occurred with attenuated rheumatism, even without joint lesions or fever. P. Weill has encountered cases of actual visceral rheumatism with no joint symptoms.

50. **Inflammatory Nature of Stenosis of the Pylorus in Newly-Born Infants.**—Weill and Péhu present data to sustain the assertion that the stenosis is sometimes merely the result of a hyperplasia of the pylorus musculature secondary to an inflammatory process in the stomach. The inflammation may be of greater or less extent and intensity which explains the variability of the symptoms. The gastritis may be clinically cured by medical measures and these should be given a thorough trial and time to act before considering operative treatment.

51. **Whooping-Cough.**—This communication from Greece states that during an epidemic of whooping-cough gastro-intestinal symptoms suggesting typhoid were common and proved fatal in a number of cases. The epidemic was in summer but a sudden change in the weather, bringing a cold northeaster, seemed to blow the whole epidemic away. The local doctors, meeting two days later, all had wonderful tales to tell of the great efficacy of the special drug which each had happened to be prescribing for his little whooping-cough patients the day the weather turned. On comparing notes, however, they came to the conclusion that some general factor must have been responsible for the benefit derived on that and the following day in all the cases from the various drugs that had been used. And this factor seemed to have been the sudden change in the weather.

Bulletin de l'Académie de Médecine, Paris

June 28, LXXIV, No. 25, pp. 651-674

52 Arsenical Insecticides in Agriculture. Duguet and Committee.
53 *The Dog as Typhoid-Bacillus Carrier. (Le chien, porteur de bacilles d'Eberth.) J. Courmont.
54 *Differential Radiodiagnosis of Gall-stones and Urinary Calculi A. Béclère.

53. **Dogs as Typhoid-Bacilli Carriers.**—Courmont found that 10 of the 12 dogs tested eliminated typhoid bacilli regularly in their stool for four or five days after eating a single meal of food experimentally contaminated with typhoid bacilli. The bacilli seemed merely to pass through the dog's body without causing lesions or symptoms, but it is evident that during the five days following ingestion of typhoid material the dog is liable to be a dangerous bacillus carrier. In the two cases with negative findings in the stool the bacilli proved afterward to have been derived from cases of Malta fever.

54. **Radiodiagnosis of Gall-Stones and Urinary Concrements.**—In the case reported by Béclère the symptoms indicated kidney stone and radioscopy showed a large concrement in the right side. Its shadow was 40 mm. in diameter when the tube was placed above the patient but the shadow was only 28 mm. in diameter when the tube was placed beneath, the patient's position and the distance of the tube the same for each exposure. This difference in the size of the diameter with the upward and downward exposures indicated that the stone must have been much nearer the front than the back of the body, suggesting that it was in the gall-bladder rather than in the kidney, although there had been no signs of anything wrong with the biliary apparatus. The hematuria was still unexplained until the tube was applied to the left side also, when a small kidney stone was discovered.

Grèce Médicale, Syra, Greece

II, Nos. 7-8, pp. 17-20. Last indexed May 14, p. 1655

55 *Malarial Hemoglobinuric Fever Should Not be Treated with Quinin. (Quelques mots sur l'etiologie et la pathogénie de la fièvre bilieuse hémosphérinurique; devons-nous la traiter par la quinine?) J. Cardamatis.

Nos. 9-10, pp. 21-24

56 Influenza and Dengue. (Grippe et fièvre dengue.) P. N. Divaris.

55. **Should Quinin be Given in Hemoglobinuric Fever?**—Cardamatis has been collecting the experiences of physicians throughout Greece in regard to hemoglobinuric fever and its treatment with quinin and states that in 2,481 cases, including 55 from his own practice, the mortality was 24.42 per cent. in the 1,347 cases in which treatment was with quinin, but only 7.32 per cent. of the patients died in the 1,134 cases in which no quinin was given. This list includes the experiences of 105 Greek practitioners, in as many different foci of malaria, and the conclusions from the total statistics confirm what Cardamatis has been teaching since 1893, namely, that complete abstention from quinin is necessary in treatment of bilious hemoglobinuric fever. The hemoglobinuria is stated to have followed eating green beans or their flowers in a number of cases, and Kouzis has isolated from fresh beans a special ferment which he calls "cyamose," but Cardamatis thinks that the trouble is more likely to be explained by some minute mushroom growth on the raw beans, the mushrooms containing some poisonous element. One of the Greek physicians reported a case brought on apparently by emotional stress, in another by the odor of resin, drinking a glass of an infusion of quassia or decoction of absinthe, or, in one child of 8, by eating a very large number of figs. In Ghiompres' case fatal hemoglobinuria came on after eating a dish of snails. Blood from the hemoglobinuric patients failed to show any evidence of a special hemolytic action or a destructive action on the malarial parasite.

Lyon Médical, Lyons

June 12, XLII, No. 25, pp. 1237-1280

57 *Absorption of Ultraviolet Rays by Transparent and Colorless Substances and Practical Consequences for Hygiene. (Translucidité et opacité ultra-violettes par les substances transparentes et incolores à la lumière. Application aux liquides de l'organisme.) H. Bordier.

June 26, No. 26, pp. 1281-1324

58 Histogenesis of Syphilitic Gumma in the Liver. L. Bériel and C. Laurent.

July 3, No. 27, pp 1325-1376

59 *Intestinal Dyspepsia. A Cade Commenced in No. 26.

57. **Absorption of Ultraviolet Rays by Impurities in Air, Etc.**—Bordier reports extensive research on the absorption of the chemical rays by various substances, organic fluids, transparent solutions, etc., and draws some practical conclusions. The crystalline lens and cornea become fluorescent under the action of the rays, showing transformation of energy, and this transformation of energy cannot occur, he believes, without some physiologic transformation which in time may become pathologic. He advises careful exclusion of the ultraviolet rays in all sources of illumination, kerosene lamps and incandescent lights being far preferable in this respect to an arc light, Auer, Nernst or mercury light. His experiments further showed that the impurities in the air of cities absorb the ultraviolet rays so that they lose their bactericidal action on the air. The composition of city air renders it an impenetrable barrier for the ultraviolet rays unless high winds keep the air constantly replenished. It is not necessary, however, he adds, to send persons to a great distance to get pure air—a few miles beyond the city limits the ultraviolet rays display their full powers again. This should be borne in mind, he suggests, in selecting a site for a hospital.

59. **Intestinal Dyspepsia.**—Cade applies this term to habitual functional disturbances in the intestinal digestive process, independent of any lesion in the bowel. He discusses in turn the clinical manifestations, causes, effects elsewhere, diagnosis, prognosis and therapeutic indications. The most common form is that due to lack of sufficient gastric juice, and this indicates treatment with acids. With pancreatic insufficiency the acids should be supplemented with the ferments and lime salts. With a lack of sufficient bile, an extract of bile can be given, with sodium and magnesium salts. In all the forms special attention should be paid to the always predominant nervous element. A well conducted course at a spa is often particularly useful in permanently curing intestinal dyspepsia, selecting the waters best adapted for the patients with the diarrheic or constipated form.

Obstétrique, Paris

June, III, N. S., No. 6, pp. 561-608

60 *Diagnosis and Importance of the Loss of Lime During Pregnancy. (Décalcification gravidique.) Marquis.
61 Changes of Presentation in Course of Labor. (Relations étiologiques entre les présentations du siège décompléte mode des pieds et les mutations polaires de présentations au cours du travail.) J. Rouvier.
62 Jonges' Position to Enlarge the Outlet of the Pelvis During Labor. (L'agrandissement du diamètre bis-ischiatique.) A. H. M. J. Van Rooy.

60. **Loss of Lime During Pregnancy and Its Clinical Importance.**—Marquis states that there is evidently a physiologic loss of lime during pregnancy, manifested by the looseness of the pelvic articulations; if it reaches a pathologic degree there is pain in the symphyses, and this he regards as the first stage of osteomalacia, believing that this degree of osteomalacia is quite common; in the second phase, there is considerable pain in the bones and walking is difficult, but the pelvis is not deformed. The third stage, in which the pelvis is actually deformed, is the only form of the affection recognized by other authors to date, and this is why the prognosis of osteomalacia is generally considered so grave. Examination of the proportion of lime in the blood is a reliable method of determining the condition in regard to lime waste. In two typical cases described in detail, the blood contained 0.12 per thousand lime in one and 0.162 in the other, instead of the normal average of 0.052 for the pregnant woman. The proportion of lime in the blood has always paralleled the severity of the osteomalacic disturbances in his clinical experience. The disturbance in osteomalacia is a decalcification while in rachitis it is more impossibility of recalcification. The decalcification in pregnancy is probably due to some disturbance in ovarian, suprarenal or similar functioning, with a predisposition afforded by frequently repeated pregnancies and deficiency of lime in the food.

Presse Médicale, Paris

July 6, XVIII, No. 54, pp 513-520

63 *So-called Primary Neuralgia of the Rectum E. Parmentier and J Foucaud.

63. **Neuralgia of the Rectum.**—In this article two typical cases are reported of primary rectal neuralgia. One was a butcher of 36 with intense paroxysmal pain in the region of the rectum, the other was a woman of 46. In her case the pain came on soon after eating and lasted for nearly three hours. In both cases there had been a preceding enterocolitis. Both patients were much benefited by a general brief tepid douche followed by local hot douches to the region. The application of heat in this way cured the first patient completely and the second is nearly cured and there has been no recurrence in either case for more than a year. The history, symptomatology and the diagnosis by exclusion are discussed and the benefit from local heat emphasized.

Revue de Gynécologie, Paris

June, XIV, No. 6, pp. 513-624

64 Atresia of the Hymen. L. Aubert.
65 Kraurosis and Leukoplasia of the Vulva. F. Jayle and X. Bender.
66 Tumors of Wolffian Origin in the Round Ligament. M. Chevassu.
67 Rectoscopy: History, Technic, Indications and Findings. G. Luys.

Revue de Médecine, Paris

June, XXX, No. 6, pp. 449-528

68 Comparative Study of the Reactions of the Islands of Langerhans in the Pancreas and of Lymph Glands and Spleen in Experimental Tuberculosis. M. Salomon and P. Halbron.
69 Mediastinal Pleurisy. E. Devic and P. Savy.
70 Acute Poliomyelitis. IV. E. Job and J. Froment.

Semaine Médicale, Paris

July 13, XXX, No. 28, pp. 325-336

71 *The Relics of Tubal Abortion and Their Diagnosis. (Les reliquats de l'avortement tubaire.) F. Lejars.

71. **Retrospective Diagnosis of Tubal Abortion.**—Lejars regards a prolonged continuous blood stained uterine discharge as an important aid in differentiating tubal abortion; even if the proportion of blood is small its persistence for two up to five weeks is characteristic and absence of blood in the vaginal discharge is strong evidence against a recent hematocele. The slight hemorrhage seems to persist longer after tubal abortion than after rupture. Incomplete expulsion of the ovum is also liable to keep up the hemorrhagic discharge, and he relates some instances of such retention of the placenta with the tube open and of total retention with the tube closed. The small encapsulated collection of blood may be taken for a fibroma and the resulting disturbances for inflammatory processes in the adnexa or in the uterus. Certain cases of tubal abortion have been diagnosed as a hemorrhagic metritis and the uterus was curetted when this organ was sound and the trouble was in the tube beyond the reach of the curette. It might possibly have been detected if the adnexa had been systematically palpated. The tubal abortion may not have been recognized as such and the discovery of the small encysted collection of blood in the pelvis years later may be a puzzling find.

Archiv für klinische Chirurgie, Berlin

XCII, No. 1, pp. 1-263. Last indexed April 16, p. 1343, and August 6, p. [illegible]

72 Roentgen Carcinoma and Its Origin. F. Rosenbach.
73 Results of Traumatic Severing of the Achilles Tendon. (Zur Kenntniss des Pes calcaneus traumaticus.) S. Peltesohn.
74 Plastic Operation for Intrathoracic Fistula into Lower Trachea. (Intrathorakale Luftfistel seltener Aetiologie und ihre plastische Deckung durch einen Hautperiostknochenlappen.) M. Hofmann.
75 *Technic for Alcohol Injections in Trigeminal Neuralgia. (Die Technik der Injectionen in die Trigeminusstämme und in das Ganglion Gasseri.) H. K. Offerhaus.
76 The Accessory Ligaments of the Shoulder in Connection with Dislocation. (Die Hemmungsbänder des Schultergelenks und ihre Bedeutung für die Schulterluxationen.) E. Delorme.
77 Congenital Urethra Diverticulum. (Fall von angeborenem Harnröhrendivertikel.) S. Timofeew.
78 Retroperitoneal Dermoid Cysts. F. Ehler.
79 Single Cysts of the Long Bones. (Die solitären Cysten der langen Röhrenknochen.) W. Röpke.
80 Case of Spontaneous Exclusion of Loop of Small Intestine. (Fall von spontaner Ausschaltung einer Dünndarmschlinge, nebst Bemerkungen zur Frage des Ileus.) P. Esau.
81 Treatment of Complications of Gastric Ulcer. (Behandlung der Complicationen des runden Magengeschwürs.) I. K. Spischarny.
82 Antiferment Treatment of Suppurative Processes. E. Hesse.
83 Experiences with Excision and Resection of Gastric Ulcers; 24 Cases. (Magengeschwüren.) E. Payr.
84 Varices in Abdominal Wall. (Ueber Phlebectasien der vorderen Bauchwand.) I. Elbergell.
85 Recurring Volvulus of Small Intestine. (Fall von Wiederholung des Dünndarm Volvulus.) W. Philipowicz.

75. **Technic for Injections into the Trigeminal Nerve.** Offerhaus has been working out a method for certain and safe localization of the nerve for deep injections of alcohol, etc., in treatment of chronic trigeminal neuralgia. He reviews the history of the method and lauds its efficiency. The ancient Greeks knew that the dimensions of the human body are proportional to each other so that, given certain measurements, the others can be estimated from them, and he has found that this applies also to the skull bones and to their various parts. Comparative measurements of 60 European skulls in the Groningen museum of anatomy showed that the distance between the oval foramens is always equal to the distance between the alveolar processes measured beyond the last molars at the point where the palate process joins the lower jaw. The distance between these points is readily determined by measuring in the mouth. Eleven instructive illustrations and diagrams show the conditions and the various laws he has worked out from this material and his experience with deep injections in 8 cases. The laws of practical importance are that the distance between the inner side of the alveolar processes back of or beside the last molars, is equal to the distance between the round foramens. The distance between the outer side of the alveolar processes measured beyond the last molars is equal to the distance between the oval foramens; it is also equal to the distance between the outer sides of the maxillary tuberosities. The distance between the oval foramens and the outer side of the maxillary tuberosity is equal also to the distance between the round foramen and the outer side of the malar bone. In practice, therefore, it is necessary to know only the distance between the inner side of the alveolar processes and the distance between the maxillary tuberosities to know the point where the needle inserted will hit the third branch of the trigeminal nerve; if these measurements are respectively 5 cm. and 14 cm. then the oval foramen lies at a depth of $\frac{14-5}{2} = 4.5$ cm. The same principle applies also to the second branch and the round foramens. In order to determine with precision the exact direction to give the needle, he has devised graduated calipers with an adjustable rod in the end of each branch. The calipers are applied to the maxillary tuberosities and the rods are adjusted so that they project in a single straight line and the needle is introduced along this imaginary line running between the tuberosities. The needle first pierces the parotid gland, then passes in front of the maxillary articulation, through the rear wall of the masseter muscle and through the external pterygoid, and then reaches the third branch of the trigeminal nerve just before it divides. No large vessels are encountered on the way. To reach the second branch, the distance between the zygomas is determined in the same way as also the imaginary line connecting them; the calipers are applied to the middle of the malar bone about 1.5 cm. behind the point where the ascending and horizontal portions meet. The needle is introduced just above the zygomatous process, or, if it is desired to hit the second branch where it emerges from the round foramen, the needle is introduced just below it, the point of the needle directed a little upward and backward. The above technic locates the nerve within a few millimeters unless there is marked asymmetry of the skull, Offerhaus declares, and the simple method of deep injections is thus rendered accessible to all. He advises injecting a little alcohol into the peripheral foramen at first, and then, if this does not cure, making a deep injection. General anesthesia is unnecessary and actually detrimental. He adds that the entire domain of the second and third branches of the trigeminal nerve can be readily and effectually anesthetized by a single injection of a small amount of an anesthetic to reach the nerve as it passes out from the round or oval foramen.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVI, No. 4, pp. 327-417. Last indexed July 30, p. 442

86 *Treatment of Tuberculosis According to Dr. Carl Spengler of Davos. I. K. (Tuberkulose-Therapie nach Dr. Carl Spengler mit besonderer Berücksichtigung des I. K.). R. Denöhr.

87 Idem. (Anwendung und Wirkungsweise des I. K. an der Hand von Krankengeschichten aus der Carl Spenglerschen Praxis.) R. Benöhr and A. Hoffmann.
88 Idem. (Behandlung der Tuberkulose mit I. K. in der Landpraxis.) W. Pumr.
89 Idem. (Erfolgreiche Anwendungsweise des "I. K." Spengler bei der Behandlung der Tuberkulose.) Westphal.

86. **Treatment of Tuberculosis.**—Benöhr states that Spengler regards the red corpuscles as the main source of production and storage of the immune bodies, and he obtains his I.k. (Immun-Körper), to serve as a tuberculin, from the dissolved corpuscles of artificially immunized sheep and rabbits. Benöhr tabulates the details of 130 cases of tuberculosis in which this treatment was applied at Davos, and Pumr of 46 other cases while Westphal relates his experiences with it at Hannover. The conclusions of the writers are all favorable as to its efficiency. Spengler has made a special study for nearly twenty years of the combination of tuberculosis and syphilis. An inherited syphilitic taint is found underlying the tuberculosis in more cases than is generally recognized. Syphilitic involvement of the lung is comparatively frequent although it is difficult to produce anatomic proof. The syphilitic lung is inclined to be "fleshy," hypertrophied, with a tendency to cirrhosis in time. A characteristic auscultation finding over these "fleshy" lungs is a murmur (Rauschen), more frequent over the middle and lower lobes than the upper, corresponding to the more usual location of syphilitic changes in the lung. This murmur is generally restricted to the terminal phase of inspiration and the beginning phase of expiration. With tuberculosis combined with syphilis the larynx is frequently involved and this is often the primary process. The bronchi also are notably involved, especially with acquired syphilis. Auscultation reveals this syphilitic bronchitis by the bronchial symptoms and a rattling or a snoring sound. Another sign is the lack of proportion between the apparently extensive pulmonary process and the well nourished, healthy aspect of the patient. The syphilitic-tuberculous sputum is large in amount, mucous or mucopurulent, and the microscope shows numerous cellular elements with fragmented nuclei in contrast to the sharp outlines of the cell nuclei under other conditions. Tubercle bacilli are few and far between, even with extensive processes in the lung. Sometimes spirochetes can be discovered in the sputum. Vigorous mercurial treatment is contraindicated in the tuberculous, and only mild measures can be used. Many obstinate cases of pulmonary tuberculosis yield to tentative antisyphilitic measures; the outlook is more promising in the young and in the stage of inflammatory hypertrophy. In one such case a man had had pulmonary symptoms for 26 years; the cough had increased during the last six months and there was fever and a few tubercle bacilli were found. He has healthy children and no history of syphilis, but 20 drops of tincture of iodin twice a day in milk banished nearly all the râles in less than two weeks and by the end of two months the temperature was normal, the expectoration and râles had ceased and the patient had gained many pounds in weight.

Berliner klinische Wochenschrift

June 27, XLVII, No. 26, pp. 1213-1260

90. *Sudden Total Amaurosis in Woman of 71 and Man of 50. (Zwei bemerkenswerte Fälle von plötzlicher doppelseitiger Erblindung im höheren Lebensalter.) W. Uhthoff.
91 *Tuberculin Treatment of Kidney Tuberculosis. H. Wildbolz.
92 Cystic Kidneys and Kidney Cysts. A. Renner.
93 Case of Habitual Torsion of the Large Intestine. (Zur Kasuistik der habituellen Dickdarmtorsion.) A. Augspach.
94 Anguillula Intestinalis in Miners. A. Springfeld.
95 Tuberculin Test in Dairies. (Zur Frage der Tuberkulinprüfung der Kindermilchkühe.) C. Bolle.
96 Idem. B. Möller.
97 *Treatment of Chronic Lead Poisoning with Fixation Abscesses. (Zur Behandlung des chronischen Saturnismus mit Fixationabscessen.) V. Hinze.
98 Warning for Caution in Application of Wassermann Syphilis Reaction in Diagnosis. A. Freudenberg.

90. **Sudden Blindness in the Elderly.**—Uhthoff reports two cases of sudden bilateral blindness which he ascribes to a peripheral, basal affection of the optic nerve, basing his diagnosis on the exclusion of all other probable causes. In the first case nothing pathologic could be found in the woman of 71 except a tendency to arteriosclerosis. The only plausible explanation seems to be bleeding from an artery at the base of the brain, the blood entering the sheath of the optic nerve, or compressing it after encapsulation of the minute hemorrhage. The cerebrospinal fluid was limpid on lumbar puncture five weeks later. In the second case there were signs of a preceding tendency to neuritic atrophy of the optic nerve although the patient, a man of 59, had not been conscious of any disturbance; a basal hemorrhage had probably occurred also in this case.

91. **Tuberculin Treatment of Kidney Tuberculosis.**—Wildbolz states that microscopic examination of the kidneys in 5 cases after prolonged courses of tuberculin treatment failed to reveal any tendency to healing of the tuberculous processes in the kidney under the influence of the tuberculin. In 4 of the patients the tuberculosis was restricted to one kidney and the conditions were unusually favorable for a cure if the tuberculin treatment had been able to effect such, but in every instance the disease progressed and nephrectomy became necessary in time. The general health persisted good and the tuberculous process had not progressed to the cheesy phase or cavity formation notwithstanding its long duration, up to 8 years in one case. There were no evidences in any of the kidneys of an injurious action from the tuberculin. He also reports 3 cases in which the tuberculous process in the kidney apparently healed under conservative measures without tuberculin, and the patients were in good health for 3, 2 and 9 years before the symptoms flared up again and the long advised nephrectomy was permitted. Such spontaneous remissions and apparent clinical cures impose extra caution in estimating the effect of tuberculin. His conclusions from these and other data cited are that tuberculin has a general favorable, toxin-binding influence in case of kidney tuberculosis but no appreciable local action on the lesions. In his 31 cases the general health almost invariably improved under the tuberculin but no patient was cured or even relieved from his local disturbances. Extreme caution is necessary if tuberculin is given in advanced kidney tuberculosis on account of the extensive absorption of the toxins of the tubercle bacilli in the kidney process, flooding the system with tuberculin from within. In early cases of unilateral kidney tuberculosis, a trial of tuberculin is justified, especially in the young. By this means it may be possible to benefit in some cases, and the constant oversight required with tuberculin treatment enables a prompt decision as to when nephrectomy should be advised or enforced, while the findings in the kidney will throw light on the actual action of tuberculin in such cases. We must ask more of the tuberculin with kidney than with pulmonary lesions, as in nephrectomy we have a means of actual definite cure, while there is no such resource with pulmonary lesions.

97. **Fixation Abscess in Treatment of Lead Poisoning.**—Hinze reports a case in which unmistakable benefit was derived from a fixation abscess made in the thigh by subcutaneous injection of 1 c.c. of turpentine. Although the patient in this case had had nothing to do with lead for ten months, yet 0.089 per cent. of metallic lead was recovered in 1.528 gm. of pus from the abscess. The patient in this case, a type-founder of 41, suffered also from tuberculosis, alcoholism and arteriosclerosis and there were signs of interstitial nephritis, but he bore the fixation abscess without apparent harm. At autopsy a few months later only traces of lead could be found in the liver and none in the bone marrow. J. Carles reported last year 2 clinical cases and considerable experimental research, all confirming the action of the harmless fixation abscesses in aiding in the elimination of lead in cases of industrial lead poisoning. He calls it "leukocyte venesection."

Deutsche medizinische Wochenschrift, Berlin

July 7, XXXVI, No. 27, pp. 1257-1304

99 Pathology and Treatment of Hydrophobia (Tollwut.) O. Lentz
100 The Experimental Basis for the Use of the New Arsenical Preparations in Spirochete Diseases, and Particularly in Syphilis. P Uhlenhuth and P. Mulzer
101 *Secondary Infection with Tubercle Bacilli and Their Saprophytic Growth. C. Hart.
102 Radiography of the Appendix. (Die radiographische Darstellung des Wurmfortsatzes.) R. Liertz.
103 Gelatin and Coagulation of the Blood. (Gelatine und Blutgerinnung.) H. Grau.
104 Advantages of Early Operation for Appendicitis. H. Kümmell. Commenced in No 26.

105 *Treatment of Flat-Foot. (Eine auf einem neuen Prinzip begründete Plattfusseinlage.) O. Momburg.
106 New Histologic Findings with Glioma of the Retina. M. Peschel.
107 Oxygenated Mud Baths. (Sauerstoffmoorbäder.) M. Wassermann.
108 *Beethoven's Deafness. (Ludwig van Beethoven's Gehörleiden.) L. Jacobsohn.
109 *Treatment of Deformities of the Feet. (Weitere Beiträge zur Behandlung von Fussdeformitäten.) J. Fränkel.

101. **Secondary Infection with Tubercle Bacilli and Their Saprophytic Growth.**—Hart is a prosector and he protests against the assumption that children are infected with tuberculosis as generally as seems to be the case from the numerous positive responses to the Pirquet tuberculin skin test. Again and again in his experience the autopsies of children giving a positive Pirquet reaction during life have failed to reveal the slightest tuberculous lesion under the microscope. He thinks it is far more likely that tubercle bacilli may be located somewhere in the body, leading a saprophytic existence and causing no tissue reactions, but at the same time absorption of their toxins from their saprophytic growth may lead to the production of antibodies which in turn would give a positive reaction to the ultrasensitive Pirquet test although in reality there are no tuberculous lesions. To sustain these views he reports a demonstrative case in which a colony of tubercle bacilli were found living a saprophytic existence without trace of microscopic changes in the tissues in which the colony of bacilli were ensconced. The cadaver was that of a locksmith of 51, with no tuberculous antecedents in the family. He had been coughing for several years and lately had become much emaciated. The physical findings in the right middle lobe suggested tuberculosis; there had been hemoptysis on one occasion, and after repeated negative findings a few tubercle bacilli had at last been detected in the sputum. The ocular tuberculin test with 2 per cent. solution of tuberculin was negative, weakly positive with a 4 per cent. solution, and the skin test gave weak positive findings. The clinical diagnosis was thus pulmonary tuberculosis and right empyema; autopsy disclosed, however, a primary cancer in the bronchi and no tuberculous focus in the lung or elsewhere, but a small colony of tubercle bacilli were found in the thick pus in the enlarged bronchus while the pus in the lung contained merely streptococci. He interprets the case as one of secondary colonization of inhaled tubercle bacilli in the stagnating secretion of the compressed bronchi, where they led a saprophytic existence, but generated toxins which were absorbed in sufficient amounts to account for the reactions to the tuberculin tests.

105. **Treatment of Flat-Foot.** Momburg remarks that it is absurd to attempt to correct a twisted and sunken arch only by sustaining the center of the arch; by pushing the bases of the arch into their proper place the central arch will resume its proper position. This is the basis for his flat-foot insole. He leaves the arch alone but strives to bring the heel into pronounced supination while the bones in the ball of the foot are brought into a plane perpendicular to the axis of the leg. The heel and the heads of the metatarsal bones are the supports for the arch of the foot, and by bringing them into their proper place the arch reassumes its normal shape. He accomplishes this with a rubber, wedge-shaped insole, the slant inward and forward, the piece fitting under the heel and stopping just short of the ball of the foot. A spring below and a leather sole above hold the parts in place; the supports of the foot are forced into the proper position and the arch takes care of itself. He states that this insole has freed many patients from long rebellious flat foot disturbances. This simple and cheap insole can be worn with any shoe with a broad low heel.

108. **Beethoven's Deafness.**—The first signs of Beethoven's deafness were noticed about the age of 25 and he tried one method of treatment after another, the deafness growing constantly worse and the subjective sounds—the *Sausen und Brausen*—tormenting him, as he says, like a demon day and night. He turned from one physician to another and finally to quacks, and various ear trumpets were devised to help him but without benefit, some by Mälzel, inventor of the metronome. He succumbed finally, at the age of 57, to cirrhosis of the liver. The Eustachian tubes were found at autopsy much thickened, with cicatricial depressions near the mouths, the auditory nerves shriveled and without medulla, and general signs of otosclerosis. The convolutions of the brain were twice as deep and numerous as in the average brain, the skull very thick. The loss first of the high tones shows that the deafness was primarily of nervous origin while the subjective sounds revealed the otosclerosis which the autopsy findings confirmed. Beethoven had smallpox in youth and a typhoid affection a few years before his deafness; the typhoid, Jacobsohn remarks, may have been responsible both for the otosclerosis and the bowel trouble from which he suffered. There was nothing to suggest syphilis, inherited or acquired, except possibly a circumscribed thickening of the right parietal bone of the skull which, according to the pictures, resembles those observed on a basis of syphilis. The autopsy report was signed by J. Wagner, Vienna, 1827.

109. **Treatment of Deformities of the Feet.** Before correcting the deformities, Fränkel loosens up the foot by a preliminary superheated air bath in the glass boot. He gives illustrations of various devices for correction of flat-foot and club-foot and the technic for treatment of club-foot after it has been once corrected.

Medizinische Klinik, Berlin

July 10, VI, No 28, pp. 1083-1122

110 *Pseudoputrid Processes in the Air Passages. H Eichhorst.
111 Natural Processes for Regulation of the Temperature of the Body in the Bath. (Wärmeregulation im Bade.) A. Strasser.
112 *The Reaction in the Focus with the Subcutaneous Tuberculin Test and its Importance for the Early Diagnosis of Apical Pulmonary Tuberculosis. (Herdreaktion bei der subkutanen Tuberkulinprobe und ihre Bedeutung für die Frühdiagnose der Lungenspitzentuberkulose.) M. Otten.
113 Scopolamin. M. Cremer.
114 Torsion of the Great Omentum. (Ueber die Torsion des grossen Netzes.) E. Schümann.
115 Contradictory Findings with the Salomon and Hemolysin Tests for Diagnosis of Gastric Cancer. (Salomonsche Probe und Hämolysine im Magensaft und Magenkarzinom.) E. Fränkel.
116 Indications for Various Mercurial Preparations. F. Juliusberg.
117 Familial Occurrence of Tetany. Coler.
118 Staining Process for Fibrin. (Zur Theorie der Fibrinfärbung.) K. Lennhoff.

110. **Pseudo-putrid Processes in the Air Passages.**—Eichhorst reports a case in which a putrid empyema existed in the pleura but without perforation of pus into the air passages. The putrid odor of the breath and sputum and the changes found in the air passages at autopsy were evidently due solely to penetration of the putrid gases into the lungs and their action on the tissues. In two other similar cases the women succumbed to the progress of a putrid empyema in the pleura although the breath and sputum had never had a putrid odor, and no pathologic findings were encountered in the air passages or elsewhere.

112. **Importance of Focal Reaction to the Subcutaneous Tuberculin Test.** Otten regards the reaction at the focus after administration of tuberculin as the most reliable means at our disposal for estimating the actual condition of the focus, whether it is active or in a latent or healed phase. Neither the local or general reaction with the subcutaneous test is decisive in this respect while the focal response gives illuminating findings. In 324 cases in which the subcutaneous tuberculin test was applied, 60.8 per cent. of the patients responded with both a focal and a general reaction; 7.4 per cent. with a focal reaction only; 23.5 per cent. with a general reaction only, and 8.3 per cent. with no reaction of either kind. The patients were those merely suspected of a tuberculous apical process in the lung in an incipient phase. In the 221 cases giving a focal reaction this consisted of development of dulness in 6 cases, exaggeration of previously existing dulness in 78, development of dulness and new râles in 3 while in 66 the existing dulness became more pronounced and râles were heard for the first time or became more pronounced in 10 cases. In 40 cases râles were heard for the first time while the dulness persisted unmodified, and in 9 the râles increased, the resonance persisting normal. Besides these findings the patients frequently complained of a vague or sharp pain in the region of the lung involved. In some cases a cough developed for the first time or the expectoration

increased or commenced for the first time. In 3 cases there were traces of blood in the sputum, observed for the first time. In only 3 of the total 324 cases were tubercle bacilli discovered for the first time in the sputum after the tuberculin test. The symptoms of the focal reaction lasted as a rule only 2 or 3 days, occasionally for 4 or 5. The patients were kept in the institution for a few days after subsidence of the reaction and no harm resulting from the test was ever discovered. Later examinations have also confirmed the precision of the focal findings as three-fifths of the patients showing traces of a focal reaction have grown worse in the interim, notwithstanding sanatorium treatment, while the condition has persisted unchanged in almost every one of the cases not displaying any evidence of a focal reaction, although none has had sanatorium treatment. The reaction at the point of injection of the tuberculin, the *Stichreaktion*, did not parallel the other findings in most cases and does not seem to have decisive diagnostic value.

Münchener medizinische Wochenschrift

July 5, LVII, No. 27, pp. 1425-1480

119 *Chlorosis. (Untersuchungen über Chlorose.) P. Morawitz.
120 Treatment of Syphilis with Ehrlich's "Substance 606." (Behandlung der Syphilis mit dem neuen Ehrlich-Hataschen Arsenpräparat No. 606.) E. Schreiber and J. Hoppe.
121 Bacteriologic Examination of the Blood. (Zur Methodik der kulturellen Blutuntersuchung.) W. Meyerstein and L. B. Rosenthal.
122 Influence of Senna on the Digestive Movements. (Einfluss des Sennainfuses auf die Verdauungsbewegungen beim Menschen.) E. Stierlin.
123 *Resection of Posterior Spinal Roots in Spastic Paralysis. (Ueber die Förstersche Operation.) A. Codivilla.
124 *Idem in Tabetic Crises. (Zur Behandlung tabischer Krisen mit Resektion der hinteren Würzeln.) H. Flörcken.
125 Chemical Theory for Action of Anesthetics. (Eine neue Theorie der Narkose.) K. Bürker.
126 Elimination of Radioactive Substances in the Urine. C. Ramsauer and A. Caan.
127 Radium in Treatment of Rheumatic Pains. J. Görner.
128 Formation of Beta-Oxybutyric Acid in the Animal Organism. (Bildung von Beta-Oxybuttersäure im tierischen Organismus.) H. D. Dakin (New York).
129 Drug Eruptions as Expression of Idiosyncrasy and Anaphylaxis. (Arzneiexantheme als Ausdruck von Idiosynkrasie und Anaphylaxie.) E. Klausner.
130 *Three Methods for Rapid Staining of Living Spirochetes. E. Meirowsky.
131 *Two Cases of a Tendency to Gangrene after Tincture-of-Iodin Sterilization of the Skin. W. Hindenberg.
132 *Action of Roentgen Rays on Tumors. (Wirkung von Röntgenstrahlen auf Geschwülste.) R. Werner and A. Caan. Commenced in No. 25.

119. Chlorosis and Its Treatment.—Morawitz protests against the assumption that chlorosis is essentially an anemia; in 28 girls with the classic clinical picture of chlorosis whom he has examined in the last six months, the proportion of hemoglobin was above 80 per cent. in nearly all, not below 60 in any, and frequently over 90 per cent. Notwithstanding this normal or nearly normal composition of the blood, the patients presented the typical symptoms of chlorosis and nearly all were cured by iron. He concludes from these and other experiences of the kind that the anemia is not the essential feature of chlorosis but only one among other symptoms. It is much more probable, he thinks, that defective or excessive functioning of the ovaries or some interrelated ductless gland is at the root of all the syndrome; the ovary alone cannot be responsible as ovarian organotherapy has not given encouraging results. Giudiceandrea has recently reported enlargement of the thyroid gland in fully 50 per cent. of his chlorotic patients examined. The fact that chlorosis develops exclusively during puberty is also suggestive in this line, as also that chlorosis may recur again and again in those who had it at puberty. Seiler found the hemoglobin percentage only 10 or 15 below normal in 51 cases of chlorosis, and all the symptoms disappeared under iron in 30 of the patients. He calls this condition "masked chlorosis;" among the 21 who were not cured by the iron were 12 girls with incipient apical tuberculosis. The iron evidently acts on the primary cause of the trouble; it is absurd to suppose, Morawitz declares, that the mere loss and recovery of such a minute hemoglobin percentage as the difference between 80 and 90 per cent., could elicit and banish the train of symptoms we call chlorosis.

123-124. Resection of Posterior Spinal Roots in Treatment of Spastic Paralysis and Painful Crises in Tabes.—Codivilla reports a severe case of spinal spastic paralysis in a well nourished girl of 15 in which a little benefit was derived from resection of the second sacral and fifth and third lumbar roots on the left and of the second sacral and fifth lumbar on the right. He is convinced that the improvement in this case might have been attained equally well with the ordinary orthopedic operations, tenotomy, etc. The results might have been better, he remarks, if more of the roots had been resected. There seems to be a tendency to atrophy of the muscles on the side on which most roots were resected. Flörcken reports complete success from resection of the seventh to tenth dorsal roots inclusive in a case of painful crises involving the spine and thorax, the syndrome like that of exceptionally severe trigeminal neuralgia. The whole syndrome was cured by cutting off the region from communication with the central nervous system by resection of the spinal roots involved. Flörcken ascribes to Abbe of New York and Bennet, in 1888, the first suggestions of resection of the spinal roots as a means of curing violent neuralgia. Chipault in 1895 endorsed their suggestion, and Munro reported in THE JOURNAL in 1904 two cases of laminectomy and division of the posterior roots, but Foerster and Küttner first applied the method on a systematically outlined plan.

130. Simple Staining Technic for Living Spirochetes.—Meirowsky mixes methyl violet with a few drops of physiologic salt solution and rubs the colored mixture vigorously into the ulcerated primary sore or condyloma. As serum oozes it is found to contain the spirochetes stained a bright violet. The depth of the stain depends on the concentration of the coloring mixture; it works best when it is of such strength that the lipoid envelop of the red corpuscles is a deep bluish violet tint. The refringens assumes a bluish violet tint, easily distinguished from the bright violet stain of the pallida.

131. Gangrene after Iodin Sterilization of the Skin.—Hindenburg reports two cases of an ax injury of the toes while splitting wood, in both of which he applied tincture of iodin according to the customary technic. When the dressings were changed two days later there were signs of commencing gangrene which he ascribes to penetration of the iodin into some gaping vessel entailing destruction of the vessel walls and consequent gangrene. The cases warn, he adds, against applying the tincture of iodin method to cutting wounds unless the cut surfaces are protected with gauze against the penetration of the tincture of iodin.

132. Action of Roentgen Rays on Tumors.—This communication relates the experiences with Roentgen-ray treatment of tumors at the Heidelberg Institute for Cancer Research in charge of Czerny. A favorable influence from the rays was undeniable but it is doubtful if they will ever prove reliable alone. The method fails sometimes in the apparently most propitious cases while again in others, apparently the least encouraging, surprising benefit may be realized. Operable tumors, it is reiterated, should always be removed but in the after treatment the Roentgen rays may be usefully applied even in combination with fulguration or thermopenetration or other measures. When applied to an open wound, the Roentgen rays seem to act more effectually than when they have to pass through the skin. When an operation is impossible from any reason then the Roentgen rays should be applied as vigorously as possible, but not if there is a chance for operative measures later as in that case the overexposures might have an injurious influence on the healing of the wound. This applies also to cancers on the limit of operability; preliminary Roentgen exposures may render them more movable and much facilitate their removal, but in such cases Czerny is always careful not to expose the region enough to induce much eczema. In the absolutely inoperable cases Roentgen treatment should be given a trial in every case, it is stated, as surprises in a favorable direction are always possible. But if only an aggravation follows the first set of exposures (5 or 6 H units over every point of the surface), it is useless to continue the exposures as when this was observed further exposures had no favorable influence in such cases. Especially unfavorable experiences in this direction were encountered with carcinomas of the mouth, tongue and parotid region. Apparent success at first is not always a precursor of a definite cure: the melanosarcomas were most disappointing in this respect, and certain cases of lymphosarcomas. After surprising retrogression of the tumors at first, they then entered a phase in which they ceased to be influenced by further exposures. The aim in Roentgen treatment is not to induce necrosis of the cancer but merely an elective injurious influence on the pathologic cells, destroying their vitality and leaving them in a form permitting their absorption, while at the same time the rays have a stimulating action on the neighboring tissues, starting proliferation in them. Unless the adjacent tissues are able to absorb the destroyed tumor cells, their destruction does no good. One great difficulty with Roentgen treatment of cancer, it was found, is that the different elements of the lesion possess a varying susceptibility to the rays: this difference may be striking even from cell to cell. Homogeneous radiosensibility of the cancer, surpassing that of adjoining tissues, is the *sine qua non* of success.

Wiener klinische Wochenschrift, Vienna

July 7, XXIII, No. 27, pp. 991-1024

133 Etiology of Suppurative Follicular Enteritis. H. Albrecht.
134 Edema after Operation for Stenosis of the Pylorus: Three Cases. A. Jiann.
135 Tonsillectomy. (Ueber die Radikaloperation der Tonsille.) S. Tenzer.
136 Spiral Test of Cutaneous Sensibility. (Eine Spiralprüfungsmethode mit dem Pinsel zur Abgrenzung berührungsanästhetische und berührungshypästhetischer Hautstellen.) M. Löwy.
137 Spinal Anesthesia by Jonnesco's Technic in 50 Cases. (Ueber die Medullaranästhesie nach Jonescu.) P. de Favento.
138 Historical Sketch of Hemostatic Measures. (Zur Geschichte der Blutstillung im Altertum und Mittelalter.) E. F. Heeger.

Zentralblatt für Chirurgie, Leipsic

July 9, XXXVII, No. 28, pp. 929-952

139 Inflammation of the Scaphoid Bone Generally Entailing Fracture. (Eine typische posttraumatische und meist zur Spontanfraktur führende Ostitis navicularis carpi.) G. Preiser.

Zentralblatt für Gynäkologie, Leipsic

July 9, XXXIV, No. 28, pp. 929-976

140 Treatment of Placenta Prævia. W. Sigwart.
141 Technic of Rhachiotomy (Verschleppte Querlage—Küstner's Rhachiotom.) H. Küster.
142 *Childbirth after Suprasymphyseal Delivery. (Ueber Geburten nach suprasymphysärer Enthindung.) K. Hartmann.
143 *Perineotomy. (Wo ist vorteilhaft die Episiotomie zwecks Erhaltung der integrierenden Dammgebilde anzulegen?) A. Markowsky.
144 Decapsulation of the Kidney in Eclampsia. S. Cholmogoroff.
145 *Carcinoma in the Stump of the Cervix after Chrobak's Myoma Operation. H. Hinterstoisser.
146 Vicarious Menstruation Through Laparotomy Fistulas. E. Bircher.

142. **Births after Suprasymphyseal Delivery.**—Hartmann has previously reported 8 childbirths in women delivered by suprasymphyseal section and here reports 4 more cases. No mishaps were encountered in any case for which the previous operation was in any way responsible.

143. **Perineotomy.**—Markowsky states that v. Ott has made a practice of prophylactic section of the perineum since 1895 and now has a record of over 364 cases and is preparing a detailed and laudatory report on the method for the approaching gynecologic congress in St. Petersburg next September. He claims that the perineum is protected best by systematic incision.

145. **Cancer in the Stump of the Cervix.**—Hinterstoisser has had carcinoma develop in the stump of the cervix in two cases after the Chrobak supravaginal amputation of the cervix for myoma. This makes ten cases on record of this contingency but he declares that this percentage is too small to detract from the value of the Chrobak technic, although it imposes the necessity for regular and frequent examination of the woman afterward.

Zentralblatt für innere Medizin, Leipsic

July 9, XXXI, No. 28, pp. 697-720

147 Treatment of Serum Sickness. J. C. Schippers and J. M. Wentzel.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 3, XXXI, No. 79, pp. 826-840

148 Heart Disease and Tetany. (Cardiopatia e tetania.) M. Gioseffi.

July 5, No. 80, pp. 841-848

149 Advantages of Wire to Hold Fractured Femur. (Il cerclage nelle fratture della diafisi femorale.) L. Vercelli.

July 7, No. 81, pp. 849-856

150 *The Albumin Reaction in Tuberculous Sputum. (L'albuminoreazione—prova del Roger—nell' espettorato tubercolare.) A. Trona.

150. **The Albumin Reaction in the Sputum.**—Trona applied Roger's technic in 44 tuberculous cases and 35 of various other affections and obtained positive findings only in the tuberculous cases and in 9 with heart disease and albuminuria. The sputum is mixed with salt solution and a few drops of acetic acid are added to precipitate the mucin. The whole is then stirred and filtered. The filtrate is then boiled or treated with trichloracetic acid to reveal the presence of albumin. The albumin indicates that the sputum is not a mere superficial secretion but comes from some deep-seated inflammatory process.

Policlinico, Rome

July 17, XVII, No. 29, pp. 899-930

151 *Hemostasis by Inflated Tubing. (Sopra un nuovo metodo d'emostasi e sulla prolungata ischemia senza conseguenza per l'integrita dei tessuti e della loro funzione.) E. Pomponi.

151. **Hemostasis by Inflating Tubing.**—Pomponi uses a rubber tube 2 or 3 cm. (1¼ inches) in diameter, the ends held with forceps. Air is slowly pumped into the tube and by this means compression is exerted sufficient to arrest pulsation below without injury of the tissues, even when the compression is kept up for hours. He uses this contrivance for the Momburg belt constriction and states that the disturbances were slight and transient even after six or seven hours' application in his experiments.

Riforma Medica, Naples

June 27, XXVI, No. 26, pp. 701-722

152 Quantitative Formol Test for Nitrogen in Stomach Content and its Diagnostic Importance. (Azoto titolabile col formolo nel contenuto gastrico e suo valore diagnostico.) A. Barlocco.
153 Treatment of Total Prolapse of the Rectum. (La cura del prolasso totale del retto.) P. Lilla.
154 Diagnosis of Hernia of the Bladder. (Per la diagnosi dell'ernia della vescica.) A. Arcangeli.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

NEPHROCOLOPTOSIS. A Description of the Nephrocolic Ligament and Its Action in the Causation of Nephroptosis, with the Technic of the Operation of Nephrocolopexy, in Which the Nephrocolic Ligament is Utilized to Immobilize Both Kidney and Bowel. By H. W. Longyear, M.D., Professor of Gynecology and Abdominal Surgery, Detroit Post-Graduate Medical School. Cloth. Price, $4. Pp. 251, with 86 illustrations. St. Louis: C. V. Mosby Company, 1910.

COMMERCIAL RELATIONS OF THE UNITED STATES WITH FOREIGN COUNTRIES DURING THE YEAR 1908. In Two Volumes. Vol. I, Europe. Pp. 592. Vol. II, North and South America, Asia, Oceania and Africa. Pp. 853. Cloth. Washington: Government Printing Office, Supt. of Documents, 1909.

ST. LOUIS. ITS HISTORY AND IDEALS. Prepared for the Sixty-first Annual Session of the American Medical Association, June 7-10, 1910. By Philip Skrainka, M.D., Metropolitan Building, St. Louis. Cloth. Price, 75 cents. Pp. 172, with illustrations. 1910.

THE REPORT OF THE DIRECTOR OF THE INTERNATIONAL BUREAU OF THE AMERICAN REPUBLICS TO THE FOURTH PAN-AMERICAN CONFERENCE. Held at Buenos Aires, Argentine Republic. July, 1910. Washington, D. C. Paper. Pp. 120, with illustrations.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION. Forty-third Annual Session, held at Oxford, April 12-14, 1910. Roll of Members, Constitution and By-Laws, and Code of Ethics. [Secretary, E. F. Howard, Vicksburg.] Cloth. Pp. 256.

TRANSACTIONS OF THE INTERNATIONAL MEDICAL ASSOCIATION OF MEXICO. Fifth Annual Session, held at Aguas Calientes, Agts., Jan. 25, 26 and 27, 1910. [Secretary, Dr. J. S. Steele, Monterey, N. L., Mexico.] Paper. Pp. 108, with illustrations.

SYPHILIS. ITS DIAGNOSIS, PROGNOSIS, PREVENTION AND TREATMENT. By Thomas P. Beddoes, F.R.C.S., Surgeon to the London Hospital for Diseases of the Skin. Cloth. Price, $2 net. Pp. 221. New York: Paul B. Hoeber, 1910.

WHAT THE MAYOR AND CITY COUNCIL CAN DO IN THE PREVENTION OF TYPHOID FEVER. By L. L. Lumsden, Passed Assistant Surgeon, U. S. P. H. and M. H. Service. Paper. Pp. 11. Washington: Government Printing Office, 1910.

TWENTY-SEVENTH ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF INDIANA. For the Fiscal Year Ending Sept. 30, 1908. Statistical Year Ending Dec. 31, 1908. To the Governor. Cloth. Pp. 782.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

Vol. LV, No. 8 CHICAGO, ILLINOIS August 20, 1910

SOME ASPECTS OF THE MEDICAL CURRICULUM OF TO-DAY AND OF TO-MORROW

A. W. MEYER, M.D.
Professor of Human Anatomy, Leland Stanford, Jr., University
STANFORD UNIVERSITY, CAL.

That he who makes a prophecy risks his reputation, is an old adage. I accept its truth. However, only he who hath can lose. Moreover, it is not my purpose to suggest or to forecast an ideal curriculum, but simply to discuss certain aspects of present-day curricula in our stronger medical schools, and to call attention to changes which may be anticipated, or perhaps found advisable, even now. Others may be necessitated in the future—likely in the near future—while some have already been incorporated by a few of the leading medical schools of the country. It is indeed to be regretted that there is such a distance between the vanguard and the rear-guard of our medical schools, and that the curricula of many of them have undergone so few transitions outside of those necessitated by the very recent changes in requirements for admission. To be sure, change does not necessarily imply progress, but its absence surely suggests stagnation. This, I take it, applies to a certain extent to both the nature of the courses and the time devoted to them.

RIGID CURRICULA

With a few notable exceptions, one of the most prominent characteristics—yes, *the* most prominent characteristic—of the curricula of our medical schools is their rigidity. As a rule, the entire course is clearly marked out in every detail, not for one or for two years, but for four. In actual hours, this time varies from about three to seven thousand! Regardless of his previous training—or lack of it—the student is put into this educational strait-jacket from the first day of his four-years' course to the last, the strongest locking step with the the weakest. His tasks are meted out to him from 8 to 9 in the morning until 5 to 6 in the afternoon, for five or even for six days in the week.

That this is not an overstatement of the facts can easily be learned by a review of the schedules themselves, and of statistics available to everyone. Few hours indeed are left to the disposal of the student, in which to find himself, to develop his own inclination, and to exercise his own initiative, to say nothing of recreation. Under these conditions the able student must abandon—or at least defer, which is frequently equivalent—any scholarly ambitions which he may cherish, unless good fortune and good health enable him to avail himself of vacation days. In this connection it is frequently urged that the curriculum must meet the needs of the general practitioner. This is true, but it is not the whole truth, nor does it follow that the best general practitioners are produced by a trip-hammer process of education. The medical curriculum, it seems to me, can and should provide adequate training for the future general practitioner without depriving him of all opportunity to cultivate a proper scientific attitude toward his future work. I am well aware that not every country practitioner will make a Robert Koch, and that the exhausting humdrum of so-called practical routine drill, which sometimes unfortunately fills all the hours of the day and night, would never make a capable physician, much less a Koch. Yet it would be foolish to deny that the atmosphere in which the medical student lives and the opportunity given him for the cultivation of a proper attitude toward his work often determines his later career. The cultivation of this habit cannot be deferred until practice is begun. He who comes not naturally by it, or belongs not to the few who acquire it in their pre-medical work, must of necessity, then, be given the opportunity to acquire it during his medical training. For few indeed are the noble minds and resolute souls that can keep latent, with any hope of fruitful revival, scholarly ambitions dormant for a decade.

THE NEED OF DEVELOPING THE SCIENTIFIC SPIRIT

But the general practitioner has every need of being a progressive physician. He, above all, needs that attitude which can appreciate the value of a fact regardless of any obvious relationship to pressing life-problems or its immediate utilization, to preserve him from hopeless deterioration and inefficiency. It was said long ago, and often since, that "a little learning is a dangerous thing." A broad grasp of some subject—it matters little what—is essential for the acquirement of abiding interest. But how under the stress of the present-day curriculum with its increasing multiplicity of subjects can the student "drink deep"? Hence "taste not the Pierian spring" becomes his unconscious and willing or unwilling motto.

I take it that medical students can be unmade as well as made, and that to discover and to preserve the capable is as important as to eliminate the incapable. A [illegible] soul may survive. Poe did; Macaulay did; Darwin did; John Hunter would have, but demurred. Unfortunately not every medical student comes to us with the [illegible] of childhood preserved, yet most men after all [illegible] something of what Lichtenberg called "das [illegible] Ursachenthier" in them. To preserve and to cultivate these natural endowments is a high duty and sacred privilege, it seems to me. A fuller recognition of it would, I believe, result in inestimable benefit to mankind, and redound greatly to the glory of the medical profession. Perhaps this has received tacit recognition. Open recognition is needed, however. It is no excuse to say that recent progress has been so great and the subjects so many that this is impossible. We have several notable examples in this country which have repeatedly and long since demonstrated that it is possible to have the medical curriculum follow closely in the wake of scientific progress and yet leave room for the play of individuality. Besides, will not subjects increase and progress continue? Assuredly, the present golden days in medicine will not be followed by dark ages again! And if so, this would be all the more reason for preventing *den rastlosen Ursachenmensch* from becoming *ein gleichgültiger Machinenmensch*.

ELECTIVE COURSES

Several of our leading medical schools have already reduced the required work, both prescribed and elective, to a minimum, and made all other work elective. Since the elective system in colleges and universities has been so fully and so ably discussed in recent years, a full discussion will here be avoided. Its dangers, I believe, can be safeguarded by the group system, and in other ways. By its introduction, well-trained and ambitious students will be given an opportunity to get more than an elementary knowledge of some subject. More thorough work is likely to result, because the student takes a more intelligent interest in his work, and is encouraged to think for himself. Departments of instruction must of necessity be better equipped in men and means to afford able students an opportunity. Hence departments barely able to afford minimum requirements will cease to exist, never having had any good *raison d'être*. For, as any tyro knows, a machine that always runs at its maximum is not an efficient or an economical one. Even the general practitioner will have better opportunities through the enrichment of the course by a number of elective and optional subjects. Courses that are not thorough will not be chosen save by the weaklings, and this again will bring its own reward to both students and professors. Individual departments will be more self-respecting, for the younger men on the staff, being assured an impartial hearing, now have every incentive to show their mettle. Being placed in direct and equal competition with all, they will often act as a powerful leaven in the whole department. These men will thus be given an opportunity to develop themselves, and to lay the foundation of a later career under the guidance of those whose disciples they are. And even if none of them prove a Huxley, yet the day is sure to come when, as Virchow said: "We are filled not alone with admiration for the hero, but at the same time with grateful recognition of the institution which planted the seed of high achievement in the soul of the youthful student."

Further criticisms—all of the friendliest kind, to be sure—are made with the greatest reserve, since they mostly concern matters outside of my own work. If, however, this imposes silence, then manifestly there can be no mutual consideration and cooperation, and hence no progress in this matter. If therefore I shall look boldly over the fence which bounds my own lane into my neighbor's field, I trust I shall not be regarded a trespasser.

PURE AND APPLIED SCIENCE

Pasteur, it will be recalled, said applied science was related to pure science as a tree to its fruit. One of the trees growing here and there which we must fertilize, water and prune, let the command go forth, "Cut it down; why cumbereth it the ground?" is applied anatomy. There seems to be a good deal of confusion as to what applied anatomy is. In the past, tree and fruit have been confused, or even considered apart from each other. What the great master meant, I take it, was to foster well the tree, and the fruit would appear in due season. Perhaps it is this fine conception of science which has been responsible for the absence of special courses in applied anatomy in some of our best medical schools. The want in the past, it is clear, has been in the absence of those who fostered the tree, and in the multitude of those who, fixing their eyes solely on its golden fruit, let the neglected tree wither in sterile ground before them.

ANATOMY AND SURGERY

In some schools, applied anatomy seems to be the equivalent of or limited to surgical anatomy. In others, it is transformed into topographical anatomy, or even into operative surgery or is restricted to regional anatomy. The mere fact that so much confusion exists in regard to an old subject throws a strong and very interesting side-light on the whole matter. It also suggests that in many cases probably nothing very definite, or very indispensable even to the training of the general practitioner, was included. For if it be topographic anatomy it should be called so. If, on the contrary, it be surgical anatomy that is taught, then apparently only a portion of the field of applied anatomy is covered. Since, moreover, the recent graduate is not to do any major operation, there would seem to be no adequate reason why much that is at present given under surgical anatomy should be included at all in the required work of the curriculum.

It is interesting indeed that, at a time when surgeons are unanimous in declaring that it is wholly unjustifiable for any graduate in medicine to do major surgical work without prolonged and thorough hospital training, courses in operative surgery should still be insisted on! It is true that I am not fully informed as to the details of the subject-matter covered in many of the schools. But it is known what texts are used, and that all manner of major operations on the cadaver from the vertex to the soles are frequently done before, by, and with students who have not even finished their dissections. In other cases, work on animals is introduced, and students take turns in gaining facility in the use of hemostats, by catching severed vessels quickly. As to the care of the material, and the conditions under which this work is often done, I forbear to speak. Indeed, were the schools in which these things happen less prominent I would gladly forget it. Besides, I am not concerned with the character of the work, but with the work itself. Why should any student, it may be asked, spend the precious time of an overcrowded curriculum studying the details of difficult operations in surgery? Such operations, for example, as the removal of the Gasserian ganglion (lately called Gasserectomy—poor Gasser!) prostatectomy, lateral lithotomy, pyloroplasty, intestinal anastomoses, etc., etc. These all, and many others, are often included in surgical anatomy and operative surgery.

But no matter how ideal the conditions under which this work is done, or how ably it is taught, it certainly is not consistent or excusable to teach students these things, and then to condemn them for doing them. What wonder that after such teaching recent graduates attempt to perform all manner of major operations to their own sorrow, to the discredit of their teachers and to the harm of the public. It is difficult indeed to see why able teaching in human anatomy and in surgery would not make these special courses largely unnecessary. The trend of medical education is still in the main a practical and not a scientific one. In this connection, it may pertinently be recalled that Helmholz and many since attribute the dominant position of Germany in medicine to the fact that the Germans had purely ideal aims for the cultivation of science without any immediate prospect of practical utility. We Americans, on the contrary, have often been credited, and rightly so, with being unusually quick to see the practical relations of facts—provided we knew of the facts—but have we been equally active or fortunate in the revelation of those facts? From these things, and from the examples of certain excellent schools, one is compelled to conclude that it would be in the interests of all to eliminate a large part or the whole of these courses, or at least to confine them to the few who become surgeons, and thus withhold such knowledge from many a young physician who might be tempted to take a chance.

TOXICOLOGY

If I have correctly understood those fully competent to speak, most graduates from college and university courses have not had sufficient training in chemistry to enable them to take up the subject of toxicology to advantage. This, to be sure, is no reflection on these institutions. If toxicology belongs to higher analytical chemistry, it must be true that a thorough training in analytical chemistry itself is a *sine qua non* for entrance on toxicologic work. I am well aware, of course, that toxicology as given in most medical schools is nothing so self-respecting or so advanced as this. Is it really toxicology, then, and should it be given apart from the other chemical work in the medical course? I do not presume to answer this, though I am well aware how able teachers in both chemistry and pharmacology regard the matter. Their opinions are available. It must be evident to everyone, though, that if toxicology, so-called, were eliminated from the medical curriculum, some future practitioners might be deterred from supposing themselves capable of acting as expert analysts in medicolegal cases. Almost every week sees some overzealous and benighted doctor of medicine making a spectacle of himself and of his profession before a court of law and before the public. While the elimination of toxicology from the list of required work would not change human nature, it might and probably would change the attitude of many a general practitioner to this matter and eliminate it from licensure tests.

SLIGHTED SUBJECTS

If the introduction of the elective principle into the curriculum be thought unwise, because of the lack of maturity and preparation on the part of students, or for other reasons, it surely would not be difficult to find substitutes for any of the above-suggested eliminations. Among the subjects of direct and material importance to the general practitioner are at least two which, according to authorities in them, have so far not received adequate attention. These are pediatrics and psychiatry. Material for instruction in these subjects is available everywhere. What is needed is the correlation of the facilities of existing institutions and the erection of special hospitals or hospital wards for childrens' diseases and particularly for mental cases.

The equipment of childrens' wards and of wards for contagious cases in childrens' hospitals would afford every medical student an opportunity to obtain first-hand knowledge of the diseases of early infancy and of the care of young children. The training so gained, in addition to that obtained in the maternity ward, and dispensary, would equip the young physician in a way which is now largely impossible. To-day, most graduates go into practice without adequate knowledge of contagious diseases in general. For the lack of hospitals for contagious diseases the attitude of the public is no doubt partly responsible, but what can be more unfortunate or embarassing in the career of the beginner than to see measles, chicken-pox, scarlet fever, diphtheria, etc., for the first time in his life as a student or practitioner of medicine? Unless he is tactful, mother or nurse may correct his diagnosis and seriously handicap him at the very start.

Modern civilization no longer tolerates the *tortura insomnia*, and many other relics of past barbarity, in the treatment—or what the future will call mistreatment—of mental cases, but contents itself chiefly with benevolent incarceration. Surely much less could not be done in this day. To immure the helpless patient and leave him to his own devices, or those of unskilled and untrained attendants makes not for progress. With the doors of the general hospitals barred against him, nothing but the private sanitarium remains for the patient with incipient mental disease. Under present conditions, there is written over the doors of many of these, as well as over the doors of many of our asylums, "He who enters here leaves hope behind." This would be less pathetic were it less true. And until the general hospital will admit such patients as readily as it does patients with the acute infectious diseases, the medical student at best will likely be compelled to begin his career with but a text-book knowledge of them. As a result, he is almost sure to overlook impending danger and fail to recognize the actual conditions until the catastrophe breaks on his patient.

These things have been said with some reluctance, and with full appreciation of the services of the many devoted and unselfish men, whose all too busy lives are spent in the noblest of causes. Any one who knows what is done at the present day, however, and realizes what could be done, and is done elsewhere, for the mentally afflicted, cannot help but feel the injustice and in many respects the hopelessness of the present situation.

NEW SUBJECTS

I am also persuaded that the near future will see the relegation of pharmacognosy to the pharmaceutical schedule, more emphasis placed on physiology, on psychology, and some aspects of therapeutics, and the correlation of therapeutics and pharmacology and that instruction in pathologic physiology, preventive medicine and the allied subjects of sanitary science, public health, hygiene, and vital statistics will be given. To enlarge on the necessity for these in the curriculum for the general practitioner, seems unnecessary. Moreover, it is not my purpose to do more than to call attention to their frequent absence.

The devotion of more time to some of these subjects, and the introduction of others, will greatly enrich and strengthen the medical curriculum. It will widen the horizon and broaden the grasp of the general practitioner, as well as of the future investigator. I know full well that to introduce these things will require very material additions to both staff and equipment in many cases—for no instruction is better than faulty instruction. And here may it not be said with entire courtesy that retrenchment in some of the recent expansions would seem advisable on the part of those colleges and universities which have assumed responsibility for the conduct of a medical school, rather than to jeopardize the efficiency and to limit the usefulness of the future practitioner of medicine by a false economy? Surely this matter is too serious a one for the student, for the public and for the institutions concerned to be regarded lightly.

IMPROVEMENT ALREADY SECURED

Besides, our beacon-lights of medical education seem as yet unable to reach the eyes of all. To be sure, the progress made in the last decade is cause for much congratulation. The medical sciences have found a firm foundation, and further differentiation has already begun in clinical medicine. Moreover, the higher standards in medical education adopted through the combined efforts of the Council on Education of the American Medical Association, the Association of American Medical Colleges, state boards, and the Carnegie Foundation for the Advancement of Teaching, bid fair to have the most far-reaching and permanent effects. For, although schools with the highest standards have long exerted the best of influences, their splendid example unfortunately needed the reinforcement of publicity. They were often said to train theorists, unpractical men, good enough for teaching, while the pride of the rest was the training of the general practitioner. For him, low standards of admission and crude equipment were supposed to be sufficient. The fancied need of the general practitioner, or even the needs of various parts of the country for general practitioners of medicine, have often served as an excuse for wholly unjustifiable conditions. Against these assumptions, and against the separation of medical schools from universities, Brücke raised his voice long ago, and his words, though often unheeded, are still true.

THINGS DESIRED

Publicity of the facts has done much, and will do more. The forthcoming report of the Carnegie Foundation will no doubt mark an epoch in medical education. It is heroic treatment this, but the results will stand as an enduring monument to the credit of the medical profession with whom the movement for reform started. That this movement shall not cease till double standards in state boards, unjustifiable conditions within our schools, and many other things, are corrected, is the desire of every one who has the best interests of medical education at heart. From such, and from no other motives, the above criticisms and suggestions were made by one who is willing to sit at the feet of those who have grown great and gray in the service of medicine in this, or in any other day.

THE IMPORTANCE OF BEDSIDE TEACHING

FRANK W. HORNBROOK, M.D.
BOSTON

In this day when laboratory methods are so strongly emphasized and practiced and when there is such a surplus of theoretical teaching, let me call the attention of the medical profession, and especially the teaching branch of the profession, to bedside teaching. Teaching medical students at the bedside, while they are still in school, how to recognize a patient who is really seriously sick from one who is only mildly ill; how to recognize what the patient is suffering from, how to prognosticate as to recovery and what are the practical, the sane methods of treatment in each individual case as learned from the actual case by individual examination—this form of teaching, which is of the utmost value, is not carried out in any of the first-class medical schools with which I am familiar.

I would urge the great value and the absolute importance to medical students of continuous and painstaking observations on the sick at the bedside, the careful examination, complete in detail, and the thoughtful, serious effort at forming conclusions when at the side of patients who are confined to their beds because of the gravity of their afflictions.

When a medical student is given his degree, it certifies that he is prepared to practice medicine and surgery, but he is not; he must spend two years or more in a large hospital or become the assistant of some busy practitioner before he is even fairly well fitted to practice his profession, because his medical work at the school has been too theoretical; because he has not seen and handled any really sick people to speak of; he has not had anything like enough of individual bedside teaching.

Work in the out-patient departments, examining one or two patients in the hospitals and writing theses on them, followed with discussions before the class, case teaching from printed slips, occasionally being called down from the amphitheater to feel a pulse, to palpate a tumor, to listen to a heart, to examine reflexes—these are valuable, but such opportunities to handle the living patients are handed out in homeopathic doses, and it is for more bedside opportunities for the medical student that I am pleading. It is of small value to look at a patient from an amphitheater and listen to a discourse, as compared to the value of having all the students divided into small groups, by means of small sections, personally studying and handling the patients.

It is not enough even to stand at the bedside with a small number of students and an instructor and listen to him talk and watch him examine, unless the individual student examines himself, not only once but many times during the course of the disease. As an illustration, the student should have abundant opportunities for feeling pulses in all kinds of sickness and in the various changes of sickness; he should learn at the bedside the significance of those changes through observation and he should after open discussion with a wise and sympathetic teacher learn to form careful conclusions; to administer himself the remedies determined on in desperate cases as well as mild cases, and to stay at the bedside and observe the results of such treatment. He should get up in the night and go to the hospital to observe changes in patients, and while there he should feel the pulse, observe temperature, examine heart, lungs, abdomen, urine, nervous systems, general appearance, whether that patient is suffering from sepsis, cardiac failure, hemorrhage, renal deficiency shock, etc., and the lessons thus learned at the bedside are not easily forgotten.

Such teaching as this I positively know is needed badly. It means much more inconvenience to teacher, student and patient, but I am certain it is worth it. We should not stop at this extra inconvenience if it will make better and safer servants of the sick. With tact and good management in the distribution of cases there would be little more objection from patients, and with the advent of university hospitals and students living near by, such bedside teaching could be carried out.

We can say that the hospital internship solves the question; but a large percentage of medical students on graduation do not see their way clear to spend one or two years in a hospital, and besides there are nothing like as many hospital appointments that are worth anything as there are medical graduates. In addition to this, the diploma says that the graduate is prepared to practice medicine at the time it is issued; not after he has had two years of hospital service.

Laboratory teaching is excellent; it lays a broad and scientific foundation, but let us have more actual bedside teaching; let us give the medical students a personal acquaintance with the sick and the dying; let them handle such patients with all their faculties and senses open, stimulated through a wise teacher, and we shall make a distinct and practical advance in the teaching of young men to take care of those who are sick and to bring back now and then one who is dying.

71 Marlborough Street.

OPHTHALMIA NODOSA OR CATERPILLAR-HAIR OPHTHALMIA

WITH REPORT OF A CASE *

WALTER R. PARKER, B.S., M.D.
Professor of Ophthalmology, University of Michigan
DETROIT, MICH.

By ophthalmia nodosa is understood an affection of the eye caused by the entrance into the tissues of the eyeball of the hair of certain varieties of caterpillar. It was first described by Pagenstecher[1] in 1883 as "caterpillar-hair ophthalmia," later by Wagenmann[2] as "pseudotuberculosis," and by Saemisch as "ophthalmia nodosa." It shows a tendency to form tubercle-like structure, often showing nodules appearing singly or in crops, progressing mostly with exacerbation and remissions. The patient does not always give a history of caterpillar contact, the diagnosis being made with the aid of the microscope.

We are indebted for studies on this subject to Baas,[3] Wagenmann,[2] Hillemann,[4] Kruger,[5] Lawford,[6] Stargardt,[7] de Schweinitz and Shumway,[8] Teutschlaender[9] and others, and for an analysis of the literature to Ginsberg,[10] Greeff,[11] and Parsons.[12]

The disease is most common among those who work in the woods and fields. In most cases, the caterpillar falls or is thrown into the eye of the patient, or more rarely the infection occurs through free hairs, as in the case here reported. Ratzeburg pointed out the varying susceptibility of different persons, and Teutschlaender[9] proved by experiments on himself that the skin varies as to susceptibility according to its thickness. He obtained a marked reaction on the thin skin of his forearm, but practically none from the thicker skin of the finger, the same caterpillar being used in both tests. The hairs have been demonstrated in the conjunctiva, episclera, sclera, cornea, iris and in one case in the choroid.

As a rule, the first symptoms appear soon after the trauma, although in exceptional cases no symptoms appear until the nodules are present. When the cornea is involved the initial symptoms are often most severe. They consist of the sensation of a foreign body in the eye, itching or burning, with lacrimation and photophobia, all being heightened by rubbing. These symptoms are followed by swelling of the lid, pericorneal injection and edema. There is usually loss of corneal epithelium, either through wounding by the caterpillar, or through the rubbing by the patient. The initial stage continues as long as the hairs cause irritation, either mechanically or chemically, or until the hairs penetrate the tissues and become encapsulated, which occurs from the fourth to the eighth day (Teutschlaender[9]). At the end of the second week or the beginning of the third, the first nodule or nodules appear, thus ushering in the typical stage of ophthalmia nodosa. Should the hairs be eliminated the disease may be aborted without developing a nodular formation.

Karsten in 1848, as quoted by Leydig, demonstrated the fact that the irritating variety of caterpillar (*Saturna*) has skin glands which discharge directly into the wide canal of the chitin integument, which canal passes into the base of the hair, while the non-irritating varieties (*Vanessa, Acraea, Argymus*) do not have these glands. In 1855, Leydig confirmed the work of Karsten and demonstrated the presence of the gland in the *Bombyx rubi* (*Barenraupe*).

Other explanations than the Karsten-Leydig medullary poison theory have been advanced to explain the peculiar symptoms that follow the entrance of hairs of certain caterpillars into the tissues, among which are the Gossen-Fabre varnish theory, namely, that the poison is a by-product of the organic metabolism of the caterpillar and adheres to the outside as pollution; and the Stargardt[7] resorption theory, namely, that the toxin is a product resulting from decomposition of the chitin which the absorption of the hair brings about. The possibility of bacterial infection as the exciting cause has been disproved by negative results obtained by Stargardt,[7] by de Schweinitz and Shumway,[8] who transplanted a piece of conjunctiva rich in nodules into the anterior chamber of a rabbit; by the results of the tuberculin injections of Kruger[5] and Becker;[13] and also by the microscopic examination of the excised material by Wagenmann,[2] Becker,[13] Hillemann,[4] Hanke,[14] Bostrom,[15] de Schweinitz and Shumway,[8] Stargardt,[7] and Teutschlaender.[9] The offending hair appears to be sterile (possibly owing to the disinfecting action of the contained formic acid as suggested by Mitsche[illegible]koff) and the symptom-complex cannot be explained on the theory of an accompanying bacterial infection.

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Pagenstecher: Interessante Präparate von Eindringen feiner Raupenhaare in die Conjunctiva und die Iris mit daran sich bildenden tuberkelartigen Knötchen, Klin. Monatsbl. f. Augenh., 1883, No. 21; (Beilageheft, Sitzungsb. des Heidelberger Ophth.-Cong. p. 176.)

[2] Wagenmann (Göttingen): Ueber pseudotuberculöse Entzündung der Conjunctiva und Iris durch Raupenhaare, Arch. f. Ophth (Graefe's), 1890, xxxvi, 126.

[3] Bass: Toxische Entzündung der Conjunctiva (durch Prozessionsraupen), Klin. Monatsbl. f. Augenh., 1888, No. 26.

[4] Hillemann (Bonn): Ueber Augenentzündungen durch Eindringen von Raupenhaaren. Ophthalmia nodosa (Saemisch), Deutsch. med. Wchnschr., 1894, No. 24.

[5] Krüger (Bonn): Ophthalmia nodosa, durch Eingedrungene Raupenhaare verursacht, Arch. f. Augenh. (Knapp-Schweigger's), 1892, No. 24; Ophthalia nodosa; Ein weiterer Beitrag zur Kenntnis der Raupenhaarerkrankungen der Auges, ibid., 1892, No. 25.

[6] Lawford: Ophthalmia nodosa, Ophth. Soc. U. Kingdom, 1895; abstr. in Centralbl. f. Augenh. (Hirschberg's), 1895, p. 413.

[7] Stargardt (Kiel-Zurich): Ueber Pseudotuberculose und gutartige Tuberculose des Auges, mit besonderer Berücksichtigung der binocularmikroskopischen Untersuchungsmethode, Arch. f. Ophth. (von Graefe's), 1903, lv, 469.

[8] de Schweinitz and Shumway: Conjunctivitis Nodosa with Histologic Examination, Univ. Pennsylvania Med. Bull., November, 1904, xvii.

[9] Teutschlaender: Raupenhaar Ophthalmia, Arch. f. Augenh., 1908, lxi, No. 2.

[10] Grundriss der pathologischen Histologie der Auges, Berlin, 1903, p. 68.

[11] Pathologische Anatomie des Auges, p. 70.

[12] Pathology of the Eye, London, 1904, Part 1, i, 84.

[13] Becker: Ein Fall von Opath Pseudotuberculosa, hervorgerufen durch das Eindringen von Raupenhaaren, Berl. klin. Wchnschr., 1892, No. 22

[14] Hanke (Vienna): Ueber Ophthalmia nodosa, Augenerkrankung durch Raupenhaare, Beitr. z. Augenh (Deutschmann's), 1896, xxiii, 10

[15] Bostrom: Casuistische Beiträge zur Kenntniss der epibulbaren Neubildungen, Giessen, 1897.

The caterpillar hairs are more or less pointed, tubular structures, which are either needle-like and rigid or worm-like and flexible. Their surface is either smooth or covered with barbs or spinules. They are composed of a chitinous substance, which surrounds the medullary canal. Into this canal the secretion of the gland is emptied. The hairs are very numerous and easily detached. Owing to the fact that the barbs all point upward the hair must enter the tissues base foremost.

Formic acid, which plays such an important part in insect poison, has been proved to be present in the gland secretion (Fabre). When the hair enters the tissues more or less toxin escapes from the medullary canal, and the initial symptoms are produced. The course is chronic—may cover months or years. According to Teutschlaender,[9] the latent period, interrupted by acute exacerbations, are so characteristic of the disease that he agrees with Meixner[16] that it is almost pathognomonic for ophthalmia nodosa. Recurrences have been reported at periods of time varying from four days (Natanson's[17] case) to over three years (Stargardt's[7] case). The patient in the latter case had the first recurrence one month after the time of infection, the third attack three years later, and the fourth after another month. According to different theories, the recurrences may be owing to a new infection; the wandering of a non-encapsulated hair; or to chemical action. Hillemann,[4] Lawford[6] and Teutschlaender[9] all agree that from an analysis of the clinical observations it would seem that in addition to the mechanical irritant another agent must be present, which gives to the clinical history its peculiarity, and they believe that the idea of a chemical toxic agent best explains not only the clinical manifestations of the initial attack, but is the cause of the recurrent attacks as well. The details of the process as given by Teutschlaender[9] are as follows:

The initial inflammation subsides, some of the hairs being eliminated, while those remaining behind have their mechanico-chemical irritation hindered through the process of infiltration and encapsulation. But so long as the foreign body or its poisonous substance have not been absorbed or eliminated the process is not permanently stopped. Either there is an intensification of the poison, or else the protection of the tissue is weakened. The tissue changes, which during the inflammatory period caused a halt in the work of the etiologic factor, undergo a certain metamorphosis during the latent period. The edema and cell infiltration disappear and the protection is lessened. At the same time changes are taking place in the hair. The chitin-layer is being absorbed and larger openings in the medullary canal allow the poison to escape and the chemical agents to accumulate at the inner part of the nodule. When a sufficient amount has accumulated, or the protection is weakened or gone, an irritation is set up and the reaction appears, resulting in a recurrence of the initial process. This cycle goes on until the poison has all been carried off, when the hair remains in the tissue as an unirritating foreign body.

While the clinical picture of ophthalmia nodosa is characteristic, the anatomic changes are not. The first change is an intensely active hyperemia soon associated with round-celled infiltration which appears especially in the direction of the foreign body and is accompanied by more or less edema. Those hairs which are superficially situated and circumscribed by the cell infiltration may be pushed out when healing follows. The mechanico-chemical action calls forth a cell diapedesis and proliferation until a sufficiently protecting wall is built up. While in the early stage of the nodule formation round-celled leucocytes are the predominating element, later epithelioid and giant cells are added.

The conjunctiva is the most frequent site of infection and it is here that the typical nodules so suggestive of tubercle are formed. The number of nodules varies greatly—in one case twenty-seven were demonstrated (de Schweinitz and Shumway[8]). They are grayish-yellow in color and between them there is marked congestion of the conjunctival and episcleral vessels.

In the cornea, the pericorneal injection appears almost immediately, and on the third day the infiltration is noticeable. While the areas of infiltration are well defined, they are not elevated as is the case in the conjunctiva and iris. This is owing to the fact that the cornea is non-vascular (Teutschlaender[9]).

The iris is far more frequently affected than the cornea. The hair perforates the cornea either through the force of the fall of the caterpillar or through the rubbing of the eye by the patient. With one part still sticking in the cornea, the hair may bridge the anterior chamber and by means of its spinules become attached to the iris, which by its movements in dilating and contracting may draw the hair away from the cornea. At the point of entrance of the hair into the iris hyperemia and swelling occur, followed by cell infiltration, resulting in the formation of a nodule. In most cases the reaction is not severe enough to jeopardize the vision, although in one reported case an iridochorioiditis plastica followed with blocking of the pupil, and in another the eyeball shrunk, resulting in phthisis bulbi.

One patient (Kruger's), as observed by Reis,[18] twelve years after the occurrence of the infection, showed seven scars in the conjunctiva, one nodule in the episclera (from which a well-preserved hair was extracted), an opacity in the cornea (from which a hair was removed), and in the chorioid a Y-shaped streak of chorioidal degeneration bordered with pigment with a greenish reflex at one extremity, which Reis thought probably was a hair. The following report is of my case:

Patient.—H. S., male, aged 33, first came under observation in April, 1906, with the history of having had recurrent attacks of very severe pain and redness in the right eye at intervals of about 30 days, from October, 1905. The first attack came on with excessive lacrimation, severe pain and some swelling. After 3 or 4 days the more severe symptoms disappeared, though the eye remained irritable throughout the entire course of the affection. At this time all the history I was able to obtain was negative. Later, however, after 3 months' unsuccessful treatment, when asked if he had had anything to do with caterpillars, he replied: "Last October the caterpillars were so thick in our apple trees we had to burn them out." On closer inquiry, it was found that his first attack came on immediately after the trees had been freed of the caterpillars, but the patient himself did not associate in any way the work done on the trees with the disturbance in his eye. There was no history of having been struck in the eye, so the infection must have been from the free hairs.

Examination.—The eyelid was slightly swollen and the conjunctiva congested. With oblique illumination there could be plainly seen 5 areas of infiltration, situated in the superficial layers of the cornea. One was 1 by 3 mm. in size, running horizontally at the level of the upper pupillary margin. The other four, from 1 to 2 mm. in diameter, were situated in the

---

16. Meixner: Ein Beitrag zur Kenntniss der Raupenhaar-Ophthalmie, Inaug. Diss. Erlangen, 1901.

17. Natanson (Moskau): Bindehaut- und Hornhautentzündung in Folge Verletzung des Auges durch eine behaarte Raupe, Klin. Monatsbl. f. Augenh., 1897, xxxv.

18. Reis: Ueber eine eigenthümliche Aderhautveränderung nach Ophthalmia nodosa, Arch. f. Augenh., 1902, xlii, 250.

Number.	Reported by	Date.	Anamnesis of Caterpillar.	Species.	Hair Demonstrated.	Tissues Affected.	Nodules.	Time Between Accident and First Consultation.	Recurrences.	Month of Injury.
1	Pagenstecher[1]...	1883	No..	Not determined.	Yes	Conjunctiva and iris.	26 nodules	5-6 months.	4 weeks.	August or September.
2	Bass[3]......	1888	Yes.	*Cnethocampa processionea.*	Yes.	Conjunctiva.. ...	None..	Few days	None..	July.
3	Bass[3]......		Yes..	*Cnethocampa processionea.*	No..	Conjunctiva......	None.....	Few days	None..	July.
4	Weiss[19]. ...	1889	Yes..	*Bombyx pini*.....	Yes. ..	Iris..................	Several.	6 months	4 months.	June.
5	Wagenmann[2]	1890	Yes.....	*Bombyx pini*.....	Yes.	Conjunctiva and iris.	Conjunctiva, 2-3 nodules; iris, 2 nodules.	4 months.	None..	September.
6	E. Kruger[5].....	1891 and 1892	Yes..	*Bombyx rubi*.....	Yes.	Cornea, iris, conjunctiva.	Cornea, several; iris, several; conjunctiva, 12.	4 months.	6 months. .	September.
7	E. Kruger[5].....	.....	No..	*Bombyx rubi*.....	Yes.	Conjunctiva and iris.	Not stated...........	2 months.	None... ..	September
8	E. Kruger[5]......	......	Yes. ..	*Bombyx rubi*.....	Yes.	Conjunctiva, iris, cornea.	Conjunctiva, many; iris, 1 nodule; cornea, 1 hair.	6 months	None.. .	September.
9	Becker[13]	1892	Yes.....	*Bombyx rubi* or *Bombyx pini.*	Yes.	Conjunctiva and iris.	Conjunctiva, many nodules; iris, several.	3 months.	None....	September or October.
10	Hillemann[4]......	1894	Yes.....	*Bombyx rubi,* probably.	Yes.	Conjunctiva, subconjunctiva, cornea and iris.	Conjunctiva, 3 nodules; subconjunctiva, 3 nodules; iris, 2 nodules.	5 months.	None.. .	August.
11	Hummelsheim[19]..	1894	Yes...	Not determined.	Yes.	Conjunctiva, iris and cornea.	Conjunctiva, 14 nodules; iris, 3 nodules.	3-4 weeks.	6 weeks.....	October.
12	Störmann[20]	1894	Yes.....	Not determined.	Not stated.	Conjunctiva and iris.	Several..	Same day.	None.... .	Not stated.
13	Elsching[21]	1895	Yes.....	*Cnethocampa processionea,* probably.	Yes.	Conjunctiva and cornea.	Cornea, several vesicles containing hair.	4 hours...	None.. ..	June.
14	J. B. Lawford[6]...	1895	Yes.....	*Bombyx rubi*:....	Yes.	Conjunctiva.........	Several.	2 weeks...	4 months. .	September
15	Hanke[14].........	1896	Yes	*Bombyx rubi*.....	Yes.	Conjunctiva and cornea..............	2 in lower fornix, several on bulbar conjunctiva.	Several days.	Recurred in 10 days; again in 2 weeks.	October.
16	Boström[15]........	1897	No.. .	Not determined.	Yes	Cornea, scleral margin.	Limbus, 1 large nodule.	2 weeks...	None..... ..	Not stated.
17	Vossius[22]........	1897	No.. ..	Not determined.	Yes.	Sclera........... ..	1 large nodule....... .	Not stated.	None...... .	Not stated.
18	Knapp, Geo.[23]*...	1897	Yes.....	Not determined.	Yes.	Episclera, iris and cornea.	Iris, 1 nodule; episclera, 3 nodules; cornea, infiltrated.	Several days.	Repeated attacks for 3 months.	June.
19	Knapp, Geo[23] .	......	No.. ..	Not determined.	Yes.	Ocular conjunctiva.	3 nodules.......	2 weeks...	....	Sept.
20	Knapp, Geo[23]	......	Yes...	Not determined.	Yes.	Ocular conjunctiva and cornea.	Conjunctiva, 4 hairs; cornea, 2 hairs.	2 days....	None..	September.
21	Colburn[24]........	1897	Not stated.	Not determined.	Yes.	Conjunctiva, cornea and anterior chamber.	Conjunctiva, 1 hair; cornea, 1 hair; anterior chamber, 1 hair.	Not stated.	None... ..	Not stated.
22	Nathanson[17]......	1897	Yes.	Not determined.	No..	Cornea and conjunctiva.	Conjunctiva, 7 nodules; cornea, vesicles.	1 day... .	Recurred in 4 days; again in 10 days.	July.
23	Bayer[25]	1900	Yes.. ..	Not determined.	Yes.	Cornea and iris.....	Cornea, 3 nodules; iris, several.	Some days.	None..	Not stated.
24	Reis, W.[19].......	1900	No	Not determined.	Yes.	Conjunctiva, cornea, iris, episclera and sclera.	14 nodules; 3 in iris.	6 weeks...	1 week..	July.
25	Meixner[16]	1901	Yes..	Not determined.	Yes. ..	Conjunctiva, bulbi and iris	Several nodules.. . ..	40 days..	Recurred	September.
26	Denig[26]..........	1901	Yes.. ..	Spinning *Bombycina (Orgyia pudibunda.)*	Yes.	Conjunctiva...	Several vesicles. .	1 month	None., . .	July.
27	Stocké[27]........	1902	Yes.....	Not determined.	No..	Conjunctiva	1 pea-sized vesicle	1 or 2 days.	None..	Not stated.
28	Reis, W.[18]*......	1902	Yes ...	*Bombyx rubi*.....	Yes.	Conjunctiva, iris, cornea, episclera, chorioid.	Episclera, 1 nodule; conjunctiva, 7 nodules; cornea, 1 hair; chorioid, 1 hair.			
29	Stargardt[7]	1903	Yes.. .	Not determined.	Yes.	Conjunctiva, iris, sclera and cornea.	Conjunctiva, many nodules; cornea, hair.	2 months..	1 month; 1 year; 1 month later.	May.
30	Stargardt[7].......	1903	No.	Not determined.	Yes. ..	Iris and cornea......	Iris, 1 nodule... ..	5-6 weeks	10 days... . .	Feb.
31	Stargardt[7].......	......	Yes. . .	Not determined.	Yes.	Cornea.	Cornea, hair; no nodules.	Several days.	None.. .	August.
32	Stargardt[7].......	......	Yes.	Not determined.	Yes.	Cornea.	Cornea, hair .	2 days	None...	August.
33	de Schweinitz and Shumway[8]..	1901	No..	*Spilosoma virginica Bombyx*).	Yes. .	Conjunctiva.. .	27 nodules.	Few days	None....	July.
34	Valude[28].........	1904	Yes.	Not determined.	Yes. .	Cornea.	Several.. . . .	3 months..	None...	Dec.
35	Solva[29]...........	1905	Yes. ..	Not determined.	No..	Cornea and iris...	Cornea, yellowish ulcers.	Not stated.	4 months..	Not stated.
36	Teutschlaender[9].	1908	Yes. ...	*Bombyx rubi*.....	Yes.	Iris and conjunctiva.	Conjunctiva, many; iris several.	2½ months. .	5 weeks .	September.
37	Marlow[30]	1910	Yes. .. .	Not determined.	Yes.	Conjunctiva and sclera.	6 nodules. . . .	3 months	None..	September.
38	Parker, W. R....	1910	No	*Bombyx rubi*.....	Yes.	Cornea.	5 nodules..	6 months..	3, monthly	October.

* Kruger's case reported 12 years later. It is not included in the summary as a separate case

---

19. Reis (Bonn): Ein neuer Fall von Ophthalmia nodosa (Saemisch), Klin. Monatsbl. f. Augenh., 1900; Hummelsheim's case is mentioned in detail. This case was treated in Bonn in 1894, and reported in the publications of Niederrheinischen Gesellschaft für Natur- und Heilkunde and is only shortly referred to in Centralbl. f. Augenh. (Hirschberg's).

20. Stürmann: Ueber Entzündungen insbesondere Augenentzündungen, hervorgerufen durch Raupenhaare, Inaug.-Diss., Berlin, 1894.

21. Elschnig (Graz): Augenentzündung durch Eindringen von Raupenhaaren (Keratitis punctata superficialis), Klin. Monatsbl. f. Augenh., 1895, xxxiii.

22. Vossius: Ueber die durch Raupenhaare bedingten Augenaffectionen, Ztschr. f. pract. Aerzte, 1897, No. 6, p. 429.

23. Knapp: Ophthalmia nodosa, Am. Jour. Ophth., 1897, p. 247.

24. Colburn: Case reported in the discussion of Dr. Knapp's paper, Am. Jour. Ophth., 1897, xiv, 252.

25. Bayer: Ein Fall von Raupenhaar-Ophthalmie (Ophth. nod Saemisch), München med. Wchnschr., 1900, p. 730.

26. Denig: New York Med. Monatsch., October, 1901, xiii, 449.

27. Stocke: Augenentzündung durch Raupen, Ophth. Klin., 1902, No. 1.

28. Valude: Ophthalmia Nodosa, Ann. d'Ocul., March, 1905, p. 80.

29. Solva: Un Cas d'ophthalmia nodosa, Dauphiné méd., 1905, xxix, 337.

30. Marlow: Report of a Case of Ophthalmia Nodosa, Arch. Ophth., April, 1910.

upper third of the cornea about midway between the pupillary margin and the limbus. The epithelial layer was intact, the infiltrated area apparently involving the basement membrane. The cornea between the areas of infiltration was clear except immediately adjoining the opacities where it was slightly clouded.

Treatment.—When I first saw the patient he was not suffering severely, and the possibility of caterpillar hairs being the etiologic factor did not occur to me. A careful examination did not reveal the presence of the hair, but after seeing the man in one of his acute attacks when the pain was severe, photophobia intense and the pericorneal injection marked, and the cornea had become striped about the large area of infiltration, I determined to curette the indurated areas. From the scrapings I recovered the small hair shown in Figure 1, eight months after the first attack.

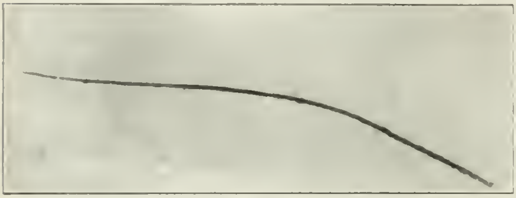


Fig. 1.—Photomicrograph of hair removed from eye of author's patient. ×62.

Species of Caterpillar.—In September, I asked the patient to bring me a caterpillar like those he burned out of the trees the year before. This he did, and the hair shown in Figure 2 was taken from the specimen which was classified as the *Bombyx rubi.*

Result of Treatment.—In a comparatively short time the patient was well, although some thin scars were left in the cornea at the site where the hairs were removed. As none of the scars were central his vision was unimpaired.

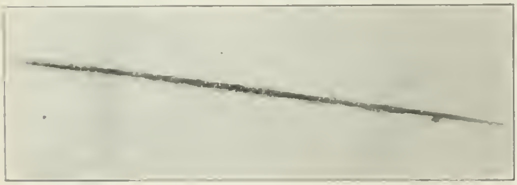


Fig. 2.—Normal hair of caterpillar. ×31

In the accompanying table the cases of ophthalmia nodosa are arranged chronologically. The table contains, so far as I am able to determine, all the accepted cases reported to this date.

In a majority of cases there is a history of injury to the eye by a caterpillar; in the absence of this history there is one of sudden onset of the symptoms, consisting of pain, more or less severe, much photophobia and lacrimation. These symptoms tend to subside after a few days, but do not entirely disappear. In the course of a few weeks an exacerbation of all the symptoms occurs. The time between the date of infection and the first consultation varied from four hours to six months. The period of time that elapsed between recurrent attacks varied from four days to three years.

The different tissues of the eye affected were as follows:

1. Conjunctiva: 21 cases = 62.1 per cent. of 37 cases.
2. Cornea: 18 cases = 48.6 per cent. of 37 cases.
3. Iris: 16 cases = 43.2 per cent. of 37 cases.
4. [illegible]: 4 cases = 10.8 per cent. of 37 cases.
5. Sclera: 3 cases = 8.1 per cent. of 37 cases.
6. [illegible]: 2 cases = 5.4 per cent. of 37 cases.
7. [illegible]: 1 case = 2.7 per cent. of 37 cases.

In every case reported, there was either a definite history of injury with a caterpillar or the presence of a caterpillar hair was demonstrated. There was a history of injury in 27, or 73 per cent., of the cases, while the hair was demonstrated in 32, or 86.4 per cent., of the cases. The species of the offending caterpillar was determined in 16, or 50 per cent., of the cases in which the hair was found.

The following species of the caterpillar were demonstrated: *Bombyx rubi,* 10 times; the *Knethocampa processionea,* 3 times; the *Bombyx pini,* 2 times; and the spinning *bombycina* and the *Spilosoma virginica,* each, once.

The treatment adopted in the reported cases has been in the main symptomatic. The local remedies employed have been those usually prescribed in the treatment of iritis. The resemblance of the corneal lesions to those found in keratitis punctata superficialis of Fuchs has led in some cases to the administration of mercury, but without results. Operative treatment has been limited to iridectomy, to combat iritis or increased tension, and for the excision of nodules and hairs.

The prognosis in ophthalmia nodosa should be guarded. It will depend on the tissues involved, the severity of the case, and the extent of the structural change present.

I wish to acknowledge the assistance rendered me by Dr. George M. Waldeck in the preparation of this paper.

Chamber of Commerce Building.

PRIMULA DERMATITIS*

O. H. FOERSTER, M. D.

MILWAUKEE

That the primula or primrose, a flowering plant found in many homes as a floral decoration, is frequently the cause of a dermatitis of more or less severe degree, is a fact not sufficiently recognized by the medical profession.

In this country attention was first called to the poisonous property of the species of primula known as *Primula obconica,* by J. C. White[1] in 1889 and again in 1890, when several cases observed in florists were reported.[2] With the exception of case reports by Denston[3] and Sweet,[4] there have been no further contributions to this subject by American writers, and in the consideration of dermatitis venenata in the latest dermatologic text books the primula is either omitted entirely or is barely mentioned. This is in marked contrast to the large number of articles on this subject which have appeared in recent years, especially in English and German medical and botanical journals. The distribution of the primula in American homes is almost universal during certain seasons, and is certainly as wide-spread as in England and on the Continent, thus giving an equal opportunity for the development of cases. The discrepancy in the number of cases reported in this country is therefore perhaps attributable to a lack of appreciation of the primula as the possible cause of some forms of dermatitis remaining grouped under the term eczema. I venture to assert that a more wide-spread knowledge of the toxic properties of this plant will shed light on the etiology of many instances of so-called recurrent "eczema," and of cases of "mild erysipelas," basing this on my experience following the presentation of a case of primula dermatitis before a local medical society in 1903. For some time thereafter I was frequently informed by general practitioners of the discovery of cases of primula dermatitis which had masqueraded unrecognized under the convenient term of eczema, (until the primula as a possible causative factor had been brought to their attention).

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Garden and Forest, 1889.

[2] Boston Med. and Surg. Jour., 1890, p. 125.

[3] Med. Summary, 19[illegible], p. 227.

[4] The Journal A. M. A., July 27, 1907, p. 329.

My personal experience with the dermatitis produced by the primula would indicate that it is not at all infrequent, as it comprises some forty or fifty cases, of all grades of severity and extent, observed during the past seven years. In addition I have learned from others of the existence of many instances of this affection, so that I now constantly hold the primula under suspicion when inquiring into the cause of a dermatitis. In this connection the remarks of Jadassohn[5] are very pertinent, when he says:

> In the past few years the best known—but still not sufficiently well known—inflammations have been those produced by some species of the primula in individuals with an idiosyncrasy toward this plant, affecting especially the hands and face (even with iritis), constantly recurring in acute form or appearing in a more chronic manner with exacerbations. Whoever has once experienced how much an "eczema" for years always appears at a definite time, tortures the patient, is treated unsuccessfully by all possible methods, subsides on rest in bed, and immediately reappears when the patient again goes about (because the care of the plant is resumed), and finally disappears entirely after disposing of the primula, will never again forget to search for the most varied external causes in eczemas of every description.

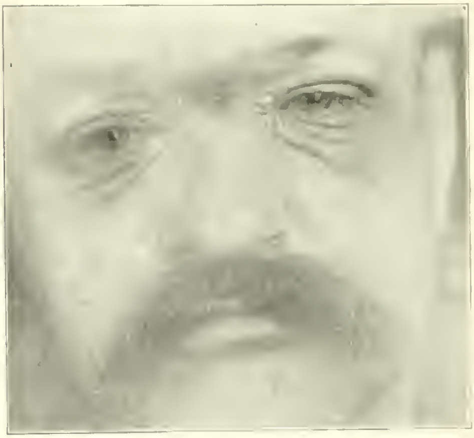
TYPES OF PRIMULA DERMATITIS

From the observation of any considerable number of cases it is apparent that the dermatitis caused by the primula presents itself chiefly in three types, depending on the degree of idiosyncrasy. Those possessing a well-marked idiosyncrasy to the toxic principle respond with an intense inflammation, erythemato-vesicular in character, at times with the formation of bullæ, and accompanied by more or less swelling. Others develop an erythemato-vesicular or erythemato-squamous eruption of a less acute type, with considerable infiltration, after repeated attacks, and scaling continued over a long period. Again, in others an intensely itching or burning sensation confined to the pulps of the fingers, which are puffed, tense, and slightly reddened, may be the only evidence of reaction.

The clinical picture of the highly inflammatory type in all its details is well presented in the following notes from the case of a housewife, aged 58 (?) made when the attack was of sixteen hours' duration.

> On the face, from level of zygoma to border of jaw, are blotchy, irregularly outlined, erythematous patches extending over cheeks and jaws, converging on the chin, but leaving nose and ears unaffected. On the central part of the left cheek is a dollar sized patch of closely crowded, almost coalescent, peculiarly angular and flattened vesicles, with clear contents, resembling drops of dew. In the labiomental furrow and extending upward to midpoint of lower lip is an intensely erythematous and slightly puffy area with a central group of small, closely set, angular vesicles. There is no glandular enlargement. The eyelids are not affected.
>
> The dorsum of the left hand is puffed up with an elastic, cushion-like swelling, extending to the ulnar border, over the dorsal and lateral surfaces of fingers, and slightly to the palmar surface of the fingers. The swelling prevents closing of hand. A ring on the third finger is almost hidden in the fold of edema. On the dorsum and lateral surface of ring finger are three tensely filled bullæ with rounded summits and clear contents. Two bullæ are each 1 inch long and $^3/_8$ inch wide, the third is round, $^3/_4$ inch in diameter. On the dorsum of the middle finger is one bleb, $^3/_4$ inch by $^3/_8$ inch. There are no vesicles on hand or other fingers.
>
> The dorsum of the right hand shows a pale, elastic swelling, extending over dorsum of fingers, without erythema, vesiculation, or bleb formation. The palms of both hands are unaffected, but perspire excessively.
>
> On both forearms, more on extensor than on flexor surface, and extending upward to within two inches of elbow, is a blotchy, unevenly distributed, rose-red erythema with irregular margins, with intervening areas of normal skin. The eruption on the two arms is of equal intensity, and erythematous throughout. The remainder of the body is not involved. There is intense itching and burning, especially on lateral surface of fingers.

In other instances the reaction may be of an abortive papulo-vesicular type on an erythematous base, or simply erythematous or urticarial in character, though the latter has been very infrequent in my experience.



Primrose dermatitis, chronic type, infiltrated and scaling dermatitis.

The cases which might be termed chronic, owing to repeated attacks at short intervals, present an appearance of acute exacerbation of an infiltrated and scaling dermatitis. On the face the skin is thickened and thrown into folds, especially about the eyes, yellow-red in color and covered with closely adherent, thin scales. Vesiculation during acute attacks is imperfect and small denuded areas, slightly edematous, exude thin serum which dries into gummy, yellow crusts. The active inflammatory process appears as though focused in limited areas, without outlying reaction, and as if it were superimposed, giving an appearance of artificiality to the clinical picture, which is often quite striking.

An analysis of the cases as to age, sex, occupation, and the like, is not only of interest, but reveals some points of value in diagnosis. As the dermatitis results from direct contact with the plant it naturally follows that florists, gardeners, housewives and servants are most prominent in the list of those affected; that females are more often affected than males, and that children almost never develop the dermatitis. I observed several cases among the members of a religious sisterhood, and in merchants who made a hobby of cultivating flowering plants.

---

[5] Deutsch Klin., x, 146.

OCCURRENCE

The primula is hothouse-grown and its growth is forced for its sale during the holiday seasons of Christmas and Easter, though it is in the market at all times. Consequently the great majority of cases developed immediately after Easter, following the introduction of the primula into the home as a floral decoration. Others referred the beginning of the dermatitis to the period immediately following a birthday anniversary, at which time the primula had been received as a gift. In the case described earlier, the patient had been presented with a flowering primula at Easter-time for five successive years, and had promptly each time developed a dermatitis, which became increasingly severe with each recurrence. Many exacerbations followed at irregular intervals for several months, and finally the entire process ceased (after the withered plant had been removed), to reappear at the following Easter. Only once was this sequence broken, owing to the presentation of a primula on the patient's birthday and the consequent development of the dermatitis during her stay at a sanatorium, where she had gone to recuperate after several months of suffering from what was regarded as a "nervous eczema."

In another instance the dermatitis made its appearance regularly for three years on Easter Sunday afternoon, had then persisted for weeks, was considered a "gouty eczema" and was each time cured by a stay at a German health resort.

In many instances the history of regularity or periodicity of attacks or exacerbations provides the clue for determining the cause of an otherwise unexplainable dermatitis, and probably nowhere more so than in the primula dermatitis. This is well shown in the history of several cases which I have observed. One patient repeatedly developed the dermatitis shortly after every return to her own home after a period of time spent in visiting friends or traveling; her return after even a few days of absence was followed by the outbreak of a dermatitis, her first care always having been the trimming of her plants, including the primula. In another instance a dermatitis of only moderate degree and extent appeared on every successive Sunday and subsided by Thursday or Friday of the same week. This sequence is explained by the regularity with which the primula was trimmed every Friday.

The eruption is most often found on the hands, forearms, and face, including the ears, and in all of the cases observed by me these were the only parts of the body affected. I have been informed of the case of a florist in whom the erythemato-vesicular inflammation extended to the shoulders, with marked swelling of both arms.

It appears that the inflammatory reaction remains limited to those parts which come directly into contact with the plant or to which the irritating principle is transferred. Thus, in one of my cases the ears were intensely affected because of transference from the hands owing to the patient's habit of pulling at the lobes of the ears. In the case of a housemaid the fingers and wrists were the only parts affected, owing to their contact with the primulas contained in a window-box when raising or lowering the window shades. A unique case has been reported by Kirk[6] in which an intense swelling of the oral and pharyngeal mucous membrane resulted from chewing a leaf of the primula.

This limitation of the eruption is in marked contrast to that seen in ivy poisoning, in which areas of the skin remote from the points of original contact are frequently and severely affected.

The first symptoms usually observed are intense burning and itching, without visible change in the skin, which, however, soon responds with an erythematous blush and some swelling. I have not observed a papular eruption, though papulo-vesicles may develop later. Rarely the reaction is entirely of an urticarial nature; that is, an acute edema with serous exudate, sufficient at times to prevent closing of the hand. Small vesicles, closely grouped, develop early, and I have been impressed with the frequency with which the vesicles are angular in outline, as contrasted with the rounded vesicular lesions of eczema. The lateral surfaces of the fingers, dorsum of the hands, and the chin and cheeks show the vesicular eruption most often. In the cases I have seen the palms have always remained normal.

The subsequent course of the eruption may be acute, with the formation of blebs and considerable edema, or more subacute with rapid drying of the vesicles and scaling. The duration of a single attack may be as short as four to five days or may be extended to two weeks before recovery is complete. Acute exacerbations due to renewed exposure may prolong the affection indefinitely, and result in the production of a chronic, infiltrative type of dermatitis, lasting perhaps for several months. Fortunately, however, the discovery of the cause of the dermatitis, or the death of the plant, and consequent absence of further opportunity for renewed infection, allows recovery to take place. In this connection it is interesting to note that although under favorable conditions the primula blooms about every six weeks, it usually, after two or three months of household care, loses its vitality and is discarded, at which time the dermatitis also terminates.

The sleeplessness, anorexia, and general nervous irritability observed in some cases can be fully accounted for by the intense burning and itching which is a prominent feature of even mild types of the dermatitis. Fever, chills, joint pains, and other evidences of constitutional disturbance have never been observed by me, though transient slight rises in temperature are mentioned by Nestler.

The variation in the degree of reaction exhibited by different persons to the irritating principle contained in the primula, and the apparent immunity of others, is suggestive of the existence of an idiosyncrasy. The study of a large number of cases, however, shows in many a constantly increasing susceptibility, so that even the slightest contact with the toxic agent will eventually result in the production of an intense dermatitis. Others, apparently entirely immune, will later, after repeated exposure, develop an intense reaction just as do those who exhibit an "idiosyncrasy" primarily. Among florists and their assistants this gradual change from immunity to susceptibility is not uncommon, and I have had occasion to observe several such instances. The personal experience of Nestler,[7] detailed in his admirable monograph, in which his immunity was finally succeeded by an intense susceptibility, provides the experimental proof for the assertion that probably no one is entirely immune.

---

[6] Lancet, 1886, ii, 579, 1630.

[7] Hautreizende Primeln, Berlin, 1904.

This extremely sensitized state of the skin, causing marked reaction to even minimal amounts of the irritant, is highly suggestive of the development of an anaphylactic condition, and is comparable to the phenomena resulting after repeated introduction of essentially non-toxic sera of a different species. This view is supported by the analogous condition of increased susceptibility of the skin after repeated exposure to the dust of satinwood, with the development of a dermatitis, observed in satinwood workers by Wechselmann.[8] He also calls attention to the fact that in animal experiments parts of the phenomena of anaphylaxis occur in the skin: intense itching, hyperalgesia and spasm of the arrectores pilorum.

Individuals differ in their rapidity of response to the action of the irritant within wide limits. It has been experimentally determined (Nestler) that the dermatitis may not develop until fourteen days after contact with the plant, although the usual period is from a few hours to two or three days. After repeated attacks the response is more prompt, usually within a few hours following contact. The occasionally prolonged incubation period, and the fact that the primula dermatitis does not always appear after the first contact with the poison, but may require repeated exposures for its development, largely increase the difficulty of diagnosis.

BOTANICAL AND CHEMICAL CHARACTERS

Of the many species of the primrose family only four (*Primula obconica, P. sinensis, P. cortusoides and P. sieboldii*) are known to be capable of producing a dermatitis, according to Nestler's researches, and of these the *Primula obconica* is most virulent and the most frequent offender. *Primula sinensis*, the Chinese primrose, though capable of exciting an intense dermatitis, is less often in question, and will merely be mentioned here.

The *Primula obconica* was introduced into Europe from China in 1883 and several years later began to be extensively cultivated by American florists. The flowers are arranged in a whorl, borne on a slender, cylindrical, hairy stalk, and are pale lilac, pink or purplish in color. The leaves are soft, large, radical, ovate-cordate, hairy, and spring from the root. The leaf-stalk, flower-stalk and midrib are abundantly provided with coarse, easily visible hairs and innumerable fine hairs, the latter being found also on the calyx and corolla. The hairs are all glandular and exude a greenish-yellow material which forms brownish-yellow masses that are readily detached by the slightest touch.

The secretion, including the crystals, is readily soluble in alcohol, ether, chloroform, hydrochloric acid and sulphuric acid, but is insoluble in water (Nestler). Under the microscope the formation of monoclinic crystals can be observed.

Practically all who have written on the subject of primula dermatitis ascribe its production to an assumed mechanical irritation by the hairs of the plant, because these are pointed and said to be easily detached. My study of the subject, however, led to the conclusion that inasmuch as the hairs are not readily detached and are too soft and supple to act as mechanical irritants, the source of the dermatitis must be sought for in the secretion of the plant. The leaves have a faint aromatic odor, distinct from the perfume of the flower, and this suggests the presence of a volatile oil with toxic properties. Experiments with the secretion applied to my skin were negative except for a temporary tingling and prickling sensation, but produced a mild reaction in a patient who had formerly experienced the dermatitis. Similar results followed the application of the dried residue left after washing a number of leaves with ether. At this time I became acquainted with the experimental work of Nestler on this subject, as detailed in his exhaustive monograph, and have been able to confirm a number of his observations. He was the first to demonstrate the existence of needle-shaped crystals and large and small rhombic prisms in the secretion exuding from and covering the glandular hairs of the leaves. By direct experiment on himself and others he was able to produce a dermatitis with crystals obtained by sublimation of the residue left after flooding the leaves with ether: he thus provides the evidence that in these crystals resides the irritating principle of the primula. Although I have repeatedly found extremely minute needle-like crystals and small rhombic forms in the ether washings and in the untreated secretion of fresh leaves, the larger rhombic formations, as described by Nestler, have thus far escaped my observation. The chemical composition of the toxic principle, however, still awaits solution. Nestler showed further that not alone the fresh leaves, but also the thoroughly dried leaves, contain the irritating substance, which explains the infection occurring particularly in housewives, who, when trimming the primula, pick off the dried leaves.

The dermatitis may develop without direct contact with the plant, owing to transference of the secretion to various objects and then to the skin. Nestler was infected several times through the medium of gloves which had been worn while experimenting with the secretion of the plant. In the case of a highly susceptible florist's assistant observed by me the dermatitis developed after handling the paper in which primulas had been packed during shipment. This mode of infection, however, is probably very infrequent, as is also the transmission of infective material from one person to another, as briefly mentioned by Nestler, and direct contact with the plant will be found to have occurred in the great majority of cases.

TREATMENT

Consequently the removal of the primula and thorough cleansing with alcohol of objects which have been in contact with the plant are required to prevent a recurrence of the dermatitis. Alcohol, ether and chloroform are solvents of the secretion, and when applied immediately after contact with the plant have been found by Nestler to prevent the development of the reaction. From my own experience I can confirm this observation, and also Nestler's statement, based on experiment, that alcohol applied immediately on the appearance of the dermatitis, in case there has been a short incubation period, results in a modified and mild course of the inflammation.

In other respects treatment is to be conducted according to the usual principles followed in cases of acute dermatitis. The intense itching and burning are usually promptly relieved on the application of calamin lotion or zinc gelatin, and under a bland ointment the inflammation rapidly subsides and the skin returns to normal after slight desquamation. This rapid subsidence of an apparently intense inflammatory process of eczematous character, under indifferent treatment, ought to be sufficient to arouse suspicion of the artificial nature of its production and lead to a thorough inquiry as to its external origin.

---

[8] Deutsch. med. Wchnschr., 1909, No. 32.

As a preventive measure it appears desirable for florists to acquaint prospective purchasers of the *Primula obconica* and *Primula sinensis* with the irritating properties of these plants, and thus to assist in not only decreasing the number of cases of dermatitis but in arriving at a correct and early recognition of their cause.

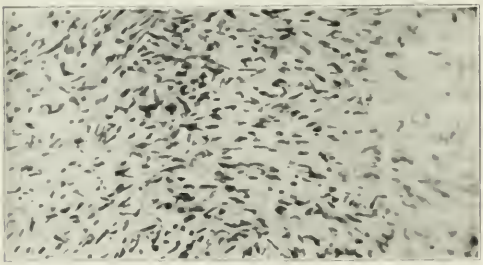
128 Wisconsin Street.

PRIMARY SARCOMA OF THE HEART, WITH REPORT OF ADDITIONAL CASE

HUGH A. BALDWIN, M.D.
COLUMBUS, O.

Primary sarcoma of the heart is a clinical condition which cannot be diagnosed with certainty during life, as it presents no characteristic signs or symptoms. Babcock,[1] states that the usual symptoms are simply those of heart weakness, with irregular and accelerated pulse; pain, if the pericardium is affected, and murmur, if an opening is obstructed.

It is difficult to say with absolute certainty just how many cases of primary cardiac sarcoma have been reported, as the actual pathology in some of the earlier cases must always remain in doubt. It is very probable that some of them were secondary to overlooked foci.



Photomicrograph of section of primary sarcoma of the heart

In the following list of cases which I have collected from literature, I include those cases only in which the diagnosis of sarcoma seems to be unquestioned.

Bodenheimer[2] collected seven cases up to 1877, including the five cases found by Ely in a review of fifty years' literature. Leyden and Fraenkel added two other cases, reported in Berthenson's list of cardiac neoplasms. Of these nine, eight were round-celled and one was giant-celled sarcoma. Since Berthenson's[3] report several more have been added. In 1890 Bernheim reported[4] a sarcomatous polyp of the right heart. Three years later Hektoen[5] reported a case of primary sarcoma of the epicardium, a case very similar pathologically to the case of primary sarcoma in the heart of a dog, reported by Bryant.[6] In 1896, a case of primary sarcoma was reported by Leroux and Mesley.[7] In 1898 Raw[8] and Lambert[3] reported their cases, Raw's case being a spindle-celled sarcoma attached to the wall of the right auricle. In addition to his own case Lambert describes one of primary angiosarcoma of the heart and pericardium, reported by Redtenbacher. Azzunini,[9] in 1907, contributes one more case in an article on tumors of the heart.

This brings the number of authentic cases of primary sarcoma of the heart previously reported to sixteen. My own case is the seventeenth. The details of the case are as follows:

History.—The patient was a young man, aged 34, sent into Grant Hospital by Dr. M. D. Fitch, July 25, 1909. He had always been fairly healthy, but never really robust. April 20, 1909, he fell against a heavy box with considerable force, causing a good deal of bruising of the left chest, but he continued at his work for three weeks. He has had no fever; no chills. His temperature never rose more than 4/10° higher than normal. He had had occasional sweats.

Examination.—Marked dyspnea, amounting even to orthopnea, was present, and swelling of the ankles and marked pulmonary symptoms. Physical examination made by Dr. J. F. Baldwin, Dr. N. R. Coleman and Dr. M. D. Fitch showed considerable dulness, perhaps complete flatness, over the lower portion of the left lung, and all through this left lung could be heard coarse râles of all descriptions, though but little air seemed to enter the lung, except at the upper portion. The right lung showed the same general condition, but there was no flatness, and the râles were not so pronounced. The heart was enlarged, and the apex-beat was about two inches below the nipple. The conditions were very suggestive of encysted effusion or solidification of the lung, but a careful consideration of the symptoms present would favor the diagnosis of solidification. The patient coughed a great deal, and what expectoration there was, was bloody. Sputum examination showed no tubercle bacilli. The prognosis was unfavorable, and patient returned home.

Autopsy.—A post mortem examination made Saturday, September 4, 1909, showed both lungs very highly congested. This was more marked, however, at the base of the left lung, where in one spot there was an organized blood-clot about the size of an egg. The heart was very much enlarged. A section of the heart showed the right side of the heart very much dilated, the walls of the right ventricle being no thicker than cardboard. In the left auricle was found a pedunculated tumor, taking its origin from the margin of the vein returning from the base of the left lung. The tumor practically filled the left auricle. It measured 3 inches in its greatest length, 2½ inches in thickness and 8¼ inches in circumference. Its weight was 3½ ounces. With the exception of the large hemorrhagic pulmonary infarct near the base of the lower lobe of the left lung, further examination was negative.

Pathologic Report on Specimen.—Dr. J. J. Coons kindly examined the tumor, and made the following report: "The specimen consists of a pear-shaped tumor, measuring 5 by 6 by 7 cm. It is encapsulated, somewhat irregular, and nodular. On section, the tumor mass is soft, and pinkish white in color; it is homogeneous except for the infiltrating bands bounding the nodules. Macroscopically, there is no degeneration.

"Histologically, for the most part the slides show large spindle-cells, some of which are rod-like. The nuclei stain sharply, in contrast to the cytoplasm. Mitotic figures are found in small numbers, and also multinucleated giant cells. The larger blood vessels consist of single endothelial tubes.

"*Diagnosis.*—Large spindle-celled sarcoma."

347 East State Street.

---

[1] Babcock: Mod. Med., iv, 130.

[2] See Traité des maladies du cœur, 1889.

[3] Lambert: A Case of Primary Sarcoma of the Heart, New York Med. Jour., 1898, lxvii.

[4] Bernheim: Polype sarcomateux du cœur droit, Bull. Soc. anat. de Paris, 1890, lxv, [illegible].

[5] Hektoen: Primary Round-celled Sarcoma of the Epicardium, Med. News, Philadelphia, 1893, lxiii, 571.

[6] Bryant: Primary Sarcoma in the Heart of a Dog, Bull. Johns Hopkins Hosp., 1907, xviii.

[7] Leroux and Mesley: Sarcome du cœur, Bull. Soc. anat. de Paris, 1896, lxxi.

[8] Raw: Primary Tumor of Auricle of Heart, Brit. Med. Jour., 1898, ii.

[9] Azzunini: Clin. Med. Florence, 1907.

A NEW INCISION FOR EPITHELIOMA OF UPPER AND LOWER LIPS OF SAME SIDE

WALTER S. SUTTON, A.M., M.D.
Assistant Professor of Surgery, Kansas State University; Assistant Attending Surgeon, Kansas City General Hospital; Assistant Surgeon, St. Margaret's Hospital
KANSAS CITY, MO.

The incision described is an adaptation of the principles of the well-known Dowd operation to the removal of a growth involving both upper and lower lips. This readily appears from the similarly-lettered sketches presented herewith.

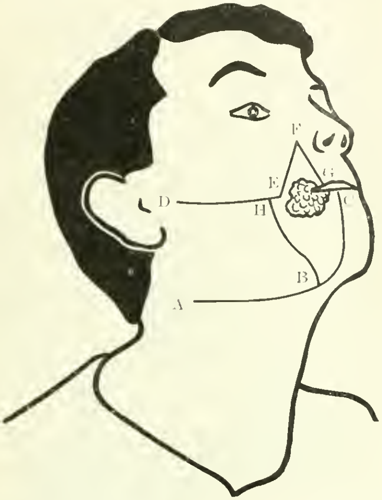


Fig. 1.—Suggested incision for epithelioma involving both lips.

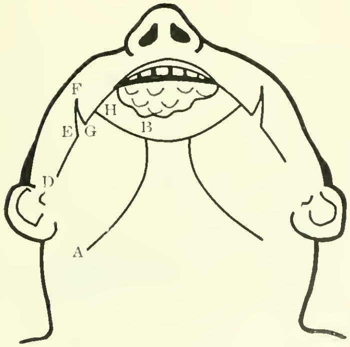


Fig. 2.—The Dowd incision (after Binnie).

In the Dowd operation, as in its predecessor, the Malgaigne, it is usually necessary to excise a triangle (E F G Fig. 2), from the upper half of the cheek in order that the tension necessary to bring the lower flaps together may not produce a wrinkle in this location. In the absence of involvement of the upper lip this triangle may be taken out at any convenient point. If, however, there is involvement of the upper lip this triangle may be made of such size and placed in such a location as to remove it (E F G Fig. 1). In case of a growth involving the entire lower lip and both ends of the upper lip, the procedure could be made bilateral and would then resemble the Dowd operation even more closely.

In practice the incision A B is first made and the removal of submaxillary lymph and salivary glands completed. The facial artery is preserved though its ligation is not necessarily followed by necrosis of the flap. The other incisions are then marked on the skin and rapidly completed, the outer portion of the line D H going down only to the deep fascia over the masseter. The flap A B H D is then separated from the jaw-bone as far back as required to permit the necessary stretching, care being taken not to injure the facial artery in this step. The point E is then brought over to point G and point H to point C.

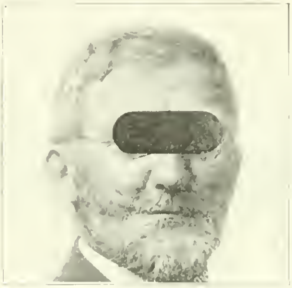


Fig. 3.—Result following author's incision twenty-two days after operation.

In case of deficiency of mucosa on the part of the new-made portion of either lip, much can be done toward covering the raw area by simply drawing over the edge of the mucosa from the sound side without dissection and tacking it to the raw surface by means of one or two plain gut sutures.

Figure 3 is from a photograph of a patient in which the growth and incision lines correspond closely to conditions shown in Figure 1. The photograph was made on the twenty-second day after operation.

Argyle Building.

A CLAMP FOR ISOLATING A PORTION OF THE LUMEN OF A BLOOD-VESSEL WITHOUT STOPPING THE CIRCULATION THROUGH THE VESSEL*

G. N. STEWART, M.D.
CLEVELAND, O

For various purposes in physiology and also in surgery it may be desirable to clamp off temporarily a longitudinal portion at one side of a blood-vessel while the circulation is allowed to go on through the remainder of the lumen. A field can thus be provided in which the operator can work at his leisure without fear of injuring the organs supplied or drained by the vessel by clamping it off altogether. I have devised a clamp by which this can be conveniently done. One form of it is shown in the accompanying illustrations.

The essential points are the following:

---

* From the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University.

1. The long, narrow grip of the jaws in the longitudinal direction. The grip is narrow in order that as little as possible of the lumen may be encroached on. The length of the occluded portion will, of course, vary with the purpose for which the clamp is used.

2. The extension of the grip at each end at right angles to the length of the vessel. This is necessary to complete the occlusion of the isolated segment. The length of the rectangular portions must be proportioned to the diameter of the vessel worked with. If too long, they project too far beyond the vessel, and thus make the field of operation less accessible for some purposes.

3. The hollow behind the gripping edge in which the open portion of the vessel is safely lodged and protected from pressure. The size of this hollow must be great enough to comfortably accommodate the non-occluded part of the vessel.

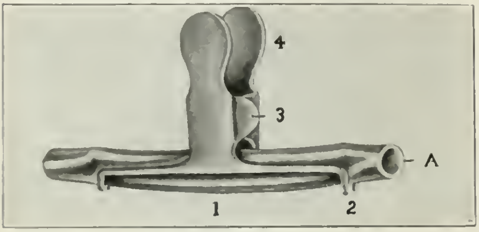
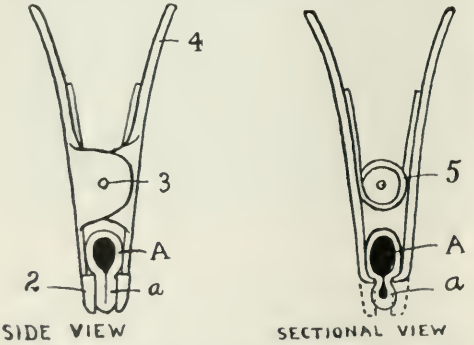


Fig. 1.—Front view of clamp in position on vessel; (1) middle of the isolated portion of the vessel; (2) the rectangular projections of the jaws; (3) the axis on which the jaws rotate; (4) grip for the fingers; A, open lumen of blood-vessel beyond the clamp.



Figs. 2 and 3.—Side view (to the left) of clamp (2, 3 and 4 as in Figure 1; A, open portion of lumen of vessel in the hollow of the clamp; a, occluded portion of lumen), and sectional view to the right, at position of (1) in Figure 1; (5, section of the spring through which the pressure of the clamp is obtained; a, isolated portion of the lumen; A, open portion).

In the clamp shown in the figures the pressure is obtained from a small-sized spring behind the axis. It can also be made with a screw for graduating the pressure. A pair of ordinary "bull-dog" forceps fitted with jaws of the shape described is another form which may be useful for some purposes.

Such clamps might be employed to arrest hemorrhage from a wound in a large vessel which could not be clamped completely without detriment, and during the suturing of the wound, possibly in the treatment of sacculated aneurysm in some situation; in performing lateral anastomoses of blood-vessels in cases where it is undesirable to completely occlude one or both of the vessels for the time required in the operation; in performing lateral implantation of one vessel on to another which must not be totally occluded; in inserting a cannula laterally into a vessel without stopping the circulation when there is no convenient branch of the vessel which might be used, or where it is disadvantageous to occlude such a branch; in narrowing experimentally the lumen of a vessel without temporarily occluding it, especially when a diminution of the lumen by a definite amount is desired, etc.

My colleague, Dr. George W. Crile, has told me that it might be useful to have a clamp which embodied the principle of that just described but which could be applied over a wounded vessel without dissecting out the vessel too freely. I have therefore devised the form shown in Figure 4. This is intended to be applied to the wounded side of the vessel only. It is supposed that the surgeon could suture the wound through the open portion of the clamp while the circulation goes on through the part of the lumen not included in the

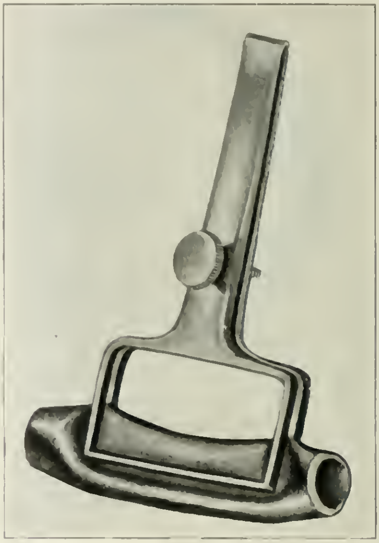


Fig. 4.—Clamp to be applied to the wounded side of the vessel only.

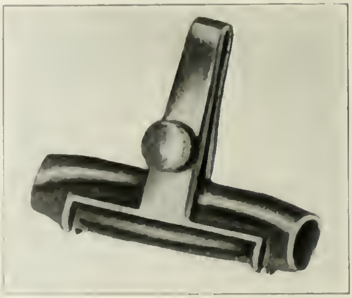


Fig. —First form of clamp as made with a screw for graduating the pressure.

clamp. This clamp may possibly be used also for some of the other physiologic or surgical purposes for which the first form was intended. Figure 5 shows the first form of clamp as made with a screw for graduating the pressure. The jaws, of course, may be covered with thin rubber.

East Ninth Street and St. Clair Avenue.

FEMORAL HERNIA OF FALLOPIAN TUBE WITHOUT OVARY

CHARLES H. PARKES, M.D.
Assistant Professor Operative Surgery and Surgical Anatomy, Chicago Policlinic
CHICAGO

The intention in presenting this case is not to emphasize its rarity, however unusual the condition may be, but to call attention to the possibility of the occurrence and the necessity of its recognition at time of operation.

The literature on the subject has been covered by Dr. Frank T. Andrews[1] and Dr. Paul Morf[2] of Chicago up to the year 1907. It is therefore unnecessary at this time, to pursue that phase of the subject to any greater extent than to refer those interested to the articles mentioned. These writers—in their reports—present cases of their own to add to the list of the few on record.

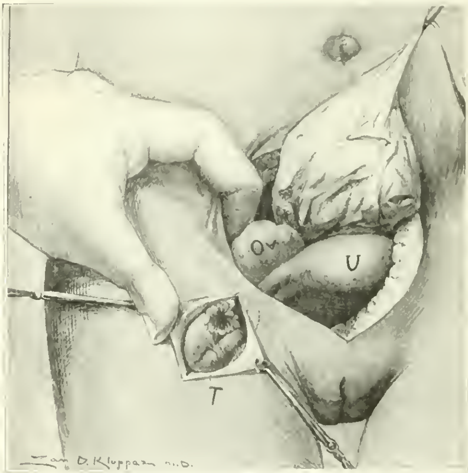
Since the publication of Dr. Andrews' last paper on the subject in 1907, very few cases are to be found; in fact, I have been unable to discover any of the femoral and only three of the inguinal variety. In these cases the tube was not found alone within the sac but with some other abdominal or pelvic viscus.

History.—The case which I wish to present, referred to me by Dr. J. F. Williams, is that of a woman 33 years old, married, whose occupation was that of a housewife. The family history is negative, having no bearing whatever on the difficulty in question. The menses began at 14, and had always been regular and without any especial pain. The patient had never noticed the occurrence of any vaginal discharge. She had been married at 30 and never had been pregnant. There was no history of injuries of enough importance to have made an impression. With the exception of an attack of typhoid fever ten years previously and the negative history of gestation and trauma, the personal history was devoid of interest.

Present Illness.—The patient complained of a small tumor in the region of Scarpa's triangle of the right thigh. This tumor had existed for about fifteen years as a small lump that varied slightly in size and consistency from time to time. It had caused no inconvenience, however, and in consequence had never been examined. Within the last twelve months the size of this tumor had increased gradually until at the time of this examination, it had reached that of an egg. During the last few days, pain had developed in the right pelvis and abdomen and the tumor itself had become tender.

Examination.—The routine examination of the patient showed her to be of large frame, with a very wide pelvis; her condition to be unusually good, except that her expression betrayed anxiety. Pulse was 110; temperature, 100 F. The tumor under consideration was situated in the right thigh, below Poupart's ligament, but a little higher than the usual location for a femoral hernia. It was tense, slightly discolored, and gave the sensation of slight fluctuation. Absolutely no impulse was obtained on hard coughing and no change in size on pressure in whatever position the leg was placed. Bimanual examination of the pelvis revealed nothing definite because tenderness interfered with the examination. An indefinite mass could be palpated in the right pelvis. No diagnosis was made further than that of a femoral hernia, perhaps strangulated, or the possibility of an enlarged inflamed lymphatic gland.

Operation.—A transverse incision curved upward above Poupart's ligament through subcutaneous tissue to the tumor, revealed a hernial sac extending up under Poupart's ligament. The sac was thick, tense and filled with fluid. When incised, a sanguineous colored serum escaped. The sac contained, besides the fluid, what was shortly identified as about one-third of the Fallopian tube. The tube showed evidence of considerable congestion, was swollen to about the size of the patient's thumb, purplish in color and besides was adherent in several places to the peritoneum, especially around the neck of the sac. The fimbria were matted together, red, and adherent to the sac. Reduction was impossible without incising Gimbernat's ligament and even had this course been followed it would not have been warranted on account of the pathologic condition of the tube. The abdomen was incised in the median line, the general peritoneal cavity protected and the pelvis explored. The uterus was found drawn forward, twisted somewhat to the right with the cornu of that side pointing toward the femoral canal. The right ovary was discovered plastered up against the femoral ring, cystic, and about the size of an orange. The right tube was stretched, thinned and disappeared into the femoral canal. The left tube and ovary were practically normal. The indications were in favor of exsection of the right tube and resection of the corresponding ovary. The tube was removed by incising elliptically into the cornu to remove mucous membrane canal in wall of uterus, suturing the uterine incision and with the same suture coapting the layers of the broad ligament outward to the femoral ring. The portion of the broad ligament which followed the tube into the sac was ligated separately; the tubal adhesions freed from the sac and the tube lifted out of the sac through the femoral incision. The femoral ring was found small and thus, by removing the tube backwards, was left small. The sac was then freed, ligated, resected and through abdominal incision, purse-stringed. The ovary was resected in the usual manner and the appendix removed because of concretions. The abdominal incision was closed and the thigh incision drained for thirty-six hours, with rubber tissue strip.



Femoral hernia of Fallopian tube without ovary. This illustration is reproduced from a cadaver specimen, prepared at the Chicago Policlinic Laboratory, to show conditions found in the case.

---

[1] Andrews, Frank T.: Hernia of the Tube without the Ovary, The Journal A. M. A., Nov. 25, 1905, p. 1625; Hernia of Ovary and Tube, The Journal A. M. A., Nov. 24, 1906, p. 1907.

[2] Morf, Paul F.: Hernia of Fallopian Tube with Hernia of Ovary, Ann. Surg., March, 1910.

The patient made an uneventful recovery, leaving hospital in ten days.

When a condition as unusual as the above is encountered during an operation, the procedure must be determined by following the general principles of operative surgery, relieving the condition by removing the pathologic tissue, repairing defects and guarding against infection.

Routine methods for operating in such a case cannot be fixed, as here we have encountered the unexpected in the usually simple operation for femoral hernia.

The steps taken in this operation were determined on because of the following considerations:

1. The size of the ring under Poupart's ligament. Had this hernia been of the inguinal variety the ring could have been enlarged and a second abdominal incision would have been unnecessary.

In this case the right horn of the uterus could not have been resected through the femoral ring.

2. The fact that the tube was adherent to the sac in several places, especially around its neck; that the portion within the sac was swollen, dark red, but except at points of adhesions the peritoneum was free from blisters, erosion or anything to indicate much inflammation. This condition of strangulation was certainly mechanical rather than inflammatory and the evidences of inflammation were not of recent date.

3. The advisability of knowing the condition of the pelvic organs, especially on account of the pelvic tenderness and the mass palpable through the vagina. The median incision seems to have been justified by the finding of the large cystic ovary.

4. The superior results obtained in the removal of the tube by excising at the horn of the uterus and suturing layers of broad ligament, rather than ligating *en masse* as would have been necessary had the tube been resected in location of hernia.

5. The positive indication for the removal of the tube on account of its very evident pathologic condition.

The most plausible of several etiologic possibilities as to the causation of this condition seems to be that this was probably originally a small intestinal or omental hernia, that the abdominal contents were reducible and at some time, when reduced, were replaced by the tube. The tube was at the time, or, later, became slightly inflamed, forming adhesions between itself and the sac, causing it to become irreducible. The strangulation occurred because of the interference with the tubal return circulation, by possibly Gimbernat's ligament, with the subsequent congestion, discoloration, swelling and transudation of serum.

There may also be an explanation based on J. H. Russell's theory[3] from the congenital standpoint but in this case, aside from the natural tendency to a hernia in this location, especially in the case of a woman with a particularly wide pelvis, the history containing nothing to indicate trauma of any nature, nothing here adds any conformation to the embryologic hypothesis.

If congenital it must be an accidental defect rather than a consecutive embryologic development, like that for example in the male, where the testicle descends down into the scrotum and an embryologic sac, which normally is obliterated, remains within the sheath of the spermatic cord.

The fact that this case is one in which the tube was found alone within the sac, seems to have been an accident. There should have been a case with the tube and ovary both involved within the hernia. The ovary certainly had a tendency to follow the tube, as shown by the location in which it was found. The small hernial ring or the cystic enlargement of the ovary, or perhaps both, were responsible for its retention within the abdomen.

161 State Street.

INTRADURAL TUMOR OF THE SPINAL CORD WITH OPERATION *

EDWARD E. MAYER, M.D., and OTTO C. GAUB, M.D.
PITTSBURG, PA.

REPORT OF CASE AND ANALYSIS BY DR. MAYER

The diagnosis of tumors of the spinal cord is no longer difficult, nor is their operability in a majority of cases a debatable question. Indeed the large number of patients successfully operated on has fully justified the optimism of Victor Horsley as expressed by him three decades ago. Since then in every country many have contributed to our knowledge of tumors of the spinal cord—the recent books of Malaise, Bruns, Oppenheim and Schlesinger covering well the entire subject—so that we shall try to avoid being too discursive.

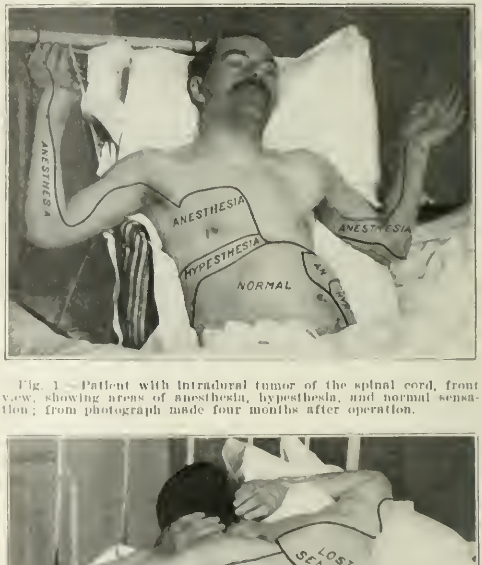


Fig. 1.—Patient with intradural tumor of the spinal cord, front view, showing areas of anesthesia, hypesthesia, and normal sensation; from photograph made four months after operation.

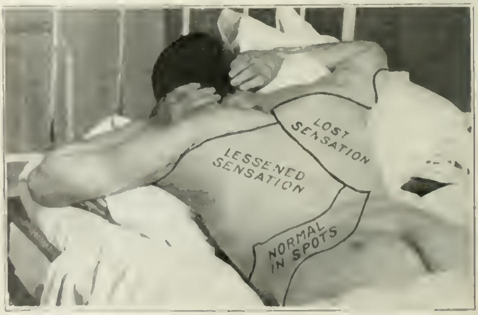


Fig. 2.—Same patient, back view, showing areas of lessened sensation, lost sensation, and normal sensation in spots; from photograph made four months after operation.

---

[3] Russell, R. Hamilton: Congenital Origin of Hernia, Intercolonial Med. Jour., Australia, Jan. 20, 1906.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session held at St. Louis, June, 1910.

CASE REPORT

Clinical History.—July 12, 1909. Family and previous history are not noteworthy. The patient, M. T., had not had syphilis, gonorrhea, or any infectious disease, but probably did overexert himself and subject himself to cold and privation. A cloth manufacturer in Russia, he was reduced to poverty, and for some years after coming to America peddled, carrying a fifty-pound grip. For the last four years he had been a storekeeper in a small way.

Present Illness.—In 1904 he felt a slight pain between his shoulder-blades. This was continuous for about one month and was especially noticeable when he threw his head back or turned his neck; when recumbent he could move head and neck freely without any pain manifesting itself. This pain grew worse, was intermittent, and would shoot down the inner side of his arms, and at one time disappeared for over a year. In October, 1908, on the advice of his physician, he went to Mount Clemens to try to get relief there from this pain. At this time he could not stoop to tie his shoe laces on account of the pain in his neck. His spine was at no time stiff, however, nor was there any lateral deviation or torticollis. When he would sit for any length of time, a numb feeling would steal up his legs which he would not notice when he was standing or walking. Later, a similar sensation developed around his right elbow. Pain between his shoulder blades not only persisted, but now would not stop when he was walking or when recumbent or with any position of his head. While at Mount Clemens, he took the baths and massage and believes his pains disappeared for a few weeks. However, he returned home very weak, and a little later, (November, 1908,) noticed a weakness in his right leg which could not be lifted as easily as before. This grew worse from day to day. About a month later, his right arm began to feel heavy and his hand-grasp was weaker than formerly. This weakness increased to paralysis. About January, 1909, his left leg and arm became involved similarly. He came to see me on January 11, was told of the seriousness of his condition and the probabilities of an operation, and advised to go immediately to the hospital. He chose to be guided by other opinions, however, and presented himself again only on July 12, six months later.

Examination.—At this date the patient was absolutely helpless, having been bedridden from the beginning of March. He complained very much of cramps in his calf muscles, accompanied by involuntary flexion of his legs, with sharp pains extending up his arms and back, to his neck. He had absolutely no power of voluntary motion in his lower limbs. When his lower limbs contracted involuntarily, his fingers drew up also in the ulnar side. He had no erection and no ejaculation for six months, nor had he any longer control of either bladder or bowel. When he wished to cough or take a deep breath he felt a constriction or sense of heaviness across his chest. The patient slept soundly except when awakened by the spasms. There was no disturbance of hearing, smell, taste or of speech. There was absolute paralysis of lower limbs, with pronounced clonus, and incontinence of urine and feces.

Right Hand and Forearm: Weakened power of supination; no power for extension of hand; inability to flex fingers completely. He could flex second phalanges about thirty degrees. There was inability to abduct thumb: slight abduction and adduction of fingers on radial side; absent on ulnar side. Interossei and intrinsic hand muscles were slightly atrophied. Hand grasp was zero.

Left Hand and Forearm: Extension and flexion weakened but neither so much as on right side; abduction of fingers weakened; hand grasp zero.

Reflexes: Mendel-Bechterew phenomenon present; knee-jerks both much increased; Babinski present in both legs; Oppenheim present in both legs; Gordon present in both legs; cremasteric reflex, faint; abdominal reflexes, absent; triceps and ulnar reflexes, diminished; scapular reflex, absent. On extreme lateral movements of eyeballs there were slight nystagmoid movements. Right pupil slightly larger than left. Normal pupillary reactions. Equal palpebral fissures. Fundi normal. Normal neck and shoulder movements. No enlargements of vertebræ. Entire spinal column freely movable. Percussion, which was taken with posterior surface of the flexed index finger elicited slight tenderness over sixth cervical vertebræ. Auscultation with percussion (tonal percussion) over vertebræ negative.

Sensation: Patient complained of a cold pain in right leg. In areas of lost sensibility, patient felt at some places a delayed sense of touch or pain without being able to orient it; that is, to tell where he had felt it. This was most noticeable in the lumbar flanks and inguinal region. Lost tactile sensation extended one segment higher than lost pain sensation, as high as the second rib in front and the first dorsal vertebræ behind. Temperature sense was disturbed about equally in areas shown by chart, but especially on the right side of the body. Inner side of arms anesthetic, analgesic and thermanesthetic; bathyanesthesia and pallanesthesia of both lower limbs.

Wassermann negative; von Pirquet negative; blood examination negative; radiograph negative.

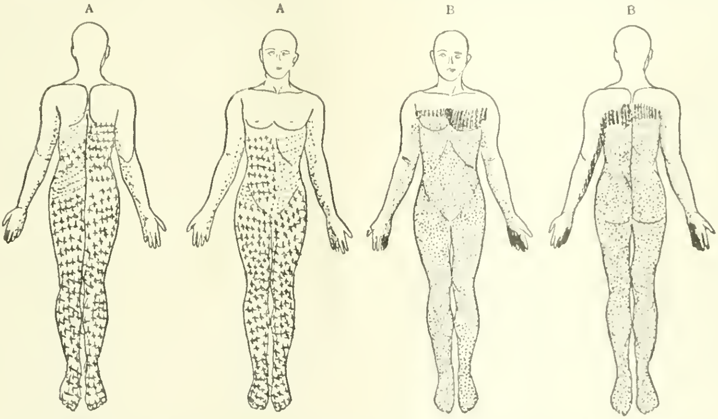


Fig. 3.—Diagrams of sensation areas in same patient before operation. In A A, area covered with crosses indicates loss of temperature sense to both heat and cold; stippled area indicates deficient temperature sense, either delayed or not always correctly interpreted. In B B, stippled portion indicates the region in which both pain and tactile senses are lost; portion shaded with lines indicates additional area with tactile anesthesia; solid shaded portion in hands represents lost muscle sensation.

Diagnosis.—Tumor involving seventh and eighth cervical and first thoracic spinal nerves, the sensory changes pointing especially to the eighth cervical and first thoracic, and the muscle changes to the sixth and seventh roots as well. Operation was not arranged for until September on account of taking our vacation.

This history on analysis read so clearly that a diagnosis of spinal cord tumor was easily made, its location, structure and extent only requiring a further study. It is needless to emphasize the importance of establishing these points in discussing the question of a spinal tumor and its operability, which carry with them a consideration of the segments of cord or of spinal roots involved. I am omitting all special points connected with tumors of the vertebræ themselves, or of intramedullary tumors, except as they enter into the question of the diagnosis of intravertebral tumors, extradural or intradural, which are primarily the operable types, and whose clinical histories are practically similar. It is to the intradural variety that this case belongs.

SYMPTOMS AND DIAGNOSIS OF INTRADURAL TUMORS

Symptoms of intradural tumors, following somewhat the arrangement of Bruns may be grouped as follows:

1. Spinal Roots:
    - a. Irritative symptoms.
    - b. Compression symptoms.
    - c. Atrophic symptoms.
2. Spinal Cord:
    - a. Symptoms of local pressure.
    - b. Symptoms of tract disease:
        - 1. Unilateral.
        - 2. Bilateral.
    - c. Symptoms due to growth of tumor into cord.
3. Vertebral:
    - a. Erosion.
    - b. Trophic.

In other words, depending on the origin, size, and manner of growth, intradural tumors will slowly but progressively evoke symptoms of unilateral, later bilateral, pain and hyperesthesia, radicular in type, spasms and then paralysis, perhaps of a Brown-Séquard type at first (unilateral compression of cord), but generally becoming rapidly a paraplegia (total compression) with atrophy.

With Mr. T. no objective early history was obtainable, but even his meager description brings out a very important fact: that is, the fairly constant pain between his shoulder-blades was made worse on movement. Though there are exceptions, whenever an algia of such a location is intensified by movement of the head or by stooping, coughing, etc., a strong suspicion of spinal root irritation should be instantly created. Indeed, if at that time, it had been found on examination that the algia extended segmentally, and not according to a peripheral innervation, with the absence of any lateral deviation of the spine or stiffness, a probable diagnosis of spinal cord tumor at that time, even before the onset of any paresis atrophy or segmentary anesthesia, would, I believe, have been justifiable. The necessity of examining for objective sensory changes twice a month or oftener, is also indicated, in order to detect the oncoming of this significant diagnostic point. The occurrence of edema in the innervation zone of the painful spinal root, to which Schlesinger and, lately, Pearce Bailey call attention, is a valuable help when present. With doubtful pains, corsets and braces or extension are advocated, though Oppenheim calls attention to their making the symptoms rapidly worse. The question of an eccentric projection of pain (Stintze) should never be forgotten, and all possible diseases of the thoracic and abdominal organs excluded. An extension upward of a spinal growth would of course, involve new segments and roots and evoke symptoms higher up the cord. An extension downward need not cause any new symptoms; never, if there has been a complete conductive paralysis. A bilateral pain is more often found in vertebral tumors than in tumors of the roots and spinal cord, and if in addition shortening of the spinal column is noticed, carcinoma of the vertebræ is most probable. Of course, the incomplete intercostal neuralgias which are not of Head's type, found in hysteria and the presence of trophic muscular disturbances accompanying simple chronic neuritis, must always be excluded.

The fact that three nerve roots must be affected before distinct sensory and motor paralysis occurs emphasizes in my opinion the importance of a careful investigation of these prodromic symptoms of spinal root irritation, their intensity, constancy and stubborness to medical treatment, their aggravation on movement and explosive respiratory acts, the segmental character of the pain and tenderness or hypesthesia present and possibly localized tenderness or increased pain on pressure over vertebræ. A change in the vertebral percussion note manifestly could occur only late in the growth of the tumor (except of the vertebral tumors), and if it did occur early, should awaken suspicion of a serous meningitis more than of tumor. The change, however, in the percussion note is so slight that it can never be of much value as a diagnostic factor. Palpation and percussion should always be done slightly to each side of the spinous processes and in palpation I have found that pressure upward helps to get a more reliable result. Percussion on one side and listening with the stethoscope on the other side of the spinal column is a good method.

A striking point in our patient's history is the length of his period of pain. Though the course of spinal cord tumors is a slow one, and of the intradural type the slowest (an average of twenty-six months according to the most reliable statistics), with Mr. T. we have a history of four to five years of radicular pains, indicating possibly an irritative state before the appearance of, or without an increase in the size of, the tumor. The question, moreover, of a possible primary radicular disease preceding the growth of the tumor, must be considered. Such a protracted course is, however, not exceptional as the histories given by Horsley, Bruns and Oppenheim show, though in our patient it persisted longer than in the patients reported by them before compression symptoms developed. I could hardly reconcile this slow course with the pathologic finding of an endothelioma.

We have learned from experience that motor symptoms without sensory alterations, even though they increase progressively, cannot be accepted as conclusive evidence of the presence of a tumor of the spinal cord, and that whenever there is reasonable certainty of its presence, the place for operation depends on the localization of the upper pole of the growth. Charting on the skin the areas which show sensory alterations is without question necessary in every case of spinal cord disease, and especially in suspected tumor cases. Further realizing that every muscle and skin area is innervated by from two to four segments, we must locate the seat of cord injury at least one segment higher than the paralysis of motion and sensation indicates. I have, for instance, at present in my service at the South Side Hospital a probable case of dorsal-cord tumor in which the motor paralysis is of the second to the fourth lumbar segments and where the upper pole of the hypesthesia is at the level of the tenth dorsal vertebra. Operation will be justified, however, a little higher, as it is reasonably sure that the seat of trouble is higher. The pains and spasms of this patient are particularly prominent and call attention to the importance of such symptoms in localizing the upper pole of the growth. Indeed, where this so-called anesthesia dolorosa, or the so-called paraplegia dolorosa of Cruvelhier, is present, its value for localization exceeds every other symptom. Though therefore in this latter patient we would from her paralytic symptoms view her paralysis as lumbar, the hyperesthesia and spasms point to a higher innervation and must be considered in the operation to be performed on her.* Another interesting symptom of this patient is the intermittent presence of Babinski's sign, present one day, absent the next.

Unless the surgeon is also a neurologist, he should always have the seat of injury or of disease thoroughly located, if possible, before operation. I was, for instance, recently asked to examine a patient because he did not recover motion and sensation after a laminectomy; in him I found segmental symptoms several segments higher than the operative site, though I could not assert, not having examined him previously to the operation, that there had not been an ascending myelitis since the operation. How much better, however, had it been if this patient had been thoroughly examined before operation!

To return to our patient who is the subject of this paper: The sensory charts revealed an involvement of the last cervical and upper dorsal segments. We assumed the upper pole of the growth to be a little higher, because of the total anesthesia and paralysis, and because of the local tenderness ignored the dorsal cord entirely, and the operation, skilfully performed by Dr. Gaub, revealed a tumor at the sixth cervical segment. I wish to also add that Drs. McKennan, Diller, Henniger and Silver saw this patient and confirmed our diagnosis.

One cannot too strongly remember that to have paralysis, two or three spinal roots or segments must be injured, and that with an area of intense pain the spinal root above, or perhaps two spinal roots, are probably affected. Individual variations of course occur, so that whenever we have hyperesthesia lying segmentarily over an anesthetic zone, it clinches localization. In segmental localization the upper pole of the lesion is always higher than the symptoms indicate and often higher than the area laid bare by the surgeon. That the innervation zones are given by some authorities a segment higher or lower than generally accepted can be practically ignored, because of the rarity of such an occurrence, coupled with the fact that we must, on account of the trisegmental innervation spoken of before, and of the topographic relations of cord, roots and vertebræ, allow for an error of at least one segment. I am not forgetting that dissociated anesthesia as a temporary symptom has been occasionally reported even in extradural tumor, but it is an extremely rare occurrence.

Given a positive segmental diagnosis in any progressive disease where the pains are severe and there is no hope for any other kind of benefit, operation, in spinal cases, is indicated (except where gliosis symptoms are present), even where the diagnosis is not clear, and subacute myelitis, localized serous meningitis or pachymeningitis have not been absolutely excluded.

Postoperative History.—The damage to the cord in our case was too extensive to warrant absolute recovery, though Mr. T. is better and his life has been saved. Loss of sensation gradually decreased to a hypesthesia on the right side and his spastic phenomena measurably decreased in intensity, but not entirely. Both motion and sensation gradually improved in his left arm and hand, but not in his right, and he can now turn in bed, partially sit up and move his toes, all of which was impossible for him to do last summer. The last sensory chart made of him shows that his thermic sense has practically become normal on his right side; that the upper level of the hypesthesia is not as high as was the anesthesia (right side), but practically the same on the left side. His right hand remains totally paralyzed. Notes made by my assistant, Dr. MacIntire, this spring read:

"Right Arm: Partial abduction of wrist. No abduction. Palmaris longus causes flexion of wrist. Slight contraction of flexor sublimis digitorum seen in movements of index finger only. Spade-like hand. Thenar and hypothenar eminences atrophied. Pronation and supination normal. No lateral movements of fingers or of thumb. Left Arm and Hand: All muscles normal."

The pictures taken by Dr. MacIntire show the present sensory involvement. A last report from our patient informs us that he now sits up ten hours daily and sleeps soundly all night, his obstipation being what most troubles him at present.

REPORT OF OPERATION BY DR. GAUB

The patient was placed in the prone position, with the head slightly lower than the shoulders, which eliminated the normal curvature of the posterior surface of the neck.

A straight incision was made over the spinous processes of the vertebræ, beginning at the fourth and ending at the first dorsal spinous process. The soft tissues were removed from the spinous processes and lamina of the fifth, sixth and seventh cervical vertebræ.

The arches of the sixth and seventh cervical vertebræ were removed by means of Macewen's bone-cutting forceps. Nothing abnormal was found. The dura presented a normal appearance and pulsated.

At the suggestion of Dr. Mayer the arch of the fifth cervical vertebra was removed. The dura was opened in the median line, revealing the cord, whose contour showed no gross alteration.

The exposed cord, at its lower level, felt resistant on palpation. By means of an aneurism needle the cord was gently drawn to the left, which exposed a mass the size of a Malaga grape, bluish white in color, situated on the right anterolateral surface of the cord, apparently traversed on its posterior surface by the posterior root, on account of the dislocation of the cord, and on blunt dissection it seemed to surround the anterior root of the sixth cervical nerve.

During the process of removal the tumor ruptured, but with care it was removed, possibly with the exception of a minute portion of the growth, which may have remained in the sixth intervertebral foramina.

The tumor on microscopic examination, made by Dr. Proescher, pathologist to the Allegheny General Hospital, proved to be an endothelioma. The dura was closed with interrupted catgut sutures, the soft structures, as far as possible, coaptated by means of a continuous catgut suture, and the intermuscular space drained with rubber tissue.

The patient was placed in bed on his side. There was moderate shock. Within a few hours, the temperature rose to 102.6 F. and continued a degree lower, with slight remissions, for the next seven days. There was moderate leakage of cerebrospinal fluid. After the removal of the drain, the patient suffered a chill and a rise in temperature to 103.2 F.

The temperature dropped to normal within thirty-six hours. It continued at 99 F. for a week, when there occurred a second chill, moderate in severity, and a rise in temperature to 10[illegible] F. This quickly subsided and the temperature remained around 99 F., until four days later there was another chill and the temperature arose to 102.6 F., which again quickly receded.

Two more chills, mild in character, and an increase in temperature occurred at intervals of four days, following which the temperature remained normal.

---

* Since this was written, an operation on this patient was performed and no tumor but a localized meningitis was found.

During this time there was moderate leakage of cerebrospinal fluid through the drainage tract. The patient was maintained in the semiprone position for three weeks and then gradually allowed to lie on his back. The surgical convalescence from this time on was uninterrupted.

Several points in the operative technic for the removal of tumors of the cord are engaging the attention of surgeons at the present time.

The conservation of cerebrospinal fluid is of great importance. Attention given to the position of the patient, both on the operating table and when returned to his bed, the minimizing of drainage and the accurate suturing of soft tissue would tend to serve this purpose. It is probably better to close the dura with a continuous suture of catgut.

Careful hemostasis, accurate suturing, and coaptation of the soft structures, tend to close the hiatus left following the removal of the arches, and minimizes the necessity for drainage, but the surgeon may feel it safer to insert a rubber tissue to care for any dead space between the muscle layers.

After the dura is opened, avoidance of frequent mopping with gauze will save cerebrospinal fluid.

A tumor hidden by the cord is best recognized by palpation. In the present case pulsation was present, no gross alteration of the cord presented, and the presence of a tumor was determined by gentle palpation.

The question of a two-stage operation, as advised by Elsberg,[1] for intramedullary growths, appears to me to be a wise procedure. For the intradural type of tumor, its removal, as a primary procedure, is preferable, provided the patient's resistance warrants the completion of the operation.

A study of the literature presents the surgery of spinal cord tumors in a favorable light and it may well be that patients will submit to operation when a tumor of the cord is strongly suspected by competent diagnosticians, and not postpone the operation until irreparable damage to the cord has been done.

ABSTRACT OF DISCUSSION

Dr. Theodore Diller, Pittsburg: Through the kindness of Dr. Mayer I was permitted to examine this patient before the operation and also to witness the operation. I can bear witness that the examination was thorough and complete, and that the tumor was found as was expected and in accordance with the markings of the diagram which is going around the room. I must join with him, too, in his regret that the improvement in this patient is not greater and that the case did not come to operation at an earlier time. I believe that Dr. Mayer is right in attributing the lack of improvement to the fact that the operation was so long delayed. Secondary degenerations must have occurred.

Dr. Julius Grinker, Chicago: About a year ago it was my privilege to report a case similar to this one, and it was published in The Journal and in the transactions of this Section. Dr. Mayer's experience was almost identical with my own. The diagnosis had not been made until it was too late to produce a perfect cure. The patient recovered and has regained sensation fully, but not much motion. Recently I have again seen the patient and found her quite comfortable, but she cannot walk. She has a typical spastic paraplegia with contractures. In that case the localizing diagnosis was correct and the operation was a success, but the true nature of the disease had not been recognized sufficiently early. She has had neuralgic pains for a long time and was treated for intercostal neuralgia before I saw the case.

Recently I had a similar case in which I made a diagnosis of tumor of the spinal cord and localized it correctly. What was supposed to be a tumor was found opposite the eighth dorsal vertebra. That case, however, proved to be a cyst, a so-called meningitis serosa circumscripta, a number of cases of which have been recently reported by Munro. I do not see how it is possible to correctly diagnose the pathology of a tumor before operation. In my presentation of the case before the Chicago Surgical Society, I mentioned the various kinds of neoplasms and also the possibility of finding a cyst. The operation was performed by Dr. S. C. Plummer, of Chicago, who discovered a circumscribed cyst and no tumor. I did not feel that it was a mistake in diagnosis. Munro has called our attention recently to the little known fact that in diagnosing spinal tumor we must always make the reservation that it might be a cyst rather than a tumor. In the event of it being a cyst, it should be emptied of its contents; and this would be equivalent to the removal of the tumor, because we cannot dissect out the very fine membrane without injuring the meninges. My patient made a good recovery from the operation. Diagnosis was based on the fact that there was an abrupt beginning of the line of hypesthesia and hypalgesia; there were no continuous pains; only occasionally some neuralgic pains on one side. The opposite side showed a monoplegia or spastic paralysis of the Brown-Séquard variety. Sensory disturbances on one side, motor disturbances on the other, and an abrupt beginning of hypesthesia and hypalgesia, enabled me to diagnose neoplasm rather than transverse myelitis. There were sphincter disturbances which have improved since operation; the patient walks better; sensation is slowly returning, and it appears as though a perfect recovery will ensue.

Dr. Charles L. Dana, New York: The surgery of the spinal cord has certainly made great advances in the last few years, and the success in the removal of tumors of the spinal cord has been very much greater than that of removing tumors of the brain.

In New York we have had in the last five or six years a great many operations of this kind, and it has been shown that a very large proportion of these tumors are operable. If you look over the classified list of the tumors of the cord as given in the text-books and monographs, you would not suppose there were many tumors that could practically be removed. As a matter of fact in the cases that I have seen operated on they are nearly all fibrosarcomata or endotheliomata, as the pathologists now choose to call them. And they are pretty nearly always either extramedullary or growing from the pia and not infiltrating the spinal cord to that extent that they cannot usually be dissected out.

The diagnosis of spinal tumors has been made of course, more exact; but in addition to that, exactness of diagnosis has not been so necessary as formerly, for the reason that the operation for exploration has been rendered comparatively safe. Dr. Taylor has advised an operation for unilateral laminectomy by which we can very quickly and easily cut down, expose the spinal cord, and if there is no tumor, or if the conditions do not warrant operation, the parts are restored, and the patient is pretty well in a comparatively short time, and for that reason sometimes we do not have to postpone the decision of operation for so long a time as we otherwise would. I always insisted on the niceties of diagnosis. You cannot by any possible means always, it seems to me, say that it is a tumor. I think in about 90 per cent. of cases we can be quite sure, but in the other 10 per cent. we are likely to run into a cyst, or sometimes a certain rather curious thrombotic softening of the cord, which is found occasionally instead of cysts.

I have found in one or two cases that the *x* ray has been of help in diagnosticating the location and seat of the tumor, especially when there is any involvement of the bone in connection with the disease.

Treatment of Recent Epilepsy. W. A. Turner, in the *Lancet*, states that there is no single specific remedy in the treatment of epilepsy, although the alkaline salts of bromin come nearest to this definition. But the influence of the bromids on epileptic convulsions, he says, is variable and uncertain.

---

[1] Elsberg, C. A.: The Extrusion of Intraspinal Tumors, The Journal A. M. A., April 16, 1910, p. [illegible]

UNIVERSITY MEDICAL SCHOOLS *

JAMES J. WALSH, M.D., PH.D., LL.D.
Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine
NEW YORK

In recent years there has been a very decided improvement in medical education in the United States. It is not hard to understand why the foreigner lifts his eyebrow in surprise when he is told that most of our medical schools a generation or two ago required but two terms of four or five months each and that there was just beginning to be a demand for a little more complete course and better facilities. There were many medical schools with these low standards turning out graduates every year with the degree of Doctor of Medicine, which constituted a license to practice in every state in the Union, for there were no laws regulating the practice of medicine. As for preliminary requirements, the less said the better. If a man could write his name—and, indeed, he did not have to write it very plainly—he found it easy to matriculate in a medical school and to be graduated at the end of two scant terms. He might come from the mines or from the farm, or from before the mast, or from the smithy, or the carpenter shop; he need know nothing of chemistry, or physics, or botany, or English, or, above all, English grammar, to be admitted to what was called a professional school and graduated when he had served his time. Practically no one was "plucked." The desire of the faculty for numbers of students forbade that in most cases. The two terms in medicine were not even successive courses. The second-year student listened to the same lectures that he might have heard the preceding year.

We all know the reason now for this extremely low standard of medical education. Proprietary medical schools made it their one business in life to make just as much out of medical education as possible and the professors, or sometimes the dean, pocketed the fees—I came near saying the spoils—every year, and robbed medical education of whatever possibilities it might have for the real training of young men in the science and art and practice of medicine. Perhaps the most interesting feature of this maintenance of extremely low standards in medical education is the fact that, in spite of it, men—at least many of them—succeeded in obtaining a good foundation in medicine and then, by personal work afterward, came to be excellent practitioners of medicine. Professor Welch said not long since:

> One can decry the system of those days, the inadequate preliminary requirements, the short courses, the dominance of the didactic lecture, the meager appliances for demonstrative and practical instruction, but the results were better than the system. Our teachers were men of fine character devoted to their duties; they inspired us with enthusiasm, interest in our studies and hard work, and they imparted to us sound traditions of our profession.

Some of these very admirable results our medical schools with their longer terms do not achieve at the present time.

Nothing that I know is a better testimony to American enterprise and power of overcoming the difficulties of an almost impossible situation than the life-stories of some of the men who came from these utterly inadequate schools. If with the maimed training and incomplete education given a generation ago American medicine not only succeeded in maintaining the dignity of the profession to a noteworthy degree, but also raised up many men who made distinct contributions to world medicine, what may we not do now that our medical education is gradually being lifted up out of the slough of despond in which it was, and the preliminary education for medical students set at a standard where real work can be looked for of thoroughly scientific character from the very beginning of the medical course?

Is it any wonder, then, that those of us who have the best interests of American medicine at heart are watching with deep interest the movement that is now reforming medical education in this country? The one hope of medical education is and always has been organic connection with the university. Real university medical schools—that is, medical schools as the genuine postgraduate departments of universities with the fine training that they give—have opened our eyes to what is needed in medical education in this country. Some of the old-time medical schools here in the United States had been connected by name with universities; but this connection was more apparent than real, and the medical faculty ruled absolutely in its own department, throttled medical education, and divided the income of the college among themselves, devoting as little as possible to equipment, to laboratories, to all that was needed for medical education.

Now has come the epoch of university medical schools in this country—I came near saying America; but we must not forget that the Spanish-American countries having adopted their educational systems from their mother Latin country always maintained the organic connection of the medical schools with their universities, and as a consequence a good preliminary education has always been required there. At least four years in the medical school were required even in the sixteenth and seventeenth centuries, and five and six years during the nineteenth century in all these Spanish-American countries. I have thought, then, that this story of medical education in connection with universities and genuine university work would be interesting to the graduates of that great western university whose work in medicine is acknowledged to be up to the best standards of university professional work, and whose organic connection with a great university assures not only a continuance, but the future development of medical education here along lines that shall place this in the very near future among the productive medical schools of the world.

The first university medical school that well deserves that name is the one that came into existence in connection with the University of Alexandria. I have been at some pains, because it is so delightfully amusing, to point out how the University of Alexandria resembles our modern universities in most particulars. It was founded by a great conqueror who had gone out and made the world his oyster, and, having extracted from it the pearl of supreme dominance, sighed for more worlds to conquer, founded a great city that was to be the capital of his empire, and looked forward to endowing a great institution of learning in that capital that was to attract students from all over the world. When he died prematurely the Ptolemies carried out his wishes. Money was no object at Alexandria; they put up magnificent buildings, founded a great library, bought a lot of first editions of books in the shape of original manuscripts, stole the archives of Athens, used Alexander's collection made for Aristotle as the foundation of what we would call a museum, paid professors better salaries than they received anywhere else, and housed them in

---

* Address to the graduates of St. Louis University Medical and Dental Schools, May 31, 1910.

purposes. What a strangely familiar sound all this has! Then Alexandria proceeded to do scientific work.

Euclid wrote his geometry and we still use it as a textbook in our colleges. Archimedes followed up Euclid's work, laid the foundations of mechanics in his study of the lever and the screw, and of hydrostatics and of optics in his study of specific gravities and burning mirrors and lenses. He made a series of marvelous inventions showing that he was a practical as well as a theoretic genius, and would be gladly welcomed as a member of the faculty of a university of moderate times even of the highest grade. Later Ptolemy elaborated the system of astronomy that had been first taught by Alexandrians, and Heron invented his engine, which we have had as a toy in our laboratories for centuries, and of which we only realized the true significance when the turbine engine was invented; then we found that its principle was in the toy engine of this old natural philosopher of Alexandria. They even wrote their literature scientifically at Alexandria. We have no great original works from there in literature, but they invented the comparative study of literature, for this purpose making the Septuagint translations of the Scriptures and many another religious document of the surrounding nations for comparative studies.

It is rather easy to understand, then, that a medical school arose in connection with this scientific university, and that it did excellent work. The collections of Aristotle contained many illustrations which served as a basis for zoology, botany, comparative anatomy and what we know generally as the medical sciences. The Ptolemies were very liberal and allowed dissection of the human body, so that human anatomy developed from a definite scientific standpoint better than ever before. The number of strangers in the town and the rather unhealthy climate of Egypt left many unclaimed bodies. The lack of such facilities, much more than prejudice against the violation of the human body on any general principle, has been the reason for the absence of human dissection in many periods of the world's history. We object to having the bodies of friends cut up, but we do not mind much if the bodies of those who are unknown to us are treated in that way. So long as men did not travel much there were few unclaimed bodies. With the advent of travel came abundant material for dissection and Ptolemy allowed the medical school to use it.

Two great anatomists built up the structure of scientific anatomy on the rather good foundations that had been laid in animal anatomy in the foretime. After all, the anatomy of the animal resembles that of man so much that very precious knowledge had been gained from such dissections in the previous ages. These two anatomists were Erasistratos and Herophilos. Both of them devoted themselves to the study of the brain, as might well have been expected, just as soon as the opportunity for dissecting man was provided. Herophilos has named after him the torcular Herophili and the name he gave the calamus scriptorius is still retained. He described the membranes of the brain, the various sinuses of the choroid plexuses, the cerebral ventricles and traced the origin of the nerves, the brain and the spinal cord, recognized the distinction between nerves of sensation and motion. He described the eye and especially the vitreous body, the choroid and the retina. He did not neglect other portions of the human anatomy; how much and how exact observations may be judged from his remark that the left spermatic vein in certain cases joins the renal.

Erasistratos was perhaps even a more successful investigator than Herophilos. He represented the best tradition of Greek medicine of the time. He had two distinguished teachers, one of them Metrodoros, the son-in-law of Aristotle. It was probably through this intimacy that Erasistratos received his invitation from the first Ptolemy to come to Alexandria. The scientific work of Alexandria, then, was founded on Aristotle's collections and his books, for his library was brought to Alexandria as the foundation of the great university library, and then the direct tradition of his scientific teaching through this pupil of his son-in-law. Erasistratos' other great teacher was the well-known Chrysippos of Cnidos. Cnidos was the great rival school of the time to that of Cos. Owing to the reputation of Hippocrates we know of Cos, but we should not ignore Cnidos. Erasistratos' discoveries were in connection with the circulation more than anything else. He came very near discovering the systemic circulation. His description of the valves and of their function is very clear. He looked for large-sized anastomoses between veins and arteries, and, of course, did not discover the minute capillaries which required Malpighi's microscope to discover nearly 2,000 years after. Like Herophilos, Erasistratos also studied the brain very faithfully.

It is no wonder that students from all over the world were attracted to Alexandria for the next three centuries because of the opportunities for the study of medicine afforded them there. After the first century of its existence not so much was accomplished as at the beginning, because what always occurs in the history of medicine after a period of successful investigation happened also there. Men concluded that nearly everything had been discovered and began to theorize. They were sure that their theories explained things. Men have persisted in spinning speculative theories in medicine. Theories unsupported by observations have never helped us and they have always wasted our time. Observation is the thing that counts. Alexandria continued to have the reputation, however, and in the first century of the Christian era was the greatest center of medical interest. It was probably here that St. Luke was educated, and we know now, from the careful examination of the Third Gospel and of the Acts, he knew his Greek medical terms very well. Harnack has shown us recently once more how thoroughly Luke converted the ordinary popular terms of the other Evangelists into the Greek medical terms of his time. Luke must have known medicine very well. His testimony to the miracles of Christ is, therefore, all the more valuable, and seems quite providential.

After Greece and Rome there is supposed to be a sterile interval in medical education down almost to our own time. We are prone to think, because of the curious ways in which the histories, not only of medical education, but of all education, have been written that, while there were some schools in the Middle Ages, these were of so little value that men practically did nothing for education until modern times. Such an opinion is blatantly absurd and ridiculous. The great universities founded during the thirteenth and fourteenth centuries attracted more students to the population of the country at the time than go to our universities to the number of our population in the present day. These medieval universities are the models of our universities at the present time, and, indeed, the history of many of the old European universities is continuous for seven centuries. They had an undergraduate department in which students were trained in grammar, rhetoric, logic, arithmetic, astronomy, music and gymnastics; and graduate departments of theology, law and medicine. Huxley, reviewing medieval education, once said that the undergraduate department of the medieval universities was better than our own. He doubted "that the curriculum of any modern university shows so clear and generous a comprehension of what is meant by culture as this old triviam and quadriviam did."

Their post-graduate work was just as fine as their undergraduate work. They systematized the law of the world in the thirteenth century and laid the foundation on which the philosophy and theology of the after times have been built up. Strange as this may seem to many, they did the same thing in medicine. Take, as a single example, what they did for medical education and practice. A law of the emperor, Frederick II, issued in 1241 for the Two Sicilies, required three years of preliminary training, the ordinary graduate course at the university, before a man was allowed to take up medicine, and four years at medicine before he received his degree, with a year of practice with a physician before he was allowed to practice. If he were going to practice surgery an extra year of the study of anatomy was required. But many will be apt to ask: "Since men of the middle ages knew almost nothing of medicine and surgery, at what did they spend their time during these four years?" The more we know about the details of that early teaching the more we respect them.

Probably the most surprising feature of their teaching was in surgery. We are very apt to think that the development of surgery was reserved for our day. Nothing could be more untrue. The greatest period in the history of surgery, with the possible exception of our own time, is the century and a half from 1250 to 1400. What they taught in surgery we know, not from tradition, but from the text-books of the great teachers which have been preserved for us, and many of which have been recently republished. Three men stand out preeminent: William of Salicet, Lanfranc, who taught at Paris, having been invited there from Italy, where he had been a pupil of William's, and Guy de Chauliac, to whom have been given by universal acclaim the title of "Father of Modern Surgery."

There is practically nothing in modern surgery that these men did not touch in their text-books. Perhaps the most surprising thing is to find that William of Salicet, in discussing his cases, suggested that sometimes he succeeded in obtaining union by first intention by keeping his wounds clean. Alas for the surgery of succeeding centuries! Guy de Chauliac, a greater mechanical genius than William, insisted that union by first intention was an illusion, and that healing could come only through pus formation. Laudable pus became the shibboleth of surgery for centuries, imposed on it by the genius of a great man. Most men think that they think; they really follow leaders, and so followed blindly after Guy until Lister came and showed us our mistake.

Guy was a teacher at Montpellier, and also the physician to the popes, who were for the time in Avignon. His text-book of surgery is full of expressions that reveal the man and the teacher. He says the surgeon who cuts the human body without knowledge of anatomy is like a blind carpenter carving wood. He insisted that men should make observations for themselves and not blindly follow others. He discussed operations on the head, the thorax and the abdomen. He said that wounds of the intestines would surely be fatal unless sewed up, and he described the technic of suture for them. His specialty was operation for hernia. There are pictures still extant of operations for hernia done about this time in an exaggerated Trendelenburg position. The patient is fastened to a board by the legs, head down, the board at an angle of 45 degrees against the wall. The intestines dropped back from the site of operation and allowed the surgeon to proceed without danger. Guy said that in hernia cases more patients were operated on for the sake of the physician's pocket than for their own benefit. His instructions to his students, his high standard of professional advice, all show us one of the great physicians of all time, and historians of medicine are unanimous in their praise of him.

The next great development in medicine came at the time of the Renaissance with the reorganization of the universities. In the sixteenth century Italy particularly did magnificent work in the universities, stimulated by touch with old Greek medicine which had been republished. At Padua, at Bologna, above all, at Rome, in the magnificent papal medical school, the great foundations of the modern medical sciences were laid. I need only mention the names of Vesalius, Varolius, Eustachius, Fallopius, Columbus, who discovered the circulation of the blood in the lungs, and Caesalpinus, to whom, and rightfully, the Italians attribute the discovery of the systematic circulation nearly half a century before Harvey. These men, all of them, did fine work everywhere in Italy. They were doing original investigation of the greatest value. Whenever anybody anywhere in Europe at this time wanted to do good work in science, astronomy, mathematics, physics, and, above all, any of the medical sciences, he went down to Italy. Italy was, and continued for five centuries after the thirteenth, to be what France was for a scant half century at the beginning of the nineteenth, and Germany, for a corresponding period just before our own time. How erroneously the history of science and of medicine was written when it seems to contradict this! Above all, what ridiculous nonsense has been taught about papal opposition to science! The great universities of Italy in the thirteenth and fourteenth centuries had charters from the popes. They were immediately under ecclesiastical influence, yet they did fine work in anatomy and surgery. Rome had a fine medical school for centuries. Bologna, at the height of its fame in medicine, was in the sixteen papal states. The father of modern surgery was a papal physician. The papal physicians for seven centuries had been the greatest contributors to medicine. Anyone can find this out for himself if he reads the history of medicine. The popes deliberately selected as their physicians the greatest investigators in medicine at the time. Besides Guy de Chauliac, such men as Eustachius, Varolius, Columbus, Caesalpinus, Lancisi and Malpighi were papal physicians.

We have an even more striking testimony to the papal patronage and encouragement of medicine and to the Church's influence in fostering medical education here in America. The first university medical school was not, as has so often been said, the University of Pennsylvania, founded in 1765, my own medical alma mater —and it is not to decry her but to bring out the truth that I say it—but the medical school of the University of Mexico, where medical lectures were first delivered in 1578. Our medical schools in this country have become genuine university medical schools, in the sense of being organic portions of the university, only in the last twenty years. Before that their courses were brief and unworthy and no preliminary education was required.

The universities of Spanish America from the very beginning required three years of preliminary training in the university before medicine could be taken up, and then four years of medical study. These four years became five and six years in certain countries, and at no time during the nineteenth century did the medical education of Spanish America sink to the low level unfortunately reached in the United States. The lesson of it is clear. When medical education is seriously undertaken as a university department all is well. When it is not results are disastrous.

887 Longwood Avenue.

THE PREVENTION OF INFANT MORTALITY FROM AN EDUCATIONAL STANDPOINT*

L. T. ROYSTER, M.D.,
NORFOLK, VA.

In no line of research has scientific investigation achieved more striking results than in medicine. Nor has the broad-mindedness of the physician been content with the mere alleviation of human suffering, however praiseworthy this may be, but that altruism which has always characterized the profession is impelling it to strive with ever-widening success for the complete eradication of preventable disease and suffering and the developing of a race noted for health, vigor and strength. Preeminent among such efforts stand the investigations of the pediatrists, who hold an undisputed position among the pioneers in the study of prevention, and I may safely say that enough is known to-day to reduce materially the present fearful rate of infant mortality if the knowledge were properly applied, and yet with all that has been discovered and the knowledge which has been acquired, the actual number of deaths during infancy has not been materially decreased, and the question naturally arises, why? The answer is simple; because a knowledge of the means of preventing infant mortality has not been sufficiently disseminated among the people. If this is true and I am thoroughly convinced that it is true the question resolves itself into the best means of distributing such information as will aid in this campaign, to all people of all classes and conditions of life, showing them what are the causes of mortality, the results of bad management and how best to apply the knowledge of the means of prevention to the accomplishment of the desired end.

I propose, therefore, to discuss a few ways in which education may aid in a material reduction of the death-rate among infants and children. It seems to me to be entirely proper that we start with the profession itself in our campaign of education, for on us must rest the burden of at least interesting the public in the vast importance of this crusade and directing its mind in the right channel along which to work.

In the first place, the course in pediatrics in the majority of colleges is entirely inadequate and far from commensurate with the importance of the subject. Anatomy, practice of medicine, therapeutics, materia medica and other branches are well taught in the average medical college, and even a certain number of actual deliveries in obstetrics are required for graduation; and, as is well known, there is given over so much time both in lecture and in attendance on clinics that one might well imagine that nine-tenths of all students who graduate are being prepared for a practice wholly devoted to this branch, whereas, in many colleges, if pediatrics is taught at all, it is treated as an unimportant side-branch of practice of medicine or obstetrics. It would appear, therefore, that the college authorities fail to realize the importance of the subject, which is important to the student because it is a very necessary part of his preparation for general practice into which the majority of the graduates of the medical schools fall, and important for its bearing on the life and health of the nation, for mortality among infants means not only depopulation but deprivation of many useful, if not wealth-producing citizens to the community; while morbidity—which cannot be separated from mortality in such a discussion as this—bears directly on the virility of the race. So in the beginning I must make a plea for better instruction in this branch of medicine during the college course.

One of the most serious matters for consideration is the awakening of the practicing physician to the vast importance of the proper handling of infants and children, for barring the three great factors, poverty, overcrowding and ignorance, all more or less economic in their nature, the careless or ignorant physician is perhaps the most difficult part of the problem to handle. Many doctors are either too ignorant or too lazy to attend properly to the needs of infants during the first year of life; consequently they turn these helpless creatures, especially the artificially fed ones, over to a nurse who may or may not know anything about their care, or what is worse, dismiss the case with the sole instruction to an ignorant mother to put the child on A's or B's patent food and to follow the manufacturer's circular, or else to employ the equally vicious alternative, condensed milk. Some one has aptly said that "the patent food is the boon of the lazy doctor, the bane of the suffering infant," and I know of no words which better describe the situation. Such men as these are either unwilling to admit that they do not know how to feed infants or they are afraid of losing a few dollars by referring the case to some one competent to take charge; and are comparable to the obstetrician who fails to instill the silver solution into the eyes of the new-born.

As I have stated, this class of physicians presents an exceedingly difficult phase of the problem and I am quite certain that there is only one way in which they can be reached and that is through their patients. The public must be taught wherein consists proper and improper handling of infants, what constitutes good feeding, the evils of improper feeding, and in a general way, what is right for the physician to do. When they understand these things, as they will in a remarkably short time, if properly instructed, they will then demand more careful and approved attention to their children on the part of the family physician, who will be compelled either to study approved methods for himself or to seek aid from those better informed on the subject. Likewise the people should be taught the true significance of the blindness resulting from the gonococcus and the means of its prevention, and when they fully realize its importance we can rely on them to see that the attending obstetrician or midwife uses the silver solution.

As we all know, the most important and far reaching of the many causes of the condition under discussion is ignorance on the part of those having the intimate care of children during that most critical period of life—infancy. This, of course, usually means ignorance on the part of mothers; hence the key note of the whole situation is the education of the mother in the home. When taking histories it is not an uncommon occurrence for a mother to state that she has had seven or eight children and that she has raised only one or two, the rest dying in infancy. This, in the majority of instances, is the most striking commentary on the knowledge (or ignorance) of the mother. Nor is this to be wondered at. Many a woman becomes a wife and subsequently a mother without having had instruction in any of the many difficulties with which she is to be confronted, with the natural consequence that she is soon surrounded by a galaxy of sympathizing and self-opinionated neighbors who are pouring into her open ears a detailed account of miraculous cures effected by this or that remedy, which she receives and uses with an avidity born of desperation and bred of the ignorance of which she is the unfortunate heir. As the natural result of this the stricken mother has the misfortune to see her offspring wilt in her arms, where she invariably keeps it, until at last the physician may be called only in time in most cases to sign the death certificate. The influence of "grannies" is gradually passing, at least among the better classes of society, and yet their superstitions are still apparent in many of the so-called home remedies in common use. The fear of fresh air for the well, to say nothing of the sick infant (especially those sick with eruptive diseases) is still so prevalent as to make us involuntarily ask the question whether the value of fresh air has even begun to be appreciated by most people; while the methods of feeding and handling which are generally practiced are so obviously indicative of ignorance that we might well imagine we are dealing with mothers just from the African jungle rather than in the heart of American civilization.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

I am glad to see that the custom of early weaning from the mother's breast is rapidly going out of fashion; but the importance of maternal feeding as a factor in the prevention of infant mortality cannot be impressed too strongly on the popular mind. The economic value of breast-feeding should be emphasized, and will appeal strongly to those of moderate means. About nine out of every ten mothers who come to my clinic (mostly negroes) know of only one substitute for mothers' milk, and that is condensed milk; and when told of the value of fresh cows' milk at once inform us that they know of no one who has just one cow from which to secure the child's food. So deeply does this idea of the one cow's milk for the child seem to be implanted in the minds of the poorer people that it is with great difficulty they can be persuaded to get their milk from a good dairy or the milk laboratory. These ideas and superstitions are in many instances so well established in the popular mind that when we endeavor to explain the correct method of procedure, we often meet with such a degree of suspicion toward the physician that it would appear the profession is held in light esteem and that its opinions are regarded with less confidence than those of the old women or neighbors alluded to before. Hence the confidence of the people must be secured to the physician before much can be accomplished.

It is well known what remarkable success has met the efforts of those interested in the prevention of tuberculosis in instructing the public concerning the cause, means of prevention and cure of this disease through the medium of a general educational campaign; why then cannot as much be done through the same means in the equally important field of the prevention of infant mortality? As has been said before, the key-note of the situation is the education of the mother in the home. How then may we best reach the mother? A great deal can be done through popular lectures and magazine articles and the few such articles as have appeared in some of the prominent magazines have already borne fruit, as I have had opportunity to witness quite recently; and such articles have greater weight than the private talk of the family physician, or else confirm what he has often said and prove the correctness of his statements because it has been "seen in print."

Probably the greater proportion of mothers, however, never see these magazines or hear a popular lecture and the valuable information contained in them is lost to the most important part of the population. This class, therefore, is to be reached through other channels and I know of no better way than through the well-conducted dispensary and milk depot. The instruction and advice given in the dispensary can be followed up in the home by a competent visiting nurse, without which any dispensary or milk depot is seriously handicapped, if not a failure, so far as popular education is concerned. Whatever the method, therefore, whether by magazine article, pamphlet, dispensary or the individual instruction by the visiting nurse in the home, the object should always be to gain the confidence of the people so that they will follow the advice and instruction of the physician or nurse rather than of the self-constituted and ignorant adviser or the patent-medicine circular.

The havoc wrought by long working hours for the nursing mother and the woman about to become a mother are too well known to physicians to be more than mentioned here, but not until the public generally becomes aware of this injury to women and its fearful results to their offspring in mortality and morbidity, shall we ever secure a proper regulation of labor laws. I believe, firmly, that when public sentiment is sufficiently aroused, the people will demand of both legislator and manufacturer regulation in this matter and a respect for life and health as opposed to the value of the dollar. Human life and health, however, can be shown to be a valuable asset of pecuniary value and, when this is done an impetus will be given the struggle for regulation of working hours which cannot be secured in any other way, for we all know what a powerful influence the monetary standard of valuation possesses. From this point of view, I have strong hope in the aid we shall eventually receive from the insurance companies, especially those of an industrial nature; for when these companies once fully appreciate the relation between the health of the pregnant woman and her unborn offspring and the insurance risk of the child or man, when insured at a later date, I am confident that we shall then have to aid us both the moral and the financial influence of these great powers.

The signs of the times already point to bettered conditions now or in the very near future, and the press, from which we are to hope for the greatest assistance in this matter, is alert to the importance of the question as is shown by a comment in the Chicago *Record-Herald*, in reporting a recent legal decision bearing on this matter. The comment reads:

> What we know as men, we cannot profess to be ignorant of as judges. . . . As weakly and sickly women cannot be the mothers of vigorous children, it is of the greatest importance to the public that the state take such measures as may be necessary to protect its women from the consequences induced by long, continuous manual labor in those occupations which tend to break them down physically. It would therefore seem obvious that legislation, which limits the number of hours which women shall be permitted to work to ten hours in a single day, in such employments as are carried on in mechanical

establishments, factories, and laundries, would tend to preserve the health of women and insure the production of vigorous offspring by them and would directly conduce to the health, morals and general welfare of the public, and that such legislation would fall clearly within the police power of the state.

There is another field of usefulness in this educational effort which has been touched on but sparsely in the literature at my command, but which appeals to me most strongly since, being in touch with primary education, I see its possibilities, and this is the public school. Hygiene is taught in the school in a general way, hygiene of the home and public hygiene, but the hygiene of early life, that which bears directly on the life and health of the infant is neglected. The girls of our schools to-day are not only the mothers of a short generation hence, but many are the "little mothers" of the poor at present. Why should they not be taught the care of the child and the general principles of feeding? The only reason is that its importance has not been sufficiently recognized. Some effort has been made in this direction in the playgrounds under the teaching of the caretakers there employed; but this instruction has not been taken directly into the schools. We all know the powerful influence of whatever is taught in the schools and the rapidity with which the pupil carries the lesson into the home and how reflexly the parent is influenced by the child's knowledge. Why should such an opportunity as is here afforded to spread information regarding the care of the infant be allowed to pass? This is especially important among the foreign element which grasps with such remarkable avidity anything which looks like improvement and suggests the acquirement of American civilization.

Finally, we physicians must realize that on us lies the burden of inaugurating this campaign and should institute a beginning as soon as possible. What more influential body of men is there in this country to-day than the American Medical Association? Why should we not make the greatest effort in this direction and be recognized as the leaders in the fight?

Taylor Building.

ABSTRACT OF DISCUSSION

Dr. S. W. Kelley, Cleveland, Ohio: Dr. Royster spoke of the short time for pediatrics in the college course, and of its being doubled up with some other branch of teaching in many colleges, being taught by the teacher of obstetrics or gynecology or toxicology or what not. These conditions, among others, have been taken up for consideration by the Association of American Teachers of the Diseases of Children and, after some studies of the subject two years ago a report was adopted at the session held in Atlantic City in June, 1909. This report declared, among other things, that "every medical college should have a chair of pediatrics. It should be a full professorship quite independent, i. e., not subordinate to any other chair." The association declared also in favor of devoting as much time to pediatrics as to any other practical branch; that 10 per cent. of the third and fourth years, or not less than 190 hours, should be the minimum.

The Council on Medical Education of the American Medical Association has also taken some action recommending an increased allowance of time to 180 hours.

In the Association of American Medical Colleges, the Committee on Curriculum for the Clinical Years, at the meeting at Baltimore last March, advanced the time devoted to pediatrics from 100 hours to 150 hours. This has not yet gone into effect but the report will be acted on next year and whatever is adopted will not merely be recommended but will become the law of the Association as the minimum requirement. The time allowance, of course, does not come up to the ideal, but is certainly a very encouraging advance.

The Journal A. M. A. gives an account of the meeting of the College Association in brief abstract; it may interest you to hear that the report goes on to say that "the allowance for pediatrics is intended to include instruction in the exanthemata. In many other ways medicine and pediatrics overlap. Useless repetition can only be avoided by a proper understanding between the teachers of these two subjects, and a certain elasticity should be allowed a school for the purpose of assigning time to one subject or the other according to where the borderland subjects can best be taught. In the same way pediatrics and surgery touch and overlap. In one subject or the other the surgery peculiar to children should receive attention. Valuable suggestions in relation to the teaching of pediatrics will be given in an appendix to this report."

PUBLIC HEALTH ORGANIZATION IN NEBRASKA*

D. T. QUIGLEY, M.D.,
NORTH PLATTE, NEB.

The purpose of this paper is to report the organization of the public health officers of the State of Nebraska, to give the plan of the organization and to recommend the plan to other states where such a movement has not yet been made, rather than to recount the work already accomplished.

On June 8, 1909, in response to a call sent out, a large number of the city and county physicians of the state met in Omaha and organized what is now the Nebraska State Health Association. For several weeks before the meeting, and before the call was sent out, interest was aroused by the following letter, which was published in newspapers throughout the state:

HEALTH OFFICERS SHOULD ORGANIZE

North Platte, Neb.

To the Editor:—In line with the present rapidly developing sentiment in favor of the idea of preventing disease instead of attacking it after it has developed, and the spread of life-saving medical intelligence, I want to bring before the public the necessity of organization of the public health officers and the need of public support of such an organization after it has been effected. Much good would result if the public health officers of the state were organized and would hold regular meetings, where the ways and means for preserving public health might be discussed, improvements and advances noted, and the force of the organized body brought to bear on the enforcement of such regulation as might be necessary. City and county health officers have been inclined to be passive and very little work of an active and aggressive nature has been done; but, in view of the fact that an enormous amount of the diseases that now afflicts the people of our state could be absolutely prevented, it seems reasonable to suppose that one of the first steps to secure more nearly ideal health conditions would be perfection of such an organization as I have cited.

D. T. Quigley, City Physician.

This was followed up by a letter to every city and county physician in the state as follows:

CALL FOR STATE MEETING OF THE PUBLIC HEALTH OFFICERS OF NEBRASKA

To all city and county physicians and other public health officers of the state of Nebraska:

Dear Doctor:—This circular letter is sent to every public health officer in the state for the purpose of effecting a state organization. The need of such an organization is apparent when we realize that there is much to be gained in enforcing health regulations, if the city or county physician is backed up by a compact and well organized state association. This, however, is of minor importance compared with the benefits that will come to each community and the state by the wide dissemination of knowledge on preventive medicine that will result. The dominant note in all medicine to-day is prevention. There is much that is new in this field. Most of us can teach others something; we can all learn, and we shall all be better physicians and better health officers, if we get together and mix our experience and our learning. Nebraska, as a state, ranks first in the intelligence of her people; let us see that she ranks first in the intelligence of public health officers by making a good, strong association that will be a pattern for other states and do untold good by furthering the work of protecting our people from disease and death. We want to have this meeting as early as possible so as to get after the hot weather diseases, flies, etc., and that we may report what has been done at the Section on Hygiene of the American Medical Association at the Atlantic City meeting, June 8. The date set for this meeting, therefore, is June 7 and 8; the place, the Rome Hotel, Omaha. Return the enclosed postal, at once, stating whether or not you will be present. Get in as a charter member if possible. Charge your expense for the trip to your city or county. Very few will refuse to pay, if the benefit to the community from your presence at the meeting is explained to them.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Dr. D. T. Quigley, North Platte, Neb.

At this first meeting the subjects of tuberculosis, medical inspection of schools and the carrying of disease by insects, flies, etc., were taken up and fully discussed. As all the leading papers in the state had reporters at the meeting, the intelligence in regard to these diseases that was spread broadcast throughout the state amounted to a great deal, and health officers, even in districts not represented at the meeting, found it easier to enforce their regulations in regard to preventive measures. At the second meeting, which was held in Lincoln, a large number of persons who were not public health officers having become interested, the by-laws were so amended as to take in all interested outsiders as associated members, the only restriction being that they were not allowed to vote on any question involving the enforcement of any health regulations or rules. These associate members are very valuable in keeping up interest in health matters in their respective localities, and, in an association in which the active members hold office by political appointment usually only for one year, it seemed wise to make such a provision, if only to take care of the older members. The new health officer, coming in, is usually enthusiastic enough to seek membership, while the old one, going out, has learned to love the work well enough so that he will stay and give his colleagues the benefit of his experience. It will be seen that the possibilities for the growth of such an association are great.

The plan of the association is to spread knowledge of the prevention of disease in every way possible—by newspapers, lectures, etc. We expect to have a lecturer on public health at every chautauqua in the state this summer. The plan also includes the use of the influence of the association toward the passage of laws directed to the betterment of the public health, such as providing for a state lecturer on tuberculosis and venereal disease, the prevention of the marriage of the diseased, the idiotic and the insane, the prevention of the spread of disease by railroads, providing for medical inspection of schools, providing for quarterly bulletins to be issued by the state board of health and sent to every tax-payer in the state giving seasonable information on the prevention of disease, etc.

It will be seen that there is much to be done, and much can be done by an association like this in every state. I addressed the governors' conservation congress in March on the need for this kind of legislation and was very glad to see that the conservation of human life stirred up more interest than any other topic taken up by the assembly. All the recommendations made were incorporated into the resolutions adopted by the meeting. An association of this kind in every state giving its endorsement to such measures as Senator Owen's bill would help much toward the passage of favorable medical legislation.

THE PERMANENT ELIMINATION OF YELLOW FEVER*

J. H. WHITE, M.D
NEW ORLEANS

Where the means for combating any disease is made known, it is little less than criminal to let such agencies fall into disuse. The American Commission in Cuba placed the necessary knowledge directly at our disposal in 1900, and we have evolved the correct practice since that time to such extent that we no longer fear epidemic yellow fever, but there still remains a goodly share of the work to be done. Most of us have vaguely considered the question of total eradication—I among the rest—but no practical solution of all points presented itself to me until I recently had a talk with the one man who probably knows more of yellow fever than any other, and his remarks put me on the track of the final solution—to Dr. Carter, of our service, therefore, belongs entirely the credit for most that I shall say.

We find this disease in endemic and epidemic foci. Endemicity, to be maintained, demands:

(a) A sufficient birth rate to furnish a very steady, continuous supply of non-immunes (babies), and therefore demands for its habitat a city of considerable size, unless conditions are peculiar, as below.

(b) The supply of non-immunes may be existent in a smaller place through the presence of a constant influx of non-immunes from the back country. This is exactly the reverse of what has many times been stated, viz: that the Hinterland infected the coast town. This latter erroneous impression I think Carter was the first to contravene.

Now, if we accept these two as the necessary corollaries for endemicity, it is readily seen that once endemicity is destroyed, we can also destroy *pari passu* all chance of epidemic occurrence. It has been fully demonstrated at Habana, Santiago, Cienfuegos, Vera Cruz, Rio Janeiro, Colon, and Panama that epidemic centers can be eliminated.

We know that the remaining foci are Cartagena, Sabanilla, Baranquilla, Bahia, Manaos, Para, Pernambuco, Santos, Guayaquil, and possibly the capitals of British, Dutch, and French Guiana on the American continent, and one or two points at most on the Gulf of Guinea, in Africa.

The total population of all these places will not exceed 1,500,000, and I am fully justified in saying that 5 mills per diem per capita would cover the cost, even at American prices, of holding these places in sanitary control—which control continued for a space of three years, at a total outlay of about $10,000,000, would mean that yellow fever, which has been the scourge of commerce for 400 years, would be no more, and maritime quarantine, save for plague alone, would become an unpleasant memory.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Such work would require cooperation with us on the part of the Latin-American countries and Great Britain, and, if Cayenne and Parimaribo are foci, of France and Holland; but I do not doubt the feasibility of obtaining all necessary cooperation, save for one of the Latin countries, since all but that one are on the best of terms with us, and even that one might be persuaded, in time.

The whole program could be summed up briefly as follows:

(a) Each center under one man's control, and he given full power to make a steady, insistent, and minutely exact fight on all Stegomyia breeding places.

(b) No attempt made to handle the sick, and so rouse the ire of the individuals.

(c) Be most careful to make it plain that subordinates shall annoy no one, and then see that they do not annoy.

The officer should approach the question of human carriers of the disease, if at all, solely through friendly suggestion to local authority, after getting on intimate terms, and then only to discreet officials, for fear of arousing opposition to his own particular work, which, in the end, would be absolutely sure of success. Could this be done, the medical profession would have to its credit an achievement that would be worth in money to the western world each year all of its cost, and to humanity more than can be estimated.

I wish to reiterate that I claim no originality in the foregoing, it being simply deductions from the splendid work of Colonel Gorgas, observations during my own work and, as before stated, Carter's suggestion. The idea of presenting such a conclusion having grown out of a statement made by Colonel Kean at the Atlantic City session in 1909, that we should wipe out yellow fever in ten years.

EXPERIMENTAL POLIOMYELITIS IN MONKEYS

EIGHTH NOTE: FURTHER CONTRIBUTIONS TO THE SUBJECTS OF IMMUNIZATION AND SERUM THERAPY *

SIMON FLEXNER, M.D.

AND

PAUL A. LEWIS, M.D.

NEW YORK

In our seventh note[1] on experimental poliomyelitis we treated of some of the phenomena of active immunization and passive serum protection in respect to epidemic poliomyelitis, and in this connection we wish to record some additional observations of the same general import. It can now be accepted as established that human beings and monkeys who have passed through an attack of poliomyelitis have come to contain in their blood certain neutralizing principles for the virus of poliomyelitis, that these principles are readily demonstrable by animal tests for two or more years in human beings, and that they probably persist for as great a period in monkeys. It has, moreover, been shown that monkeys which have recovered from an attack of poliomyelitis are highly refractory to reinoculation with the virus of poliomyelitis, and it is probable that the recovered human beings are similarly protected from reinfection. In both instances the attack has conferred a strong active immunity. But to have had and to have recovered from poliomyelitis is not the sole way in which an active immunity can be achieved, since it has been proved possible to immune monkeys actively by injecting into the subcutaneous tissue either the virus of full strength or one modified by chemical agents (for instance, glycerin).

ARTIFICIAL ACTIVE IMMUNIZATION

This mode of producing active immunity has not up to the present time been developed into a uniformly successful and safe method, since of the treated animals some do not develop a strong immunity and others develop paralysis as a result of the treatment.

The test of this active immunity thus far published consisted of the ability to resist a large intracerebral injection of the filtrate that in far smaller quantities produces paralysis in the control animals. The active immunity has been secured either from a single large subcutaneous injection of the crude or modified virus as represented by emulsions of the spinal cord taken from recently paralyzed monkeys, or by repeated injections of gradually increased amounts of the crude virus.

SERUM NEUTRALIZATION OF THE VIRUS

It has been shown that the blood-serum of human beings and monkeys that have recovered from an attack of poliomyelitis contains neutralizing principles for the virus of the disease, which principles are absent from normal serum. Moreover, it is safe to assume that these neutralizing substances are the indication and cause of the active immunity which is responsible for the refractory state of the animals to reinfection. Hence there should exist in the serum of the directly actively immunized animals, which have not been made to pass through an attack of poliomyelitis, similar neutralizing principles. When an active filtrate containing virus is mixed with the serum of actively immunized monkeys and incubated for a period at 37 C. it no longer sets up paralysis on being injected into the brain of normal monkeys.

In the previous neutralization experiments with monkey serum reported, the serum had been taken from animals in which, after recovery, reinforcement of the immunity had been attempted either purposely by subsequent injections of considerable quantities of active virus or had been circumstantially produced in the course of tests made to determine the existence of immunity to reinfection. We have since ascertained that without reinforcement the serum of monkeys that have recovered from the paralysis contains readily appreciable quantities of this principle. This experiment has established the fact that monkeys react precisely as human beings do in respect to the disease, since their serum as such after recovery possesses marked neutralizing power for the virus *in vitro*; and it indicates that the test would probably disclose the fact of an atypical attack of poliomyelitis such as is embraced in the so-called abortive type of the affection.[2]

---

* From the Laboratories of the Rockefeller Institute for Medical Research.

[1] The previous notes have appeared in The Journal A. M. A., Nov. 13, 1909, p. 1639; Dec. 4, 1909, p. 1913; Dec. 18, 1909, p. 2095; Jan. 1, 1910, p. 45; [illegible] 2, 1910, p. 1140; May 28, 1910, p. 1780, and [illegible]

[2] Netter and Levaditi have indeed determined that the blood of a patient who had suffered an abortive attack of poliomyelitis contained the neutralizing principle.

EXPERIMENTAL SERUM THERAPY WITH MONKEY SERUM

In the seventh note we pointed out that the serum derived from immune monkeys that had passed through an attack of poliomyelitis possessed therapeutic properties for the experimental disease. It was stated that if the quantity of virus injected into the brain was not in excess of a given dose the development of paralysis could, in some cases, be prevented by making several injections of the serum, by lumbar puncture, into the subarachnoid space, and that infection by way of the nasal mucosa could also and with greater certainty be prevented by the serum injections. We have also ascertained that the serum of directly immunized monkeys possesses similar therapeutic properties.

EXPERIMENTAL SERUM THERAPY WITH HUMAN SERUM

That human serum derived from children who have passed through an attack of poliomyelitis possesses neutralizing power for the virus of poliomyelitis has been stated already; it can now be stated that it possesses therapeutic value also. When the subarachnoid injections are begun twenty-four hours after the intracerebral inoculation of the virus, the development of paralysis can be entirely prevented in a certain number of the animals, while in another number the onset of paralysis is much delayed.

The period of incubation in the control animals ranged from seven to eleven days and in some of the treated animals that finally became paralyzed it was as great as twenty-six and twenty-seven days. The serum injection begun twenty-four hours after the inoculation, was carried out on three successive days, after which an interval of three days was allowed to pass, when three more daily injections were given. It seems probable that had the injections been resumed after another interval of rest the last vestige of the virus in the tissues would have been destroyed.

NEUTRALIZED VIRUS PRODUCES NO IMMUNITY

We have seen that actively immunized monkeys, the result of obvious disease and paralysis, or the product of gradual or abrupt accommodation to the virus, not only yield a serum that contains neutralizing properties for the virus, but are themselves highly refractory to reinfection with a highly potent virus. The fact has been repeatedly observed that failure to develop paralysis after an intracerebral inoculation of an active virus does not lead to any increase in resistance of the monkeys to subsequent infection by the same route. The animals which have once withstood an inoculation respond on another occasion as readily as the control animals. No explanation for this discrepancy has been found.

It is of interest, therefore, to learn that monkeys which have been protected from paralysis through the employment of mixtures of virus and immune serums, or as result of treatment by subarachnoid injections of immune serums, do not exhibit any unusual degree of resistance to subsequent intracerebral injections of active virus made at periods of several weeks to four or five months after the condition of the original experiments. Three important points are developed by this fact: that neutralized mixtures of virus and immune serum do not lead to any degree of active immunization; that the therapeutic action of the serum is associated with restraint of multiplication of the virus such as would be required to establish any grade of active immunity; and that a simple passive immunity is either not produced by the serum injections, or is of brief duration or small amount.

ARTIFICIAL IMMUNE SERUM

We have continued our efforts to produce an immune serum in some of the lower animals that might possibly become the source of a therapeutic serum. This work is being actively pursued at present, but we wish to report on an indication in the direction of our search. It has been found that normal sheep serum possesses a definite although slight neutralizing power for the filtered virus, and that the injection of emulsions of the spinal cord and brain of recently paralyzed monkeys into the sheep augments this property of neutralization.

The serum treatment of poliomyelitis is at present in the experimental state, and how soon, or whether ever at all, it will be applicable to the spontaneous disease in human beings cannot be predicted.

Sixty-sixth Street and Avenue A.

NOTES ON THE TECHNIC OF TRANSFUSION OF BLOOD

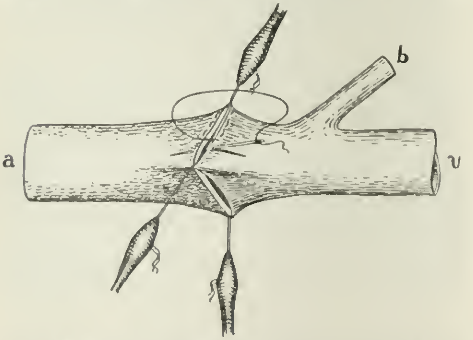
J. SHELTON HORSLEY, M.D.
Professor of Principles of Surgery and Clinical Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital
RICHMOND, VA.

Transfusion of blood has been brought into prominence in the last few years as an emergency life-saving measure. This operation has been developed by Carrel, Guthrie, Crile and others to such a point as to render its performance quite satisfactory in the hands of an average surgeon who has done enough experimental work on the lower animals to perfect his operative technic. Its advantages have been so well demonstrated by clinical use that its position among surgical procedures is assured. In two kinds of cases it is particularly appropriate. The class of cases exsanguinated to such an extent that even when the volume of blood is increased by salt solution life cannot be maintained, can be saved only by transfusion of blood. The other group consists of patients who have been so enfeebled by disease that they cannot stand the operation necessary to cure them. Here transfusion of blood increases the resistance of the patient and often enables him safely to undergo surgical procedures that otherwise would probably be fatal. The field may yet be widened, but the above two classes of cases already constitute a sufficiently broad field to render the operation one that should be frequently performed.

The similarity between the development of arterial suture and the evolution of intestinal suture is very striking. When intestinal surgery began to come to the front there was a host of mechanical devices, of which the Murphy button was the most prominent. As experience increased it was seen that, other things being equal, the simpler an apparatus was the more desirable it would be. Gradually it was found that everything that could be accomplished by a mechanical contrivance could be equally well done with a needle and thread. Consequently mechanical contrivances are now rarely used in intestinal surgery. In arterial suture, as in the transfusion of blood, there is likewise a host of devices, of which the cannula of Crile is the most prominent. After the technic of arterial suture develops the various rings, forceps and cannulas will probably be discarded, as was the case in intestinal surgery, and the needle and thread will be adopted. Arterial suture requires experimental work on the lower animals to even a greater degree than intestinal suture, but with this experimental experience arterial suture with a needle and thread is safer than with any mechanical device.

In the illustration one or two points are shown that have occurred to me while suturing blood vessels or transfusing blood. When transfusion of blood is done the vein should be selected near a point where it gives off a branch. In this way, after the transfusion has been performed, if a clot forms at the suture line, the finger can be placed on the main trunk of the vein, the branch unclamped, and the eye of a threaded needle can be thrust through this branch and made to break up the clot at the suture line. With the finger still on the main trunk of the vein, the force from the artery will pump the broken-up clot through the small venous branch. In this way it will be prevented from going into the circulation and producing an embolism. No bruising of the delicate intima is done by this procedure, as is the case when the site of the transfusion is too forcibly stripped with the fingers.

The method of Carrel, by which three sutures are inserted at equal distances along the circumference of the vessels and used as tractors, is excellent. Instead of using the over-hand suture, however, a running mattress suture may be employed, as shown in the cut. This makes more satisfactory apposition of the intima and leaves less of the thread exposed to the blood stream. If the original tractor sutures are not tied too tightly they can be cut out after the operation has been completed. Pulling on these sutures is likely to injure the intima and to leave a point at which a clot will easily form. The mattress suture can go somewhat deeper and approximate the healthy intima, so covering up the point in the arterial coat where the tractor suture penetrates. If anyone will recall the difference in the appearance of an intestinal wound when sutured by a right angle continuous suture and an intestinal wound sutured by the ordinary running over-hand suture he can readily appreciate that in the latter method much more thread is exposed than when the right angle suture is used. The mattress suture, as used in arterial suturing or for transfusion of blood, produces the same appearance on the inside of the blood vessel as the right angle continuous suture does on the outside of the intestine.



In this illustration *a* represents the artery, which is being sutured to the vein *v*. At *b* a small branch of the vein is shown, which is bent back in such a position that the eye of a threaded needle can be thrust through it and break up a clot which may form at the point of suture. A continuous mattress suture is shown uniting the artery and vein.

[illegible]3 West Grove street.

A NEW METHOD OF INFLATING THE STOMACH

STEWART LEWIS, M.D.

PINE TREE INN, LAKEHURST, N. J.

The method of inflating the stomach described below seems absurdly simple, yet I have found it of much practical value.

Procedure.—The patient is placed on the examining table, the abdomen exposed, a towel arranged under the chin and a siphon of carbonated water rested on the shoulder with the nozzle at the patient's lips. These instructions are given:

"I wish you to drink some of this carbonated water in order to get some gas into the stomach, which will swell it a little and help my examination. Please manage the siphon yourself; drink very slowly at first so as not to choke yourself and then drink as rapidly as you can. I will tell you when to stop."

The average patient will thus take eight ounces or more without difficulty. In favorable cases even half this amount will bring the outline of the stomach clearly into view, while the mixture of gas and fluid gives to palpation a crackling feel and typical splash apparent to the most inexperienced.

Difficulty is found in the following cases:

1. Obesity.—Comparison of percussion outlines before and after inflation will rarely leave one in doubt.

2. Relaxed Pylorus.—In these cases the gas rapidly escapes into the small intestine. With a little practice one readily understands this condition and the observation is itself of value. The inexperienced may here be led to wrongly make a diagnosis of misplaced stomach. Percuss carefully during the inflation.

Method of Percussion.—I prefer to employ direct percussion with a small wooden object such as a lead pencil, or, better, a flat object such as a paper knife or wooden-handled scalpel. With this, working from below upward, the abdominal wall is struck so as to produce a "spat," superficial, high-pitched. This sound is transmitted only to the viscus directly underlying. Gastric tympany is clearly differentiated.

The following objects are attained:

1. Size and position are accurately determined.

2. With practice some idea of gastric tone may be obtained. Roughly speaking, four ounces of fluid will lower the border of the normal stomach about an inch. In atony it may lower the border two or three inches.

3. As noted above, rapidity of escape of gas into the intestine will be a crude test of the tone of the pylorus.

4. Tumors may be more readily palpated.

I have practiced this method in about fifty cases and have quite carefully compared it with results obtained by other methods of inflation, by progressive water-drinking and in a few cases by transillumination with Einhorn's gastro-diaphane, aided by fluorescein solutions.

The following advantages appear to me:

1. It is safer.

2. It is much less unpleasant. I have never had a patient object.

3. It is, in my opinion, efficient.

If these claims are verified I strongly urge the adoption of this test, especially for office work, as I believe many errors in diagnosis may thus be avoided. In one case in which pyloric carcinoma had been diagnosed by three clinicians the method showed at a glance a case of vertical stomach while the gas could be plainly felt passing through a normal pylorus located in the right iliac fossa. I hope for a thorough test of the method by those of larger opportunity.

Therapeutics

GLYCOSURIA IN ELDERLY PERSONS

Under this heading Dr. Victor C. Vaughan of Ann Arbor, Mich. (*New York Med. Jour.*, Feb. 26, 1910), well urges that small amounts of sugar in the urine, even in elderly persons, should be considered important and more or less serious. He is right in believing (some clinicians to the contrary notwithstanding) that even small quantities of sugar should be considered pathologic and the patient's diet properly regulated. Small amounts of sugar in the urine will surely lead, under careless diet, to a greater amount and more serious condition. Life will therefore be prolonged if the urine of elderly people is occasionally examined and dietetic errors, discovered by such careful examination, corrected.

As Vaughan states, we are pretty generally alive to protein poisoning, so much discussion on this subject has taken place, but we are not positively sure that large amounts of carbohydrates cannot cause almost as serious disturbance. A large sugar and starch eater may take care of his extra amount of these foods for a time and probably put on weight, but sooner or later sugar is likely to appear in the urine. This shows that there is an excess of this food beyond the ability of the glands and tissues to utilize it, and, while such an overflow in the urine should perhaps not be termed pathologic, it certainly is unphysiologic and abnormal.

Vaughan thinks the carbohydrates most abused in this country are cane sugar and wheat starch, and these are the ones for which the individual most frequently loses the capability of assimilation, and it is these two substances that under these conditions are really poisonous to the patient. The ability to work these substances into fat or to have these substances protect the fat is lost, the patient begins to lose weight, passes sugar in the urine, becomes thirsty, and dietetic glycosuria, due to an insufficiency of the organs concerned in the carbohydrate metabolism, is in evidence. This metabolism may be sufficient for a small amount of starch, but is insufficient for the amount taken. If the patient persists in taking this excessive amount of starch sooner or later the actual disease, or diabetes mellitus, will be in evidence.

We like to call sugar in the urine a glycosuria, either dietetic glycosuria or functional glycosuria, provided the sugar may be removed by an arrangement of the diet. If, on the other hand, sugar persists in the urine on an absolutely starch-free and sugar-free diet, in other words, if the sugar is metabolized from protein, disease is present, and the name for it is diabetes mellitus. It can be readily seen that the borderline between a dietetic glycosuria and the actual disease is at times very narrow, and the condition must readily pass into the disease; in other words, permanent insufficiency of the organs for the proper metabolism or utilization of starch and sugars.

Vaughan shows how such a patient should be dietetically studied to see which particular starch he can metabolize and which not, and then to arrange the diet for the immediate present accordingly. His future diet is largely arranged according to how well it is found that he can properly metabolize small amounts of starch and which starch he metabolizes the best. He also emphasizes what is not sufficiently considered, and that is the value of muscle rest and fresh air treatment in diabetes.

The following is the clinical history of a patient who personifies the value of Vaughan's suggestions. This patient, Mrs. C., aged 70, came under observation Jan. 30, 1910, with a history of excessive thirst, loss of weight, great weakness, uncontrollable itching; all of this of several months' duration, and gradually increasing in severity. Her eyesight was defective, due to slowly developing cataracts. Previous history was negative and family history was negative. Physical examination showed nothing abnormal, except eczema on various parts of the body, and especially on the vulva, where the itching and irritation was such that she could not sleep at night. The urine showed 5.5 per cent. of sugar. The amount of urine was never excessive, either at this time or throughout the treatment, varying from 1,200 to 1,500 c.c. in twenty-four hours. She was put under careful observation on a diet whose starch and sugar content was gradually and systematically diminished. It is always safer to diminish the starch and sugar slowly than rapidly, lest toxic acidosis be caused. The urine rarely showed diacetic acid or betaoxybutyric acid and but a small amount of acetone. The general management was an increased amount of butter, some milk, frequent warm baths, daily massage of the body with olive oil, and rest in the open air. The only medicament was two or three drops of the tincture of the chlorid of iron three times a day. Under the regulated diet the sugar reduced gradually in percentage: 4.6, 4.8, 2.3, 1.8, 1.6, 1.0, 0.9, by early in March. Even on an absolutely sugar-free and starch-free diet there was always a little sugar in the urine, which by March 30 had reached 0.4 per cent. and remained there. The patient complained of being hungry and chilly, and, as a trace of albumin appeared in the urine, it seemed advisable not to push protein, but to gradually find which starch she digested the best. She was then allowed first one slice and then two slices of toasted bread a day. This caused at first a little more sugar to appear in the urine, 1.6 per cent., but it soon dropped again to 0.7. She was then changed to a heaping tablespoonful of oatmeal a day and the bread stopped. The urine under this food contained 0.4 per cent. of sugar, the same as on a pure protein diet. She was then tried with one potato a day and the oatmeal stopped. This gave an average of from 0.7 to 0.9 per cent. sugar. She then was allowed oatmeal in the morning and a slice of toast at night, and she averaged about 0.7 to 0.9 per cent. of sugar. Finally she was allowed a small dish of oatmeal in the morning, one potato at noon and one large or two small slices of toasted bread at night, the rest of the diet being starch-and-sugar-free. On this she thrived, with an average of from 0.5 to 0.7 and 0.8 per cent. of sugar, with no itching, no thirst, added some pounds of weight, slept well, was not nervous and was perfectly comfortable. She has followed this diet to the present date, and examination of the urine on July 10, 1910, shows only a bare trace of sugar. After the first month of treatment she was urged to drink more water, as she was not thirsty and did not really take sufficient water to saturate her tissues.

The itching and eczema rapidly disappeared from all parts of the body except the vulva. Here almost every recommended local treatment was tried to stop the excessive itching which kept her awake, but nothing was of much avail even after the sugar had practically disappeared from the urine, until a wash of yeast was used. This was made by dissolving an ordinary tin-foil yeast cake in a pint of water. This was used to bathe the vulva with two or three times a day, and the itching disappeared as if by magic and has never returned. This wash was used occasionally for a long time, until the eczema entirely disappeared. The medicaments and lotions tried to relieve this itching of the vulva were oils (bland and medicated), powders, ointments, witch hazel, phenol, zinc, lead, bicarbonate of soda solutions, menthol preparations, etc.

It is almost fair to assume that this woman, who is perfectly comfortable on the present diet and suffering no symptoms from the diabetes, will not die, under this management, from this disease. The story of this patient shows what can be done to make a patient with glycosuria not only comfortable but all but well.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1910," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 503*)

DIASPIRIN.—Diaspirin is succinyl disalicylic acid. $CO(O.C_6H_4.COOH).CH_2.CH_2.CO(O.C_6H_4.COOH)$.

Diaspirin is a salicylic acid derivative, produced by the interaction of the two carboxyl groups of succinic acid with the phenolic hydroxyls of two molecules of salicylic acid, with the elimination of 2 molecules of water, thus: $COOH.CH_2.CH_2.COOH + 2HO.C_6H_4.COOH = CO(O.C_6H_4.COOH).CH_2.CH_2.CO(O.C_6H_4.COOH) + 2H_2O$.

It is prepared by the action of succinyl dichloride upon salicylic acid.

Diaspirin is an odorless and almost tasteless white crystalline powder, said to melt at about 178° C. (352.4 F.) (Specimens examined by the Council were found to melt at 168° C. Corr.) Soluble with difficulty in cold alcohol and glacial acetic acid; scarcely soluble in water. By heating with caustic alkalies it decomposes into succinate and salicylate. Diaspirin is a dibasic acid which reacts with bases, organic or inorganic, to form salts.

Diaspirin produces the effects of salicylates. The following special claims are made for it: That it passes unchanged through the stomach, producing no irritation, but is split into its constituents in the intestine; that it exerts a strong diaphoretic effect.

Actions and Uses.—The same as those for salicylic acid.

Dosage.—1 Gm. (15 grains) three or four times daily.

Manufactured by the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken, of Elberfeld Co., New York). U. S. patent No. 874, 929. U. S. trademark applied for.

FERRATIN—Sodii Ferrialbuminas. Sodium Ferrialbuminate.—Ferratin is the sodium salt of ferrialbuminic acid, containing iron in the ferric state in organic combination, equivalent to 6 per cent. metallic iron.

Sodium ferrialbuminate occurs naturally in the organs of mammals, especially in the liver. Ferratin is prepared from egg albumin and [illegible] in the presence of alkalies.

Ferratin is a light brown, tasteless powder, having a faint odor. It is soluble in weak alkaline aqueous solutions, from which solutions it is precipitated by hydrochloric acid. On dissolving 0.3 Gm. ferratin in 10 Cc. of water with the aid of a few drops of ammonia water, and then adding an equal volume of a 25 per cent. potassium carbonate solution, no precipitation occurs.

Actions and Uses.—See Organic Iron Compounds.

Dosage.—0.5 Gm. (7½ grains) three to four times daily.

Manufactured by C. F. Boehringer & Soehne, Waldhof, Mannheim, Germany (Merck & Co., New York). U. S. patent No. 505980. U. S. trademark No. [illegible].

ARSENOFERRATIN—Sodii Arsenoferrialbuminas.—Sodium Arsenoferrialbuminate.—Arsenoferratin is an arsenic iron albumin compound, obtained by introducing the element arsenic into the molecule of ferrialbuminic acid. Arsenoferratin contains iron in the ferric state, in organic combination equivalent to 6 per cent. metallic iron and arsenic, equivalent to 0.06 per cent. elementary arsenic.

Arsenoferratin is a brown, almost odorless and tasteless powder. It is soluble in water and easily soluble in dilute alkaline solutions.

Actions and Uses.—Arsenoferratin has the pharmacologic action of organic compounds of iron and of arsenic.

Dosage.—0.5 Gm. (7½ grains) three to four times daily.

Manufactured by C. F. Boehringer & Soehne, Waldhof, Mannheim, Germany (Merck & Co., New York). U. S. trademark No. 24,228.

Arsenoferratin Tablets.—Each tablet contains arsenoferratin 0.25 Gm. (4 grains).

Arsenoferratose.—Liquor Ferratini Arsenati.—Arsenoferratose is a 5 per cent. solution of arsenoferratin.

Arsenoferratin, 5 parts, is dissolved with the aid of a small quantity of sodium hydroxide in water, 68 parts, glycerin, 20 parts, alcohol, 6 parts, and Angostura essence, 1 part.

Dosage.—4 to 8 Cc. (1 to 2 fluidrams) three to four times daily.

For the determination of Iron and Arsenic in Arsenoferratose, the following methods are furnished:

Twenty-five Cc. of arsenoferratose are evaporated to a viscid consistency in a capacious tared crucible and the residue heated in a drying oven at 100 degrees C. for three hours to constant weight. After the crucible and its contents have been allowed to cool in a desiccator, it is weighed. The weight of the evaporated residue multiplied by 4 should be about 23. The weighed residue is now carefully incinerated, and finally ignited. After it has cooled, it is moistened with nitric acid, and again ignited, and finally taken up with 10 Cc. hydrochloric acid. The solution is diluted with 30 Cc. water, and when cold, 3 Gm. potassium iodid are added and the mixture allowed to stand for an hour in a well-stoppered bottle at the ordinary temperature. It is then titrated with decinormal sodium thiosulphate solution. The iodin liberated should require about 12.5 Cc. of tenth normal thiosulphate solution.

Fifty Cc. of the arsenoferratose contained in a distillation flask of about 500 Cc. capacity, are heated on a water bath and evaporated to about one-third of its original volume. To the residue are now added 80 Cc. of arsenic-free concentrated hydrochloric acid and 20 Cc. arsenic-free, 25 per cent. solution of ferrous chloride, and the arsenic chloride distilled over, the receiver being kept well cooled by means of cold water. The contents of the receiver are then supersaturated with sodium bicarbonate, and the arsenic then titrated with the tenth-normal iodin solution: 0.4 Cc. decinormal iodin solution should be required, corresponding to a content of 0.003 Gm. in 100 Cc. arsenoferratose.

THIGENOL.—Solution of Sodium Sulpho Oleate, Roche.—Thigenol is a solution of the sodium salts of synthetic sulpho-oleic acids, containing 2.85 per cent. sulphur.

Precipitated sulphur is dissolved by boiling in the glyceride of oleic acid; the resulting solution is treated with sulphuric acid, during which process sulphurous acid escapes, and a sulpho-oleic acid is separated out. The separated sulpho-acid is then obtained by pouring into water, and subsequently washing thoroughly. By treatment with solution of sodium hydroxide, there results a solution of sodium sulpho-oleate, which is evaporated in vacuo until it has a specific gravity of 1.05 to 1.06.

Thigenol is a dark brown liquid, having a faint sulphurous odor. It is soluble in one or more parts of water, dilute alcohol, glycerin, chloroform, oily or fatty bases, with any one of which it mixes freely. When water is the vehicle employed, it should be distilled; hard water will cause a precipitate. Thigenol is incompatible with mineral acids or acetic acid.

Actions and Uses.—Thigenol is said to have the actions of sulphur. It is claimed to stimulate granulation, restrict secretion and to be antipruritic.

It is used in diseases of the uterus and its appendages and in skin diseases in which sulphur is commonly employed.

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains) in plain or sweetened water. Thigenol is used locally either in the pure state or mixed in any desired proportion with ointment bases, fats or glycerin according to the intensity of action required.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. trademark No. 42,295. Not patented.

SUPRACAPSULIN.—The name used for epinephrine by The Cudahy Packing Co., South Omaha, Neb.

Not patented. U. S. trademark No. 72,580.

Supracapsulin Solution.—A solution 1:1000 of supracapsulin in normal salt solution with small quantity of sulphite and 0.5 per cent. of chloral.

(*To be Continued*)

MEDICAL COLLEGES OF THE UNITED STATES

Data Prepared by the Council on Medical Education

Below are given brief descriptions of the medical colleges in the United States and Canada that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated is given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students (excluding specials and postgraduates), graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In a few instances where such reports were not received the information published is from other reliable sources. Extracts of rules and the membership of the Association of American Medical Colleges is shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's estimates for 1909.

ALABAMA

Alabama, population 2,112,465, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 45,122 and of Birmingham, 49,553.

Birmingham

Birmingham Medical College, Avenue F and Twentieth Street. —Chartered in 1894. The first class graduated in 1895. There are 22 professors and 12 assistants, total 34. The course of instruction embraces four separate sessions of eight months each. The fees are $100 for each of the first three years and $125 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1909-10, 209; graduates, 23. The seventeenth session begins Sept. 28, 1910, and ends May 26, 1911.

Mobile

University of Alabama School of Medicine, St. Anthony and Lawrence Streets.—Organized in 1859 as the Medical College of Alabama. Classes were graduated in 1861 and in all subsequent years except 1862 to 1868, inclusive. It was reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama in 1907. Present title assumed in 1909. The faculty consists of 8 professors and 17 lecturers and assistants, a total of 25. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. Rhett Goode. The total registration for 1909-10 was 179; graduates, 40. The forty-fifth session begins Sept. 19, 1910, and ends May 9, 1911.

ARKANSAS

Arkansas, population 1,476,582, has two medical colleges, the Medical Department of the University of Arkansas and the College of Physicians and Surgeons, both located in Little Rock, a city of 43,688.

University of Arkansas Medical Department, Second and Sherman Streets.—Organized in 1879 as the Medical Department of Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. The faculty consists of 22 professors and 16 lecturers and assistants, total, 38. The course of study covers four years of eight months each. The fees are $100 for each of the first three years and $125 for the fourth year. The secretary is Dr. C. E. Witt. Total registration, 1909-10, was 171; graduates, 26. The thirty-second session begins Sept. 15, 1910, and ends May 6, 1911.

College of Physicians and Surgeons, Lincoln Avenue, north of the Union Station.—It was organized in 1906. The first class graduated in 1907. The faculty consists of 28 professors and 12 lecturers and assistants, a total of 40. The course of study covers four years of seven months each. The fees are $100 for each of the first three years and $125 for the fourth year. The Dean is Dr. J. P. Runyan. The total registration for 1909-10 was 104; graduates, 29. The fifth session begins Oct. 1, 1910, and ends May 1, 1911.

CALIFORNIA

California, population 1,729,543, has eight medical colleges. Four are located in San Francisco, a city of 400,000 inhabitants. They are Leland Stanford Junior University College of Medicine, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Physicians and Surgeons and the California Eclectic Medical College and the Los Angeles Clinical Department of the University of California are situated in Los Angeles, population 300,000. The Oakland College of Medicine and Surgery is in Oakland, population 225,000. The College of Medical Evangelists is located at Loma Linda, a village near San Bernardino, this latter place having a population of 13,500.

Loma Linda

College of Medical Evangelists.—Organized in 1909. The faculty numbers 10. The course extends over five years of nine months each, but includes a study of the Bible, pastoral training and other non-medical subjects. The total fees each year are $100; matriculation fee, $5, payable but once; graduation fee, $10. The Dean is Dr. George Knapp Abbott. The total registration for 1909-10 was 10; no graduates. The second session begins Sept. 29, 1910, and ends June 27, 1911.

Los Angeles

College of Physicians and Surgeons, Medical Department, University of Southern California, 516 East Washington Street. —Organized in 1903, first class graduated in 1905, became Medical Department, University of Southern California August 11, 1909. The course covers four years of nine months each. The faculty consists of 12 professors and 32 associate professors, lecturers and instructors, a total of 44. The fees are $150 per year, not including matriculation fee, paid but once, $5, and graduation fee, $25. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1909-10 was 69; graduates, 12. The next session begins Sept. 14, 1910 and ends June 15, 1911.

California Eclectic Medical College, 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 30 professors. The Dean is Dr. J. A. Munk. The registration for 1909-10 was 22; graduates 2. The 32d session begins Sept. 19, 1910, and ends May 18, 1911.

Oakland

Oakland College of Medicine and Surgery, Thirty-first and Grove Streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 33. The course covers four years of nine months each, and the classes are limited to ten students each. The total fees for each of the four years respectively are $210, $200, $150 and $150. The Registrar is Dr. Edward N. Ewer. The total registration for 1909-10 was 20; graduates, 3. The ninth session begins Aug. 15, 1910, and ends May 20, 1911.

San Francisco

Hahnemann Medical College of the Pacific (Homeopathic), Sacramento and Maple Streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 26 professors and 16 lecturers, instructors, etc., a total of 42. The course covers four years of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1909-10 was 34; graduates, 1. The 29th session begins Aug. 11, 1910, and ends April 27, 1911.

College of Physicians and Surgeons, 344 Fourteenth Street. —Organized in 1896. The first class graduated in 1897. The faculty numbers 60. The course covers four years of nine months each. The fees are $150 each year. The Dean is Dr. Ethan H. Smith. Registration for 1909-10 was 29; graduates, 7. The fifteenth session begins Sept. 1, 1910, and ends June 1, 1911.

San Francisco-Palo Alto

Leland Stanford Junior University, Department of Medicine, University Campus, Palo Alto, and Sacramento and Webster Streets, San Francisco.—Organized in 1858 as the Medical Department of the University of the Pacific. Discontinued in 1864. Revived in 1870. It became the Medical College of the Pacific, Medical Department of the University College of San Francisco in 1873. Became Cooper Medical College in 1882. A class was graduated in 1860 and in each subsequent year except 1865 to 1869, inclusive. In 1908 an agreement was made to unite with the Leland Stanford Junior University. By the terms of this agreement Cooper Medical College would continue to teach until the classes which entered prior to August, 1909, had been graduated. The last class will be graduated in 1912. Three years of collegiate work are required for admission. During the next session the work of the first and second years will be given at Palo Alto and the third and fourth years at San Francisco. The faculty of the combined schools consists of 39 professors and 35 lecturers, assistants, etc., a total of 74. The course covers four years of nine months each. The total fees for each of the first and second years are $175; for the third year, $170, and for the fourth year, $185. The Secretary of the faculty is Dr. Emmet Rixford, San Francisco. The total registration for 1909-10 was 95; graduates, 17. The next session at Palo Alto begins Aug. 25, 1910, and ends May 22, 1911. At San Francisco the next session begins Aug. 15, 1910, and ends May 5, 1911.

San Francisco-Berkeley-Los Angeles

University of California Medical Department, University Campus, Berkeley; Second and Parnassus Avenues, San Francisco and Buena Vista and Alpine Streets, Los Angeles.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. In 1909 it absorbed the College of Medicine of the University of Southern California, which became a clinical department at Los Angeles. Two years of collegiate work are required for admission. The work of the first two years is given at Berkeley and the work of the last two years at either Los Angeles or San Francisco. The faculty is composed of 33 professors and 84 associates and assistants, a total of 84. The course covers four years of nine months each. The fees are: Matriculation, $5; tuition, $150 each year. The Dean at San Francisco is Dr. Arnold A. D'Ancona; at Los Angeles, Dr. W. Jarvis Barlow. Total registration of the two schools for 1909-10 was 107; graduates, 13. The 38th session at San Francisco begins Aug. 22, 1910, and ends May 17, 1911. The next session at Los Angeles begins Sept. 15, 1910, and ends May 31, 1911.

COLORADO

Colorado, with a population of 653,000, has two medical colleges. The Denver and Gross College of Medicine is in Denver, which has a population of 156,726, and the Colorado School of Medicine is at Boulder, population 12,000. These two schools will be merged Jan. 1, 1911, in case the amendment to the state constitution is secured giving the State University the right to teach medicine in Denver.

Boulder

University of Colorado School of Medicine.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years, except 1898 and 1899. The faculty embraces 23 professors and 20 lecturers and assistants, a total of 43. The work embraces a graded course of four years of nine months each. The entrance requirements are two years of college work counting toward a degree in arts in an accredited college or university. The tuition is $75 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1909-10 was 77; graduates, 8. The twenty-ninth session begins Sept. 12, 1910, and ends June 7, 1911.

Denver

The Denver and Gross College of Medicine, 1025 Fourteenth Street.—It is the Medical Department of the University of Denver. Organized in 1902 by the union of the Gross Medical College (organized in 1887) with the Denver College of Medicine (organized in 1880). Classes were graduated in 1903 and in all subsequent years. This college will be merged into the University of Colorado School of Medicine Jan. 1, 1911, when the clinical year of the latter school will be removed to Denver. Fees for each of the last two years, respectively, are $103 and $126. The Dean is Dr. George H. Stover, 1445 Glenarm Place. The total registration for 1909-10 was 117; graduates, 21. The thirtieth session begins Sept 12, 1910, and ends June 7, 1911.

CONNECTICUT

Connecticut, with a population of 1,054,336, has only one medical college, located in New Haven, population 127,827.

New Haven

Yale Medical School, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and 1813 it was organized as the Medical Institution of Yale College. The first class graduated in 1814. The faculty consists of 16 professors and 50 lecturers and assistants, a total of 66. The requirement for admission is two full years of collegiate work plus evidence of satisfactory preparation in physics, general inorganic chemistry and general biology. The course covers four years of nine months each. The fees are $150 each year. In the first year there are additional fees amounting to $23, and in the second $3, and there is a graduation fee of $10. The Dean is Dr. George Blumer, New Haven. The total registration for 1909-10 was 124; graduates, 27. The ninety-eighth session begins Sept. 29, 1910, and ends June 21, 1911.

DISTRICT OF COLUMBIA

Washington, population 322,212, has three medical colleges: George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department.

Washington

George Washington University, Department of Medicine, 1325 H Street, N. W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years except 1834 to 1838 and 1861 to 1864 inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904 by act of Congress it received its present title. The faculty is composed of 35 professors and 46 instructors, demonstrators and assistants, a total of 81. The course covers four years of eight months each. The total fees are $150 per year. The Dean is Dr. William C. Borden. The total registration for 1909-10 was 115; graduates, 26. The 89th session begins Sept. 28, 1910, and ends June 7, 1911.

Georgetown University, School of Medicine, 920 H Street, N. W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total 74. The course of study covers four terms of eight and one-half months each. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1909-10 was 117; graduates, 14. The sixtieth session begins Sept. 26, 1910, and ends June 11, 1911.

Howard University, Medical Department, Fifth and W Streets, N. W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 23 professors and 23 lecturers and assistants, 46 in all. The course covers four years of thirty weeks each. The fees of each session are $100, plus $7 for graduation. The Dean is Dr. Edward A. Balloch. Registration for 1909-10 was 210; graduates, 30. The forty-third session begins Oct. 1, 1910, and ends May 25, 1911.

GEORGIA

Georgia, population 2,557,412, has five medical colleges: Medical College of Georgia, located in Augusta, population 44,967; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, the Georgia College of Eclectic Medicine and Surgery, and the Hospital Medical College are in Atlanta, a city of 111,825 population.

Atlanta

Atlanta College of Physicians and Surgeons, Butler and Armstrong Streets.—Organized in 1898 by union of the Atlanta Medical College, organized in 1855, and Southern Medical College, organized in 1878. The first class graduated in 1899. It has a faculty of 24 professors and 31 assistants, a total of 55. The course of study covers four years of seven months each. Fees: $100 each year. The Dean is Dr. W. S. Elkin, 29 Luckie Street. Total registration of students for 1909-10 334; graduates, 63. The thirteenth session begins Sept. 21, 1910, and ends May 2, 1911.

Atlanta School of Medicine, Luckie, Barton and Cain Streets.—Organized in September, 1905. The first class graduated in 1906. The course covers four years of seven months each. It has a faculty of 13 professors and 27 lecturers and assistants, a total of 40. The fees for each of the first two years are $70; for each of the last two, $80. The Proctor is Dr. Edward G. Jones. The total registration for 1909-10 was 227; graduates, 42. The sixth session begins Sept. 20, 1910, and ends April 20, 1911.

Georgia College of Eclectic Medicine and Surgery, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1884 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The faculty consists of 14 professors and 6 assistants, a total of 20. Tuition is $80 per year; graduation fee, $25. The Proctor is Dr. E. B. Thomas. Total registration for 1909-10 was 90; graduates, 35. The next session begins Sept. 21, 1910, and ends April 21, 1911.

Hospital Medical College, Eclectic, Capitol Avenue and Richardson Street.—Organized in 1908. The faculty consists of 16 professors, and 8 lecturers and assistants, a total of 24. The tuition fees are $80 each year; graduation fee, $30. The Dean is Dr. William Bernard Lingo. Total registration for 1909-10 was 43; graduates, 15. The next session begins Sept. 15, 1910, and ends April 1, 1911.

Augusta

Medical College of Georgia, Sixth and Telfair Streets.—Organized in 1828 as the Medical Academy of Georgia, the name being changed to the Medical College of Georgia in 1829. Since 1873 it has been known as the Medical Department of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863. The faculty includes 17 professors and 17 assistants, 34 in all. The course is four years of seven months each. Fees for each of the four years are $100. The Dean is Dr. W. H. Doughty, Jr. The total registration for 1909-10 was 113; graduates, 13. The seventy-ninth session begins Oct. 1, 1910, and ends May 1, 1911.

ILLINOIS

Illinois, population 5,717,229, has eleven medical colleges, two of which are night schools, all located in Chicago, a city of 2,224,191 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Hahnemann Medical College, Bennett Medical College, Hering Medical College, Jenner Medical College, American Medical Missionary College, College of Medicine and Surgery, Chicago College of Medicine and Surgery and Reliance Medical College.

Chicago

Rush Medical College.—This school was founded in 1837, organized in 1843; was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 88 professors, 181 associates, instructors, etc., a total of 269. The requirements for admission are a four-year high school education and, in addition thereto, two years of college work including courses in college chemistry, physics and biology and a reading knowledge of German or French. The course covers four years of eight and a half months each. An optional fifth year, consisting of a hospital internship or of a fellowship in one of the departments is offered. All freshmen and sophomore studies are given at the University of Chicago. The last two years are given in the clinical building at the corner of Wood and Harrison Streets. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Dean is Dr John M Dodson, 34 Washington Street Total registration 1909-10 was 468; graduates, 85. The sixty-eighth session begins Oct. 1, 1910, and ends June 17, 1911.

Northwestern University Medical School, Dearborn Street, between Twenty-fourth and Twenty-fifth Streets.—Organized in 1859 as the Medical Department of Lind University. In 1864 it became independent as the Chicago Medical College. It united with Northwestern University in 1869, but retained the name of Chicago Medical College until 1891, when the present name was taken. The faculty comprises 53 professors and 110 lecturers and assistants, a total of 163. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus one year of college work including courses in physics, chemistry, biology and modern languages. The course covers four years of thirty weeks each. The fees for the first year are $190; second year, $200; third year, $191.50, and fourth year, $185. The Secretary is Dr. Charles Louis Mix. The total registration for 1909-10 was 637; graduates, 142. The fifty-first session begins Oct. 4, 1910, and ends May 29, 1911.

College of Physicians and Surgeons, Honore and Congress Streets.—Organized in 1882. The first class graduated in 1883. It became the Medical Department of the University of Illinois in 1896.. The faculty is composed of 47 professors, 103 assistants and instructors, a total of 150. The fees are $155 each for the first two years, $150 for the third, and $175 for the fourth year. The Dean is Dr. William E. Quine, 103 State Street. Total registration for 1909-10 was 526; graduates, 131. The twenty-ninth session begins Sept. 27, 1910, and ends June 7, 1911.

American Medical Missionary College, 888 Thirty-fifth Place —Organized in 1895. The first class graduated in 1899. Part of the work is given at Battle Creek, Michigan. The faculty numbers 22 professors and 10 assistants, a total of 32. The course covers four years of nine months each. Total fees for the four years, respectively, are $182, $182, $175, $175. The Registrar is Dr. Benton N. Colver, Battle Creek, Mich. Total registration for 1909-10 was 67; graduates, 9. The sixteenth session opens Sept. 13, 1910, and closes June 9, 1911.

Chicago College of Medicine and Surgery, 337 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 when it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 39 professors and 34 lecturers and assistants, a total of 73. The total fees for each of the four years, respectively, are $120, $110, $100 and $100. The Registrar is Dr. G. E. Wyneken. The total registration for 1909-10 was 580; graduates, 89. The tenth session begins Sept. 27, 1910, and ends May 15, 1911.

Hahnemann Medical College and Hospital of Chicago, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. The faculty includes 38 professors and 46 lecturers, assistants, etc., a total of 84. The course extends over four years of eight months each. The tuition fees are $100 each year. The Registrar is Dr. W. Henry Wilson. The total registration for 1909-10 was 131; graduates, 31. The fifty-first session begins Sept. 27, 1910, and ends May 25, 1911.

Hering Medical College, Homeopathic, Wood and York Streets. —Organized in 1892. The first class graduated in 1893. The faculty consists of 29 professors and 23 assistants, instructors, etc., a total of 52. The tuition fees are $100 per year. The Dean is Dr. Robert N. Morris. The total registration for 1909-10 was 42; graduates, 12. The next session begins Sept. 27, 1910, and ends June 1, 1911.

Bennett Medical College, Medical Department of Loyola University, Fulton and Ada Streets.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Dropped Eclecticism in 1909. In 1910 the Illinois Medical College merged with it and it became the Medical Department of Loyola University. The first class graduated in 1870. The faculty numbers 57. The course covers four years of thirty weeks each. Fees for each year are $125, with a matriculation fee, paid once, of $5. The President is Dr. John D. Robertson. The total registration for the two colleges in 1909-10 was 231; graduates, 37. The next session begins Sept. 20, 1910, and ends May 31, 1911.

College of Medicine and Surgery, Physiomedical, 721-725 South Wood Street.—Organized in 1885 as the Chicago Physiomedical Institute. The first class graduated in 1886. In 1891 the name was changed to the Chicago Physiomedical College. In 1899 it took its present name. The faculty numbers 61. The school year has three divisions of 16 weeks each. Attendance on any two will constitute a year's work. Fees for the four years, respectively, are $120, $115, $115 and $140. The Secretary is Dr. William F. Schaare. The total registration for 1909-10 was 57; graduates, 16. The next session begins Sept. 21, 1910, and ends May 12, 1911.

Jenner Medical College, a night school located at 196 East Washington Street.—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. The faculty numbers 50. Registrar, Dr. John D. MacKellar. Total registration for 1909-10 was 205; graduates, 23. The next session begins Aug. 29, 1910, and ends June 30, 1911.

Reliance Medical College. A night school, located at Washington Boulevard and Halsted Street.—Organized in 1907. The faculty numbers 65. The total fees are $130 for each of the first two years and $125 for each of the last two. Registration for 1909-10 was 80; graduates, 7. The President is Dr. J. F. Burkholder. The next session begins Sept. 1, 1910, and ends June 27, 1911.

INDIANA

Indiana, population 2,808,115, has one medical college, the Indiana University School of Medicine, located at Indianapolis, a city of 241,826 people, except that the work of the first two years is offered also at Bloomington, population 5,000, the seat of the University.

Bloomington and Indianapolis

Indiana University School of Medicine.—Organized in 1893, but did not give all of the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1869) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 100 professors and 89 lecturers, associates and assistants, a total of 189. Two years of collegiate work are required for admission. The work of the first two years may be taken either at Bloomington or at Indianapolis. The clinical work is all done at Indianapolis. A fifth optional year leading to the "M.D *cum laude*" has been added. The Secretary at Bloomington is Dr. B. D. Myers; at Indianapolis, Dr. Edmund D Clark, Newton-Claypool Bldg The total registration for 1909-10 was 248; graduates, 59. The next session begins Sept. 22, 1910, and ends June 16, 1911.

IOWA

Iowa, population 2,192,608, has three medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 8,197. In Des Moines, population 86,415, is the College of Medicine of Drake University.

Des Moines

Drake University College of Medicine.—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1882 as the Iowa College of Physicians and Surgeons. The first class graduated in 1883. In 1887 it became affiliated with and in 1900 became the Medical Department of Drake University. The faculty consists of 20 professors and 30 assistants, lecturers, etc., a total of 50. Two years of collegiate work, including courses in physics, chemistry and histology, are required for admission. The work covers four years of nine months each. The total fees are $150 each year. The Dean is Dr. William Wilson Pearson. The total registration for 1909-10 was 108; graduates, 23. The twenty-eighth session begins Sept. 19, 1910, and ends June 14, 1911.

Iowa City

State University of Iowa College of Medicine, University Campus.—Organized in 1869 First session began in 1870. First class graduated in 1871. The faculty is made up of 15 professors, 25 lecturers, demonstrators and assistants, a total of 40. Two years of collegiate work, including courses in physics, chemistry and biology, are required for admission. The course of study covers four years of thirty-six weeks each. Total fees for each year are $50 plus a matriculation fee of $10 paid but once and a graduation fee of $10. The Dean is Dr. James R. Guthrie, Dubuque Total number of students registered for 1909-10 was 190; graduates, 44. The forty-first session begins Sept. 19, 1910, and ends June 14, 1911.

State University of Iowa College of Homeopathic Medicine. —Organized in 1877. The first class graduated in 1878. The faculty is composed of 11 professors and 19 lecturers and assistants, a total of 30. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa, and it has the same entrance requirements. The fees are $50 each year, plus a matriculation fee of $10, paid but once and a graduation fee of $10. The Dean is Dr George Royal. Total registration for 1909-10 was 35; graduates, 7. The thirty-third session begins Sept. 19, 1910, and ends June 14, 1911.

KANSAS

Population 1,703,002, has two medical colleges. Kansas Medical College is in Topeka, population 44,757. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,915, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 277,427.

Lawrence and Kansas City

University of Kansas School of Medicine.—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. The faculty, including lecturers and clinical assistants, numbers 87. The requirements for admission are two years of collegiate work. The course covers four years of about nine months each. The total fees are, for the first two years, $60 per year (and for non-residents of the state, $70); for the last two years, $100 and $110, respectively. The Dean at Lawrence is Dr. Mervin T Sudler. The Dean at Kansas City is Dr George Howard Hoxie. The total registration for 1909-10 was 89; graduates, 20. The thirty-first session begins Sept. 19, 1910, and ends June 7, 1911.

Topeka

Kansas Medical College, 521 Quincy Street.—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1903. It has a faculty of 26 professors and 18 lecturers and assistants, a total of 44. The course covers four years of nine months each. Fees, $75 yearly. Matriculation fee of $5 paid but once. The Dean is Dr. William E. McVey. Total registration for 1909-10 was 67; graduates, 12. The twenty first session begins Sept. 14, 1910, and ends June 7, 1911.

KENTUCKY

Kentucky, population 2,406,859, has three medical colleges. They are all situated in Louisville, a city of 236,688 inhabitants, and are as follows: University of Louisville Medical Department, Southwestern Homeopathic Medical College and Louisville National Medical College.

Louisville

University of Louisville Medical Department, Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. It has a faculty of 42 professors and 50 lecturers and assistants, a total of 92. The course covers four years of thirty weeks each. The fees are $105 each year; graduation fee, $25. The Dean is Dr. T. C. Evans. The total registration for 1909-10 was 624; graduates, 202. The next session begins Oct. 10, 1910, and ends May 19, 1911.

Southwestern Homeopathic Medical College and Hospital, Floyd and Walnut Streets.—Organized in 1892. The first class graduated in 1894. It has a faculty of 12 professors and 15 lecturers and assistants, 27 in all. The curriculum covers four years of seven months each. Total fees: First three years $80 each and $100 for the fourth. The Dean is Dr. George S. Coon. Total number of students for 1909-10 was 13; graduates, 2. The eighteenth session begins Oct. 6, 1910, and ends May 25, 1911.

Louisville National Medical College. Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 23. The course covers four years of seven months each. The fees are $60, $55, $55 and $75 for the four years, respectively. The Dean is Dr. E. S. Porter. Total registration for 1909-10 was 31; graduates, 8. The next session begins Oct. 1, 1910, and ends May 18, 1911.

LOUISIANA

Louisiana, having a population of 1,618,358, contains two medical colleges: Medical Department of the Tulane University of Louisiana and Flint Medical College of New Orleans University. They are both situated in New Orleans, a city of 327,662 people.

New Orleans

Medical Department of the Tulane University of Louisiana, University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-65, inclusive. It was transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 73. The course covers four years of thirty-two weeks each. One year of collegiate work is required for admission. Total fees are $160 per year. The Dean is Dr. Isadore Dyer. The total registration for 1909-10 was 417; graduates, 103. The seventy-seventh session begins Oct. 1, 1910, and ends June 1, 1911.

Flint Medical College of New Orleans University. Colored. 1566 Canal Street.—Organized in 1889 as the Medical College of New Orleans University. A class was graduated in 1892 and in each subsequent year, except 1896. Took the above name in 1901. The faculty numbers 15. The course covers four years of thirty weeks each. Total fees for each of the four years, respectively, are $60, $56, $50 and $50. The Dean is Dr. R. T. Fuller. Total registration for 1909-10 was 13; graduates, 4. The twenty-first session begins Sept. 29, 1910, and ends May 9, 1911.

MAINE

Maine, population 724,508, has one medical college, located in Brunswick and Portland, the latter having a population of 57,675.

Brunswick-Portland

Medical School of Maine. The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820. The first class graduated in 1820. The faculty numbers 57. The course covers four years of eight months each. The total fees are $120 for the first year and $110 for each of the other three years. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1909-10 was 74; graduates, [illegible]. The ninetieth session begins Oct. 13, 1910, and ends June 21, 1911.

MARYLAND

Maryland, with a population of 1,319,132, contains six medical colleges, all located in Baltimore, a city with 576,023 inhabitants. They are as follows: Johns Hopkins University Medical Department, School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College, Atlantic Medical College and Maryland Medical College.

Baltimore

Johns Hopkins University, Medical Department, Washington and Monument Streets. Organized in 1893. The first class graduated in 1897. The faculty consists of 23 professors and 89 clinical professors, etc., a total of 112. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university or (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is $200 per annum. The Dean is Dr. William H. Howell, 232 West Lanvale Street. Total registration for 1909-10 was 334; graduates, 72. The eighteenth session begins Oct. 5, 1910, and ends June 14, 1911.

College of Physicians and Surgeons, Calvert and Saratoga Streets.—Organized in 1872. The first class graduated in 1873. In 1878 it united with Washington University School of Medicine. The faculty numbers 58. The work covers four years of eight months each. Total fees are $155 for each of the first three years and $185 for the fourth year. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1909-10 was 283; graduates, 66. The thirty-ninth session begins Oct. 1, 1910, and ends June 1, 1911.

University of Maryland School of Medicine, Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees are $155 each year; graduation fee, $30. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1909-10 was 309; graduates, 85. The 104th session begins Oct. 1, 1910, and ends June 1, 1911.

Baltimore Medical College, Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 71. The course covers four years of eight months each. Total fees for the first three years are $125 per year; for the fourth year, $155. The Dean is Dr. David Streett. The total number of students registered in 1909-10 was 270; graduates, 54. The twenty-ninth session begins Sept. 20, 1910, and ends May 27, 1911.

Maryland Medical College, 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty numbers 38. The course covers four years of eight months each. Total fees for the four years, respectively, are $111, $111, $105 and $135. The Dean is Dr. W. S. Smith. The total registration for 1909-10 was 112; graduates, 36. The next session begins Oct. 1, 1910, and ends June 1, 1911.

Atlantic Medical College, Mount Street, north of Riggs Avenue.—Organized in 1891 as the Southern Homeopathic Medical College. In 1907 it assumed the above name and became "nonsectarian." The Dean is Dr. Eldridge C. Price. The total registration for 1909-10 was 19, of which number 14 graduated. Among these graduates are several who are reported as having failed miserably in other medical colleges.

MASSACHUSETTS

Massachusetts, population 3,162,347, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 622,970.

Boston

Medical School of Harvard University, Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 35 professors and 136 associates, assistants, etc., a total of 171. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." The session is four years of eight months each. Fees: Matriculation, $5; tuition, $200 each year. The Dean is Dr. Henry A. Christian. The total registration for 1909-10 was 279; graduates, 66. The 129th session begins Sept. 29, 1910, and ends June 1, 1911.

Boston University School of Medicine, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 27 professors, 39 associates, etc., a total of 66. The course covers four years of eight months each. Total fees for the first, second and third years, $127 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 302 Beacon Street. Total registration for 1909-10 was 79; graduates, 11. The thirty-eighth session begins Oct. 6, 1910, and ends June 7, 1911.

Tufts College Medical School, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 33 professors and 70 assistants, lecturers, etc., a total of 103. The course covers four years of eight months each. The total fees are $155 each year. The Secretary is Dr. Frederic M. Briggs, 31 Massachusetts

Avenue. Total number of students for 1909-10 was 428; graduates, 52. The seventeenth session begins Sept. 28, 1910, and ends June 1, 1911.

College of Physicians and Surgeons, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The course covers four years of nine months each. The college announcement gives the names of 226 "matriculants and applicants" for the session of 1908-9, which included both dental and medical students. From other reliable information it seems that only about 80 medical students actually attended throughout the session of 1909-10. There were 28 graduates reported. The faculty numbers 56. The Dean is Dr. Thomas D. Crothers. The next session begins Sept. 21, 1910, and ends June 14, 1911.

MICHIGAN

Michigan, population 2,666,308, has four medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,711 people. Detroit, a city of 384,855 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

Ann Arbor

University of Michigan Department of Medicine and Surgery.—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 18 professors, 56 associates, instructors, etc., a total of 74. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is $350 and for others about $400. The Dean is Dr. Victor C. Vaughan. The total registration for 1909-10 was 315; graduates, 64. The sixty-first session begins Oct. 4, 1910, and ends June 29, 1911.

University of Michigan Homeopathic College.—Organized in 1875. The first class graduated in 1877. Although the work of the first two years is taken in the same classes with the Department of Medicine and Surgery of the University of Michigan, nevertheless the entrance requirements are still kept at only a high-school education—a difference of two years of collegiate work! The Dean is Dr. W. B. Hinsdale. The total registration for 1909-10 was 74; graduates, 11. The next session begins Oct. 4, 1910, and ends June 29, 1911.

Detroit

Detroit College of Medicine, St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 25 professors, 88 lecturers, instructors, etc., a total of 113. The course covers four years of eight months each. The Registrar is Dr. F. B. Walker. The total registration for 1909-10 was 152; graduates, 38. The twenty-sixth session begins Sept. 21, 1910, and ends May 25, 1911.

Detroit Homeopathic College, Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1900 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From $75 to $95 per year. The Registrar is Dr. Fred E. Thompson. The total registration for 1909-10 was 26; graduates, 5. The twelfth session begins Sept. 14, 1910, and ends May 19, 1911.

MINNESOTA

Minnesota, population 2,162,726, contains one medical college, the College of Medicine and Surgery of the University of Minnesota, situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 477,640.

Minneapolis

University of Minnesota College of Medicine and Surgery.—Organized in 1883; reorganized in 1888 by absorption of St. Paul Medical College and Minnesota Hospital Medical College. The first class graduated in 1889. In 1908 the Minneapolis College of Physicians and Surgeons, organized in 1883, was merged. In 1909 the Homeopathic College of Medicine and Surgery was merged and provision made for elective chairs in didactic materia medica and therapeutics. Students electing these courses on graduation will receive the degree of Doctor of Medicine in Homeopathy. The faculty includes 61 professors and clinical professors and 67 associate professors, assistants, etc., a total of 128. The curriculum covers four years of nine months each. The entrance requirements are two years of university work which must include one year each of physics, general chemistry, qualitative analysis, zoology or botany, and German or French, all in addition to a four-year high school course, including Latin. Total fees for the first year are $150, for each of the other years $100; microscope rental, $1 to $4 per annum. The Dean is Dr. F. F. Wesbrook. The total registration for 1909-10 was 176, including 16 Hamline University students; the graduates of 1910 numbered 34, including 3 which were granted degrees by Hamline University. The twenty-third session begins Sept. 13, 1910, and ends June 8, 1911.

MISSISSIPPI

Mississippi, population 1,786,773, has two medical colleges, the Medical Department of the University of Mississippi giving only the first two years of the medical course, is located at Oxford, a city of 1,825 inhabitants. The Mississippi Medical College is located at Meridian, population 21,937.

Meridian

Mississippi Medical College, Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 25. The course covers four years of seven months each. The Secretary is Dr. W. W. Hamilton. The total registration for 1909-10 was 96; graduates, 18. The fifth session begins Oct. 3, 1910, and ends April 30, 1911.

Oxford

University of Mississippi Medical Department.—Organized in 1903. Gave only the first two years of the medical course until 1909, when a clinical department was organized at Vicksburg. Graduated one class in 1910, when the clinical years of the course were discontinued. The course covers four years of eight and a half months each. The work of the first two years is given at Oxford. The faculty numbers 30. The Dean is Dr. W. S. Leathers. The total registration for 1909-10 was 49; graduates, 4. The eighth session begins Sept. 23, 1910, and ends June 1, 1911.

MISSOURI

Missouri, population 3,491,397, has ten medical colleges. St. Louis, population 686,369, contains five of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, the School of Medicine of St. Louis University, Washington University Medical Department and Barnes Medical College. Kansas City, which with Kansas City, Kan., has a total population of 277,427, has three colleges, namely: University Medical College, the Kansas City Hahnemann Medical College and the Eclectic Medical University. Ensworth Medical College is located in St. Joseph, population 125,504. The Department of Medicine of the University of Missouri is at Columbia, a town of 5,651 people.

Columbia

University of Missouri School of Medicine.—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 10 professors, 8 assistant professors, lecturers, etc., a total of 18. The course covers two years of nine months each. The entrance requirements are two years of college work, including English, 5 hours; German, 5 hours; general zoology, 5 hours; physics, 5 hours; inorganic chemistry, 5 hours; Elective, 35 hours. Equivalent work in foreign language may be substituted for the English and German. Total fees are $70 each year. The Dean is Dr. C. M. Jackson. Total registration of students for 1909-10 was 29. The next session begins Sept. 22, 1910, and ends June 8, 1911.

Kansas City

University Medical College of Kansas City, 911 East Tenth Street.—Organized in 1881 as the University of Kansas City Medical Department. The first class graduated in 1882. It was reorganized in 1888 under the present title. Its faculty comprises 47 professors and 19 lecturers and assistants, a total of 66. The course of study covers four years of thirty weeks each. The total fees for each year are $100; graduation fee, $25. The Dean is Dr. J. M. Frankenburger. The total registration for 1909-10 was 186; graduates, 48. The twenty-ninth session begins Sept. 6, 1910, and ends May 15, 1911.

Kansas City Hahnemann Medical College, 1020 East Tenth Street.—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1889. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. The Dean is Dr. William E. Cramer. Total registration for 1909-10 was 58; graduates, 21. The next session begins Sept. 7, 1910, and ends May 6, 1911.

Eclectic Medical University, 1423 Independence Avenue.—Organized at Kansas City, Mo., in 1898 with the present title. Moved to Kansas City, Kan., in 1907, and took the name of Western Eclectic College of Medicine and Surgery. Returned to Kansas City, Mo., in 1909 and resumed the present title. First class graduated in 1900. The faculty numbers 32. Fees for the four years, respectively, are $90, $95, $100 and $115. Course covers four years of about eight months each. The Secretary is Dr. M. D. I. Isley. The total registration for 1909-10 was 21; graduates, 9. The thirteenth sessions begins Sept. 6, 1910, and ends April 30, 1911.

St. Joseph

The Ensworth Medical College, Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of thirty weeks each. The fees for the four years, respectively, are $90, $95, $75 and $95. The Secretary is Dr. T. E. Potter. Total registration for 1909-10 was 68; graduates, 17. The next session begins Sept. 14, 1910, and ends May 1, 1911.

St. Louis

Washington University Medical School, 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Washington University

Medical School. In 1899 it absorbed the Missouri Medical College. The faculty comprises 48 professors, 51 lecturers and instructors, a total of 99. The course is four years of eight months each. The total fees for the four years are respectively, $137.50, $132.25, $117.25 and $101.25. The Dean is Dr. George Dock. The total registration for 1909-10 was 205; graduates, 56. The next session begins Sept. 2[illegible], 1910, and ends June 8, 1911.

St. Louis University School of Medicine, Grand Avenue and Caroline Street.—Organized in 1903 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 37 professors, 75 lecturers and assistants, a total of 112. The curriculum covers four years of eight months each. The total fees are $110 each year. The Dean is Dr. E. P. Lyon. The total registration for 1909-10 was 261; graduates, 66. The next session begins Oct. 1, 1910, and ends May 29, 1911.

St. Louis College of Physicians and Surgeons, Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. It has a faculty of 25 professors, 24 lecturers, instructors, etc., a total of 49. The course covers four years of seven months each. Total fees for each of the four years, respectively, are $105, $100, $100 and $105. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1908-9 was 228; there were 42 graduates in 1910. The next session begins Sept. 15, 1910, and ends May 6, 1911.

Barnes Medical College, Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years except 1899. The faculty consists of 40 professors and 8 lecturers and assistants, a total of 48. The course covers four years of eight months each. The total fees are $100 each year. The Dean is Dr. A. R. Kieffer. Total registration for 1909-10 was 184; graduates, 51. The next session begins Sept. 14, 1910, and ends May 13, 1911.

American Medical College, 407 South Jefferson Avenue.—Organized in 1873 as an Eclectic College. Eclecticism dropped in 1910. Two classes were graduated each year from 1874 to 1883, inclusive. Since then one class has graduated each year. The course covers four years of nine months each. The fees are $100 each year. The Dean is Dr. James Moores Ball. The total registration for 1909-10 was 39; graduates, 7. The next session begins Sept. 5, 1910, and ends June 1, 1911.

NEBRASKA

Nebraska, population 1,069,579, has three medical colleges: The University of Nebraska College of Medicine and the John A. Creighton Medical College at Omaha, population 134,972, and the Lincoln Medical College at Lincoln, population 52,308.

Lincoln and Omaha

College of Medicine, University of Nebraska, Eleventh and R Streets, Lincoln, and Twelfth and Pacific Streets, Omaha.—Organized in 1881 as the Omaha Medical College. The first class graduated in 1882. It became the Medical Department of Omaha University in 1891. In 1902 it affiliated with the University of Nebraska, with the present title. Two years of collegiate work are required for admission. The first two years are given at Lincoln; the last two at Omaha. The faculty is composed of 28 professors and 40 lecturers and instructors, total 68. The fees are approximately $100 per annum. Total registration for 1909-10 was 76; graduates, 16. The next session at Lincoln begins Sept. 20, 1910, and ends June 7, 1911. For the advanced classes at Omaha the next session begins Sept. 13, 1910, and ends May 27, 1911.

Lincoln

Lincoln Medical College (Eclectic), Corner 13th and P Streets. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The faculty numbers 37. The course of study covers four years of thirty-two weeks each. The total fees are $90 each year. The Secretary is Dr. R. H. Spradling, 1315 O Street. The total registration for 1909-10 was 58; graduates, 13. The twenty-first session begins Sept. 7, 1910, and ends May 20, 1911.

Omaha

John A. Creighton Medical College, Fourteenth and Davenport Streets. It is the Medical Department of Creighton University.—Organized in 1892. The first class graduated in 1895. It has a faculty of 31 professors and 18 associates, lecturers and assistants, a total of 49. The course of study embraces four years of eight months each. The total fees for the four years, respectively, are $105, $100, $100 and $105. The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1909-10 was 134; graduates, 14. The nineteenth session begins Sept. 5, 1910, and ends April 2[illegible], 1911.

NEW HAMPSHIRE

New Hampshire, population 443,140, has one medical college, located at Hanover, population 1,884.

Hanover

Dartmouth Medical School.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is composed of 17 professors and 6 instructors, a total of 23. Two years of collegiate work are required for admission. The course covers four years of eight months each. The fees are [illegible] each year. The Dean is Dr. William T. Smith. The total registration for 1909-10 was [illegible]; graduates, 10. The work of the first and second years begins with that of the academic department Sept. 22, 1910, and ends June 24, 1911; for the advanced classes the course begins Aug. 2, 1910, and ends March 28, 1911.

NEW YORK

New York State, population 8,706,039, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,450,963. Albany Medical College is located in Albany, a city of 100,730 people. The University of Buffalo Medical Department is situated in Buffalo, population of 396,535. The College of Medicine, Syracuse University, is in Syracuse, a city of 125,378 inhabitants.

Albany

Albany Medical College, Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 15 professors and 78 lecturers, assistants, etc., a total of 93. The curriculum covers four years of eight months each. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Registrar is Dr. Willis G. Tucker. The total registration for 1909-10 was 196; graduates, 41. The eightieth session begins Sept. 20, 1910, and ends May 16, 1911.

Buffalo

University of Buffalo Medical Department, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 37 professors and 58 lecturers, assistants, etc., a total of 95. The course covers four years of eight months each. The total fees for the four years, respectively, are $185, $180, $140 and $140. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1909-10 was 191; graduates, 37. The sixty-fifth session begins Sept. 26, 1910, and ends June 1, 1911.

New York

Columbia University College of Physicians and Surgeons, 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. Affiliated with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 55 professors and 121 instructors, demonstrators, etc., a total of 176. Two years of collegiate work, including courses in physics, chemistry and biology are required for admission. The work covers four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250, and $275 for the fourth year. Total registration for 1909-10 was 360; graduates, 69. The 103d session begins Sept. 28, 1910, and ends June 7, 1911.

Cornell University Medical College, Ithaca, and First Avenue and Twenty-eighth Street, New York.—Organized in 1898. The first class was graduated in 1899. The work of the first year may be taken either in Ithaca or New York. The faculty is composed of 53 professors and 86 assistants, lecturers, instructors, etc., a total of 139. All candidates for admission must be graduates of approved colleges or scientific schools and in addition must have such knowledge of physics, inorganic chemistry and biology as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1909-10 was 164; graduates, 68. The thirteenth session begins Sept. 28, 1910, and ends June 14, 1911.

Eclectic Medical College of the City of New York, 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. The Dean is Dr. George W. Boskowitz. Total registration for 1909-10 was 91; graduates, 13.

Fordham University School of Medicine, Third and Pelham Avenues.—Organized in 1905. First class graduated in 1909. The faculty consists of 47 professors and 31 lecturers and assistants, a total of 78. The course of instruction covers four years of nine months each. Fees, $200 each year. A year's work in a recognized college of liberal arts is required for admission. The Dean is Dr. James J. Walsh. The total registration for 1909-10 was 75; graduates, 6. The sixth session begins Sept. 21, 1910, and ends June 1[illegible], 1911.

Long Island College Hospital, Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 86 assistants, instructors, etc., a total of 95. The course covers four years of eight months each. Fees: First and second years, $205 each; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1909-10, was 368; graduates, 7[illegible]. The fifty-third session begins Oct. 1, 1910, and ends June 1, 1911.

New York Homeopathic Medical College and Hospital, Eastern Boulevard between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 18[illegible]. The first class graduated in 1861. The Dean is Dr. Royal S. Copeland. Total registration for 1909-10 was 12[illegible]; graduates, [illegible]4.

New York Medical College and Hospital for Women, 17-19 West One Hundred and First Street.—Organized in 1863. The first class graduated in 1864. The Dean is Dr. Helen Cooley Palmer. The total registration for 1909-10 was 24; graduates, 4.

University and Bellevue Hospital Medical College, First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 36 professors and 130 instructors, etc., in all 166. The course covers four years of eight months each. The fees are $200 per year. The Dean is Dr. Egbert Le Fevre. Total registration for 1909-10 was 474; graduates, 64. The next session begins Sept. 28, 1910, and ends June 1, 1911.

Syracuse

Syracuse University College of Medicine, 307-311 Orange Street.—Organized in 1872 as the College of Physicians and Surgeons of Syracuse University. The present title was assumed in 1875. In 1872 Geneva Medical College was merged with it. The first class was graduated in 1873. The faculty is composed of 15 professors and 45 assistant professors, lecturers and instructors, in all 60. The course covers four years of eight months each. The completion of two years in an accredited college of liberal arts is required for admission. The total fees for each of the four years, respectively, are $181, $191, $151 and $166. The Dean is Dr. John L. Heffron. The total registration for 1909-10 was 140; graduates, 27. The thirty-ninth session begins Oct. 4, 1910, and ends June 14, 1911.

NORTH CAROLINA

North Carolina, population 2,142,084, has four medical schools, one of which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,099. The Leonard School of Medicine is at Raleigh, population 14,512. The North Carolina College is at Charlotte, population 35,101. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill

University of North Carolina Medical Department.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. A class was graduated each subsequent year, including 1910, when the clinical department at Raleigh was discontinued. The faculty is composed of 22 professors and 25 lecturers, assistants, etc., a total of 47. The total fees for the two years, respectively, are $114 and $116. The Dean is Dr. G. H. Manning. The total registration for 1909-10 was 74; graduates, 14. The twenty-fifth session begins Sept. 5, 1910, and ends May 30, 1911.

Charlotte

North Carolina Medical College, Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1893, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 27. The course covers four years of eight months each. Fees: First three years, $85 each, and $100 for the fourth year. The Dean is Dr. Walter O. Nisbet. The total registration for 1909-10 was 107; graduates, 14. The next session begins Sept. 14, 1910, and ends May 1, 1911.

Raleigh

Leonard Medical School.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 12. The course covers four years of seven months each. The total fees for each year are $15; graduation fee, $10. The Dean is Dr. William Moncure. Total registration for 1909-10 was 133; graduates, 23. The twenty-ninth session begins Sept. 29, and ends May 11, 1911.

Wake Forest

Wake Forest College School of Medicine.—This school was organized in 1902. The faculty numbers 10. It only gives the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees are $100 each year. The Dean is Dr. John Brewer Powers. The total registration for 1909-10 was 37. The ninth session begins Sept. 6, 1910, and ends May 20, 1911.

NORTH DAKOTA

North Dakota, population 536,103, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks, a city of 14,000 people.

University

University of North Dakota College of Medicine.—Organized in 1905. The faculty is composed of 9 professors and 7 instructors, a total of 16. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The total fees for each of the medical years are $50. The Dean is M. A. Brannon, A.M. The total registration for 1909-10 was 36. The sixth session begins Sept. 20, 1910, and ends June 15, 1911.

OHIO

Ohio, population 1,594,240, has six medical colleges. Two of these, the Ohio-Miami Medical College of the University of Cincinnati and the Eclectic Medical College, are located in Cincinnati, a city of 351,212 inhabitants. Cleveland, population 506,938, contains two medical schools: Western Reserve Medical College and the Cleveland Pulte Medical College. Columbus, population 155,340, contains one medical college, the Starling-Ohio Medical College. Toldeo, with 174,059 people, has one medical school, the Toledo Medical College.

Cincinnati

The Ohio-Miami Medical College of the University of Cincinnati.—Organized in 1909 by the union of the Ohio Medical College (founded in 1819) with the Miami Medical College (founded in 1852). The Ohio Medical College became the Medical Department of the University of Cincinnati, April 26, 1896. Under a similar agreement, March 2, 1909, Miami Medical College also merged into the University when the present title was taken. The faculty consists of 53 professors, 74 associates, assistants, etc., a total of 127. The course covers four years of eight months each. The fees are a tuition fee of $125 a year; a matriculation fee of $5, payable but once, and a graduation fee of $25. The Secretary is Dr. E. Otis Smith. The total registration for 1909-10 was 191; graduates, 41. The next session begins Sept. 28, 1910, and ends June 3, 1911.

Eclectic Medical College, 630 West Sixth Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered as the Eclectic Medical Institute. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. In 1910 it assumed its present title. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843, inclusive. It has a faculty of 19 professors and 6 lecturers and assistants, a total of 25. The course covers four years of thirty weeks each. The fees are $90 for each year. The Dean is Dr. Rolla L. Thomas, 792 East McMillan Street. Total registration for 1909-10 was 91; graduates, 20. The next session begins Sept. 20, 1910, and ends May 4, 1911.

Cleveland

Cleveland Pulte Medical College, Prospect Avenue and Huron Road.—Homeopathic.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery. In 1898 it merged with the Cleveland Medical College, organized in 1890, and assumed the title of Cleveland Homeopathic Medical College. In 1910 Pulte Medical College of Cincinnati merged into it and the present title was assumed. The Registrar is Dr. Joseph A. Lytle. Total number of students registered in the two schools in 1909-10 was 67; graduates, 10. The next session begins Sept. 21, 1910, and ends May 11, 1911.

Western Reserve University, Medical Department, St. Clair Avenue and East Ninth Street.—Organized in 1843 as the Cleveland Medical College. The first class graduated in 1845. It assumed the present title in 1881. In 1910 it absorbed the Cleveland College of Physicians and Surgeons. The faculty includes 41 professors and 45 lecturers, assistants, etc., a total of 96. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1909-10 for the two combined schools was 192; graduates, 42. The sixty-eighth session begins Oct. 1, 1910, and ends June 15, 1911.

Columbus

Starling-Ohio Medical College, Buttles Avenue and Park Street.—Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 35 professors and 22 lecturers, demonstrators, etc., a total of 57. The course covers four years of eight months each. Matriculation, $5; tuition, $125 each year. The Dean is Dr. W. J. Means. The total registration for 1909-10 was 220; graduates, 41. The next session begins Sept. 21, 1910, and ends May 24, 1911.

Toledo

Toledo Medical College, Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The faculty numbers 50. The curriculum embraces four years of eight months each. The fees are $100 for each year, with a matriculation fee of $5, payable once. The Secretary is Dr. E. I. McKesson. The total registration for 1909-10 was 45; graduates, 9. The next session begins Oct. 3, 1910, and ends May 26, 1911.

OKLAHOMA

Oklahoma, population 1,592,401, has one medical college, the School of Medicine of the State University of Oklahoma. The work of the first and second years is given in the academic laboratories at Norman, a city of 4,000 inhabitants. The work of the third and fourth years is given in Oklahoma City, which has a population of 45,380 and which is eighteen miles north of Norman.

Norman and Oklahoma City

STATE UNIVERSITY OF OKLAHOMA SCHOOL OF MEDICINE.—Organized in 1900. Gave only the first two years of the medical course until 1910, when it absorbed the Epworth College of Medicine and established a clinical department at Oklahoma City. It has a faculty of 27 professors and 13 instructors, a total of 40. The course is four years of nine months each. An optional course of six years is offered for the degrees of B.S., and M.D. The total fees for the four years, respectively, are $30, $10, $100 and $105. The Secretary is Dr. J. D. MacLaren, Box 382, Norman. The total registration for the combined schools for 1909-10 was 72; graduates, 7. The eleventh session begins Sept. 14, 1910, and ends June 8, 1911.

OREGON

Oregon, population 505,339, has two medical colleges: The Medical Department of Willamette University, located at Salem, a city of 14,000 people, and the University of Oregon Medical Department, in Portland, a city of 119,607 population.

Portland

UNIVERSITY OF OREGON, MEDICAL DEPARTMENT, Lovejoy and Twenty-third Streets. Organized in 1887. The first class graduated in 1888. It has a faculty of 15 professors and 35 lecturers, assistants, etc., a total of 50. The course is four years of thirty weeks each. Fees: First year, $142.50; second, $137.50; third, $10.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi. The total registration for 1909-10 was 80; graduates, 15. The twenty-fourth session begins Sept. 12, 1910, and ends May 1, 1911.

Salem

MEDICAL DEPARTMENT WILLAMETTE UNIVERSITY.—Organized in 1865 at Salem. Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The faculty numbers 20. The course is four years of eight months each. The fees for the four years, respectively, are $122.50, $110, $87.50 and $57.50. The Dean is Dr. W. H. Byrd. The total registration for 1909-10 was 35; graduates, 4. The next session begins Oct. 1, 1910, and ends June 1, 1911.

PENNSYLVANIA

Pennsylvania, population 7,241,716, has seven medical colleges. Of these Philadelphia, having a population of 1,515,756, contains six, as follows: University of Pennsylvania, Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple University Department of Medicine. The other school, the Medical Department of the University of Pittsburg, is situated in Pittsburg, a city of 558,123 people.

Philadelphia

UNIVERSITY OF PENNSYLVANIA, DEPARTMENT OF MEDICINE, Thirty-sixth Street and Hamilton Walk. Organized in 1765. Classes were graduated in 1768 and in all subsequent years except 1772-79, inclusive. The original title was the Department of Medicine, College of Philadelphia, which was changed to the present title in 1791. It granted the first medical diploma issued in America. The faculty is made up of 26 professors, 18 associate, adjunct and assistant professors and 120 demonstrators, lecturers, associates, instructors, etc., a total of 164. The requirements for admission are the equivalent of work prescribed for the first two years in recognized colleges, which work must include a knowledge of physics, chemistry and general biology or zoology with laboratory work as specified by the College Entrance Examining Board and, in addition, two foreign languages, one of which must be French or German. The course embraces study of four years of nine months each. The total fees for each of the four years, respectively, are $[illegible], $215, $210 and $211.50. The Dean is Dr. Allen J. Smith. Total registration for 1909-10 was 529; graduates, 134. The next session begins Sept. 25, 1910, and ends June 21, 1911.

JEFFERSON MEDICAL COLLEGE, Tenth and Walnut Streets. Organized in 1825 as the Medical Department of Jefferson College, Canonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 25 professors and 115 lecturers, demonstrators, etc., a total of 140. The course of study covers graded work of four years of eight months each. An optional fifth year is offered. The tuition is $180 a year with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1909-10 was 5[illegible]1; graduates, 141. The eighty-sixth session begins Sept. 26, 1910, and ends June 5, 1911.

MEDICO-CHIRURGICAL COLLEGE OF PHILADELPHIA, Cherry Street between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 33 professors and 76 lecturers, assistants, etc., a total of 109. The work embraces four years of eight months each. An optional preparatory year devoted to physics, chemistry and biology is offered. Fees $150 per year; matriculation $5, payable once. The Dean is Dr. Seneca Egbert. The total registration for the college year 1909-10 was 45[illegible]; graduates, 69. The thirtieth session begins Sept. 26, 1910, and ends June 3, 1911.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA, Twenty-first and N. College Avenue. Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 50 assistants, lecturers, etc., in all 60. The curriculum covers four years of eight months each. Fees, about $145 each year. The Dean is Dr. Clara Marshall. The total registration for 1909-10 was 114; graduates, 31. The 61st session begins Sept. 21, 1910, and ends May 31, 1911.

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL.—Organized in 1848 as the Homeopathic Medical College of Pennsylvania. In 1869 it united with the Hahnemann Medical College of Philadelphia, taking the present title. The first class graduated in 1849. It has a faculty of 28 professors and 52 lecturers, instructors, etc., in all 80. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. The Dean is Dr. William B. Van Lennep. The total registration for the college year 1909-10 was 159; graduates, 37. The 63d session begins Sept. 26, 1910, and ends June 1, 1911.

THE TEMPLE UNIVERSITY, DEPARTMENT OF MEDICINE, Eighteenth and Buttonwood Streets.—Organized in 1901. The first class graduated in 1904. The faculty numbers 84. It gives a four-year day course. The fees are $150 per year. The Dean is Dr. Frank C. Hammond. The total registration for 1909-10 was 197; graduates, 36. The 10th session begins Sept. 15, 1910, and ends June 3, 1911.

Pittsburg

UNIVERSITY OF PITTSBURG, MEDICAL DEPARTMENT, Brereton Avenue and Thirtieth Street. Organized in 1886 as the Western Pennsylvania Medical College. Became the Medical Department of the University of Pittsburg in 1909. The first class graduated in 1887. The faculty is composed of 43 professors and 60 associates, assistants, etc., 103 in all. The course of study embraces four years of nine months each. The total fees are $210 each year. The Dean is Dr. Thomas S. Arbuthnot. The total registration for 1909-10 was 309; graduates, 60. The 27th session begins Oct. 5, 1910, and ends June 15, 1911.

PHILIPPINE ISLANDS

The Philippine Archipelago, having a population of 7,635,426, has two medical colleges, the University of St. Thomas, Medical Department, and the Philippine Medical School. Both are located in the City of Manila, which in 1903 had a population of 219,928.

Manila

UNIVERSITY OF ST. THOMAS, MEDICAL DEPARTMENT.—The University was founded by a papal decree in 1587, and the medical school was added in 1771. The faculty numbers 154. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raimundo Velasquez; the Secretary of the Medical Department is Lic. Blas C. Alcuaz. The total registration for 1908-9 was 379; graduates, 151.

PHILIPPINE MEDICAL SCHOOL.—Organized in 1907 under the support of the Philippine Commission. The faculty numbers 42. The course extends over five years of thirty-five weeks each. The requirements for admission conform to the standards in the United States and Great Britain. The Secretary is Dr. Harry T. Marshall. The total registration for 1908 was 52; graduates, 8. The third session began June 7, 1909, and ended Feb. 26, 1910.

SOUTH CAROLINA

South Carolina, population 1,510,566, has one medical college, situated in Charleston, a city of 56,573 people.

Charleston

THE MEDICAL COLLEGE OF THE STATE OF SOUTH CAROLINA.—Founded in 1824 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 11 professors and 22 lecturers, instructors, etc., a total of 33. The course covers four years of eight months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Robert Wilson. Total enrolment for 1909-10 was 229; graduates, 58. The 88th session begins Oct. 1, 1910, and ends May 31, 1911.

SOUTH DAKOTA

South Dakota, population 498,077, has one medical college, the University of South Dakota College of Medicine, located at Vermillion, a city of 2,183 people.

Vermillion

UNIVERSITY OF SOUTH DAKOTA, COLLEGE OF MEDICINE.—Organized in 1907. Offers only the first two years of the medical course. Two years' work in a college of liberal arts is required for admission. The faculty numbers 9. The Dean is Christian P. Lommen, B.S. The total registration for 1909-10 was 7. The 4th session begins Sept. 12, 1910, and ends June 8, 1911.

TENNESSEE

Tennessee, population 2,248,101, has eight medical colleges. Of these Vanderbilt University Medical Department, the Medical Department of the Universities of Nashville and Tennessee and Meharry Medical College are situated in Nashville, a city with a population of 106,476. Knoxville, population 37,758 contains two colleges, Tennessee Medical College and Knoxville Medical College. Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 136,363.

Knoxville

Tennessee Medical College, Medical Department of Lincoln Memorial University. Cleveland Street and Cameron Avenue.—Organized in 1889. The first class graduated in 1890. It has a faculty of 20 professors and 7 assistants, a total of 27. The curriculum covers four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The total registration for 1909-10 was 98; graduates, 20. The 21st session begins Oct. 1, 1910, and ends May 3, 1911.

Knoxville Medical College. Colored. Clinton and McGhee Streets. Organized in 1900. Classes were graduated in 1900 and in all subsequent years except 1906 and 1907. The Secretary is Dr. H. M. Green, Famous Building. There were 21 students and 1 graduate for the session of 1909-10.

Memphis

College of Physicians and Surgeons. Opposite City Hospital. Organized in 1906. The first class graduated in 1907. It has a faculty of 42. The course covers four years of seven and a half months each. The Dean is Dr. E. C. Ellett. The total registration for 1909-10 was 105; graduates, 17. The fifth session begins Sept. 15, 1910, and ends May 1, 1911.

Memphis Hospital Medical College. Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 12 professors and 26 lecturers, instructors, etc., a total of 38. The course covers four years of thirty weeks each. The total fees for each of the first three years are $100; for the fourth, $125. The Dean is Dr. W. B. Rogers. Total registration for 1909-10 was 425; graduates, 101. The 31st annual session will begin Oct. 1, 1910, and close May 18, 1911.

Medical Department of the University of West Tennessee. Colored. 1190 South Phillips Place.—Organized in 1900. The first class graduated in 1904 and a class graduates each subsequent year. It has a faculty of 16. The course is four years of seven months each. The fees are $50 per year; graduation $10 extra. The Dean is Dr. M. V. Lynk. Registration for 1909-10 was 35; graduates, 6. The 11th session begins Sept. 14, 1910, and ends April 14, 1911.

Nashville

Vanderbilt University, Medical Department. Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The faculty consists of 23 professors and 24 lecturers, a total of 47. The course covers four years of seven and a half months each. The total fees for each of the first three years are $125, and for the fourth year, $150. The Dean is Dr. William L. Dudley. The total registration for 1909-10 was 271; graduates, 39. The 37th session begins Sept. 15, 1910, and ends May 1, 1911.

Universities of Nashville and Tennessee, Medical Department.—Organized in 1909 by the union of the University of Nashville, Medical Department (founded in 1850), with the University of Tennessee, Department of Medicine (founded in 1876). The college has a faculty of 51. The course covers four years of thirty-two weeks each. The total fees are $125 for each of the first three years and $150 for the fourth year. The Dean is Dr. R. O. Tucker. The total registration for 1909-10 was 203; graduates, 65. The next session begins Sept. 5, 1910, and ends May 1, 1911.

Meharry Medical College, Colored. Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 14 instructors, demonstrators, etc., 26 in all. The work embraces four years of thirty two weeks each. The total fees for each of the four years respectively are $56, $59, $57 and $65. The Dean is Dr. G. W. Hubbard. Total registration for 1909-10 was 281; graduates, 56. The 35th session begins Sept. 14, 1910, and ends April 25, 1911.

TEXAS

Texas, population 3,780,574, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 38,000 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 68,132. The Baylor University College of Medicine and the Medical Department of Southwestern University are situated in Dallas, population 104,541.

Dallas

Baylor University College of Medicine. 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas, Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The faculty numbers 28. The course is four years of seven months each. The fees are $100 each year; matriculation fee of $5, paid but once; graduation fee, $25. The Dean is Dr. E. H. Cary. Total registration for 1909-10 was 67; graduates, 9. The 11th session begins Oct. 3, 1910, and ends May 1, 1911.

Southwestern University Medical College.—Organized in 1903. The first class graduated in 1904. It has a faculty of 19 professors and 14 instructors, assistants, etc. The course of instruction covers four years of seven months each. The fees for the four years respectively are $110, $105, $100 and $125. The Dean is Dr. John O. McReynolds. Total registration for 1909-10 was 61; graduates, 17. The 8th session begins Sept. 29, 1910, and ends April 30, 1911.

Fort Worth

Medical Department of Fort Worth University. Calhoun and Fifth Streets.—Organized in 1894. The first class graduated in 1895. It has a faculty of 16 professors and 22 lecturers, assistants, etc., in all 38. The course covers four years of seven months each. The total fees for each of the first three years are $105, and $130 for the fourth year. The Dean is Dr. W. R. Thompson. The total registration for the college year 1909-10 was 81; graduates, 28. The 17th session begins Sept. 27, 1910, and ends May 13, 1911.

Galveston

University of Texas, Department of Medicine. Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 9 professors and 14 lecturers. The curriculum embraces four years of eight months each. The entrance requires one year of collegiate work in addition to a four-year high school education. The total fees for the four years respectively are $55, $30, $20 and $5. The Dean is Dr. William S. Carter. Total registration for 1909-10 was 206; graduates, 35. The 20th session begins Oct. 1, 1910, and ends May 31, 1911.

UTAH

Utah, population 336,122, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 64,538 people.

Salt Lake City

University of Utah, Department of Medicine.—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. Two years of collegiate work are required for admission. The medical faculty consists of 6 professors and 10 lecturers and assistants, a total of 16. The fees are $65 each year. The Acting-dean is Dr. George M. Marshall. Total registration for 1909-10 was 30. The 4th session begins Sept. 19, 1910, and ends June 3, 1911.

VERMONT

Vermont, population 353,739, has one medical school, located at Burlington, a town of 21,880 people.

Burlington

University of Vermont College of Medicine. Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 54. The course of study covers four years of seven months each. The total fees for each of the first three years are $135, and $165 for the fourth year. The Secretary is Dr. James N. Jenne. The total registration for 1909-10 was 178; graduates, 30. The next session begins Nov. 14, 1910, and ends June 20, 1911.

VIRGINIA

Virginia, population 2,032,567, has three medical colleges, one, the Medical Department of the University of Virginia, situated in Charlottesville, population 6,449, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 109,461.

Charlottesville

University of Virginia, Department of Medicine.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years except 1865. It has a faculty of 15 professors and 15 lecturers, instructors, assistants, etc., a total of 30. The requirements for admission are the completion of a four years' high school course, or its equivalent, and a year of college work devoted to chemistry, physics and biology. Fees: First year, $150; second year, $140; third year, $120; fourth year, $100. The Dean is Dr. R. H. Whitehead. The total registration for 1909-10 was 87; graduates, 31. The next session begins Sept. 15, 1910, and ends June 14, 1911.

Richmond

Medical College of Virginia. Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 38 lecturers, instructors, etc., a total of 54. The requirement for admission is a full four year high school education. The course embraces four years of eight months each. Fees, $100 each year; graduation fee, $30. The Dean is Dr. Christopher Tompkins. The total registration for the college year 1909-10 was 191; graduates, 38. The 73d session begins Sept. 13, 1910, and ends May 30, 1911.

University College of Medicine. Eleventh and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 66. Curriculum covers four years of eight months each. The total fees are $100 for each year. The Dean is Dr. A. L. Gray. The total registration for the college year 1909-10 was 137; graduates, 22. The 18th session begins Sept. 14, 1910, and ends May 25, 1911.

WEST VIRGINIA

West Virginia, population 1,135,206, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 3,900 inhabitants.

Morgantown

West Virginia University College of Medicine.—Organized in 1902. Gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 8 professors and 5 assistants, 13 in all. Tuition to students residing in the state, $25; for others, $50 per year. The Dean is Dr. J. N. Simpson. The total registration for the college year 1909-10 was 27. The 9th session begins Sept. 15, 1910, and ends June 15, 1911.

WISCONSIN

Wisconsin, population 2,356,874, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 27,610, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 332,495 people.

Madison

University of Wisconsin College of Medicine.—Organized in 1907. Gives only the first two years of the medical course. For matriculation a candidate must have had, in addition to a four-year high school course, at least two years in a college of arts and science or an equivalent training. Two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology are specifically required. It has a faculty of 13 professors and 6 lecturers, instructors, etc., a total of 19. The Dean is Dr. Charles R. Bardeen. The registration for 1909-10 was 48. The 3d session begins Sept. 29, 1910, and ends June 23, 1911.

Milwaukee

Milwaukee Medical College, Medical Department of Marquette University, Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of the Marquette University in 1907. It has a faculty of 30 professors and 36 lecturers, instructors, etc., a total of 66. The course covers four years of eight months each. The total fees are $135 each for the first three years and $150 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1909-10 was 293; graduates 47. The 17th session begins Oct. 4, 1910, and ends May 22, 1911.

Wisconsin College of Physicians and Surgeons, Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. In 1908 it became the medical department of Carroll College. It has a faculty of 30 professors and 26 lecturers, instructors, etc., a total of 56. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $125. The Dean is Dr. Thomas C. Phillips. The total registration for 1909-10 was 51; graduates, 6. The 19th session begins Oct. 3, 1910, and ends May 30, 1911.

CANADA

Manitoba

Manitoba Medical College, Winnipeg.—It is the Medical Faculty of the University of Manitoba. Organized in 1883, first class graduated in 1886 and a class graduated each subsequent year. The faculty numbers 49. The fees are $155 for the first year and $150 for each subsequent year. The entire course covers five years. The Dean is Dr. H. H. Chown, 263 Broadway, Winnipeg. Total registration for 1909-10 was 110; graduates, 3. The next session begins Sept. 26, 1910, and ends May 1, 1911.

Nova Scotia

Halifax Medical College, Medical Faculty of Dalhousie University, Halifax.—Organized 1867 as Halifax School of Medicine, united same year with Dalhousie University, separately incorporated 1876, affiliated with Dalhousie University 1885, first class graduated 1872 and a class graduated each subsequent year except 1873 and 1886. The Medical Faculty of Dalhousie University is the Examining Board for Nova Scotia and teaches only the premedical branches. Halifax Medical College teaches the medical courses, but the Medical Faculty conducts the examinations and grants the degrees. The course covers four years. The Dean is Dr. George L. Sinclair; the Secretary is Dr. A. W. H. Lindsay. The total registration for 1909-10 was 60; graduates, 9. The next session begins Aug. 25, 1910, and ends April 27, 1911.

Ontario

University of Toronto Faculty of Medicine, Toronto.—Organized 1843 as the Medical Faculty of King's College. Abolished in 1853. Reestablished in 1887. The course of study covers five years of eight months each. In 1903 it absorbed Trinity Medical College. The Secretary is Dr. A. Primrose. The total registration for 1909-10 was [illegible]; graduates 125. The next session begins Sept. 27, 1910, and ends May 18, 1911.

Medical Faculty of Queen's University, Kingston.—Organized 1854; first class graduated in 1855 and a class graduated each subsequent year. The faculty was originally a department of the University, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1892 the school again became an integral part of Queen's University. The fees amount to $100 each year; fee for M.D., C.M. degrees $30. The course covers five years of eight months each. The total registration in 1909-10 was 228; graduates, [illegible]. The Dean is Dr. A. R. B. Williamson. The next session begins Sept. 28, 1910, and ends April 28, 1911.

Medical Department of Western University, London.—Organized 1881; first class graduated in 1883 and a class graduated each year subsequently. The faculty numbers 22. The course is five years of seven and a half months each. The Registrar is Dr. W. E. Waugh. Total registraion for 1909-10 was 116; graduates, 20. The next session begins Sept. 15, 1910, and ends May 1, 1911.

Quebec

Medical Faculty of McGill University.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No session between 1836-39 owing to political troubles. In 1905 it absorbed the Faculty of Medicine of the University of Bishop College. The course extends over five years of eight months each. The faculty numbers 101. The total fees for each of the five years respectively are $138, $138, $148, $154 and $184. The total registration for 1909-10 was 329; graduates, 79. The Registrar is Dr. John W. Scane. The next session begins Oct. 3, 1910, and ends May 20, 1911.

Laval University, Medical Department, Quebec and Montreal.—The Quebec School of Medicine, organized in 1848, became in 1852 Medical Department of Laval University; first class graduated in 1855, and a class graduated each subsequent year. Department organized in Montreal in 1878. The course extends over five years. The Deans are Dr. Michael Joseph Ahern, Quebec, and Dr. E. P. Lachapelle, Montreal. Total registration at the two departments, 1909-10 was 311; graduates, 42. The next session at Quebec begins Sept. 15, 1910, and ends June 20, 1911; at Montreal the next session begins Oct. 3, 1910, and ends June 20, 1911.

FOREIGN MEDICAL COLLEGES

ARGENTINE REPUBLIC

Buenos Ayres.—Universidad Nacional de Buenos Aires.
Cordova.—Universidad Nacional.

AUSTRALIA

Adelaide.—Universidad Nacional.
Melbourne.—University of Melbourne.
Sydney.—University of Sydney.

AUSTRIA

Gratz, Styria.—Kaiserliche Königliche Karl Franzens Universität.
Innsbruck, Tyrol.—Kais. König. Leopold Franzens Universität.
Krakow, Galicia.—Uniwersytet Jagiellonski w Krakowie.
Lemberg, Galicia.—C. K. Uniwersytet imienia Cesarza Franciszka I.
Prague, Bohemia.—K. K. Deutsche Karl-Ferdinand-Universität.
Prague, Bohemia.—C. K. Ceská Universita Karlo Ferdinandova.
Vienna, Nether Austria.—Kaiserliche Königliche Universität.

BELGIUM

Brussels.—Université Libre de Bruxelles.
Ghent.—Université d l'Etat de Gand.
Liége.—Université de Liège.
Louvain.—Université Catholique.

BOLIVIA

La Paz.—Universidad de La Paz.
Sucre.—Universidad de Sucre.

BRAZIL

Bahia.—Faculdade de Medicina, Cirurgia e Pharmacia.
Rio de Janeiro.—Faculdade de Medicina, Cirurgia e Pharmacia.
Porto Allegre.—Faculdade Livre de Medicina e Pharmacia.

CANADA

Halifax, Nova Scotia.—Dalhousie University (including Halifax Medical College).
Kingston, Ontario.—Queen's University.
London, Ontario.—Western University.
Montreal, Quebec.—McGill University.
Montreal, Quebec.—Université Laval.
Quebec, Quebec.—Université Laval.
Toronto, Ontario.—University of Toronto.
Winnipeg, Manitoba.—University of Manitoba (Manitoba Medical College).

CHILE

Santiago.—Universidad de Chile.

CHINA

Hongkong.—Hongkong College of Medicine.
Nanking.—East China Union Medical College.
Pekin.—The Union Medical College.
Shanghai.—Woman's Medical School.

COLOMBIA

Bogota.—Universidad de Bogota.

CUBA

Havana.—Universidad de la Habana.

DENMARK

Copenhagen.—Kjobenhavns Universitet.

EGYPT

Cairo.—Kasr il Aini (School of Medicine).

ENGLAND

Birmingham.—University of Birmingham.
Bristol.—University of Bristol.
Cambridge.—University of Cambridge.
Durham.—Durham University (Durham College of Medicine).
Leeds.—University of Leeds.
Liverpool.—University of Liverpool.
London.—University of London (including the following Medical Schools: (*a*) St. Bartholomew's Hospital, (*b*) Charing Cross Hospital, (*c*) St. George's Hospital, (*d*) Guy's Hospital, (*e*) King's College, (*f*) London Hospital (*g*) St. Mary's Hospital, (*h*) Middlesex Hospital, (*i*) St. Thomas's Hospital, (*j*) University College (*k*) Westminster Hospital, and (*l*) London (Royal Free Hospital) School of Medicine for Women.

Manchester.—Victoria University (Owen's College, founded in 1851, was merged in Victoria University in 1905)
Oxford.—University of Oxford.
Sheffield.—University of Sheffield.

FRANCE

Faculties of Medicine (to the degree of doctor in medicine, including the five required examinations)
Bordeaux.—Université de Bordeaux.
Lille.—Universite de Lille.
Lyons.—Université de Lyon.
Montpellier.—Université de Montpellier.
Nancy.—Université de Nancy.
Paris.—Université de Paris.
Toulouse.—Université de Toulouse.
Preparatory Schools of Medicine.—Graduates of the 16 following schools are allowed to take the first two examinations if they are presided over by some member of a medical faculty:
(a) "*Full Exercise,*" or complete course (covering the work of 16 trimesters).
Algiers (Africa).—Académie d'Alger.
Marseilles.—Université d'Aix-Marseille.
Nantes.—Ecole de Plein Exercice de Médecine et de Pharmacie (part of the University of Rennes).
Rennes.—Université de Rennes.
(b) *Reorganized Schools.*—(Completing the first 12 trimesters.)
Amiens.—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Lille).
Amiens.—Ecole Préparatoire de Médecine et de Pharmacie (part of the University of Rennes).
Besancon.—Université de Besancon.
Caen.—Université de Caen.
Clermont.—Université de Clermont.
Dijon.—Université de Dijon.
Grenoble.—Université de Grenoble.
Limoges.—Ecole de Médecine et de Pharmacie (part of the University of Poitiers).
Poitiers.—Université de Poitiers.
Reims.—Ecole Préparatoire de Médecine et de Pharmacie (part of the University of Paris).
Rouen.—Ecole de Médecine et de Pharmacie (part of the University of Caen).
Tours.—Ecole Prépatoire de Médecine et de Pharmacie (part of the University of Poitiers).

GERMANY

Berlin, Prussia.—Königliche Friedrich-Wilhelm Universität.
Bonn, Prussia.—Rheinische Friedrich-Wilhelms-Universität.
Breslau, Prussia.—Königliche Universität.
Erlangen, Bavaria.—Königl. Friedrich-Alexanders Universität.
Freiberg, Baden.—Grossherzogliche Badische Albert-Ludwigs-Universität.
Giessen, Hesse.—Grossherzogliche Hessische Ludwigs-Universität.
Gottingen, Prussia.—Königliche Georg-August-Universität.
Greifswald, Prussia.—Königliche Universität.
Halle, Prussia.—Vereinigte Friedrichs-Universität Halle-Wittenberg.
Heidelberg, Baden.—Grossherzogliche Ruprecht-Karls-Universität.
Jena, Thuringia.—Grossherzogliche und Herzogliche Sächsische Gesamt-Universität.
Kiel, Prussia.—Königliche Christian-Albrechts-Universität.
Konigsberg, Prussia.—Königliche Albertus-Universität.
Leipzig, Saxony.—Universität.
Marburg, Prussia.—Universität.
Munich, Bavaria.—Königliche Bayr. Ludwig-Maximilians-Universität.
Rostock, Mecklenberg.—Universität.
Strassburg, Alsace-Lorraine.—Kaiser-Wilhelms-Universität.
Tübingen, Wurtemberg.—Königliche Eberhard-Karls Universität.
Würzburg, Bavaria.—Königliche Julius-Maximilians Universität.

GREECE

Athens.—National University.

GUATEMALA

Guatemala.—Facultad de Medicina.

HAITI

Port au Prince.—L'Ecole Nationale de Medecine.

HONDURAS

Tegucigalpa.—Facultad de Medicina.

HUNGARY

Budapest.—Budapesti Királyi Magyar Tudomány-Egyetem (Royal Hungarian University).
Klausenburg.—Kolozsvári Magyar Királyi Ferencz-Jozsef Tudomány-Egyetem (Royal Hungarian Franz-Joseph University).

ICELAND

Reykjavik.—Loeknaskoli (School of Physicians).

INDIA

Bombay.—University of Bombay (Grant Medical College).
Calcutta.—University of Calcutta (Medical College of Bengal).
Lahore.—Panjab University (Lahore Medical College).
Madras.—University of Madras (Madras Medical College).

IRELAND

Belfast.—Queen's University.
Dublin.—National University of Ireland (including Catholic School of Medicine, Dublin; University College, Cork; University College, Galway).
Dublin.—University of Dublin (The School of Physic in Ireland, Trinity College).
Dublin.—Royal College of Surgeons, Schools of Surgery (including the Carmichael College of Medicine and the Ledwich School of Medicine).

ITALY

Bologna.—Regia Università degli Studi.
Cagliori, Sardinia.—Università degli Studi.
Camerino.—Libera Università degli Studi.
Catania.—Regia Università degli Studi di Catania.
Ferrara.—Libera Università degli Studi di Ferrara.
Florence.—Regia Instituto di Studi Superiori, Practici e di Perfezionamento.
Genoa.—Regia Università degli Studi.
Messina.—Regia Università degli Studi.
Modena.—Regia Università degli Studi.
Naples.—Regia Università degli Studi.
Padua.—Regia Università degli Studi.
Palermo.—Regia Università degli Studi.
Parma.—Regia Università degli Studi.
Pavia.—Regia Università degli Studi.
Perugia.—Università Libra degli Studi.
Pisa.—Regia Università degli Studi.
Rome.—Regia Università degli Studi.
Sassari.—Regia Università degli Studi.
Siena.—Regia Università degli Studi.
Turin.—Regia Università degli Studi.

JAPAN

Kyoto.—Imperial University (part of medical school is located at Fukuoka).
Tamsui, Formosa.—Medical School of Formosa.
Tokyo.—Imperial University (Tokio Medical College became Medical Department in 1877).

Medical schools are located also at Chiba, Sendai, Okayama, Kanazawa and Nagasaki.

MEXICO

Mexico.—Escuela de Medicina.

NETHERLANDS

Amsterdam.—Universiteit van Amsterdam.
Groningen.—Rijks-Universiteit te Groningen.
Leyden.—Rijks-Universiteit.
Utrecht.—Rijks-Universiteit.

NEW ZEALAND

Wellington.—University of New Zealand (affiliated with the University of Cambridge, England).

NORWAY

Christiania.—Kongelige Frederiks Universitet.

PERU

Lima.—Universidad Mayor de San Marcos.

PORTUGAL

Coimbra.—Universidade de Coimbra.
Lisbon.—Escola Medico-Cirurgica.
Oporto.—Escola Medico-Cirurgica.

ROUMANIA

Bukharest.—Universitatea din Bucuresti.
Jassy.—Universitatea din Jasi.

RUSSIA

Helsingfors, Finland.—Kejserliga Alexanders Universitet.
Jurjev (formerly Dorpat).—Imperatorskij Jurjevskij Universitet.
Kazan.—Imperatorskij Kasanskij Universitet.
Kharkof.—Imperatorskij Charkovskij Universitet.
Kief.—Imperatorskij Universitet Sv. Vladimira.
Moscow.—Imperatorskij Moskovskij Universitet.
Odessa.—Imperatorskij Novorossijskij Universitet.
St. Petersburg.—Vojenno-Medicinskaja Akademija (Military Medical Academy).
St. Petersburg.—Zenskij Medicinskij Institut (Medical High School for Women).
Tomsk, Siberia.—Tomskij Universitet.
Warsaw.—Imperatorskij Varsavskij Universitet.

SCOTLAND

Aberdeen.—University of Aberdeen.
Dundee.—University of St. Andrews (University College).
Edinburgh.—University of Edinburgh.
Edinburgh.—School of Medicine of the Royal Colleges (including the Surgeons' Hall School).
Glasgow.—University of Glasgow (including Queen Margaret College).
Glasgow.—Anderson's College Medical School.
Glasgow.—St. Mungo's College and Glasgow Royal Infirmary.
Glasgow.—Western Medical School.

SPAIN

Barcelona.—Universidad de Barcelona.
Cadiz.—Facultad de Medicina.
Granada.—Universidad de Granada.
Madrid.—Universidad de Central de Espana.
Santiago.—Universidad.
Saragossa.—Universidad.
Seville.—Universidad de Sevilla. (To this university also belongs the Medical Faculty at Cadiz.)
Valencia.—Universidad Literaria.
Valladolid.—Universidad.

SWEDEN

Lund.—Kungl. Karolinska Universitetet
Stockholm.—Karolinska Institutet (Medico-Chirurgical Institute). (This institute has the same chancellor as the universities at Lund and Upsala, and is guided by a similar constitution.)
Upsala.—Kungl. Universitetet i Upsala.

SWITZERLAND

Basel.—Universität
Berne.—Kantonale Universität
Fribourg.—Universität
Geneva.—Université de Genève.
Lausanna.—Université
Neu-Chatel.—Universität
Zurich.—Universität.

SYRIA

Beirut.—Syrian Protestant College
Beirut.—Université Saint Joseph de Beyrouth.

TURKEY

Constantinople.—University of Constantinople.
(Another medical department of this university is located at Damascus.)

URUGUAY

Montevideo.—Universidad.

WALES

Cardiff.—University of Wales (Cardiff School of Medicine).

EDUCATIONAL STANDARDS ABROAD

The educational standards in foreign countries regarding which definite information has been obtained are briefly stated as follows:

ARGENTINE REPUBLIC.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires 18 years and the minimum age at completion of the course is 24.

AUSTRIA.—Elementary education extends between the ages of 6 and 14, overlapping the gymnasium course by four years, the latter extending between the ages of 10 and 18. Twelve years of study, therefore, admit to medicine. The medical course covers six years and includes preliminary courses in physics, chemistry and biology. The total time required is 18 years and the minimum age at completion is 24.

BELGIUM.—Elementary education extends between the ages of 6 and 14, overlapping the work in the Royal Athénées, the secondary schools, by three years, the latter extending between the ages of 11 and 18. The time spent in the primary and secondary schools is, therefore, 12 years. An additional year devoted to physics, chemistry and biology in a college of science admits to the five-year medical course. The time necessary to complete the work is 18 years and the minimum age at completion is 24.

BOLIVIA.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires 18 years and the minimum age at the completion of the course is 24.

BRAZIL.—Elementary education extends between the ages of 7 and 15, overlapping the work of the gymnasium by three years, the latter extending between the ages of 12 and 19. Elementary work may be begun at the age of 6 years, and in some cases students may finish the gymnasium at 18. Twelve years of work lead to medicine, where six years of work are required, including preliminary courses in physics, chemistry and biology. The time required to complete the entire course is 18 years and the usual age at completion is 25.

CHILE.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years and the minimum age at completion is 24.

COLOMBIA.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires at least 18 years and the minimum age at the completion of the course is 24.

DENMARK.—Elementary education extends between the ages of 6 and 12 leading to the "Laerdeskoler," the secondary schools, which extend between the ages of 12 and 18, a total of 12 years. The medical course covers six years, including preliminary courses in the natural sciences. Time to complete the work is 18 years and the minimum age at completion is 24.

FRANCE.—Elementary education extends between the ages of 6 and 13 or 14. The majority of students entering the secondary schools, however, obtain their elementaary work from tutors or in special preparatory courses connected with the lycées. The secondary school, the lycée, has a nine-year course divided into two cycles of five and four years, respectively, and extends between the ages of 11 and 18. From age 6, therefore, twelve years of training are required to complete the primary and secondary work. An additional year devoted to the natural sciences, which must be taken in a college of science, admits to the four-year medical course. Entire course, therefore is 17 years, and the age at completion is 23.

GERMANY.—Elementary study extends between the ages of 6 and 14, overlapping the gymnasium by four years, the latter extending between the ages of 10 and 18. Then follows a six-year course, which includes preliminary courses in the natural sciences, and the last year must be spent in hospital work. This gives the right to practice, but additional work is required, and a severe examination, the "examen rigorosum," must be passed to secure the degree of doctor. Eighteen years of work lead to medical practice or 19 to the Doctorate and the age at completion is at least 24 or 25.

GREAT BRITAIN.—There appears to be no connection between elementary and secondary systems of education. Elementary public schools have been provided, extending between the ages of 6 and 12 or 13. Those entering secondary schools usually obtain their elementary instruction from private tutors or in the preparatory courses of the secondary schools. At present there are no public secondary schools in Great Britain, although that country abounds in private secondary schools, having courses varying as to age. Taking Rugby as an example, the course extends from the age of 10 to 17. Others extend from the age of 12 to 19. There are various ages at which the student may enter the medical schools, the minimum age fixed by the General Medical Council being 16. The time spent in elementary and secondary education, therefore, ranges from 10 to 13 years. Work must then be taken in physics, chemistry and biology either in a college of science or in the medical college as a part of the regular five year medical course. Authorities agree that only a small proportion of students enter the medical school before the 18th year and few graduate in medicine before the age of 23. Since the promotion from one grade to another depends entirely on the passing of an examination, the time to complete the medical course usually requires six or more years.

GREECE.—Elementary education is given in the "demotic" schools between the ages of 6 and 10 and in the "hellenic" schools between the ages of 10 and 14, leading to the secondary schools or gymnasia, which occupy the time between the ages of 14 and 18. Twelve years are occupied, therefore, by elementary and secondary education. Two years of work in the university devoted to botany, chemistry, physics, mineralogy, geology and zoology must be completed in order to begin the four year medical course for the degree of Doctor. To secure the right to practice, nine months of postgraduate work in a hospital must be completed. The total time requirement is 19 years and the minimum age at completion of the entire course is 25.

HUNGARY.—Elementary education extends between the ages of 6 and 12 years, overlapping secondary education which extends between the ages of 10 and 18. The 12 years' work thus completed leads to the five year medical course, which includes preliminary work in physics, chemistry and biology. The time for the entire course is, therefore, 17 years, and the minimum age at completion is 23.

ITALY.—Elementary education is divided into lower elementary, extending between the ages of 6 and 9 years, and higher elementary, extending between 9 and 12 years. Secondary education is given in the ginnasio, extending between the ages of 10 and 15 years, and in the liceo, which extends between the ages of 15 and 18 years. This is followed by a six year course in medicine, which includes work in the natural sciences. The complete course, therefore, is elementary study 4 years, ginnasio 5 years, liceo 3 years and medicine 6 years, a total of 18 years. The minimum age at completion of the course is 24 years.

JAPAN.—Ordinary elementary education extends between the ages of 6 and 10 years and higher elementary education is between the ages of 10 and 14 years, overlapping the work of the "middle school" by two years, the latter extending between the ages of 12 and 17 years. Completing the work of the middle school admits to the four-year medical course in all medical schools, except those at Tokio, Kioto and Fukuoka, which require also the completion of three years of higher preliminary education.

NETHERLANDS.—Elementary education extends between the ages of 6 and 12 years, leading to the gymnasium, which extends from the 12th to the 18th year. Admission is then secured to the six-year medical course, which includes work in the natural sciences. The time to complete the entire course is 18 years and the minimum age is 24.

NORWAY.—Elementary education extends between the ages of 6 and 12 years, overlapping the secondary, which extends between the ages of 9 and 18 years. Secondary education is divided into a six-year middle school and a three-year gymnasium. The completion of the course of the gymnasium admits to the six-year medical course, which includes work in physics, chemistry and biology. The entire time, therefore, is 18 years and the minimum age at completion is 24. This gives the right to practice with the title of physician. The degree of Doctor requires extra work and the passing of special examinations.

PERU.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires 18 years and the minimum age at the completion of the course is 24.

PORTUGAL.—Elementary education extends between the ages of 6 and 12 years, thus overlapping the work of the lyceum, which extends between the ages of 9 and 16. This is followed by a course of one or two years in a faculty of philosophy and mathematics and then five years in medicine for the degree of licentiate in medicine and a sixth year for the degree of Doctor. The time for the entire course, therefore, is 18 years and the minimum age at completion is 24.

RUSSIA.—Elementary education extends for 3 years between the ages of 7 and 10. Secondary education, as given in the gymnasium, extends over 8 years between the ages of 11 and 19. Completion of the secondary work admits to the five-year medical course, which includes preliminary work in the natural sciences extending through the first two years along with other subjects. The total time is 16 years and the minimum age at completion is 24.

SPAIN.—Elementary education extends between the ages of 6 and 14 years, overlapping the work of the gymnasium, the secondary schools, which conduct work between the ages of 10 and 17. After completing the work of the gymnasium one year of "preliminary study" must be taken, devoted to chemistry and natural science. Six years more gives the degree of licentiate in medicine and one more that of doctor. The complete course, therefore, requires 18 years of study and the minimum age at completion is 24.

SWEDEN.—Elementary education extends over 7 years between the ages of 6 and 13. Secondary education consists of a five-year lower modern course and a four-year higher gymnasium, the two courses being attended by students between the ages of 9 and 18. After completing the gymnasium one year of preliminary work in the natural sciences must be taken in a college of philosophy. Seven years more of study gives the degree of licentiate in medicine, which carries with it the right to practice. To secure the degree of Doctor requires more work and the passing of special examinations. Promotion to each succeeding grade depends on the passing of an examination, and the medical course often extends to 9 or more years. The entire course, therefore, includes: elementary work, 3 years; lower modern school, 5 years; higher gymnasium, 4 years; college of philosophy, 1 year, and medicine, 7 years, a total of 20 years. The age at completion is 26 to 28 years.

SWITZERLAND.—The Cantons differ somewhat in the length of their secondary courses, but all agree in regard to the preliminary work for admission to medicine and the length of the medical course. Taking the Canton of Zürich as an example, the elementary work extends over 6 years between the ages of 6 and 12. The secondary schools, known as gymnasia (realschulen or lycea), have courses covering seven years, students attending between the ages of 11 and 18. Graduation from the gymnasium admits to the five-year medical course, which includes preliminary courses in physics, chemistry and biology. The entire course, therefore, requires: elementary work, 5 years; gymnasium, 7 years, and medicine, 5 years, a total of 17 years. The minimum age at completion is 23. The degree of Doctor is not essential to practice, but may be obtained by writing special thesis and taking certain courses without necessarily requiring a longer course.

TURKEY.—Elementary education extends from the age of 6 to 10 years inclusive, intermediate education from 10 to 14, secondary education from 14 to 17 years and the medical education from 17 to 23. The total number of years, therefore, is 17 years and the minimum age at completion is 23. The sixth year of the medical course must be spent in a hospital.

URUGUAY.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six-year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years and the minimum age at completion is 24.

MEDICAL COLLEGES OF THE WORLD

Nation.	Colleges.	Nation.	Colleges.
Argentine	2	Iceland	1
Australia	3	India	1
Austria	7	Ireland	4
Belgium	4	Italy	20
Bolivia	2	Japan	8
Brazil	3	Mexico	1
Canada	8	Netherlands	4
Chile	1	New Zealand	1
China	4	Norway	1
Colombia	1	Peru	1
Cuba	1	Portugal	3
Denmark	1	Roumania	2
Egypt	1	Russia	11
England	21	Scotland	8
France	7	Spain	9
Germany	20	Sweden	3
Greece	1	Switzerland	7
Guatemala	1	Syria	2
Haiti	1	Turkey	1
Honduras	1	Uruguay	1
Hungary	2	Wales	1

Total medical colleges in all foreign countries	185
Total in the United States alone	153

Counting also the 20 sectarian schools, the graduates of which treat diseases, gives the United States a total of 1[illegible].

MEDICAL STANDARDS ABROAD COMPARED

The list of foreign medical colleges, on pages 676 to 678, shows a total of 185 such colleges outside the United States, while this country alone has 153. All European medical schools are medical faculties of universities or are under the direct control of universities, and there are no proprietary schools such as predominate in this country.

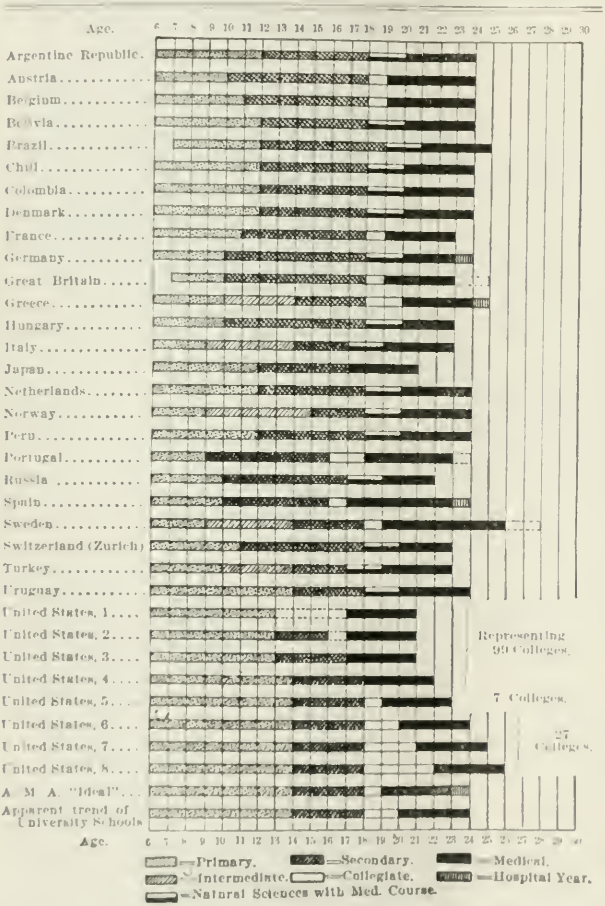
The information given regarding preliminary education as well as collegiate and medical was obtained from original sources and from foreign publications and has been verified in most instances by the American consuls in the different countries.

The requirements in twenty foreign countries are graphically presented in the accompanying chart, where each division of education is shown according to the ages at which students are in attendance. The shaded portions of the bands represent primary and secondary education, the black portions the medical, and the white portions represent the requirements of higher preliminary education, including work in physics, chemistry and biology. The chart allows valuable comparisons to be grade and as measured by years, shows a uniformity of educational standards that is somewhat surprising. It is interesting to note how sharply the line representing the age of 18 separates the secondary from higher education.

The age at the completion of the medical course in each country, as shown in the chart, with one or two exceptions, represents the lowest age at which the student can secure the right to practice medicine, disregarding the rare exceptions when the student graduates at an earlier age. The average age is one or two years higher than is shown in the chart, since the regular course of study between the ages of 6 and 21 is often broken by sickness, failure to receive promotion, or other causes.

In the majority of foreign countries secondary education begins from two to five years earlier than in this country and in some countries has no direct connection with the elementary. In fact, in several European countries, in Great Britain and in France, for example, it appears that the majority of students entering the secondary schools secure their elementary instruction from private tutors or in preparatory courses offered by the secondary schools, rather than in the regular elementary schools.

PRELIMINARY AND MEDICAL EDUCATION AT HOME AND ABROAD



The United States and Japan are the only countries named in the chart which do not require preliminary work in physics, chemistry and biology of every medical student. Even the South American countries are ahead of the United States in this respect. In some countries named the work is taken in the first one or two years of the medical course, along with the usual medical studies, while in others, notably in France, Belgium and Sweden, it must be taken in a college of science or philosophy. In still others, as in Austria and in Great Britain, the work may be taken either in a college of liberal arts or in the medical school. In France this work was given as a part of the regular medical course until in 1893, when it was transferred to the college of science, because the laboratories and trained instructors in those colleges made it certain that the courses would be thoroughly taught.

Only one year devoted to the preliminary scientific studies is required by all but two of the countries named or else the work extends through about two years along with regular medical subjects. In no instance is more than two years of college work devoted entirely to preliminary study. This seems to indicate that the preliminary requirement by a few medical schools in this country of three and four years of college work is extreme and has no parallel in other countries.

In six of the countries named, disregarding rare exceptions, the earliest age at which the right to practice medicine can be secured, is 23. In three countries the age limit is 25 or beyond. But in the great majority the age limit is 24 and the entire course of elementary, secondary, college and medical education is completed in 18 years. This agrees with the "ideal standard" adopted at Portland, Ore., in 1905, by the American Medical Association, as well as with the so-called six year combined course for the degrees of B.S. and M.D., which is being generally adopted by medical schools in this country.

The well-known diversity of standards of medical education in the United States at the present time is also shown in the chart. Preliminary standards range from a common school education up to the requirement of a college degree. Of the 133 colleges in the United States, 99 require a four-year high school education or less, as shown in Groups 1 to 4, while 27 colleges are now requiring two or more years of work in a college of arts, 23 of these having raised their requirements in the past six years. This group of colleges and the years when the higher requirement became effective are as follows:

HIGH STANDARD COLLEGES IN THE UNITED STATES.

College.	Began.
Johns Hopkins University Medical Department	1893
Harvard Medical School	1900
Western Reserve University Medical Department	1901
University of Chicago, Rush Medical College	1904
University of California, Medical Department	1905
University of Minnesota, College of Medicine and Surgery	1907
University of North Dakota, College of Medicine*	1907
University of Wisconsin, College of Medicine	1907
Cornell University Medical College	1908
Wake Forest College School of Medicine*	1908
Leland Stanford Junior University, Department of Medicine	1909
Yale Medical School	1909
University of Kansas School for Medicine	1909
University of Michigan, College of Medicine	1909
University of Nebraska, College of Medicine	1909

College.	Began.
University of South Dakota, College of Medicine*	1909
University of Colorado, School of Medicine	1910
Indiana University School of Medicine	1910
State University of Iowa, College of Medicine	1910
State University of Iowa, College of Homeopathic Medicine	1910
Drake University, College of Medicine	1910
University of Missouri, Department of Medicine*	1910
Dartmouth Medical School	1910
Columbia University College of Physicians and Surgeons	1910
Syracuse University College of Medicine	1910
University of Pennsylvania, Medical Department	1910
University of Utah, Medical Department*	1910

*Offer only two years in medicine.

There are 8 colleges which are now requiring for admission one year of collegiate work, devoted to physics, inorganic chemistry, biologic and modern languages. These are:

College.	Began.
Northwestern University Medical School	1908
Fordham University School of Medicine	1908
Tulane University, Medical Department	1910
St. Louis University School of Medicine	1910
Washington University, Medical Department	1910
Ohio-Miami Medical College, University of Cincinnati	1910
University of Texas, Medical Department	1910
University of Virginia, Department of Medicine	1910

HIGHER PRELIMINARY REQUIREMENTS BY STATE BOARDS.

There are now eight state examining boards which have adopted preliminary requirements in advance of a four-year high school education. These are:

State Examining Board of	No. of Years Required.	Affects Students Matriculating.	Affects All Applicants After
North Dakota	2	1907-08	1911
South Dakota	1	1907-08	1911
Iowa	2	1907-08	1911
Minnesota	2	1908-09	1912
Colorado	1	1908-09	1912
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914
Indiana	2	1910-11	1914

STANDARDS OF THE COUNCIL ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION

These standards were prepared by the Council on Medical Education acting under the direction of the House of Delegates of the American Medical Association.

Standard Now Recommended

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (as soon as conditions warrant), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one language (preferably German or French), to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

The Ideal Standard

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed upon by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangement to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

SCHEDULE OF SUBJECTS OFFERED IN ACADEMIC AND SECONDARY SCHOOLS, CREDITS IN WHICH ARE ACCEPTABLE FOR ENTRANCE TO MEDICAL COLLEGES

Based on the requirements of the College Entrance Examining Board

SUBJECTS.	UNITS.	REQUIRED.	ELECTIVE.
ENGLISH			
READING AND PRACTICE	2	2	...
Study and Practice	1	...	1
MATHEMATICS			
ALGEBRA, to QUADRATICS	1	1	...
ALGEBRA (Quadratic Equations, Binomial Theorem and Progressions	½	...	½
PLANE GEOMETRY	1	1	...
Solid Geometry	½	...	½
Trigonometry	½	...	½
LATIN			
GRAMMAR AND COMPOSITION	1	1	...
CAESAR	1	1	...
Cicero	1	...	1
Virgil	1	...	1
Cornelius Nepos	1	...	1
Greek			
Grammar and Composition	1	*	1
Xenophon	1	...	1
Homer	1	...	1
German			
Elementary	2	**	2
Intermediate	1	...	1
French			
Elementary	2	**	2
Intermediate	1	...	1
Spanish			
Elementary	2	**	2
HISTORY			
UNITED STATES HISTORY	1	1	...
Greek and Roman History	1	...	1
Medieval and Modern	1	...	1
English	1	...	1
SCIENCE †			
Botany and Zoology, each	½	...	½
or Biology	1	...	1
Chemistry	1	...	1
PHYSICS	1	1	...
Physiography	½	...	½
Physiology	½	...	½
Drawing	1	...	1
Music			
Appreciation	1	...	1
Harmony	1	...	1
Total	34	8	26

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 40 minutes.

Required Branches: Of the 14 units of high school work it is suggested that the subjects in capitals aggregating 8 units should be required. Other work to the amount of at least 6 units may be made up from any of the other subjects of the above schedule.

* Two units of Greek may be substituted for the two required units of Latin.

** A reading knowledge of German, French or other modern language is recommended in the high school courses of students contemplating the study of medicine without higher preliminary qualifications.

† It should be understood that each science course must include laboratory work.

An Acceptable Medical College

The following outline of the essentials of an acceptable medical college has been issued by the Council on Medical Education of the American Medical Association for its suggestive value in the rapid development now in progress among the medical colleges in the United States:

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES

	NAME AND LOCATION OF COLLEGE	Population of city where college is located (Census Bureau's estimate for 1909)	No. of students registered 1909-10.		Graduates 1910.		No. of teachers	Grads with A.B. or B.S.	Weeks in college year	Total fees (Dollars)				Executive Officer.	Session of 1910-11		Number
			Men.	Women.	Men	Women	No. of teachers	Grads with A.B. or B.S.	Weeks in college year	1st year	2nd year	3rd year	4th year		Begins 1910.	Ends 1911	
	ALABAMA		337	1	63	0	2										
1	Birmingham Medical College, Birmingham	49,783	208	1	23	0	2	34	30	100	100	100	125	B. L. Wyman, M.D., Dean	Sept 28	May 16	1
2	University of Alabama, Medical Department, Mobile	45,129	129	..	40	..	...	25	30	100	100	100	125	Rhett Goode, M.D., Dean	Sept 19	May 9	2
	ARKANSAS		274	1	55	0	1										
3	College of Physicians and Surgeons, Little Rock	45,088	103	1	29	0	...	40	28	100	100	100	125	J. P. Runyan, M.D., Dean	Oct. 1	May 1	3
4	University of Arkansas, Medical Department, Little Rock	45,088	171	..	26	..	1	38	31	100	100	100	125	C. E. Witt, M.D., Secretary	Sept. 15	May 6	4
	CALIFORNIA		349	37	53	5	10										
5	College of Physicians and Surgeons, San Francisco	400,000	27	2	7	0	...	60	36	150	150	150	150	Ethan H. Smith, M.D., Dean	Sept. 1	June 1	5
6	Cooper Medical College, San Francisco (a)	400,000	79	1	17	0	1	51	34	...	.	170	185	Henry Gibbons, Jr., M.D., Dean	Aug. 15	May 5	6
7	Hahnemann Medical College of the Pacific, San Francisco. H	400,000	32	2	1	0	...	42	34	155	100	100	100	James W. Ward, M.D., Dean	Aug. 11	April 27	7
8	Leland Stanford Junior University, Dept. of Medicine, Palo Alto	1,658	11	4	...	..	...	23	36	175	175	...	..	Emmet Rixford, M.D., Secretary	Aug. 25	May 22	8
9	University of California, Medical Department, San Francisco	400,000	41	11	3	1	3	56	35	150	150	150	150	Arnold A. D'Ancona, M.D., Dean	Aug. 22	May 17	9
10	University of California, Medical Department, Los Angeles	300,000	47	8	6	3	2	61	34	150	150	150	170	W. Jarvis Barlow, M.D., Dean	Sept. 15	May 31	10
11	California Eclectic Medical College, Los Angeles. E	300,000	22	...	2	...	...	31	32	125	120	100	125	J. A. Munk, M.D., Dean	Sept. 19	May 18	11
12	College of Physicians and Surgeons, Los Angeles	300,000	64	5	11	1	2	44	36	155	150	150	175	Charles W. Bryson, M.D., Dean	Sept. 14	June 15	12
13	Oakland College of Medicine and Surgery, Oakland	225,000	19	1	3	0	2	33	36	210	200	150	150	Edward N. Ewer, M.D., Registrar	Aug. 15	May 20	13
14	College of Medical Evangelists, Loma Linda (m)	100	7	3	...	...	...	9	36	105	100	100	100†	George Knapp Abbott, M.D., Dean	Sept. 29	June 27	14
	COLORADO		182	12	28	1	6										
15	Denver and Gross College of Medicine, Denver (b)	176,726	110	7	21	0	...	65	35	...	...	103	126	Frost C. Buchtel, M.D., Secretary	Sept. 12	......	15
16	University of Colorado, School of Medicine, Boulder (b)	12,000	72	5	7	1	6	43	35	75	75	75	75	William P. Harlow, M.D., Dean	Sept. 12	June 7	16
	CONNECTICUT		124	...	27	...	7										
17	Yale Medical School, New Haven	127,827	124	.	27	...	..	66	35	173	153	150	160	George Blumer, M.D., Dean	Sept. 29	June 21	17
	DISTRICT OF COLUMBIA		427	9	70	0	13										
18	George Washington University, Dept. of Medicine, Washington	343,003	104	5	26	0	5	81	33	150	150	150	150	W. C. Borden, M.D., Dean	Sept. 28	June 7	18
19	Georgetown University, School of Medicine, Washington	343,003	117	.	14	...	...	74	33	150	150	150	150	George M. Kober, M.D., Dean	Sept. 26	June 11	19
20	Howard University, Medical Department, Washington	343,003	206	4	30	0	8	48	31	107	102	102	109	Edward A. Balloch, M.D., Dean	Oct 1	May 25	20
	GEORGIA		801	6	165	3	9										
21	Atlanta College of Physicians and Surgeons, Atlanta	111,825	341	..	63	.	4	55	29	100	100	100	100	W. S. Elkin, M.D., Dean	Sept. 21	May 2	21
22	Atlanta School of Medicine, Atlanta	111,825	227	...	42	...	...	40	28	75	75	100	130	Edward G. Jones, M.D., Proctor	Sept. 20	April 20	22
23	Georgia College of Eclectic Medicine and Surgery, Atlanta. E	111,825	80	1	34	1	3	20	28	80	80	80	80	E. B. Thomas, M.D., Dean	Sept. 21	April 21	23
24	Hospital Medical College, Atlanta.—E (n)	111,825	38	5	13	2	...	24	26	80	80	80	110	W. Bernard Lingo, M.D., Dean	Sept. 15	April 1	24
25	Medical College of Georgia, Augusta	41,067	115	.	13	.	2	34	28	100	100	100	100	William H. Doughty, Jr., M.D., Dean	Oct. 1	May 1	25
	ILLINOIS		2760	331	564	37	133										
26	American Medical Missionary College, Chicago	2,224,491	47	21	9	0	2	53	35	182	182	175	175	Benton N. Colver, M.D., Dean, Battle Creek Mich.	Sept. 13	June 9	26
27	Bennett Medical College, Chicago (e)	2,224,491	215	16	32	6	3	108	33	130	125	125	125	William F. Waugh, M.D., Dean	Sept. 20	May 31	27
28	Chicago College of Medicine and Surgery	2,224,491	549	21	85	4	11	73	31	125	120	100	115	G. E. Wyneken, M.D., Registrar	Sept. 27	May 15	28
29	College of Physicians and Surgeons, Chicago	2,224,491	499	27	121	10	17	150	33	155	155	150	175	William E. Quine, M.D., Dean	Sept. 27	June 7	29
30	College of Medicine and Surgery, Chicago. Ph M	2,224,491	45	19	14	2	...	61	30	120	115	115	140	William F. Schaare, M.D., Secretary	Sept. 21	May 12	30
31	Hahnemann Medical College and Hospital, Chicago—H	2,224,491	122	9	28	3	5	69	32	100	100	100	100	W. Henry Wilson, M.D., Registrar	Sept. 26	May 25	31
32	Hering Medical College, Chicago—H	2,224,491	32	10	10	2	2	52	32	100	100	100	100	Robert N. Morris, M.D., Dean	Sept. 27	June 1	32
33	Illinois Medical College (f)	2,224,491	50	5	17	2	...	.	...	...	..	..	...	......	......	......	33
34	Jenner Medical College, Chicago.*	2,224,491	186	19	20	3	...	64	40	125	110	110	135	John D. MacKellar, M.D., Dean	Aug. 29	July 1	34
35	Northwestern University Medical School, Chicago	2,224,491	485	152	142	0	21	163	31	190	200	192	185	Arthur R. Edwards, M.D., Dean	Oct 4	May 29	35
36	Reliance Medical College.*	2,224,491	80	11	6	1	.	65	36	130	130	125	125	J. F. Burkholder, M.D., President	Sept. 7	June 29	36
37	Rush Medical College, Chicago	2,224,491	150	18	81	4	72	269	34	180	180	180	180	John M. Dodson, M.D., Dean	Oct. 1	June 17	37
	INDIANA		233	9	56	3	13										
38	Indiana University, School of Medicine, Indianapolis	241,826	233	9	56	3	13	183	35	160	100	130	130	B. D. Myers, Secretary, Bloomington; Edmund D. Clark, M.D., Indianapolis	Sept. 22	June 16	38
	IOWA		312	21	71	3	13										
39	Drake University, College of Medicine, Des Moines	86,415	90	9	21	2	2	50	35	150	150	150	150	William W. Pearson, M.D., Dean	Sept. 19	June 14	39
40	State University of Iowa, College of Medicine, Iowa City	8,197	180	10	43	1	10	40	35	50	50	50	50	James R. Guthrie, M.D., Dean, Dubuque	Sept. 19	June 14	40
41	State Univ. of Iowa, Coll. of Homeopathic Med., Iowa City. H.	8,197	42	2	7	0	1	30	35	50	50	50	50	George Royal, M.D., Dean	Sept. 19	June 14	41
	KANSAS		146	10	31	1	5										
42	Kansas Medical College, Topeka	41,757	64	3	12	0	3	41	35	80	75	75	75	William E. McVey, M.D., Dean	Sept. 14	June 7	42
43	University of Kansas, School of Medicine, Kansas City (d) (i)	277,427	82	7	19	1	2	87	34	30	25	100	110	Mervin T. Sudler, M.D., Dean, Lawrence; George H. Hoxie, M.D., Dean, Rosedale	Sept. 19	June 7	43
	KENTUCKY		666	2	212	0	...										
44	Louisville National Medical College, Louisville	236,688	30	1	8	0	...	13	31	60	55	55	55	E. S. Porter, M.D., Dean	Oct. 1	May 20	44
45	Southwestern Homeopathic College, Louisville.—H	236,688	12	1	2	0	.	27	31	80	80	80	100	George S. Coon, M.D., Dean	Oct. 6	May 25	45
46	University of Louisville, Medical Department, Louisville	236,688	624		202	.	.	92	29	105	105	105	130	Thomas C. Evans, M.D., Dean	Oct. 10	May 19	46
	LOUISIANA		435	1	137	0	21										
47	Flint Medical College, New Orleans	327,662	19	.	1		1	15	29	60	50	50	50	R. T. Fuller, M.D., Dean	Sept. 29	May 9	47
48	Tulane University Medical Department, New Orleans	327,662	416	1	136	0	20	88	32	150	150	160	160	Isadore Dyer, M.D., Dean	Oct. 1	June 1	48
	MAINE		74	.	20		8										
49	Medical School of Maine, Portland	57,675	74	...	20	..	8	37	33	100	100	100	100	Alfred Mitchell, M.D., Dean	Oct. 13	June 21	49

	MARYLAND		1305	39	323	10	76										
50	Atlantic Medical College, Baltimore.—P	576,023	19	...	11	...	...	40	32	105	100	90	105	Eldridge C. Price, M.D., Dean	Oct. 1	June 1	50
51	Baltimore Medical College, Baltimore	576,023	270	...	54	...	2	71	33	125	125	125	155	David Streett, M.D., Dean	Sept. 20	May 27	51
52	College of Physicians and Surgeons, Baltimore	576,023	283	...	66	...	1	58	32	155	155	155	185	Charles F. Bevan, M.D., Dean	Oct. 1	June 1	52
53	Johns Hopkins University, Medical Department, Baltimore	576,023	312	22	68	4	72	112	33	200	200	200	200	William H. Howell, M.D., Dean	Oct. 4	June 13	53
54	Maryland Medical College, Baltimore	576,023	112	...	36	...	...	38	32	111	111	105	135	W. S. Smith, M.D., Dean	Oct. 1	May 31	54
55	University of Maryland, School of Medicine, Baltimore	576,023	309	...	85	...	1	62	32	155	155	155	185	R. Dorsey Coale, M.D., Dean	Oct. 1	June 1	55
56	Woman's Medical College of Baltimore (e)	576,023	....	17	...	6	...	...	...	...	...	...	...	....	....	....	56
	MASSACHUSETTS		802	64	147	13	66										
57	Boston University, School of Medicine.—H	622,970	56	23	9	5	3	66	32	125	125	125	125	John P. Sutherland, M.D., Dean	Oct. 6	June 7	57
58	College of Physicians and Surgeons, Boston (o)	622,970	72	8	24	4	...	56	35	100	120	105	130	Thomas D. Crothers	Sept. 21	June 14	58
59	Harvard Medical School, Boston	622,970	279	...	66	...	60	171	32	200	200	200	200	Henry A. Christian, M.D., Dean	Sept. 29	June 1	59
60	Tufts College Medical School, Boston	622,970	395	33	48	4	3	107	32	155	155	155	155	Frederic M. Briggs, M.D., Secretary	Sept. 28	June 1	60
	MICHIGAN		543	24	113	5	26										
61	Detroit College of Medicine, Detroit	384,855	152	...	38	...	2	113	32	115	120	100	140	F. W. Walker, M.D., Secretary	Sept. 21	May 25	61
62	Detroit Homeopathic College, Detroit.—H	384,855	25	3	4	1	...	36	32	95	85	75	95	Fred E. Thompson, M.D., Registrar	Sept. 14	May 1	62
63	University of Michigan, Dept. of Med. and Surg., Ann Arbor (i)	14,711	299	16	62	2	24	74	35	105	95	95	55	Victor C. Vaughan, M.D., Dean	Oct. 4	June 29	63
64	University of Michigan, Homeopathic College, Ann Arbor.—H. (i)	14,711	69	5	9	2	...	22	35	105	95	95	55	W. B. Hinsdale, M.D., Dean	Oct. 4	June 29	64
	MINNESOTA		166	10	33	1	16										
65	University of Minnesota, Coll. of Med. and Surg., Minneapolis (h)	533,567	150	10	30	1	16	128	35	150	100	100	100	F. F. Wesbrook, M.D., Dean	Sept. 13	June 8	65
66	Hamline University, Medical Department, Minneapolis (p)	533,567	16	...	3	...	...	...	...	...	...	...	...	....	....	....	66
	MISSISSIPPI		143	3	21	1	1										
67	University of Mississippi, Medical Department, Oxford.†	1,825	50	...	4	...	1	13	32	75	75	...	...	W. S. Leathers, M.D., Dean	Sept. 22	June 1	67
68	Mississippi Medical College, Meridian	21,937	93	3	17	1	...	25	28	85	85	75	100	W. W. Hamilton, M.D., Secretary	Oct. 3	April 30	68
	MISSOURI		1251	29	313	4	22										
69	University of Missouri, Medical Department, Columbia.†	5,651	29	...	...	...	...	18	34	70	70	...	...	C. M. Jackson, M.D., Dean	Sept. 22	June 8	69
70	Kansas City Hahnemann Medical College, Kansas City.—H. (d)	277,427	50	8	19	2	...	43	33	105	100	100	100	William E. Cramer, M.D., Dean	Sept. 6	May 15	70
71	University Medical College, Kansas City (d)	277,427	186	...	48	...	...	47	33	100	100	100	125	J. M. Frankenburger, M.D., Dean	Sept. 6	May 15	71
72	Eclectic Medical University, Kansas City.—E. (f)	277,427	21	...	9	...	...	32	30	90	95	100	115	M. D. L. Isley, M.D., Secretary	Sept. 6	April 30	72
73	Ensworth Medical College, St. Joseph	125,504	68	...	17	...	...	34	30	90	95	75	95	T. E. Potter, M.D., Secretary	Sept. 14	May 1	73
74	American Medical College, St. Louis.—E. (g)	686,369	31	8	7	0	...	30	35	100	100	100	100	James Moores Ball, M.D., Dean	Sept. 5	June 1	74
75	Barnes Medical College, St. Louis	686,369	174	10	49	2	...	48	32	100	100	100	100	A. R. Kieffer, M.D., Dean	Sept. 14	May 13	75
76	Hippocratean College of Medicine, St. Louis (c)	686,369	28	3	...	...	...	26	...	...	...	...	...	....	....	....	76
77	St. Louis University, School of Medicine	686,369	261	...	66	...	12	112	32	115	110	110	120	Elias Potter Lyon, Ph.D., Dean	Oct. 1	May 29	77
78	St. Louis College of Physicians and Surgeons (n)	686,369	228	...	42	...	...	41	32	105	100	100	95	Waldo Briggs, M.D., Dean	Sept. 14	May 16	78
79	Washington University, Medical Department, St. Louis	686,369	205	...	56	...	10	92	34	138	153	117	105	George Dock, M.D., Dean	Sept. 20	June 8	79
	NEBRASKA		306	22	71	2	11										
80	Creighton Medical College, Omaha	134,972	181	13	44	...	6	49	31	105	100	100	105	D. C. Bryant, M.D., Dean	Sept. 5	April 29	80
81	University of Nebraska, College of Medicine, Lincoln and Omaha	134,972	71	5	15	1	5	68	34	101	112	100	105	R. H. Wolcott, M.D., Acting Dean, Lincoln	Sept. 20	June 7	81
														Omaha	Sept. 13	May 27	
92	Lincoln Medical College, Lincoln.—E	52,308	54	4	12	1	...	37	34	90	90	90	90	F. L. Wilmeth, M.D., Dean	Sept. 7	May 20	82
	NEW HAMPSHIRE		57	...	10	...	7										
83	Dartmouth Medical School, Hanover	1,884	57	...	10	...	7	24	36	125	125	125	125	G. S. Graham, M.D., Secretary, 1st two years	Sept. 22	June 21	83
														Last two years	Aug. 2	March 28	
	NEW YORK		2145	63	410	15	76										
84	Albany Medical College, Albany	100,730	196	...	41	...	1	93	31	130	145	120	130	Willis G. Tucker, M.D., Registrar	Sept. 20	May 16	84
85	Columbia University, College of Phys. and Surg., New York City	4,450,963	360	...	69	...	43	176	33	255	250	250	275	Samuel W. Lambert, M.D., Dean	Sept. 28	June 7	85
86	Cornell University Medical College, New York City	4,450,963	114	20	61	7	16	139	34	190	185	185	200	W. M. Polk, M.D., Dean	Sept. 28	June 14	86
87	Eclectic Medical College of the City of New York.—E	4,450,963	91	...	13	...	...	38	32	125	125	125	150	George W. Boskowitz, M.D., Dean	Sept. 14	May 14	87
88	Fordham University School of Medicine, New York City	4,450,963	75	...	6	...	1	78	35	200	200	200	200	James J. Walsh, M.D., Dean	Sept. 21	June 15	88
89	Long Island College Hospital, New York City	4,450,963	368	...	72	...	3	95	32	205	205	160	165	Joseph H. Raymond, M.D., Secretary	Oct. 1	June 1	89
90	New York Homeopathic Medical College and Hospital.—H	4,450,963	125	...	24	...	...	74	32	140	130	[illegible]	[illegible]	Royal S. Copeland, M.D., Dean	Oct. 4	June 1	90
91	New York Medical College and Hospital for Women.—H	4,450,963	....	24	...	4	...	38	30	155	150	135	[illegible]	Helen Cooley Palmer, M.D., Dean	Sept. 20	May 31	91
92	University and Bellevue Hospital Medical College, New York	4,450,963	474	...	64	...	3	166	32	200	200	200	200	Egbert LeFevre, M.D., Dean	Sept. 28	June 1	92
93	Syracuse University, College of Medicine, Syracuse	125,378	131	9	26	1	6	60	33	181	191	151	166	John L. Heffron, M.D., Dean	Oct. 4	June 14	93
94	University of Buffalo, Medical Department, Buffalo	396,535	181	10	34	3	3	95	32	185	180	140	140	Matthew D. Mann, M.D., Dean	Sept. 26	June 1	94
	NORTH CAROLINA		351	...	51	...	...										
95	Leonard Medical School, Raleigh	14,512	153	...	23	...	...	12	29	15	15	15	25	William Moncure, M.D., Dean	Sept. 29	May 11	95
96	University of North Carolina, Medical Department, Chapel Hill.†	1,099	71	...	14	...	...	47	35	70	70	...	...	I. H. Manning, M.D., Dean	Sept. 5	May 30	96
97	North Carolina Medical College, Charlotte	35,101	107	...	14	...	...	34	30	95	92	80	105	R. H. Lafferty, M.D., Registrar	Sept. 14	May 1	97
98	Wake Forest School of Medicine, Wake Forest.†	823	57	...	...	...	...	10	34	105	103	...	...	John B. Powers, M.D., Dean	Sept. 6	May 20	98
	NORTH DAKOTA		34	2	...	...	...										
99	University of North Dakota, Med. Dept., University (Grand Forks)†	14,000	34	2	...	...	...	24	35	50	50	...	...	M. A. Brannon, B.S., Dean	Sept. 20	June 15	99
	OHIO		790	26	153	7	23										
100	Cleveland College of Physicians and Surgeons, Cleveland (j)	506,938	91	7	19	2	1	...	...	...	...	...	...	....	....	....	100
101	Cleveland Homeopathic Medical College, Cleveland.—H. (k)	506,938	40	11	2	3	...	53	30	125	125	125	125	Joseph A. Lytle, M.D., Registrar	Sept. 21	May 11	101
102	Western Reserve University Medical Department, Cleveland	506,938	94	...	21	...	18	84	34	130	130	130	130	F. C. Waite, M.D., Secretary	Oct. 1	June 15	102
103	Eclectic Medical College, Cincinnati.—E	350,212	89	2	20	0	...	24	31	100	100	100	100	John K. Scudder, Secretary	Sept. 19	May 10	103
104	Ohio-Miami Medical College of the University of Cincinnati	350,212	190	1	11	0	8	127	32	130	125	125	125	E. O. Smith, M.D., Secretary	Sept. 28	June 3	104
105	Pulte Medical College, Cincinnati.—H. (k)	350,212	14	2	4	1	...	...	...	...	...	...	...	....	....	....	105
106	Starling-Ohio Medical College, Columbus	156,340	218	2	11	0	...	62	32	130	125	125	125	William J. Means, M.D., Dean	Sept. 21	May 24	106
107	Toledo Medical College, Toledo	171,059	44	1	8	1	2	51	31	105	100	100	100	E. I. McKesson, M.D., Secretary	Oct. 3	May 26	107
	OKLAHOMA		65	7	6	1	...										
108	Epworth College of Medicine, Oklahoma City (e)	45,880	46	5	6	1	...	...	...	...	...	...	...	....	....	....	108
109	University of Oklahoma, School of Medicine, Norman (l)	3,040	19	2	...	...	...	40	35	30	10	100	105	J. D. MacLaren, M.D., Secretary	Sept. 14	June 8	109
	OREGON		110	5	19	0	1										
110	University of Oregon, Medical Department, Portland	119,607	75	5	15	0	1	50	30	142	138	107	58	S. E. Joseph, M.D., Dean	Sept. 12	May 1	110
111	Willamette University, Medical Department, Salem	......	35	...	4	...	...	20	32	123	110	88	58	W. H. Byrd, M.D., Dean	Oct. 1	June 1	111

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES.—(Concluded)

Number	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census Bureau's estimate for 1909.)	No. of students registered 1909-10. Men.	No. of students registered 1909-10. Women.	Graduates 1910. Men.	Graduates 1910. Women.	Grads. with A.B. or B.S.	No. of teachers.	Weeks in college year.	Total fees (Dollars.) 1st year.	2nd year.	3rd year.	4th year.	Executive Officer.	Session of 1910-11. Begins 1910.	Ends 1911	Number
	PENNSYLVANIA		**2151**	**137**	**410**	**38**	**61**										
112	Hahnemann Medical College and Hospital, Philadelphia. H	1,515,756	159	...	37	.	2	80	32	155	150	150	150	William B. Van Lennep, M.D., Dean	Sept. 26	June 1	112
113	Jefferson Medical College, Philadelphia	1,515,756	531	.	141	.	18	140	33	180	180	180	180	James W. Holland, M.D., Dean	Sept. 26	June 5	113
114	Medico-Chirurgical College of Philadelphia	1,515,756	455		69	...	...	109	33	150	150	150	150	Seneca Egbert, M.D., Dean	Sept. 26	June 3	114
115	Temple University, Medical Department, Philadelphia	1,515,756	183	11	33	3	...	81	31	155	150	150	150	Frank C. Hammond, M.D., Dean	Sept. 15	June 3	115
116	University of Pennsylvania, Department of Medicine, Philadelphia	1,515,756	529	.	134	..	38	164	30	218	213	210	212	Allen J. Smith, M.D., Dean	Sept. 23	June 21	116
117	Woman's Medical College of Pennsylvania, Philadelphia	1,515,756	.	114	. .	31	2	60	33	146	146	141	141	Clara Marshall, M.D., Dean	Sept. 21	May 31	117
118	University of Pittsburg, Medical Department, Pittsburg	558,123	300	9	56	4	1	103	33	210	210	210	210	Thomas S. Arbuthnot, M.D., Dean	Oct. 4	June 14	118
	PHILIPPINE ISLANDS		**431**	...	**159**	...	**18**										
119	Philippine Medical School, Manila (m)	219,928	52	...	8	...	. .	42	35	...	...	...	...	Harry T. Marshall, M.D., Secretary	June 6	Feb. 25	119
120	University of St. Thomas, Faculty of Medicine, Manila (m)	219,928	379	...	151		18	30	34	...	...	...	..	Blas C. Alcuaz, M.D., Secretary	July 2	March 7	120
	SOUTH CAROLINA		**227**	**2**	**38**	**0**	**7**										
121	Medical College of South Carolina, Charleston	56,573	227	2	38	0	7	33	32	100	100	75	75	Robert Wilson, Jr., M.D., Dean	Oct. 1	May 31	121
	SOUTH DAKOTA		**6**	**1**	...	...	...										
122	University of South Dakota, College of Medicine, Vermilion.†	2,183	6	1	. .	.	. .	9	33	60	60	. .	...	C. P. Lommen, B.S., Dean	Sept. 12	June 8	122
	TENNESSEE		**1541**	**11**	**320**	**3**	**19**										
123	Knoxville Medical College, Knoxville	37,758	21	1	1	0	...	11	26	45	40	45	50	D. W. Crawford, M.D., Registrar	Nov. 1	May 31	123
124	Lincoln Memorial University Medical Department, Knoxville	37,758	95	3	20	0	.	29	28	80	75	75	100	S. L. Jones, M.D., Dean	Oct. 1	May 1	124
125	Meharry Medical College, Nashville	106,476	277	4	53	3	5	26	29	50	50	57	65	G. W. Hubbard, M.D., Dean	Sept. 14	April 25	125
126	Universities of Nashville and Tennessee, Department of Medicine	106,476	203	. .	65	...	3	51	31	125	125	125	150	R. O. Tucker, M.D., Dean	Sept. 5	May 1	126
127	Vanderbilt University, Medical Department, Nashville	106,476	271	. .	30	. .	5	47	30	125	125	125	150	William L. Dudley, M.D., Dean	Sept. 14	May 1	127
128	College of Physicians and Surgeons, Memphis	136,363	101	1	17	0	4	42	30	100	100	100	125	E. C. Ellett, M.D., Dean	Sept. 15	May 1	128
129	Memphis Hospital Medical College, Memphis	136,363	425	.	101	.	2	38	30	100	100	100	125	W. B. Rogers, M.D., Dean	Oct. 1	May 18	129
130	University of West Tennessee, Medical Department, Memphis	136,363	34	1	6	0	..	16	28	50	50	50	60	M. V. Lynk, M.D., Dean	Sept. 14	April 14	130
131	Chattanooga Medical College, Chattanooga (e)	34,654	111	1	18	0	.	. .	.	.	.	. .	...	....	...	...	131
	TEXAS		**406**	**9**	**68**	**1**	**2**										
132	Fort Worth University, Medical Department, Fort Worth	68,137	80	1	28	0	. .	38	31	105	105	105	130	W. R. Howard, M.D., Secretary	Sept. 26	May 12	132
133	University of Texas, Department of Medicine, Galveston	38,000	198	8	31	1	2	23	32	55	30	20	5	William S. Carter, M.D., Dean	Oct. 1	May 31	133
134	Baylor University, College of Medicine, Dallas	104,541	67	.	9	.	.	98	28	105	100	100	125	Edward H. Cary, M.D., Dean	Oct. 3	May 1	134
135	Southwestern University Medical College, Dallas	104,541	61	.	17	.	.	32	28	110	105	100	125	John O. McReynolds, M.D., Dean	Sept. 29	April 30	135
	UTAH		**29**	**1**	.	.	.										
136	University of Utah, School of Medicine, Salt Lake City †	64,558	29	1	.	.	.	16	31	65	65	. .	...	George M. Marshall, A.M., Acting Dean	Sept. 19	June 8	136
	VERMONT		**178**	.	**30**	.	**2**										
137	University of Vermont, College of Medicine, Burlington	21,880	178	..	30	..	2	54	29	135	135	135	165	J. N. Jenne, M.D., Secretary	Nov. 14	June 20	137
	VIRGINIA		**415**	.	**91**	..	**7**										
138	Medical College of Virginia, Richmond	109,461	191	. .	38	.	.	54	34	100	100	100	100	Christopher Tompkins, M.D., Dean	Sept. 13	May 30	138
139	University College of Medicine, Richmond	109,461	137	.	22	...	1	66	33	100	100	100	130	A. L. Gray, M.D., Dean	Sept. 14	May 25	139
140	University of Virginia, Department of Medicine, Charlottesville	10,000	87	...	31	...	6	30	36	150	140	120	100	R. H. Whitehead, M.D., Dean	Sept. 15	June 14	140
	WEST VIRGINIA		**27**	...	...	...	...										
141	West Virginia University College of Medicine, Morgantown.†	14,500	27	.	. .	. .	.	9	36	50	50	...	...	John N. Simpson, M.D., Dean	Sept. 15	June 15	141
	WISCONSIN		**380**	**12**	**50**	**3**	**10**										
142	Marquette University, Medical Department, Milwaukee	332,495	285	8	45	2	10	62	30	135	135	135	150	Warren B. Hill, M.D., Dean	Oct. 4	May 22	142
143	Wisconsin College of Physicians and Surgeons, Milwaukee	332,495	49	2	5	1	...	56	31	125	125	125	125	Thomas C. Phillips, M.D., Dean	Oct. 3	May 30	143
144	University of Wisconsin, College of Medicine, Madison.†	27,618	46	2	. .	...	. .	19	35	130	130	...	...	Charles R. Bardeen, M.D., Dean	Sept. 20	June 23	144
	CANADA		**1722**	**22**	**303**	**5**	**76**										
145	Dalhousie University, Halifax Medical College, Halifax, N. S. (m)	51,000	57	3	7	2	5	27	32	91	101	112	121	A. W. H. Lindsay, M.D., Secretary	Aug. 25	April 27	145
146	Queen's University, Faculty of Medicine, Kingston, Ontario (m)	19,264	228	...	30	...	...	26	30	100	100	100	130	A. R. B. Williamson, M.D., Dean	Sept. 28	April 20	146
147	Western University, Faculty of Medicine, London, Ontario (m)	49,431	116	...	20	...	8	22	30	. .	...	..	..	W. E. Waugh, M.D., Registrar	Sept. 15	May 1	147
148	McGill University, Medical Faculty, Montreal, Que. (m)	375,000	339	...	79	...	19	101	31	138	138	148	154	John W. Scane, M.D., Registrar	Oct. 3	May 30	148
149	Laval University, Medical Faculty, Montreal, Que. (m)	375,000	217	. .	29	...	14	50	34	110	118	126	138	E. P. Lachapelle, M.D., Dean	Oct. 3	June 20	149
150	Laval University, Medical Faculty, Quebec, Que. (m)	70,000	94	...	13	...	10	17	34	60	60	60	60	Michael J. Ahern, M.D., Dean	Sept. 15	June 20	150
151	University of Toronto, Medical Faculty, Toronto, Ont (m)	338,814	572	18	122	3	19	157	31	150	150	150	150	A. Primrose, M.D., Secretary	Sept. 27	May 18	151
152	University of Manitoba, Manitoba Medical College, Winnipeg (m)	100,000	109	1	3	0	1	49	29	155	150	150	150	E. S. Popham, M.D., Registrar	Sept. 26	May 1	152

H, Homeopathic; E, Eclectic; Ph.M., Physiomedical; P Panpathic. * Night schools. † Gives only two years of the medical course. ‡ Total fees for the fifth year are $110.

REFERENCES TO TABLE 1

(a) Cooper Medical College will continue to teach and will graduate those matriculated prior to 1909. After that date all work will be under the charge of the Leland Stanford Junior University Department of Medicine.

(b) These colleges will complete their merger Jan. 1, 1911.

(c) These colleges have been merged, retaining the name of Bennett Medical College.

(d) Population figures given for both Kansas Cities.

(e) This college has been suspended.

(f) Formerly the Western Eclectic College of Medicine and Surgery of Kansas City, Kan.

(g) Has just been reorganized on a non-sectarian basis.

(h) Population figures include St. Paul and Minneapolis.

(i) Tuition fees are less for residents of the state.

(j) Merged with Western Reserve University.

(k) These colleges have been merged with the new title, Cleveland Pulte Medical College.

(l) Following the suspension of the Epworth College of Medicine, this school, has organized a clinical department at Oklahoma City.

(m) Gives a five year course.

(n) The enrollment of students given is for 1908-9; the graduates, those of 1910.

(o) This college had 226 "matriculants and applicants" in 1908-9 according to its printed announcement. From other sources it is learned that only about 80 medical students actually attended throughout the session of 1909-10.

(p) Hamline University still grants degrees to students matriculated prior to the fall of 1909 who could not meet the entrance requirements of the College of Medicine of the University of Minnesota, with which it was merged.

(Continued from page 681)

1. A strict enforcement of all standards and requirements, the college itself to be held responsible for any instances where they are not enforced.

2. A requirement for admission of at least a four-year high school education superimposed on eight years of grammar school work, or the actual equivalent education, this to consist of 14 units as defined by the College Entrance Examining Board and required by the Carnegie Foundation for the Advancement of Teaching (see schedule, page 681).

3. As soon as conditions warrant, the minimum requirement for admission should be enlarged to include at least one year's college work in physics, chemistry and biology and a reading knowledge of at least one modern language, preferably German or French.

4. A requirement that students be in actual attendance in the college within the first week of each annual session and thereafter.

5. That actual attendance at classes be insisted on except for good cause, such as for sickness, and that no credit be given under any circumstances for less than 80 per cent. of attendance on each course.

6. That advanced standing be granted only to students of other acceptable colleges and that in granting advanced standing there shall be no discrimination against the college's full-course student.

7. Careful and intelligent supervision of the entire school by a dean or other executive officer who holds, and has sufficient authority to carry out, fair ideals of medical education as interpreted by modern demands.

8. A good system of records showing conveniently the credentials, attendance, grades and accounts of the students.

9. A fully graded course covering four years of at least 30 weeks each, exclusive of holidays, and at least 30 hours per week of actual work; this course should be clearly set forth in a carefully prepared and printed schedule of lectures and classes.

10. Two years of work consisting largely of laboratory work in thoroughly equipped laboratories in anatomy, histology, embryology, physiology, chemistry (inorganic, organic and physiologic), bacteriology, pathology, pharmacology, therapeutics and clinical diagnosis.

11. Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence.

12. At least six expert, thoroughly trained instructors in the laboratory branches, salaried so they may devote their entire time to instruction and to that research without which they cannot well keep up with the rapid progress being made in their subjects. These instructors should rank sufficiently high to have some voice in the conduct of the college. There should also be a sufficient number of assistants in each department to look after the less important details.

13. The medical teaching should be of at least the same degree of excellence as obtains in our recognized liberal arts colleges and technical schools

14. The members of the faculty, with a few allowable exceptions, should be graduates of institutions recognized as medical colleges and should have had a training in all departments of medicine. They should be appointed because of their ability as teachers and not because they happen to be on the attending staff of some hospital or for other like reasons.

15. The college should own or entirely control a hospital in order that students may come into close and extended contact with patients under the supervision of the attending staff. The hospital should have a sufficiently large number of patients to permit the student to see and study the common variety of surgical and medical cases as well as a fair number in each of the so-called specialties.

16. The college should have easily accessible hospital facilities of not less than 200 patients which can be utilized for clinical teaching (for senior classes of 100 students or less), these patients to represent in fair proportion all departments of medicine.

17. The college should have additional hospital facilities for children's diseases, contagious diseases and nervous and mental diseases.

18. Facilities for at least five maternity cases for each senior student, who should have actual charge of these cases under the supervision of the attending physician.

19. Facilities for at least 30 autopsies during each college session (for senior classes of 100 students or less).

20. A dispensary, or out-patient department, under the control of the college, the attendance to be a daily average of 60 cases (for senior classes of 100 students or less), the patients to be carefully classified, good histories and records of the patients to be kept and the material to be well used.

21. The college should have a working medical library to include the more modern text and reference books and 10 or more leading medical periodicals; the library room to be easily accessible to students during all or the greater part of the day; to have suitable tables and chairs and to have an attendant in charge.

22. A working medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed so that any specimen may be easily found and employed for teaching purposes.

23. A supply of such useful auxiliary apparatus as a stereopticon, a reflectoscope, carefully prepared charts, embryologic or other models, manikins, dummies for use in bandaging, a Roentgen ray or other apparatus now so generally used in medical teaching.

24. The colleges should show evidences of reasonably modern methods in all departments and evidences that the equipment and facilities are being intelligently used in the training of medical students.

25. A clear statement of the college's requirements for admission, tuition, time of attendance on the classes, sessions and graduation should be clearly set forth, together with complete lists of its matriculants and latest graduating class in regular annual catalogues or announcements.

Definitions of a Medical College* and a Medical School †

"An institution to be ranked as a medical college must have at least six (6) professors giving their entire time to medical work, a graded course of four full years of college grade in medicine, and must require for admission not less than the usual four years of academic or high-school preparation, or its equivalent, in addition to the preacademic or grammar school studies."

By a medical school as differentiated from a medical college is meant a part of a university requiring for admission the equivalent of two years of collegiate work and which offers instruction of not less than two years' duration, leading to the degree of Doctor of Medicine.

---

* This definition of a college is based on that given in the revised ordinances of the State of New York and which was also adopted by the Carnegie Foundation for the Advancement of Teaching as their standard.

† Based on the definition of the term "school" adopted in 1909 by the Association of American Universities.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership are as follows:

Preliminary Education: (a) A bachelor's degree from an approved college or university. (b) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of Latin or four years of other high school French or German, provided an examination is passed in the elements of Latin grammar, two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, one year (2 points) of physics, and six years (12 points) of further credit in language, literature, history or science. (c) An examination in the following branches totaling 30 points: A. Required (16 points): Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points).

B. Elective (14 points). English language and literature, 4 points; language, German, French, Spanish or Greek, in each not

Number.	NAME OF COLLEGE	1 Alabama.......633	2 Arizona.......5	3 Arkansas.......392	4 California.......359	5 Colorado.......157	6 Connecticut.......271	7 Delaware.......39	8 Dist. of Columbia 116	9 Florida.......143	10 Georgia.......702	11 Idaho.......21	12 Illinois.......1959	13 Indiana.......571	14 Iowa.......639	15 Kansas.......412	16 Kentucky.......428	17 Louisiana.......376	18 Maine.......173	19 Maryland.......398	20 Massachusetts.......809	Number.
1	Birmingham Medical College, Birmingham	176		1						6	4						1					1
2	University of Alabama, Medical Dept., Mobile	108	1							1								1				2
3	College of Physicians and Surgeons, Little Rock	1	1	67							2		5	2		2	2	4				3
4	University of Arkansas, Med. Dept., Little Rock			141									1	2		1	1	3				4
5	College of Phys. and Surg., San Francisco				12	1									3	1						5
6	Hahnemann Med. Coll. of the Pacific.—H.				33																	6
7	Leland Stanford Junior Univ., Dept. of Med.				14																	7
8	Cooper Medical College, San Francisco				71									1	1							8
9	Univ. of California, Med. Dept., San Francisco				47								1									9
10	Univ. of California, Med. Dept., Los Angeles				9	2	1						2	1	1	1						10
11	California Eclectic Med. Coll., Los Angeles.—E.				19											1						11
12	College of Physicians and Surgeons, Los Angeles				11								5	1	8	2	1	1			4	12
13	Oakland College of Med. and Surgery, Oakland				19											1						13
14	College of Medical Evangelists, Loma Linda				6											1						14
15	Denver and Gross College of Medicine, Denver			1	2	70							3	1	7	3	1	2				15
16	University of Colorado, School of Med., Boulder	1			1	39				1		3	2	1	5	2						16
17	Yale Medical School, New Haven	1					87									1					5	17
18	George Washington University, Dept. of Med.				3		1		33				2		1	2				4	3	18
19	Georgetown Univ., School of Med., Washington	1			3		4		36				1				2			6	10	19
20	Howard University, Med. Dept., Washington	3		1			2	3	19	7	7		3				2	2		12	2	20
21	Atlanta College of Phys. and Surg., Atlanta	37			1		1	1		30	204						1	1				21
22	Atlanta School of Medicine, Atlanta	15								16	150				1			2			1	22
23	Georgia College of Eclectic Med. and Surg.—E.										99											23
24	Hospital Medical College, Atlanta.—E.*			2						5	29											24
25	Medical College of Georgia, Augusta						1			3	94											25
26	American Medical Missionary College, Chicago	1											7	3	7	1	1					26
27	Bennett Medical College, Chicago			1		1	1			1			129	8	10	3	2				1	27
28	Chicago College of Medicine and Surgery	5		2	3		5			2			251	50	22	13	5	1		1	4	28
29	College of Physicians and Surgeons, Chicago	1				5			1	1		1	306	20	18	1	1	1				29
30	College of Medicine and Surgery, Chicago.—Ph.M.												33	2	2		1				1	30
31	Hahnemann Med. Coll. and Hosp., Chicago.—H.			1	2					1		1	64	7	21	3					3	31
32	Hering Medical College, Chicago.—H.					1			1				23	2	1		2					32
33	Illinois Medical College, Chicago	1		1									28	5				1		1		33
34	Jenner Medical College, Chicago	1		1	3				1		1		165	2	2		2				1	34
35	Northwestern University Medical School, Chicago			1	3	7							280	44	66	15					1	35
36	Reliance Medical College												71									36
37	Rush Medical College, Chicago	2		4	4	8				1	1	2	174	23	39	25	3	1				37
38	Indiana University, School of Med., Indianapolis						1				1		6	231	1							38
39	Drake University, College of Med., Des Moines				1	2						1	3		73	3						39
40	State Univ. of Iowa, Coll. of Med., Iowa City												10		161		1		1			40
41	State Univ. of Iowa, Coll. of Homeo. Med.—H.											1			30							41
42	Kansas Medical College, Topeka			1												60						42
43	Univ. of Kansas, School of Med., Kansas City															80						43
44	Louisville National Medical College, Louisville	2								1	1			4			19					44
45	Southwestern Homeopathic Coll., Louisville.—H.													3			8					45
46	University of Louisville, Med. Dept., Louisville	7		14	2		1			5	5		27	71	9	5	240	15	1		2	46
47	Flint Medical College, New Orleans			1							2							10				47
48	Tulane University Med. Dept., New Orleans	51		9						7	15						1	192			1	48
49	Medical School of Maine, Portland				1														60		3	49
50	Atlantic Medical College, Baltimore																			8		50
51	Baltimore Medical College, Baltimore	2		1					2	1	2							1	5	28	29	51
52	College of Physicians and Surgeons, Baltimore			1			5	2		1	4								1	36	26	52
53	Johns Hopkins Univ., Med. Dept., Baltimore †	7		4	11	1	18	1	3	2	10		12	8	4	4	9	4	4	51	6	53
54	Maryland Medical College, Baltimore	2					2	2	1		1			1				1		18	2	54
55	Univ. of Maryland, School of Med., Baltimore						4	7	1	3	7		2	1		2			1	116	2	55
56	Woman's Medical College of Baltimore †						1						1		1					3	1	56
57	Boston University, School of Medicine.—H.																		3		56	57
58	College of Physicians and Surgeons, Boston						2			1	1								6		41	58
59	Harvard Medical School, Boston			1		5	3		1				5	3	4	1	2		20		154	59
60	Tufts College Medical School, Boston						10						1		1				20		340	60
61	Detroit College of Medicine, Detroit												2	1								61
62	Detroit Homeopathic College, Detroit.—H. †												2									62
63	Univ. of Michigan, Dept. of Med. and Surg.	1			4	1	1		1		1	1	10	10	5		4		1		3	63
64	Univ. of Michigan, Homeo. Coll., Ann Arbor.—H.								1				1	1	2	1		1	1	2	1	64
65	Univ. of Minnesota, Coll. of Med. and Surg.												2	1	2	1						65
66	University of Mississippi, Med. Dept., Oxford										1							1				66
67	Mississippi Medical College, Meridian	4									1							1		1		67
68	University of Missouri, Med. Dept., Columbia														2						1	68
69	Kansas City Hahnemann Med. Coll.—H.					1							2	2	2	25						69
70	University Medical College, Kansas City			3		1								1	3	80						70
71	Eclectic Medical University, Kansas City.—E. †			1		1							1		1	8						71
72	Ensworth Medical College, St. Joseph											1			5	9						72
73	American Medical College, St. Louis.—E.			8									4			1						73
74	Barnes Medical College, St. Louis	2		5		1							52	3	9	4	4					74
75	Hippocratean College of Medicine, St. Louis																					75
76	St. Louis University, School of Medicine	1	1	4								2	64	5	14	7	1	2				76
77	St. Louis College of Physicians and Surgeons *	2		6	1								98	3	12	3	4	1				77
78	Washington University, Med. Dept., St. Louis	1		4		1					1	1	54	2	7	5						78
79	Creighton Medical College, Omaha				1	1	1						1		43	3					1	79
80	University of Nebraska, Coll. of Med.														8	1						80
81	Lincoln Medical College, Lincoln.—E.													1	1	1						81
82	Dartmouth Medical School, Hanover						4							1					2		14	82
83	Albany Medical College, Albany																				11	83
84	Columbia Univ., Coll. of Phys. and Surg.	2				1	11				1		5		1	2	2		2		5	84
85	Cornell Univ. Medical College, New York City				1										1			1	3	1	4	85
86	Eclectic Med. Coll. of the City of New York.—E. †						2															86
87	Fordham Univ. School of Med., New York City				1		1	1												1	2	87
88	Long Island College Hospital, New York City						4	1													1	88
89	New York Med. Coll. and Hosp. for Women.—H.																		1		2	89
90	New York Homeo. Med. Coll. and Hosp.—H. †																					90
91	Univ. and Bellevue Hosp. Med. Coll., New York				3	1	9						2				1				6	91
92	Syracuse University, Coll. of Med., Syracuse				1										1	1						92
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

---

* Figures for 1908-9. † Total exact, distribution based on that of 1908-9. H., Homeopathic; E., Eclectic; Ph.M., Physiomedical; P., Panpathic

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Number.	Michigan.....448	Minnesota.....338	Mississippi.....561	Missouri.....597	Montana.....37	Nebraska.....301	Nevada.....6	New Hampshire.....97	New Jersey.....469	New Mexico.....11	New York.....2120	North Carolina.....493	North Dakota.....97	Ohio.....902	Oklahoma.....192	Oregon.....130	Pennsylvania.....1990	Rhode Island.....101	South Carolina.....413	South Dakota.....85	Tennessee.....567	Texas.....719	Utah.....8	Vermont.....102	Virginia.....453	Washington.....8	West Virginia.....246	Wisconsin.....212	Wyoming.....11	Philippine Is., Etc.....54	Foreign.....563	Totals.....21,531	Number.
1			11									1			1				2		1	2									3	209	1
2			7																						1							179	2
3			3	3										1	2		1				2	1									2	104	3
4				1							1				14		1	1			1	3										171	4
5				1												2						1								1	7	19	5
6																										1						54	6
7																															1	17	7
8											1			1		1	1													1	2	84	8
9							1									2															1	52	9
10				3		1				1	1			1																	1	57	10
11					1																	1										22	11
12	1	3		7		3		1	1		3		1	2		1	3							1			1	1			9	69	12
13																																20	13
14	1										1																				1	10	14
15	3	1			2	2		1			1			5			2			1		2	1		3		1		1		1	117	15
16	1	2				2					2			5			1					2		1				1	2		3	77	16
17				1					2		11			3			4	2		1				3							3	124	17
18	1	1	1			2		1	1		5	6	1	4	2		6		2		3	4	2	2	6		1				6	105	18
19			1						6		6	1		2	1		13	4				1			10	1	2	1		4	1	117	19
20			2	3	1				4		8	6	1	7			9	3	8		5	6			35		1				38	210	20
21			5								3	7		1	2				1		1		1			1					1	334	21
22		1	9	1					1		1	10		1			2		10		2	2									2	227	22
23																																90	23
24												1			1				2		1	2										43	24
25		1									1								15			1										113	25
26	9		1	1					1		3			6			2				2				1			1			24	67	26
27	7	3	2	3							7	2	2	3			8			6		3				1		16			11	291	27
28	16	16	3	20		4			4		26	1	7	18	1	1	38		1	4	2	8	3			1	8	11		2	23	580	28
29	15	19	2	9	2	11					4		11	9		1	1			18	1	4	5		1	8	2	30		8	11	526	29
30	1			2							4			3								5	1					1			3	57	30
31	5	4									2		1	4			2	1							1	1	1	3			3	151	31
32	1										3						1					1						1	1		4	42	32
33	2		3								2	1		1	2		2								1			2			2	55	33
34	1	4		1					1	1	3	1		2	1		2				2	1			1			3			2	205	34
35	12	34	2	8	5	13				1	2		7	15	1	5	1			11			1			5		61	1	4	11	667	35
36		3		2																											2	80	36
37	9	9	2	19	1	15					5	1	8	20	4	8	1	2			4	1	8	1	3	8	1	32		1	15	468	37
38	1				1									1							3						1				1	248	38
39		3		7	1	2					1		1	1								1				2					4	108	39
40		2		1	2	2			1							1										1		1			1	190	40
41						2	1																							1		35	41
42				1		1							1	1			1					1										67	42
43				8											1																	89	43
44			2																												2	31	44
45																	1														1	13	45
46	5	9	18	18	1	1			5	1	6	4	1	4	6	5	13		1		19	26		1	10	1	64	3			2	624	46
47			1						1													3									1	19	47
48			73									6			6				5		4	50			1						4	417	48
49																		1													3	71	49
50											1						5								4						1	19	50
51		1	1					8	11		35	1		1			15	8	4		1			2	15		12				25	270	51
52	1				2				21		15	6		10			58	13	1		1	1	5		4		51				18	283	52
53	2	1	1	9	1	1			6		35	9		14		3	32	1	7		3	10			10	8	5	8	1		5	334	53
54								1	7		8	3		1			17								8	1	21				13	112	54
55				1				2	16		11	31		1	1		26	2			1			1	18		1	1		5	19	300	55
56									1		2	1							1						1		1			2	1	17	56
57						1					1			2			1	2						4							9	7	57
58								2			5						1	6	1						1						13	80	58
59	1			2	1	2		6	3		9	2		7		2	4	12	2		1			1		4			2		12	279	59
60								14		1	5			1			1	21	1					1							6	428	60
61	118	1									1			4			3														22	142	61
62	22													1																	1	6	62
63	172	2		4	4		1		1		27	1	1	39		3	11	2	2	6	1					5		2			6	315	63
64	31	1									17			4		1	5				1										1	74	64
65		151		1							1		7						2		1			1	3							176	65
66			45																													50	66
67			55																			1										86	67
68				2										1								1									1	39	68
69	1			18							2			1	1											1	1				1	58	69
70				79	2					1				1	9		1														5	186	70
71				5		1								1	2																	21	71
72		1		50										1			1															68	72
73				25																		1										30	73
74				86		1									6							4				1	1			1	1	184	74
75				31																												31	75
76	2	3	1	112	3	2					2			8	8	1						1				1		7			4	281	76
77				81	1	2	2				2		1		8							10						1			1	254	77
78				115	1	2	1		1		1						1				1					1		1				205	78
79	3	6		3		112					2		1			1	2		1	7			1			1						194	79
80						64											1												2			76	80
81						49									1					2	1	1							1			58	81
82					1			27	3					1										4								57	82
83								1	3		175						1	1	1					1						1	1	196	83
84		1	2	4	1			3	15		247	2		1	2	3	8	2	5	1		1	1		1	2		1		1	11	360	84
85					1				17		128	1		1			3			1										1		104	85
86									10		78						1															91	86
87									3		46						2														18	73	87
88									29		31																					68	88
89									33		75		1				7					1										[illegible]	89
90											24																					24	90
91			1					1	72		357			3			3	5			1			1		1				1		474	91
92									3		121			2			1							1				1				140	92
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

TABLE 2.—SHOWING DISTRIBUTION

Number	NAME OF COLLEGE	1 Alabama......683	2 Arizona......5	3 Arkansas......392	4 California......370	5 Colorado......137	6 Connecticut......271	7 Delaware......39	8 Dist. of Columbia......116	9 Florida......143	10 Georgia......702	11 Idaho......21	12 Illinois......1959	13 Indiana......571	14 Iowa......626	15 Kansas......412	16 Kentucky......429	17 Louisiana......376	18 Maine......153	19 Maryland......306	20 Massachusetts......869	Number
93	University of Buffalo, Medical Dept., Buffalo...						1							1								93
94	Leonard Medical School, Raleigh	9							2	6	4							1		2	1	94
95	University of North Carolina, Med. Dept. ...																				1	95
96	North Carolina Medical College, Charlotte. ..																					96
97	Wake Forest School of Medicine, Wake Forest...																					97
98	University of North Dakota, Med. Dept.........																					98
99	Cleveland College of Phys. and Surg., Cleveland					1								1								99
100	Cleveland Homeo. Med. College, Cleveland. H.†												1	1								100
101	Western Reserve Univ., Med. Dept., Cleveland....												1	4	2							101
102	Eclectic Medical College, Cincinnati. E.			1							2		6	7		2	10					102
103	Ohio-Miami Med. Coll. of the Univ. of Cincinnati													10		1	21					103
104	Pulte Medical College, Cincinnati. H............																					104
105	Starling-Ohio Medical College, Columbus.........					1							2	2	2		1				1	105
106	Toledo Medical College, Toledo..................																					106
107	Epworth College of Medicine, Oklahoma City. ..															2						107
108	University of Oklahoma, School of Med., Norman																					108
109	University of Oregon, Med. Dept., Portland....				1							2	1		2							109
110	Willamette University, Med. Dept., Salem.......				2																	110
111	Hahnemann Med. Coll. and Hosp., Phila. H				1		2	1					1		4		2		2	2		111
112	Jefferson Medical College, Philadelphia	5	1	4	5		[illegible]	5		1	4		4	8	7	5	6		2	1	7	112
113	Medico-Chirurgical College of Philadelphia....				1		3	2				1	1			1		1		3	1	113
114	Temple University, Med. Dept., Philadelphia.....						1	1					1			1				1	2	114
115	University of Pennsylvania, Dept. of Med.........	2	1	3	2	5	2	6		2	2		3	4	4	2	1	2	3	2	9	115
116	Woman's Med. Coll. of Pennsylvania, Phila..			1	3	2	2	1	1		1			1		2		2		3	6	116
117	University of Pittsburg, Med. Dept., Pittsburg.				1										1						1	117
118	Medical College of South Carolina, Charleston..									10	3										1	118
119	Univ. of South Dakota, Coll. of Med., Vermilion															1						119
120	Knoxville Medical College, Knoxville............	1								1	1					1	1				1	120
121	Lincoln Memorial Univ., Med. Dept., Knoxville.					1											8					121
122	Meharry Medical College, Nashville.............	23		12						3	32		2	2		5	7	7				122
123	Univ. of Nashville and Tennessee, Dept. of Med.	18		11						4	2		3				10	15				123
124	Vanderbilt University, Med. Dept., Nashville. ...	29		7	5					5	3		2	1			30	15				124
125	College of Phys. and Surg., Memphis			14		1									1			2				125
126	Memphis Hospital Medical College, Memphis......	9		45		1				3	1		3				3	77				126
127	Univ. of West Tennessee, Med. Dept., Memphis..			4						1	1						1	3		1		127
128	Chattanooga Medical College, Chattanooga......	30			2					7	8		1	1							1	128
129	Fort Worth University, Med. Dept., Fort Worth.†	1																				129
130	University of Texas, Dept. of Med., Galveston...																	1				130
131	Baylor University, College of Medicine, Dallas..															1						131
132	Southwestern University Medical College, Dallas..																					132
133	Univ. of Utah, Dept. of Med., Salt Lake City											4										133
134	Univ. of Vermont, Coll. of Med., Burlington.....						11									1			13		27	134
135	Medical College of Virginia, Richmond.				1					1						1				2	1	135
136	University College of Medicine, Richmond........	1									2						1					136
137	Univ. of Virginia, Dept. of Med., Charlottesville	7		2				1	2	1	3						1				2	137
138	West Virginia Univ., Coll. of Med., Morgantown																		1			138
139	Marquette University, Med. Dept., Milwaukee					1							3		3		1					139
140	Wisconsin Coll. of Phys. and Surg., Milwaukee..												1									140
141	University of Wisconsin, Coll. of Med., Madison..												5		1							141
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

---

* Figures for 1908-9. † Total exact; distribution based on that of 1908-9. H., Homeopathic; E., Eclectic; Ph M., Physiomedical; P., Panpathic.

(Continued from page 685)

less than 2 points; solid geometry and trigonometry (½ year each), 2 points; biology (one year) or botany and zoology (½ year each), 2 points; chemistry (1 year), 2 points; physical geography and geology (½ year each), 1 point; physiology and hygiene (½ year each), 1 point; astronomy (½ year), 1 point; drawing (½ year) 1 point. One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks. (*d*) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examination, may be accepted in lieu of any part of this examination. (*e*) This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located as provided for in subsection (*d*). In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Advanced Standing. Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college.

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

CURRICULUM

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	.	360	540
Surgery	180	.	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro Therapeutics	20	..	40	60
Genito Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

(Continued on page 689)

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	
Number.	Michigan....448	Minnesota....338	Mississippi....561	Missouri....807	Montana....37	Nebraska....301	Nevada....6	New Hampshire....97	New Jersey....469	New Mexico....11	New York....2120	North Carolina....493	North Dakota....97	Ohio....902	Oklahoma....192	Oregon....130	Pennsylvania....1990	Rhode Island....101	South Carolina....413	South Dakota....85	Tennessee....569	Texas....719	Utah....43	Vermont....102	Virginia....465	Washington....89	West Virginia....266	Wisconsin....319	Wyoming....11	Philippine Is., Etc....54	Foreign....583	Totals....21,531	Number.
93	1										176			1			7					1									3	193	93
94			2	1					2		1	48					1		14			6			24						9	133	94
95												67					1		3		1										1	74	95
96											1	98							6								1				1	107	96
97												35							2													37	97
98		2			1								33																			36	98
99	1													89			3														3	98	99
100	2													31			16															51	100
101	1	1	1			1				1				69			8		1	1							1	1			1	94	101
102				1					2		1			33	1		10									1	11					91	102
103	1										1			171			1									1	2				2	184	103
104														16																		16	104
105														197			8							2			3				1	220	105
106														44			1															45	106
107															41							5										51	107
108				1											18							2										21	108
109					1						1					53										18					1	81	109
110																31										2						37	110
111				1					21		6			1			107										1	2		1	4	159	111
112	3	6	4	4		2		1	34		6	22	4	14		4	293	5	4	1	1	5	9	1	4	5	6				15	551	112
113									33	2	8						350	1			1		5			1				5	29	457	113
114									13					1			164		1												11	197	114
115		3	1	2				1	32		19	17		14		2	328	3	2		3	10	3	1	9	2	2	2		1	19	[illegible]	115
116	1	1		1					6		11			1			42	1	1		1	1			2	1	1			1	17	114	116
117											2			4			298										2					309	117
118												1							212						2							219	118
119																				6												7	119
120		1	3											1	1				1		4	1	1		1	1					1	22	120
121												4		1					1		80				3							98	121
122			33	11								8		1	4		2		16		50	48					3				12	281	122
123			14	1					2		3	10			7				4		83	11			1		1				3	203	123
124	1		17	11								3		2	5				5		108	20									2	271	124
125			39											1	2						42	3										105	125
126			114	3											15				1		75	42					1			2		425	126
127			4						1			2					1				11	2			2					1		[illegible]	127
128	2		4								1	7			5		1				29	3			6		4					112	128
129										2					7						1	70										81	129
130																						205										206	130
131			2												1						2	60									1	67	131
132															2							50										61	132
133				1																			25									40	133
134	1							18	3		19			1			6	2						68							5	178	134
135		1							1		1	19							7		2	3			140		10				1	191	135
136		1							3		1	38							1						81		6			2		137	136
137			3								1	6				1	2		3			1			47		3				1	87	137
138											3			1			2										20					27	138
139	9	38											6	1						1								220				293	139
140		1																		2								47				51	140
141											1		1							1								39				48	141
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

(Concluded from page 688)

Medical Education.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty two teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course. No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the table (page 688), and no college shall be recognized that falls below this standard over 20 per cent in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent., or its equivalent, in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

The following colleges are members of the Association: College of Physicians and Surgeons, Los Angeles, Cal.; Leland Stanford Junior University College of Medicine, Palo Alto and San Francisco, Cal.; University of California, Medical Department, Berkeley, Los Angeles, and San Francisco, Cal.; University of Colorado, School of Medicine, Boulder, Colo.; Denver and Gross College of Medicine, Denver, Colo.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Physicians and Surgeons, Chicago, Ill.; Indiana University School of Medicine, Bloomington and Indianapolis, Ind.; Drake University College of Medicine, Des Moines, Iowa; State University of Iowa, College of Medicine, Iowa City, Iowa; Kansas Medical College, Topeka, Kan.; University of Kansas, School of Medicine, Lawrence, Kan.; University of Louisville, Medical Department, Louisville, Ky.; Tulane University Medical Department, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Harvard Medical School, Boston, Mass.; Tufts College Medical School, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.; University of Mississippi Medical Department, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; St. Louis University Medical Department, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; Washington University Medical Department, Omaha, Neb.; University of Buffalo, Medical Department, Buffalo, N. Y.; University and Bellevue Hospital Medical College, New York, N. Y.; Cornell University Medical College, New York, N. Y.; University of North Carolina Medical Department, Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; University of North Dakota Medical Department, University, N. D.; Cleveland College of Physicians and Surgeons, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Starling-Ohio Medical College, Columbus, Ohio; State University of Oklahoma School of Medicine, Norman, Okla.; Meharry Medical College, Nashville, Tenn.; Vanderbilt University, Medical Department, Nashville, Tenn.; Medical College of Virginia, Richmond, Va.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; University of Wisconsin College of Medicine, Madison, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 3431 Lexington Street, Chicago.

TABLE 3.—WHERE STUDENTS STUDY MEDICINE

A. STUDENTS FROM THE EASTERN STATES

Eastern States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Connecticut	1908	264	96.7	6	2.2	0	0.	3	1.1	273
	1909	255	97.0	5	1.9	1	0.4	2	0.7	263
	1910	258	95.2	8	2.9	1	0.4	4	1.5	271
Delaware	1908	52	98.1	1	1.9	0	0.	0	0.	53
	1909	53	98.1	0	0.	1	1.9	0	0.	54
	1910	38	97.4	0	0.	0	0.	1	2.6	39
Dist. of Columbia	1908	117	96.0	2	1.6	1	0.8	2	1.6	122
	1909	109	92.4	4	3.4	0	0.	5	4.2	118
	1910	109	94.0	5	4.3	0	0.	2	1.7	116
Maine	1908	172	94.5	6	3.3	2	1.1	2	1.1	182
	1909	165	94.8	5	2.9	3	1.7	1	0.6	174
	1910	149	97.4	4	2.6	0	0.	0	0.	153
Maryland	1908	236	95.5	6	2.4	1	0.5	4	1.6	247
	1909	302	97.1	4	1.3	0	0.	5	1.6	311
	1910	298	97.4	4	1.3	0	0.	4	1.3	306
Massachusetts	1908	835	97.4	15	1.7	4	0.5	3	0.4	857
	1909	789	97.0	12	1.5	7	0.9	5	0.6	813
	1910	778	96.2	20	2.5	4	0.4	7	0.9	809
New Hampshire	1908	113	95.0	4	3.4	1	0.8	1	0.8	119
	1909	102	99.0	1	1.0	0	0.	0	0.	103
	1910	95	97.9	0	0.	2	2.1	0	0.	97
New Jersey	1908	426	94.2	18	4.0	2	0.5	6	1.3	452
	1909	438	97.1	10	2.2	1	0.3	2	0.4	451
	1910	445	94.9	16	3.4	1	0.2	7	1.5	469
New York	1908	1978	93.5	105	5.0	8	0.4	25	1.1	2116
	1909	1959	92.3	133	6.3	12	0.5	19	0.9	2123
	1910	1972	93.0	126	5.9	10	0.5	12	0.6	2120
Pennsylvania	1908	1920	91.3	155	7.4	4	0.2	25	1.1	2104
	1909	2005	92.9	130	6.0	11	0.5	13	0.6	2159
	1910	1828	91.9	145	7.3	7	0.3	10	0.5	1990
Rhode Island	1908	92	92.9	5	5.1	0	0.	2	2.0	99
	1909	94	94.9	3	3.1	2	2.0	0	0.	99
	1910	95	94.0	5	5.0	0	0.	1	1.0	101
Vermont	1908	93	87.8	10	9.4	3	2.8	0	0.	106
	1909	95	89.6	7	6.6	4	3.8	0	0.	106
	1910	93	91.1	7	6.9	2	2.0	0	0.	102
Virginia	1908	448	86.0	14	2.7	0	0.	59	11.3	521
	1909	410	85.1	17	3.5	3	0.6	52	10.8	482
	1910	400	86.0	21	4.5	3	0.7	41	8.8	465
West Virginia	1908	190	65.1	89	30.5	0	0.	13	4.4	292
	1909	168	62.0	89	32.8	0	0.	14	5.2	271
	1910	149	56.0	105	39.5	2	0.7	10	3.8	266
Totals	1908	6936	92.0	436	5.8	26	0.3	145	1.9	7543
	1909	6944	92.3	420	5.6	45	0.5	118	1.6	7527
	1910	6707	91.8	466	6.4	32	0.5	99	1.3	7304

B. STUDENTS FROM THE MIDDLE STATES

Middle States.	Year.	East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Illinois	1908	55	3.1	1651	94.4	14	0.8	29	1.7	1749
	1909	54	2.8	1852	95.4	14	0.8	20	1.0	1940
	1910	315	16.0	1613	82.3	14	0.8	17	0.9	1959
Indiana	1908	23	3.2	680	94.6	9	1.2	7	1.0	719
	1909	29	4.8	565	92.6	9	1.5	7	1.1	610
	1910	28	4.9	530	92.8	5	0.9	8	1.4	571
Iowa	1908	26	3.6	676	94.4	8	1.1	6	0.9	716
	1909	35	4.8	658	91.1	27	3.7	2	0.4	722
	1910	30	4.7	582	91.5	22	3.5	2	0.3	636
Kansas	1908	26	5.6	418	89.9	3	0.6	18	3.9	465
	1909	20	5.2	349	90.2	9	2.3	9	2.3	387
	1910	26	6.3	362	87.9	12	2.9	12	2.9	412
Kentucky	1908	33	5.2	541	85.2	0	0.	61	9.6	635
	1909	28	5.6	401	80.7	6	1.2	62	12.5	497
	1910	29	6.8	331	77.3	2	0.5	66	15.4	428
Michigan	1908	24	4.9	457	92.7	4	0.8	8	1.6	493
	1909	11	2.2	470	95.7	6	1.4	4	0.7	491
	1910	11	2.5	420	95.6	6	1.3	3	0.6	440
Minnesota	1908	21	5.7	340	94.3	0	0.	0	0	361
	1909	25	7.2	313	90.2	7	2.0	2	0.6	347
	1910	16	4.7	313	92.6	6	1.8	3	0.9	338
Missouri	1908	26	2.8	851	92.6	9	1.0	33	3.6	919
	1909	27	3.4	743	91.4	12	1.3	31	3.9	813
	1910	28	[illegible]	734	91.0	12	1.4	33	4.1	807
Nebraska	1908	12	3.6	317	95.5	2	0.6	1	0.3	332
	1909	8	2.3	329	95.1	9	2.6	0	0.	346
	1910	8	2.7	285	94.6	8	2.7	0	0.	301
North Dakota	1908	6	7.9	70	92.1	0	0.	0	0	76
	1909	8	10.4	68	88.3	1	1.3	0	0.	77
	1910	7	7.2	89	91.8	1	1.0	0	0.	97
Ohio	1908	140	15.3	756	82.9	5	0.6	11	1.2	912
	1909	116	12.5	792	85.3	13	1.4	8	0.8	929
	1910	99	11.0	780	86.5	14	1.6	9	0.9	902
South Dakota	1908	3	4.2	66	93.0	0	0.	2	2.8	71
	1909	1	1.1	86	98.9	0	0	0	0.	87
	1910	4	4.7	80	94.1	1	1.2	0	0	85
Wisconsin	1908	[illegible]	4.6	450	[illegible]	2	0.4	4	0.8	478
	1909	18	4.2	407	94.7	5	1.1	0	0	430
	1910	16	3.1	498	96.0	5	0.9	0	0.	519
Totals	1908	437	[illegible]	[illegible]	[illegible]	56	[illegible]	180	2.3	[illegible]
	1909	500	[illegible]	[illegible]	[illegible]	118	1.5	145	1.9	[illegible]
	1910	[illegible]	[illegible]	[illegible]	[illegible]	108	1.5	154	2.0	[illegible]

C. STUDENTS FROM THE WESTERN STATES

Western States.	Year.	Attending Medical Schools in the East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Arizona	1908	1	6.7	4	26.7	2	13.3	8	53.3	15
	1909	1	8.3	3	25.0	2	16.7	6	50.0	12
	1910	2	40.0	1	20.0	0	0.	2	40.0	5
California	1908	55	13.5	39	9.6	306	75.0	8	1.9	408
	1909	52	18.4	33	11.7	192	68.1	5	1.8	282
	1910	48	13.4	26	7.2	277	77.2	8	2.2	359
Colorado	1908	9	5.8	28	17.9	117	75.0	2	1.3	156
	1909	10	6.7	21	14.0	116	77.3	3	2.0	150
	1910	13	8.3	29	18.5	112	71.3	3	1.9	157
Idaho	1908	2	8.3	17	70.9	5	20.8	0	0.	24
	1909	1	3.8	16	61.6	8	30.8	1	3.8	26
	1910	1	4.8	11	52.2	9	42.8	0	0.	21
Montana	1908	8	18.6	32	74.4	1	2.3	2	4.7	43
	1909	6	19.4	21	67.7	4	12.9	0	0.	31
	1910	8	21.6	25	67.6	4	10.8	0	0.	37
Nevada	1908	1	12.5	3	37.5	3	37.5	1	12.5	8
	1909	1	12.5	3	37.5	4	50.0	0	0.	8
	1910	0	0.	5	83.3	1	16.7	0	0.	6
New Mexico	1908	2	18.2	3	27.3	2	18.2	4	36.3	11
	1909	3	37.5	4	50.0	1	12.5	0	0.	8
	1910	3	27.3	5	45.5	1	9.1	2	18.1	11
Oregon	1908	22	16.8	15	11.5	92	70.2	2	1.5	131
	1909	19	16.4	19	16.4	77	66.3	1	0.9	116
	1910	15	11.5	25	19.2	90	69.3	0	0.	130
Utah	1908	35	35.4	34	34.3	29	29.3	1	1.0	99
	1909	22	29.3	32	42.7	20	26.7	1	1.3	75
	1910	25	28.4	35	39.8	26	29.6	2	2.2	88
Washington	1908	26	25.2	47	45.7	26	25.2	4	3.9	103
	1909	29	32.6	36	40.4	21	23.6	3	3.4	89
	1910	26	29.3	40	44.9	21	23.6	2	2.2	89
Wyoming	1908	1	16.7	4	66.7	1	16.7	0	0.	6
	1909	3	21.4	5	35.7	5	35.7	1	7.2	14
	1910	3	27.3	5	45.4	3	27.3	0	0.	11
Totals	1908	162	16.1	226	22.5	584	58.2	32	3.2	1004
	1909	147	18.1	193	23.8	450	55.5	21	2.6	811
	1910	144	15.8	207	22.6	544	59.5	19	2.1	914

D. STUDENTS FROM THE SOUTHERN STATES

Southern States.	Year.	East. Students.	East. Percentage.	Middle States. Students.	Middle States. Percentage.	West. Students.	West. Percentage.	South. Students.	South. Percentage.	Totals.
Alabama	1908	36	5.3	24	3.5	0	0.	623	91.2	683
	1909	34	5.0	24	3.4	0	0.	629	91.6	687
	1910	33	5.2	27	4.3	1	0.2	572	90.3	633
Arkansas	1908	20	4.8	60	14.3	0	0.	339	80.9	419
	1909	20	5.2	47	12.2	0	0.	317	82.6	384
	1910	18	4.5	56	14.3	1	0.5	317	80.7	392
Florida	1908	19	14.4	9	6.8	0	0.	104	78.8	132
	1909	27	17.2	9	5.7	0	0.	121	77.1	157
	1910	22	15.4	12	8.4	1	0.7	108	75.5	143
Georgia	1908	51	7.8	17	2.6	1	0.1	586	89.5	655
	1909	50	7.6	15	2.2	1	0.2	593	90.0	659
	1910	45	0.4	13	1.9	0	0.	644	91.7	702
Louisiana	1908	19	3.9	30	6.2	0	0.	438	89.9	487
	1909	20	4.4	31	6.8	1	0.2	404	88.6	456
	1910	14	3.7	23	6.1	3	0.8	336	89.4	376
Mississippi	1908	16	2.7	39	6.5	1	0.4	547	90.4	603
	1909	18	3.0	40	6.7	1	0.2	534	90.1	593
	1910	17	3.0	37	6.6	0	0.	506	90.4	560
No. Carolina	1908	158	31.5	13	2.5	2	0.4	329	65.6	502
	1909	170	33.1	11	2.1	1	0.2	332	64.6	514
	1910	174	35.3	11	2.2	0	0.	308	62.5	493
Oklahoma	1908	8	5.3	41	27.0	1	0.7	102	67.0	152
	1909	8	4.3	55	29.6	0	0.	123	66.1	186
	1910	6	3.1	52	26.5	0	0.	134	68.4	192
So. Carolina	1908	73	21.3	9	2.6	0	0.	261	76.1	343
	1909	66	16.8	12	3.0	1	0.3	314	79.9	393
	1910	75	18.2	8	1.9	0	0.	330	79.9	413
Tennessee	1908	19	3.1	45	7.3	1	0.1	552	89.5	617
	1909	21	3.9	38	7.1	0	0.	478	89.0	537
	1910	26	4.5	43	7.6	0	0	500	87.9	569
Texas	1908	41	4.7	113	12.9	3	0.4	717	82.0	874
	1909	39	5.2	76	10.1	7	0.9	629	83.8	751
	1910	45	6.3	70	9.7	6	0.8	598	83.2	719
Totals	1908	460	8.4	400	7.3	9	0.1	4598	84.2	5467
	1909	473	8.9	368	6.7	12	0.3	4474	84.1	5317
	1910	475		357		12		4353		5197
Average 1908, 1909, and 1910	A	6862	92.1	441	5.9	34	0.4	121	1.6	7458
	B	472	6.1	6974	90.6	94	1.2	150	2.1	7690
	C	151	16.6	209	23.0	526	57.8	24	1.6	910
	D	469	8.8	370	6.9	11	0.3	4475	84.0	5325
Migrating Students		1092	42.7	1020	30.9	139	5.5	304	11.9	2555

CHANGES IN COLLEGES IN TEN YEARS

COLLEGES MERGED

1901

Marion-Sims College of Medicine and the Beaumont Medical College, St. Louis, Mo., united, forming the Marion-Sims-Beaumont Medical College (now the St. Louis University School of Medicine).

Columbian Medical College, Kansas City, Mo., merged into the Medico-Chirurgical College of Kansas City, Missouri.

1902

Denver College of Medicine and the Gross Medical College, both of Denver, Colo., united, forming the Denver and Gross College of Medicine.

Dunham Medical College, Chicago, merged into the Hering Medical College, Chicago.

Hahnemann Medical College of Kansas City University and the Kansas City (Mo.) Homeopathic Medical College united, forming the Kansas City Hahnemann Medical College.

1903

National University Medical Department, Washington, D. C., absorbed by the Columbian University Medical Department (now the George Washington University, Department of Medicine).

Medical Department State University, Louisville, Ky., absorbed by the Louisville National Medical College.

Saginaw Valley (Michigan) Medical College absorbed by the Michigan College of Medicine and Surgery of Detroit.

1904

Chicago Homeopathic Medical College merged into the Hahnemann Medical College and Hospital, Chicago.

Dallas (Texas) Medical College, merged into the Baylor University College of Medicine, Dallas, Texas.

1905

Medical College of Indiana and the Central College of Physicians and Surgeons, both of Indianapolis, merged with the Fort Wayne College of Medicine, forming the Indiana Medical College, School of Medicine of Purdue University, Indianapolis.

The College of Physicians and Surgeons of Kansas City, Kansas, the Medico-Chirurgical College of Kansas City, Mo., and the Kansas city (Missouri) Medical College united to form the Clinical Department of the University of Kansas School of Medicine.

The Central Medical College and the Ensworth Medical College, both of St. Joseph, Mo., united to form the Ensworth-Central Medical College, which has since resumed the name of Ensworth Medical College.

1907

The State College of Physicians and Surgeons, Indianapolis, was taken over by the Indiana University School of Medicine as its clinical department.

The Louisville Medical College and the Hospital College of Medicine, both of Louisville, Ky., united to form the Louisville and Hospital Medical College.

The Kentucky University Medical Department was merged into the University of Louisville Medical Department.

The Starling Medical College and the Ohio Medical University of Columbus, Ohio, merged, forming the Starling-Ohio Medical College.

1908

Indiana Medical College, School of Medicine of Purdue University, Indianapolis, was merged into the Indiana University School of Medicine.

Keokuk (Iowa) Medical College, College of Physicians and Surgeons, merged into Drake University College of Medicine, Des Moines, Iowa.

Kentucky School of Medicine and the Louisville and Hospital Medical College were both merged into the University of Louisville Medical Department.

Minneapolis College of Physicians and Surgeons, the Medical Department of Hamline University, was merged into the University of Minnesota, College of Medicine and Surgery.

1909

The University of Southern California College of Medicine was taken over by the University of California as its Los Angeles Medical Department.

The Medical College of Ohio and the Miami Medical College merged, forming the Ohio-Miami Medical College of the University of Cincinnati.

The University of Nashville Medical Department and the University of Tennessee Medical Department united to form the Medical Department of the Universities of Nashville and Tennessee.

1910

Denver and Gross College of Medicine has united with the University of Colorado, School of Medicine.

Illinois Medical College has been merged into the Bennett Medical College, which is now the Medical Department of Loyola University.

The Cleveland College of Physicians and Surgeons has been merged into the Western Reserve University Medical Department.

Pulte Medical College of Cincinnati, Ohio, has been moved to Cleveland and united with the Cleveland Homeopathic Medical College, forming the Cleveland-Pulte Medical College.

COLLEGES SUSPENDED

1900

National Normal University, College of Medicine (Ohio)

1901

Northwestern University Woman's Medical School (Illinois).
Beaumont Hospital Medical College (Missouri).*
Marion-Sims College of Medicine (Missouri) *
Columbian Medical College, Kansas City (Missouri).*
Cincinnati College of Medicine and Surgery.

1902

Denver College of Medicine (Colorado).*
Gross Medical College (Colorado).*
Dunham Medical College, Chicago *
Hahnemann Medical College of Kansas City University (Missouri).*
Kansas City Homeopathic Medical College (Missouri) *

1903

Saginaw Valley Medical College (Michigan) *
Woman's Medical College, Kansas City (Missouri)
Laura Memorial Woman's Medical College, Cincinnati, (Ohio)
National University, Medical Department (D. C.)*
Medical Department of State University (Kentucky) *

1904

Chicago Homeopathic Medical College *
Twentieth Century Physio-Medical College (Oklahoma).[1]
Chattanooga National Medical College (Tennessee).
Dallas Medical College (Texas) *

1905

Harvey Medical College, Chicago (Illinois).
Medical College of Indiana.*
Central College of Physicians and Surgeons (Indiana) *
Fort Wayne College of Medicine (Indiana).*
College of Physicians and Surgeons, Kansas City (Kansas).*
Medico-Chirurgical College, Kansas City (Missouri) *
Kansas City Medical College (Missouri) *
Central Medical College, St. Joseph (Missouri) *
Ensworth Medical College, St. Joseph (Missouri).*

1907

Dearborn Medical College, Chicago (Illinois).
State College of Physicians and Surgeons (Indiana).*
Louisville Medical College *
Hospital College of Medicine, Louisville.*
Kentucky University, Medical Department.*
Baltimore University School of Medicine.
Michigan College of Medicine and Surgery.
Grand Rapids Medical College (Michigan).
Starling Medical College (Ohio).*
Ohio Medical University *

1908

Eclectic Medical College of Indiana.
Indiana Medical College *
Keokuk Medical College, College of Physicians and Surgeons (Iowa).*
Kentucky School of Medicine.*
Louisville and Hospital Medical College.*
Minneapolis College of Physicians and Surgeons *
Oklahoma Medical College.
Physio-Medical College of Texas.
Gate City Medical College.

1909

University of Southern California, College of Medicine *
Denver College of Physicians and Surgeons.
National Medical University, Chicago.[2]
Physio-Medical College of Indiana.
Sioux City College of Medicine.
University of Minnesota, College of Homeopathic Med. and Surg.
Homeopathic Medical College of Missouri.
Nebraska College of Medicine.
Medical College of Ohio *
Miami Medical College.*
University of Nashville, Medical Department *
University of Tennessee, Medical Department.*
University of the South.

1910

Illinois Medical College.*
Woman's Medical College of Baltimore.
Hippocratean College of Medicine (Missouri).
Cleveland College of Physicians and Surgeons.*
Pulte Medical College.*
Cleveland Homeopathic Medical College.*
Epworth College of Medicine.
Chattanooga Medical College.

---

* Closed by merger.

[1] Exposed as fraudulent

[2] Declared not in good standing by the Illinois State Board of Health.

NEW COLLEGES

1900

Eclectic Medical College of Indiana, Indianapolis, Ind *
Hahnemann Medical College of the Kansas City (Missouri) University ‡
Twentieth Century Physio-Medical College, Guthrie, Okla *
Knoxville Medical College, Knoxville, Tenn.
University of West Tennessee, Medical Department, Memphis
Dallas Medical College, Dallas, Tex ‡
University of Dallas, Medical Department, Dallas, Tex.
(Now the Baylor University, College of Medicine).

1901

Chicago Eclectic Medical College.
(Now the Chicago College of Medicine and Surgery).
Marion Sims-Beaumont College of Medicine, St. Louis.‡
(Now the St. Louis University, School of Medicine).
Temple University Department of Medicine, Philadelphia.

1902

Oakland College of Medicine and Surgery, Oakland, Cal.
Denver and Gross College of Medicine, Denver, Colo.‡
Kansas City Hahnemann Medical College, Kansas City, Mo.‡
Wake Forest College, School of Medicine, Wake Forest, N. C.
Gate City Medical College, Texarkana, Tex.*
Physio-Medical College of Texas, Dallas, Tex.*
West Virginia University, College of Medicine, Morgantown

1903

College of Physicians and Surgeons, Los Angeles, Cal.
Dearborn Medical College, Chicago.*
University of Mississippi, Medical Department, Oxford.
Bell Medical College (later the College of Physicians and Surgeons) Dallas, Tex.*
Southwestern University Medical College, Dallas, Tex.

1904

International Medical Missionary College, Atlanta, Ga.*
Epworth College of Medicine, Oklahoma City, Okla.*

1905

Atlanta School of Medicine, Atlanta, Ga.
Indiana Medical College, Indianapolis.†‡
(Another college by the same name was organized in 1869).
Indiana University School of Medicine, Bloomington.
Ensworth Central Medical College, St. Joseph, Mo.‡
(Has since resumed the name of Ensworth Medical College).
Nebraska College of Medicine, Lincoln, Neb.*
Fordham University School of Medicine, New York City.
University of North Dakota, College of Medicine.

1906

College of Physicians and Surgeons, Little Rock, Ark.
State College of Physicians and Surgeons, Indianapolis.†
Mississippi Medical College, Meridian, Miss.
College of Physicians and Surgeons, Memphis, Tenn.
University of Utah, Department of Medicine.

1907

Reliance Medical College, Chicago.
Louisville and Hospital Medical College, Louisville, Ky.†‡
Hippocratean College of Medicine, St. Louis.*
Starling-Ohio Medical College, Columbus, Ohio.‡
Oklahoma Medical College, Oklahoma City, Okla.*
University of South Dakota, College of Medicine.
University of Wisconsin, Medical School.
Philippine Medical School, Manila, P. I.

1908

Hospital Medical College, Atlanta, Ga.
College of Medical Evangelists, Loma, Linda, Cal.
Ohio-Miami Medical College of the University of Cincinnati.‡
Universities of Nashville and Tennessee, Medical Department.‡

1910

Cleveland-Pulte Medical College, Cleveland, Ohio.‡

---

* Has since become extinct.
† Closed later by merger.
‡ Organized by merger.

COLLEGE NOTES

Endowments and New Buildings

Connecticut.—Yale University received $500,000 through a bequest from the late Levi I. Shoemaker, of Wilkes-Barre, for the use of the Yale Medical School.

California.—Cooper Medical College, San Francisco, received $5,000 through the will of Mrs. Myrick.

Illinois.—A new building for Bennett Medical College, now the Medical Department of Loyola University, Chicago, has been erected at a cost of $60,000, this sum being contributed by physicians.

Iowa.—A sum of $150,000 was raised by popular subscription for Drake University College of Medicine, Des Moines, to make needed improvements and for current expenses.

Maryland.—The new Phipps Dispensary has been erected on the hospital grounds of Johns Hopkins University Medical School at a cost of approximately $500,000.

Minnesota.—Three new buildings have been erected for the College of Medicine of the University of Minnesota at a total cost of $565,000. One of these was the Elliott Hospital, named after Dr. A. F. Elliott, through whose bequest of $125,000 supplemented by $40,000 from an appropriation by the state legislature, the building was erected. The two other buildings were the new Institute of Anatomy and a new [illegible] building, each costing approximately $200,000.

Missouri.—St. Louis University, School of Medicine, was the recipient of $20,000 from Ambassador Richard C. Kerens, to be used as an endowment fund for free beds in the Rebekah Hospital.

Approximately $3,000,000 was received by Washington University Medical Department from William K. Bixby, Adolphus Busch, Edward Mallinkrodt and Dr. Robert S. Brookings for the construction of the new medical buildings on Kingshighway. Counting the value of the hospitals which were also transferred to Washington University, the entire gift came to about $6,000,000.

Nebraska.—Plans have been accepted for the new group of medical buildings to be erected at Omaha for the College of Medicine of the University of Nebraska.

The John A. Creighton Medical College has erected a new medical building on Fourteenth Street, at a cost of $60,000.

New York.—Columbia University, College of Physicians and Surgeons, received approximately $3,000,000 from William K. Vanderbilt, George J. Gould, Frank A. Munsey and others, to be used in the erection of new medical buildings adjoining the University Campus at Morningside Heights. Another gift of $15,000 was received from William D. Sloan to erect a new addition to Sloan Maternity Hospital and $18,000 was received from the children of Dr. Abraham DuBois, who was a graduate of the College of Physicians and Surgeons, for the establishment of a fellowship in memory of their father.

A new addition to the building of the University and Bellevue Hospital Medical College has been erected at a cost of $65,000. Also a gift of $100,000 was received from Mrs. Helen Hartley Jenkins to endow the chair of medicine.

Section by section the old Long Island College Hospital has been torn down and replaced by a new strictly modern structure. The last section is now approaching completion. The cost of the new structure was approximately $2,000,000.

A new building is being erected by Fordham University School of Medicine, which will cost about $1,000,000 when completed.

Donations amounting to $25,000 have been received by the New York Homeopathic Medical College, to be used for changes in the college building and for the improvement of the laboratories.

Cornell University received $50,000 from Andrew Carnegie to be used in the enlargement of the laboratory for chemical research.

Ohio.—Western Reserve University received $250,000 from Mr. H. M. Hanna, as an addition to the endowment of the medical department. The income will be used to place the clinical professorships on a modern university basis.

A fund of $45,000 was donated by the friends of the late Dr. Eichberg, to endow the Joseph Eichberg chair of physiology in the Ohio-Miami Medical College of the University of Cincinnati. The chair was established last December (1909).

A new college building has been erected by the Eclectic Medical Institute (now College), Cincinnati, at a cost of $50,000.

Pennsylvania.—Gifts amounting to $800,000 were received by the University of Pennsylvania for the endowment of the Henry Phipps Institute for the study and prevention of tuberculosis and for the endowment of the clinical chairs. A new addition to the University of Pennsylvania Hospital was opened May 12, which was built at a cost of $37,000.

A new college building is now being erected by the Medical Department of the University of Pittsburg. The approximate cost when completed will be $200,000.

Jefferson Medical College received $60,000 from Mrs. Maria Gross Horwitz, daughter of the late Dr. Samuel D. Gross, for the purpose of founding a chair of surgery, in memory of her father. Another gift from Daniel Baugh, a member of the board of trustees, is the property including the building formerly occupied by the Pennsylvania Dental School, which is valued at $50,000.

South Carolina.—The medical building of the Medical College of the State of South Carolina has been extensively remodeled.

Vermont.—The Vermont legislature gave $10,000 to the University of Vermont to enable it to assume full responsibility, financially and otherwise, for the Medical Department.

Virginia.—A sum of $10,000 has been donated toward the new building for the University College of Medicine, Richmond, to replace the one destroyed by fire last January.

Canada.—New medical buildings, at a cost of $750,000, have been erected by McGill University to replace the one destroyed by fire in 1907. Lord Strathcona, who donated the site on which the building was erected, also gave $500,000 toward the building itself.

Full Time Instructors.—The Atlanta College of Physicians and Surgeons has just added to its faculty three full-time, salaried instructors. Dr. Justin F. Grant, professor of anatomy and pathology in the medical Department of the University of West Virginia, has been secured for the chair of anatomy; Dr. George Bachman, associate professor of physiology in the Jefferson Medical College of Philadelphia, for the chair of physiology and Dr. John Funke, of Jefferson Medical College of Philadelphia, as adjunct professor of pathology, bacteriology and hygiene.

Special Preliminary Year.—A special preliminary year devoted to physics, chemistry, biology and modern languages has been established by several medical colleges, including Fordham University, School of Medicine; St. Louis University, School of Medicine and Ohio-Miami Medical College of the University of Cincinnati.

COLLEGES LISTED AS ACCEPTABLE (CLASS A)

By the Council on Medical Education of the American Medical Association

1. Giving a complete four-year course:

ALABAMA
University of Alabama Medical Department.

CALIFORNIA
Leland Standford Junior University Medical Department (Cooper Medical College).
University of California, Medical Department, San Francisco-Los Angeles.

COLORADO
Denver and Gross College of Medicine.
University of Colorado, School of Medicine.
(These two colleges have been merged and will constitute the School of Medicine of the University of Colorado.)

CONNECTICUT
Yale Medical School.

DISTRICT OF COLUMBIA
George Washington University, Department of Medicine.
Georgetown University, School of Medicine.

ILLINOIS.
Northwestern University Medical School.
Rush Medical College, University of Chicago
College of Physicians and Surgeons, Chicago.
Hahnemann Medical College and Hospital, Chicago.

INDIANA
Indiana University School of Medicine.

IOWA
State University of Iowa, College of Medicine.
State University of Iowa, Homeopathic College.
Drake University, College of Medicine.

KANSAS
University of Kansas, School of Medicine.

KENTUCKY
University of Louisville, Medical Department.

LOUISIANA
Tulane University of Louisiana, Medical Department.

MAINE.
Medical School of Maine.

MARYLAND
Johns Hopkins University, Medical Department.
University of Maryland, School of Medicine.
College of Physicians and Surgeons, Baltimore.
Baltimore Medical College.

MASSACHUSETTS
Boston University, School of Medicine.
Harvard Medical School.
Tufts College Medical School.

MICHIGAN
University of Michigan, Department of Medicine and Surgery
University of Michigan, Homeopathic College.
Detroit College of Medicine.

MINNESOTA
University of Minnesota, College of Medicine and Surgery.

MISSOURI
St. Louis University, School of Medicine.
Washington University Medical Department.
University Medical College, Kansas City.

NEBRASKA
Creighton Medical College.
University of Nebraska, College of Medicine.

NEW HAMPSHIRE
Dartmouth Medical School.

NEW YORK
Albany Medical College.
Columbia University, College of Physicians and Surgeons.
Cornell University Medical College.
Fordham University, School of Medicine.
Long Island College Hospital.
New York Homeopathic Medical College and Hospital.
Syracuse University, Medical Department.
University and Bellevue Hospital Medical College.
University of Buffalo, Medical Department.

OHIO
Ohio-Miami Medical College, Medical Department, University of Cincinnati.
Starling-Ohio Medical College.
Western Reserve University, Medical Department.

OREGON
University of Oregon, Medical Department.

PENNSYLVANIA
Hahnemann Medical College and Hospital, Philadelphia.
Jefferson Medical College
Medico-Chirurgical College of Philadelphia
University of Pennsylvania, Medical Department.
Woman's Medical College of Pennsylvania
University of Pittsburg, Medical Department.

TENNESSEE
Vanderbilt University, Medical Department.

TEXAS
University of Texas, Medical Department.

VERMONT
University of Vermont, College of Medicine.

VIRGINIA
Medical College of Virginia.
University College of Medicine
University of Virginia, Department of Medicine.

2. Giving a two-year course acceptably:

MISSISSIPPI
University of Mississippi, Medical Department.

MISSOURI
University of Missouri, Medical Department

NORTH CAROLINA
University of North Carolina College of Medicine.
Wake Forest College, Medical School.

NORTH DAKOTA
University of North Dakota, College of Medicine.

OKLAHOMA
University of Oklahoma, School of Medicine

SOUTH DAKOTA
University of South Dakota, College of Medicine

UTAH
University of Utah, Department of Medicine.

WEST VIRGINIA
West Virginia University, Department of Medicine.

WISCONSIN
University of Wisconsin, College of Medicine.

3. Medical Schools for the Colored Race:

Howard University, Medical Department, Washington, D. C.
Meharry Medical College, Nashville, Tenn

PROPORTION OF PHYSICIANS TO POPULATION

Figures for population from 1908 estimated by the Census Bureau; for the number of physicians from the second edition of the American Medical Directory.

State.	Population.	Physicians.	People to Each Physician
Alabama	2,112,465	2,287	924
Arizona	154,152	246	626
Arkansas	1,476,582	2,535	583
California	1,729,543	4,313	401
Colorado	653,506	1,690	386
Connecticut	1,054,366	1,424	740
Delaware	199,353	220	906
District of Columbia	322,212	1,231	262
Florida	679,742	786	865
Georgia	2,557,412	2,887	886
Idaho	227,670	343	664
Illinois	5,717,229	9,744	587
Indiana	2,808 115	5,036	557
Iowa	2,192,608	3,624	605
Kansas	1,703,002	2,650	642
Kentucky	2,406,859	3,708	649
Louisiana	1,618,358	1,798	900
Maine	724,508	1,198	605
Maryland	1,319,132	2,012	655
Massachusetts	3,162,347	5,577	567
Michigan	2,666,508	4,109	649
Minnesota	2,162,726	2,204	981
Mississippi	1,786,773	2,054	870
Missouri	3,491,397	6,323	552
Montana	333,695	417	800
Nebraska	1,069,579	1,776	602
Nevada	42,335	177	239
New Hampshire	443,140	680	652
New Jersey	2,352,522	2,544	925
New Mexico	229,937	367	626
New York	8,706,039	14,117	617
North Carolina	2,142,084	1,761	1,216
North Dakota	536,103	552	971
Ohio	4,594,240	7,838	585
Oklahoma	1,592,401	2,703	581
Oregon	505 339	782	646
Pennsylvania	7,241,716	11,056	655
Rhode Island	521,302	720	724
South Carolina	1,510,566	1,141	1,324
South Dakota	498,077	607	820
Tennessee	2,248,404	3,303	681
Texas	3,780,574	5,789	653
Utah	336,122	359	908
Vermont	353,739	663	533
Virginia	2,032,567	2,215	917
Washington	662,886	1,404	616
West Virginia	1,135,206	1,608	706
Wisconsin	2,356,871	2,518	936
Wyoming	109,244	202	541
U. S. Army, Navy and M. H Service		915	...
Total	88,043,455	134,402	655

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

For other information see second page following reading matter

SATURDAY, AUGUST 20, 1910

MEDICAL EDUCATION IN THE UNITED STATES

The tabulated statistics herewith presented (pages 682 to 690) are for the year ending June 30, 1910, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation of the officials of the medical colleges which have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

On pages 682 to 684 is Table 1, which gives all the colleges in session during 1909-10, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1910 graduates, men and women, the number of graduates holding collegiate degrees, the number of teachers for each college, the number of weeks of actual work in the college year, the total fees for each year, the executive officer of the college and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 657 are given essential facts concerning all medical colleges, arranged by states.

NUMBER OF MEDICAL STUDENTS

The total number of medical students (matriculants) in the United States for the year ending June 30, 1910, excluding special students, was 21,526, a decrease of 619 below 1909, a decrease of 1,076 below 1908, and a decrease of 6,616 below 1904, when the highest number of students was enrolled. It is the lowest number since THE JOURNAL began compiling these statistics in 1900. Of the total number of students, 20,136 were in attendance at the regular colleges, 867 at the homeopathic, 455 at the eclectic, 49 at the physiomedical and 19 at the nondescript colleges. The attendance at the regular colleges shows a decrease of 418 below that of last year, of 800 below 1908 and 2,167 below 1907. In the homeopathic colleges there was a decrease of 32 below the attendance of 1909. The eclectic colleges show an increase of 42 over 1909, but a decrease of 24 below 1908 and of 90 below 1907. The physiomedical colleges had 49 this year, as compared with 52 in 1909 and 90 in 1908.

TABLE 4.—MEDICAL COLLEGE ATTENDANCE

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.	9,776	1,220	830	...	...	11,826
1890.	13,521	1,164	719	...	...	15,404
1900.	22,710	1,909	552	...	...	25,171
1901.	23,846	1,683	664	83	141	26,417
1902.	24,878	1,617	765	91	150	27,501
1903.	24,930	1,498	848	149	190	27,615
1904.	23,662	1,309	1,014	123	234	28,142
1905.	24,119	1,104	578	114	232	26,147
1906.	23,116	1,085	644	110	249	25,204
1907.	22,303	1,039	545	97	292	24,276
1908.	20,936	891	479	90	206	22,602
1909.	20,554	899	413	52	227	22,145
1910.	20,136	867	455	49	19	21,526

GRADUATES

The total number of graduates for the year ending June 30, 1910, was 4,436, a decrease of 6 below 1909, a decrease of 305 below 1908 and of 544 below 1907. It is the lowest number graduating since THE JOURNAL began compiling these statistics, and is 1,311 less than in 1904, when there were 5,747 graduates. The percentage of graduates to matriculants was 20.7, as compared with 20.1 in 1909 and 21.0 in 1908. The number of graduates from the regular colleges was 4,113, or 23 more than in 1909, but 257 less than in 1908. From the homeopathic colleges there were 179 graduates, or 30 less than in 1909 and 36 less than in 1908. The eclectic colleges graduated 114, or 30 more than last year but 2 less than in 1908. The physiomedical colleges had 16 graduates this year, as compared with 15 last year and 12 in 1908.

TABLE 5.—MEDICAL COLLEGE GRADUATES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880.	2,673	380	188	.	.	3,241
1890.	3,853	380	241	..	.	4,474
1900.	4,715	413	86	.	.	5,214
1901	4,879	387	148	18	12	5,444
1902	4,498	336	138	16	11	4,999
1903.	5,088	420	149	24	17	5,698
1904.	5,190	371	146	20	20	5,747
1905	5,126	276	153	22	23	5,600
1906	4,841	286	155	22	19	5,364
1907	4,591	225	121	11	32	4,980
1908.	4,370	215	116	12	28	4,741
1909.	4,090	209	84	15	44	4,442
1910..	4,113	179	114	16	14	4,436

Of the 4,436 medical graduates, 680, or 15.3 per cent., were reported to hold also degrees in arts or science, as compared with 15.6 per cent. in 1909 and 17.3 per cent. in 1908. Although, in recent reports on medical education, Illinois is referred to in rather uncomplimentary terms on account of its having a number of inferior medical schools, this clearly does not apply to all the Illinois colleges, since of the 680 medical graduates holding collegiate degrees, 133, or about 20 per cent., came from Illinois colleges. It is expected that in the future the percentage of college graduates entering medicine will increase rather than decrease, since more medical schools are requiring some college work for admission.

WOMEN IN MEDICINE

During the past year there were 907 women studying medicine, a decrease of 11 below 1909, but an increase of 72 over 1908. The percentage of all medical students was 4.2, the same as last year. There were 157 women graduates this year, or 3.5 per cent., of all graduates. In 1909 there were 921 women students and 162 graduates, while in 1908 there were 835 women students and 185 graduates. Of all the women matriculants, 155 (17.1 per cent.) were in attendance at the 3 medical colleges for women, as compared with 169 (18.4 per cent.) in 1909 and 186 (22.3 per cent.) in 1908. From the 3 women's colleges, there were 41, or 26.1 per cent., of all women graduates, as compared with 33 (20.3 per cent.) in 1909 and 46 (24.9 per cent.) in 1908. The remaining 752 (82.9 per cent.) were matriculated in coeducational colleges.

TABLE 6.—WOMEN IN MEDICINE

Year.	Total women students.	Percentage of all students, both sexes.	Total women graduates.	Percentage of Grads., both sexes.	Women's colleges.	Students.	Percentage of all women students	Graduates.	Percentage of all women graduates.	Co-ed. schools.	Students.	Percentage of women students.	Graduates.	Percentage of all women graduates.
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	188	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1
1909	921	4.2	162	3.7	3	169	18.4	33	20.3	91	752	81.6	129	79.7
1910	907	4.2	157	3.5	3	155	17.1	41	26.1	82	752	82.9	116	73.9

NUMBER OF COLLEGES

Since June 30, 1909, 12 colleges (mentioned on page 691) have either suspended or have merged into others and 1 new college was established, making a net decrease of 11 colleges since last year, the total now being 133. The regular colleges number 111, a decrease of 6 since last year. The homeopathic colleges number 13, a decrease of 1. Of the eclectic colleges, 1 was reorganized recently as a regular college, leaving 7. There is now only 1 physiomedical college and 1 school which is unclassifiable since it offers to teach two or more systems of medicine.

TABLE 7.—MEDICAL COLLEGES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	72	12	6	..	..	90
1890	93	14	9	..	..	116
1900	121	22	8	..	..	151
1901	124	21	10	2	2	159
1902	121	20	10	3	1	155
1903	121	19	10	3	1	154
1904	133	19	10	3	1	166
1905	129	18	9	3	1	160
1906	130	18	9	3	1	161
1907	131	17	8	3	2	161
1908	123	16	8	2	3	152
1909	117	14	8	2	3	144
1910	111	13	7	1	1	133

During the past ten years, 70 medical colleges (see page 691) have ceased to exist, either through merger or otherwise. During the same time, however, 50 new colleges have been organized, leaving a net decrease of 20. While the total number of colleges is smaller, the percentage of higher-grade, stronger medical colleges has been considerably increased.

LENGTH OF TERMS

The length of term of each college fluctuates somewhat from year to year, but on the whole, during the last several years there has been a decided lengthening of college terms. This has reference to the weeks of actual work, inclusive of holidays. Only 2 colleges this year report sessions shorter than twenty-seven weeks, as compared with 4 last year. In 1901 there were 58 which held sessions of less than twenty-seven weeks. Of those having sessions of twenty-seven or twenty-eight weeks, the number is 8 this year, or 9 less than last year, and 38 less than in 1903. There are 19 colleges claiming courses of twenty-nine or thirty weeks of actual work, and 42 claiming courses of thirty-one or thirty-two weeks. One hundred and two, or over 76 per cent., of all colleges now claim to require from 31 to 36 weeks of actual work, exclusive of holidays, as compared with 30 per cent. in 1901, with 42 per cent. in 1904, and 68 per cent. last year. The 2 colleges claiming courses longer than thirty-six weeks are night schools. It would doubtless require twelve or fourteen years of the usual night-school study, however, to secure the equivalent of four years of thirty weeks each in the better day colleges.

TABLE 8.—COLLEGE TERMS

Year.	25 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks.		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Over 36 weeks.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	[illegible]
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	[illegible]
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	[illegible]
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	[illegible]
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	[illegible]
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	[illegible]
1909	4	2.3	17	11.6	24	16.4	51	34.9	18	12.3	30	20.5	3	[illegible]
1910	2	1.5	8	6.0	19	14.3	42	31.5	30	22.6	30	22.6	2	[illegible]

TUITION AND OTHER FEES

Special attention is called in Table 1 to the total amount charged by the various colleges for tuition, matriculation, laboratory and graduation fees *per annum* for each student. In Table 9, the 133 colleges have been grouped according to the amount of fees charged.

TABLE 9.—COLLEGE FEES

Total Fees.	Number of Colleges.			
	Class A.*	Class B.	Class C.	Total.
$ 50 or less	5	1	1	7
50 to $ 75	9		3	12
75 to 100	5	7	15	27
100 to 125	17	14	6	37
125 to 150	18	4	3	25
150 to 175	8	3	..	11
175 to 200	6	2	..	8
200 or above	6		..	6

* Based on the classification of medical colleges prepared by the Council on Medical Education.

Nineteen charge fees of $75 or less per year, 64 colleges charge between $75 and $125, 36 charge between $125 and $175, and 14 colleges charge above $175. Of the 19 colleges charging $75 or less, 14 or 74 per cent. have been listed among Class A (acceptable) colleges by the Council on Medical Education.[1] Among these colleges are the schools of medicine of the state universities of Colorado, Iowa, Mississippi, Missouri, North Carolina, North Dakota, South Dakota, Utah and West Virginia. On the other hand, 24 colleges listed by the Council in Class C charge fees of over $100 per year for each student. This clearly refutes the assertion made by some inferior colleges that they are needed for the sake of "the poor boy who wants to study medicine." Although 20 colleges listed in Class A charge fees ranging from $150 to $275 per year for each student, the actual expense for teaching that student in these colleges ranges from $300 to $600 or even more per year.

DISTRIBUTION OF MEDICAL STUDENTS

Table 2, on pages 686 to 689, shows from what states the students come who were in attendance at each medical college during the session of 1909-10. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. A comparison of this table with the large tables based on state board examinations[2] which show the distribution of the alumni of each college, is interesting. The college which has widely distributed alumni usually has a student body from an equally large number of states.

Only one state contributed over 2,000 students this year, this being New York with 2,120. Pennsylvania contributed 1,990 and Illinois 1,959. The next states, in the order of the number of students contributed, are: Ohio, 902; Massachusetts, 809; Missouri, 807; Texas, 719, and Iowa, 702. Four states had less than 20 each, these being New Mexico and Wyoming, each 11, Nevada 6 and Arizona 5. There were 51 students from Hawaii, Porto Rico and the Philippine Islands, and 563 students from foreign countries.

MIGRATION OF MEDICAL STUDENTS

Table 3, on page 690, shows the number of students of each section of the country who attended medical schools of that section and the number who attended medical colleges of other sections. Section A gives the figures for students from the eastern states; Section B, for students from the middle states; Section C, for students from the western states, and Section D, for students from the southern states. Figures are given for the three college years, 1907-8, 1908-9 and 1909-10. The differences in the figures for the three years show the fluctuation due to the exit of the graduating classes, to the ingress of the new freshmen and to the comparatively few who left the colleges of one section and went to those of other sections. At the bottom of Section D appear the average totals for the three years. Percentages are given in order to permit of comparisons. The eastern section has long held the largest place in medical education, and, as would be expected, still has the smallest percentage of students leaving to attend colleges in other sections, the percentage of those remaining in the eastern section being 92.1. The middle states are a close second, with 90.6 per cent. of their own resident students studying medicine in that section. The western section, having the smallest number of colleges, naturally has a larger proportion of students attending in other sections. Of the students who migrate from the middle and southern sections, the largest proportions go east, while of those from the western section, the largest proportion attends colleges of the middle section. Altogether 2,555 students attended colleges outside of the section in which they lived. Of this number, 1,092, or 42.7 per cent., went to the eastern section; 1,020, or 39.9 per cent., went to the middle section; 304, or 11.9 per cent., went to the southern section, and 139, or 5.5 per cent., went to the western section.

THE YEAR IN MEDICAL EDUCATION

The special features of the past year in medical education have been the publication of a classified list of medical colleges by the Council on Medical Education after a six years' investigation, and the publication of the report on medical education by the Carnegie Foundation for the Advancement of Teaching. The report of the Carnegie Foundation, which is more severe than that of the Council, bears out the claim of the latter that its markings were very lenient. The publication of these two reports is sure to result in good to medical education. Prospective medical students now have the information that will enable them to select the better colleges, and, therefore, colleges which adhere to reasonably high standards, and are fairly well equipped, will be benefited. These reports show how each college ranks as compared with other colleges; the needed improvements have been pointed out and the way has been opened for further development.

A survey of the entire field of medical education shows that marked progress has been made during the last few years. As is noted in another column,[3] there are 35 colleges which after this fall will be requiring one or more years of collegiate work for admission, and eight state licensing boards which have adopted similar requirements. Numerous mergers of medical colleges have been brought about, better equipped laboratories have been provided, better trained teachers have been employed, new buildings have been erected and increased endowments secured. The outlook for the future of medical education in this country is indeed most encouraging.

---

[1] For complete classification see THE JOURNAL A. M. A., June 18, 1910, pp. 2061 and 2062.

[2] See THE JOURNAL A. M. A., May 21, 1910, p. 1740.

[3] Pages 680 and 681.

ANOTHER MEDICAL JOURNAL PREFERS DECENCY TO DOLLARS

The medical journal which, being the official organ of either a state or national organization and having the financial and moral support of the organized profession it represents, decides to throw out the advertisements of all preparations exploited dishonestly and untruthfully, deserves credit. The owners of a medical journal who, at the height of a campaign for clean advertising, when enthusiasm runs high and before the experiment has been tried out, decide to do the same thing, deserve even greater credit—although the spectacular element tends to qualify it. But the owners of a medical journal who, after seeing the experiment tried—with disastrous results in many cases—and knowing the terrific struggle for a journal's mere existence which such a course entails, soberly and calculatingly determine to eliminate from their advertising pages all unworthy medicinal products—such men are making a sacrifice in the interests of truth and decency that is truly heroic.

While this movement for honest advertising of medicinal products is confined to no one section of the country, yet the South seems to be leading. No fewer than three southern medical journals have placed themselves in this class. Two of these[1] have already been referred to in THE JOURNAL. The latest one to cross the Rubicon is the *Gulf States Journal of Medicine and Surgery*, which in its June issue states the case in plain, unmistakable terms. After reviewing briefly the sphere which their journal is attempting to fill, the editors say:

> We have reached the conclusion that the only way to be absolutely sure to admit no unworthy proprietary medicine advertisement, and that those we do admit will be precisely as advertised, is to accept as final the conclusions of the Council on Pharmacy and Chemistry established by the American Medical Association, and be guided thereby. There can be no doubt of its sincerity. It has done an immense amount of investigation and analysis, and though, being human, it doubtless errs sometimes, yet its opportunities for forming sound opinions exceed by far any other ways at our disposal. Their conclusions, like those of the highest courts of review, are the soundest obtainable.

Then follows this announcement in ten-point capitals:

> **From this date the *Gulf States Journal of Medicine and Surgery*, journal of the Southern Medical Association, will neither make nor renew a contract for advertising any proprietary medicine which is not recognized by the aforesaid Council.**

The editors of this journal are evidently under no delusion as to what such a step means; they realize that to reject 50 per cent. of their present advertising patronage is not a thing to be looked at lightly. They say:

> We know what we are doing. We are aware that no medical journal can be self-sustaining without a large advertising list. We know that this step may be the first towards failure. But if we cannot publish a journal whose readers will know that whatever its editors or advertisers say is untainted with either deceit or fraud, without going down in failure, then down we will go! There is no dishonor in such a failure! But we shall not fail! Southern doctors want the sort of medical magazine that we desire to supply, and they will stand up to us through this fight. As rapidly as the circumstances will admit, our readers will observe the change in our advertising pages.
>
> Sink or swim, survive or perish, we have planted the standard of the *Journal* on the heights, and shall stand by it.

The problem is now "up to" the medical profession of the South. We believe that a section of the country which produces such editors as these also produces men who will support the principles these editors stand for. The South, in leading the country in this fight for decency and truth, has merely lived up to its traditions; and we believe that, in placing principles before pelf and conscience before commercialism, it is putting itself in the vanguard of journalistic progress. We would urge every physician to show in a concrete way his appreciation of the stand that has been taken. Subscribe for these journals[2]; a large and influential subscription list assures a liberal advertising patronage and this in turn makes possible a virile and aggressive journal.

The time has come when the medical profession must wake up to a fact that it has very largely ignored in the past: It costs money to publish a medical journal. If physicians—in whose interests these journals are published—are not willing to support them, the proprietary people stand ready to relieve physicians of the necessity of doing so. But—and this is the crux of the whole matter—the journals will naturally favor, and advocate if necessary, the interests from which they receive their chief support. If the medical profession wants really independent medical journals—independent of all interests except those they are supposed to represent—it must pay for them.

VISUAL TESTS AND THE PUBLIC SERVICES OF THE UNITED STATES

The prevention of accidents in connection with transportation systems is an important subject for the attention of the medical profession. Owing to the rapid growth of the country the railroad trackage and the system of waterways have grown almost beyond belief. As one result, the regulation of a number of details looking to the protection of the public has not as yet received that attention which its relative importance deserves. Such progress as has been made is largely due to the labors of committees appointed by the American Medical Association and its sections. As an instance the Section on Opthalmology of the American Medical Association, through a committee, devoted several years to the accumulation of statistics gathered from the important railways of this country, and finally adopted a set of well-matured resolutions embodying rules to govern the visual and hearing tests of transportation employees which were approved by the House of Delegates. The regulations they suggested have been adopted by practically all the leading railroads.

---

[1] The Southern Medical Journal and the Old Dominion Journal of Medicine and Surgery. The former now has but one advertisement to which objection can be raised, while the latter has but two.

[2] The Gulf States Journal of Medicine and Surgery, 905 Van Antwerp Bldg., Mobile, Ala., $2.00 a year; the Southern Medical Journal, 150 Fourth Avenue North, Nashville, Tenn., $2.00 a year; the Old Dominion Journal of Medicine and Surgery, 116 East Franklin Street, Richmond, Va., $2.00 a year.

In line with this work the chairman in his address[1] before the Section on Ophthalmology at St. Louis, after investigation, reviewed the visual requirements in branches of the public service in which definite standards of vision are essential. These are, chiefly, the United States Army, United States military and naval academies, mercantile marine, the Revenue Cutter Service, the life-saving department, the officials of the Coast and Geodetic Survey and pilots in both the federal and some of the state and municipal services.

One result of this activity was definitely to draw the attention of the War Department to the matter. The Surgeon-General of the Army has appointed a commission, including the chairman of the Section on Ophthalmology, to draft a new series of visual requirements for the United States Army. After careful consideration of the subject and after comparison with standards now in operation in the British and Continental services, the commission drew up a series of requirements that will shortly be submitted for the approval of the General Staff.

In the course of the inquiry into the legal requirements as to vision of mercantile marine pilots it was discovered that only officers of steamers and sailing vessels over 700 tons gross and of vessels over 100 tons carrying passengers are under federal supervision. Bar or branch pilots, as they are called, are under state and municipal authority only. In all sections of these services even the meager rules applicable to vision and to visual tests were honored rather in the breach than in the observance. The Surgeon-General of the Marine-Hospital Service, however, has arranged to apply the proper tests and to request the Department of Commerce and Labor, whose function it is to create proper standards for the purpose, to authorize a thorough examination of the sight of applicants for employment in any branch of this service.

This agitation for improved precautionary measures in our merchant marine will, doubtless, exert a beneficial influence on the pilot service of the various states and municipalities. As Dr. Posey shows, there is much room for improvement. The spectacle of a color-blind or short-sighted officer of a sailing or other vessel practicing his profession in a crowded harbor is far from reassuring. Indeed, a number of disasters at sea directly attributable to defective eyesight of the pilot in charge are noted in the address.

The visual requirements of officials in the other departments of the public service were, with few exceptions, also found to be inadequate.

With these facts before them the Section on Ophthalmology and the House of Delegates adopted resolutions recommending that a committee be appointed to confer with the Department of Commerce and Labor and with the Marine-Hospital authorities, with a view to establishing proper visual standards and tests to govern these public servants. When this committee has ended its labors we shall not be, as we now are, exposed to the accusation that the United States lags behind other governments in the protection of its seafaring population.

DOCTORS OF PUBLIC HEALTH (D.P.H.)

While much interest is taken and a vast amount of good work is being done in public health matters, yet we have only recently begun to recognize that such work requires the services of a specialist. And while the courses in our medical schools have been gradually lengthened to include training in bacteriology, in the examination of the blood, the secretions and excretions, as well as more or less instruction in hygiene and sanitation, yet our country lacks trained men to carry on public health work. As a rule the general practitioner or the physician who has had the modern medical training, while immeasurably superior to the mere political henchman, has not measured up to the possibilities of the situation as a sanitarian. There have been notable exceptions to this, but they merely point to the rule; and our failure to reap the full harvest in the field of preventive medicine is due to a considerable extent to this cause. The sanitary sciences have given us many new and useful facts, and present health organizations are daily collecting in their reports much valuable information; and still the field, though fitfully tilled by the kind-hearted philanthropist, by the faddist and by the reformer, is permitted to lie fallow most of the time for want of trained experts to make the practical application.

For years the more enlightened nations, with the exception of our own, have required of their health officers special fitness and training for public health work. In the United States, however, no such provision has been required; in fact, no professional school has so far been in a position to equip men with the special knowledge such work demands. To meet this Harvard has taken an advanced step in offering a degree of Doctor of Public Health (D.P.H.), the work for which will center about the new Department of Preventive Medicine and Hygiene. The new degree is a most practical one; it should prove attractive and will, we hope, be offered soon by other schools.

The new course offers wide opportunity for training in several specialized fields of public health work or the sanitary sciences. The course should qualify those who complete it to continue in research, if their temperament and inclinations fit them for original work; to teach the subject, provided they have the gift of pedagogy, or to administer public health affairs provided they have executive ability. Undoubtedly there is a demand for well-trained health officers. The political health officer is an anachronism, and the day when the gynecologist, the surgeon or the general practitioner, without special training, can successfully take charge of the health of the state is passing away. A board of health composed of untrained men of business or professional affairs is no longer compatible with the increase of special knowledge. The complications of modern life demand acquaintance with this special knowledge, and we welcome this latest addition to the fellowship of the learned and useful professions.

---

[1] Posey, W. C.: Visual Requirements in the Public Services of the United States, THE JOURNAL A. M. A., Aug. 13, 1910, p. 548.

THE PURIFICATION OF WATER BY HYPOCHLORITES

A large variety of chemical substances have been used in experiments on water purification and a few of them have found their way into practical use. We have several times discussed the employment of ozone in the treatment of public water-supplies and have noted that the relatively high expense and the difficulty of securing uniform production are obstacles to the general introduction of the ozone process on a large scale. Recent experience with other methods of water disinfection is, however, more promising.

In sewage disinfection the use of bleaching-powder, an impure product composed largely of calcium hypochlorites, has been studied rather extensively in Germany, and has been the subject of excellent experimental work by Phelps[1] in this country at Red Bank, N. J., and at Baltimore. It was but a step to apply a similar treatment to polluted drinking-water. Already in 1897 bleaching-powder had been used for this purpose in Maidstone, England, at the time of a typhoid epidemic due to a polluted water-supply. The use of bleaching-powder for the purification of the Jersey City water-supply in 1908-9 drew further attention to the process and was the starting-point of the greatly accentuated interest in this subject that has been shown during the past year. The construction and operation of the disinfecting plant were intrusted to a firm of sanitary experts and their report has been received with merited confidence. The degree of purification effected may be judged from the fact that while the number of bacteria in the raw water ranged from 30 up to 1,600 the treated water contained an average of but 15, and in only one sample out of 455 tests was *Bacillus coli* found in the water delivered.

It is not surprising that results like these have given a strong impetus to the use of the bleaching-powder treatment. A number of American cities have already employed the hypochlorite treatment on a large scale. Among these are Harrisburg, Pa., and Quincy, Ill., where the process has been used in conjunction with the application of coagulants and mechanical filtration. Minneapolis, Montreal, Toronto, and recently Milwaukee have made use of the treatment to check outbreaks of water-borne typhoid fever. The rapid spread of this method of water purification is indeed one of the most interesting and promising developments of the past two years. Up to the present the method has seemed to grow in favor. The great simplicity of the apparatus necessary for applying the disinfectant makes it possible in an emergency to install a small plant within a few days. The exceedingly low cost of the process, which seems to average less than 40 cents per 1,000,000 gallons, constitutes another important advantage. Thus far no serious objection has been brought against the hypochlorite treatment and there has been a surprising unanimity of favorable judgment from all who have had personal experience with it. If we must have sewage in our water, let us disinfect it before drinking.

Current Comment

A HITHERTO UNPUBLISHED TESTIMONIAL

A layman writes to The Journal asking whether the "D.D.D. Prescription" would have any injurious effect on a person using it and says, regarding this nostrum:

> "Have used forty-eight bottles of it for eczema and am not rid of it yet."

He wants to know, "whether this medicine could have a tendency to poison one's blood so that one would lose 14 pounds in flesh and become weak and emaciated, flesh soft and flabby and his condition generally miserable, within two months." As this "dandruff cure" contains 38 per cent. of alcohol and 7 grains of chloral hydrate to the ounce, an affirmative answer to our correspondent's query can hardly be called overdrawn. For a product which, before the Food and Drugs Act made lying on the label illegal, was advertised to "positively and permanently cure eczema," its therapeutic action seems rather slow. Would the manufacturers recommend a change in treatment or another round of 48 bottles? In the words of Jack London: "We are curious to know. We are curious to know."

THE UNTRAINED DOCTOR AND THE PUBLIC HEALTH

An editorial with the above caption appeared in the Chicago *Examiner*, August 12, 1910. This paper had published lists of the graduates of several low-grade medical schools of Chicago, who were practicing in Illinois. One of these graduates wrote to the paper expressing "surprise that a newspaper which has always taken the part of the common people against the trusts," should "make common cause with those who are attempting to create a trust in medical education," and saying that "the right to change one's occupation is one of the blessings which free men enjoy, and a man who has been successful in other lines is just as likely to make a successful medical man; and even if he had been a failure in his previous occupation, it would not prove him a failure in the profession he now follows." The newspaper answered that although it acknowledged the fairness of the doctor's argument and would not think of singling him out to be held up to public distrust, nevertheless it "does not wish its well-known attitude toward the trusts and the people to be confounded with its desire to throw safeguards around the practice of medicine, and it does not subscribe to the doctrine that a shoemaker must invariably stick to his last." The *Examiner* then continues:

---

[1] Phelps: Water Supply Paper 229, U. S. Geol. Survey, 1909.

> Every man is entitled to change his profession as his inclinations and his talents may dictate. But every man is not entitled to enter boldly on the practice of medicine, merely because he has a leaning that way, has given it a little desultory study, and boasts a diploma that has been obtained by questionable methods or by answering a few stereotyped questions. If there is a trust that keeps incompetent people from fooling with the health and lives of the people, the *Examiner* is for that trust, whatever or wherever it may be.
>
> If there are, here and there, men whose remarkable talents have enabled them to rise to deserved eminence in the medical profession without the full medical instruction and preparation considered safe in the practice, there are unhappily hundreds of others who are totally unqualified and unfit for the trust that is reposed in them. And the *Examiner* comes not to call the righteous but sinners to repentance, the sinners being to a notorious extent the so-called graduates of this meager and inadequate course of training.
>
> And so the *Examiner* renews its politest and sincerest assurances of esteem to all who have changed their professions for other lines of duty and the world's work for which they have been properly prepared and qualified. And it will continue to stand for the exercise of the privilege of restraining ignorance, incompetency and lack of preparation in those who jeopardize human health and endanger human happiness for a mere whim or because it seems a little more profitable to the practitioner. If "a little knowledge is a dangerous thing" it is never more dangerous than in experimenting with the art of healing.

THE DANGER OF WOOD ALCOHOL

It has been pretty well understood that wood alcohol is decidedly unsafe to drink; that even its vápor may jeopardize the eye-sight. To the medical profession especially has this danger been emphasized by the excellent researches of Buller and Wood, which were published in THE JOURNAL. Now comes Mueller, the German physiologist, who says that pure methyl alcohol is little more poisonous than ethyl alcohol; that it is the impurities which make methyl alcohol poisonous. It is stated that no systematic experiments have heretofore been made to determine the toxic qualities. The deductions of Mueller do not make methyl alcohol any more safe, but they may lead to a method by which it can be manufactured more free from the impurities referred to. One way of stating the case might be that methyl alcohol is naturally denatured in the process of manufacture.

ABATING THE FLY NUISANCE

The domestic or "typhoid" fly is at present receiving much deserved attention on the part of health boards, the newspapers and the public, all of whom seem to be taking the advice to "swat the fly" whenever he raises his pestiferous head. The determination to exterminate this disease-carrier is becoming strong and it will soon be considered as much of a family disgrace to have them about the house as it now is to have bedbugs. In addition to inhibiting the multiplication of the fly by destroying their breeding-places, a further means has been noted. Dr. Percy L. Jones, of the Army Medical Corps, reports that flies are comparatively rare in the Philippines because of a species of ant which greedily devours the larvæ of the fly, and he has seen them carry away the pupæ. If this ant has no pernicious habits or qualities as obnoxious as those of the fly, the species might be imported and put to work. Entomologists have found that there are many parasites that prey on the fly, principally in the pupal stage, but evidently they are not widely distributed or numerous enough to produce an abatement of the nuisance.

A RIGHTEOUS NEWSPAPER

Not all metropolitan newspapers put the welfare of their readers above the almighty dollar, but the Chicago *Tribune* is one that is doing this. Some years ago it barred from its columns all medical advertisements that it considered fraudulent. During the current week it has boldly published the names of certain "patent medicines" that are dangerous to infants because of the opiates contained in them. Taking the report of Dr. Kebler of the Bureau of Chemistry as its authority, it prints in blackfaced letters the names of the nostrums that are condemned as unsafe, and in addition to publishing this list in several consecutive issues, it has emphasized the matter editorially. McCutcheon aids in damning these deadly nostrums in a forceful cartoon, one picture representing the "quack" or the thoughtless dealer with a bottle of soothing syrup in his hand, saying, "That will make it stop crying; 50 cents, please;" the other representing the sequel—the mother weeping over an empty cradle. What a change would result if even one paper in each large city had the courage to do as the *Tribune* has done in this instance.

FLORENCE NIGHTINGALE

The death of Florence Nightingale at the age of ninety removes one of the most striking figures of the nineteenth century. Born to wealth and luxury, she early showed a taste for the work to which she later gave her life and lost no opportunity of visiting hospitals and studying the care and nursing of the sick. At that time the profession of nursing was not at all a fashionable occupation and had little attraction for a refined and educated lady. As one of Miss Nightingale's biographers has said, it was considered to be a profession which no decent woman of any rank could follow. In spite of this, after examining all the nursing institutions available to her in her own country she went to the Hospital of the Protestant Sisters of Mercy at Kaiserswerth, Germany, and later to the Sisters of St. Vincent de Paul in Paris. When the Crimean War broke out military nursing was practically an unknown art and anyone who has read William H. Russel's account of conditions in the British hospitals near the seat of war can see how different they were from those of modern days. Miss Nightingale's project was spoken of as an undertaking wholly new to English customs. Her work in the hospitals of Scutari and Balaklava wa pioneer work in nursing in military hospitals, but she showed such capacity for management in spite of specially difficult conditions that she made it a success. Modern military nursing, among English-speaking peoples at least, owes its origin to Florence Nightingale. She captured English opinion in spite of the prejudice of a nation which is none too ready to take up with novelties of any kind, and her name has become a household word. Though after the war she was an invalid, her activities did not cease; she was constantly consulted in all matters of nursing for fifty years or more and her writings and utterances have carried weight wherever the English language is spoken. Her advice was sought and taken in hospital construction during our Civil War and during the Franco-Prussian war, and many of the plans for the building and organization of hospitals in England passed through her hands. The training schools for nurses which she established at St. Thomas' Hospital and King's College Hospital in London have been the models for all similar institutions since established in Great Britain and America. As a writer on sanitary subjects she was clear and incisive and her opinions always carried weight. She had also a special capacity for condensing the facts and verbiage of government reports and stating in brief space the important matter they contained. Though little before the public eye, and never courting publicity, but rather avoiding it, she was sought out and honored by the greatest personages in her own country and was the only woman on whom has been conferred the "Order of Merit." It is said that she was always accessible to the workers in the institutions which she founded and always took the liveliest interest in them. Hardly any one of her countrywomen has done work more effective for good or has left behind her a choicer memory.

Medical News

CALIFORNIA

Fighting Tuberculosis in Schools.—The superintendent of the Oakland schools has inaugurated a system of breathing exercises among the pupils with the view of increasing their lung expansion. Some remarkable results have been attained. Not only has the general average of the lung expansion of the pupils been increased but in some instances the expansion has reached six to seven inches. It is found that the girls respond more readily to these exercises than the boys and that the white children show far better results than the Chinese, Japanese or negroes.

Hospitals.—The contract has been let for the construction of five new ward buildings, an administration building and nurses' home for the new public hospital at San Francisco. The cost of the work will be approximately $220,000. The material used will be brick, marble and terra cotta.——Building has commenced on the hospital at Hanford.——The staff of the Berkeley Dispensary has been made up as follows: Drs. Frank W. Edmonds, Robert Hector, Frank Simpson, Fred H. Van Tassell, Thomas C. McCleave, Romilda Paroni, Wilbur A. Sawyer, Florence Sylvester, John U. Force, May H. Sampson, Edith S. Brownsill and E. B. Hoag.

Personal.—Dr. Anderson, San Francisco, has been made assistant surgeon by the Northwestern Pacific Railroad Company, stationed at the Bryan Bluff Receiving Hospital.——Dr. Frank R. Dray has been appointed chief medical officer of the German Hospital Association at San Francisco.——Dr. Howard W. Levengood, Ocean Park, has been appointed professor of state medicine and hygiene in the College of Physicians and Surgeons, University of Southern California.——Dr. E. W. Parsons has resigned from the Emergency Hospital, San Francisco, and will be succeeded by Dr. Fred H. Zumwalt.——Dr. James M. Cassaway, surgeon in charge of the United States Marine Hospital, San Francisco, was injured in a street car accident, sustaining fractures of the pelvis, one rib and one leg in two places.

FLORIDA

New Hospital.—The new Mission Hospital was recently opened at Pensacola. A staff of twenty two of the leading physicians of Pensacola was appointed, with Dr. Juriah H. Pierpont as chairman of the medical board.

Enforcing Health Ordinances.—City Health Officer Charles E. Terry, Jacksonville, has invoked the assistance of the police in enforcing the city health ordinance relative to the protection of meat, fish, fruit and vegetables from flies and other insects. The dealers are required to protect these articles by screens.

Branch Laboratory.—The state board of health has opened a branch laboratory in Pensacola, and has placed in charge Dr. F. A. Brink, formerly of North Dakota. The establishment of the laboratory will materially aid the profession in that section of the state in their crusade against communicable diseases, especially hookworm and tuberculosis.

Appointment of Visiting Staff.—At the recent meeting of the Board of Commissioners of State Institutions at Tallahassee, on the recommendation of B. F. Whitner, superintendent of the Florida Hospital for the Insane, the following physicians were named on the visiting staff: Drs. Gerry R. Holden, Jacksonville; James H. Randolph, Chattahoochee; Clarence E. Hutchinson, Pensacola; Henry E. Palmer, Tallahassee, and Urban S. Bird, Tampa.

Crusade Against Malaria.—At the annual meeting of the State Medical Society, held in Jacksonville last April, a special committee was appointed to inaugurate a campaign throughout the state against malaria. This committee has issued an address to the people of the state stating that the first step in the campaign is to secure the cooperation of the public and that heretofore those interested in public health had not been supported. The committee in its address then says:

> To accomplish this end, there will appear in the daily press of the state, a series of bulletins, issued at certain intervals, for the purpose of educating the public on the damage done to the state as a result of malaria, the extent to which the disease prevails, how the infection is carried from person to person, correcting the many false impressions concerning its transmission, showing how little decrease there has been in the disease during the past decade in this and other southern states, what has been accomplished in other parts of the world during the same period, as a result of a properly organized campaign, and finally, a summary of how it is possible to entirely eradicate the infection from our South, if the people generally will aid in every way they can.

The committee is composed of Drs. Graham E. Henson, E. VanHood and Edmund W. Warren. They have issued Bulletin 1, which has been published in the newspapers throughout the state, in which they state the situation in regard to malaria. They say that from two hundred to four hundred lives are offered as sacrifices to malaria in the state every year, equal to an annual cash loss of $800,000, estimating the value of each life at $2,000. In addition to that, the loss in wages, cost of attendance, drugs, etc., amounts to $400,000 more.

ILLINOIS

Evanston's Health Record.—Evanston claims to be the healthiest city in the state, the death rate for the past year being reported as only nine per 1,000 of population.

New Hospital.—Plans for the new $50,000 Methodist Hospital at Peoria have been completed and bids asked for. The plans provide for a four-story building in the renaissance style, 70 by 80 feet. The kitchen will be placed on the top floor.

School Boards and Medical Inspection.—At Rockford, Corporation Counsel Rew has rendered an opinion that inspection of school children must be done under the supervision of the city health department instead of the school board, and that the board of education cannot legally provide for medical inspection. It is said that State Attorney-General Stead and State Superintendent Blair hold the same opinion.

Chicago

New Emergency Wards.—Since the abandonment of the old Harrison Street Emergency Hospital, two rooms have been fitted up in the Harrison Street Police Station for emergency hospital purposes, in charge of Drs. Charles D. and Clarence

H. Wall. As many as ten to fifteen minor surgical cases have been cared for each day since.

Personal.—Dr. and Mrs. Isaac A. Abt sail for Europe August 20 to be gone until November.——Dr. George Sultan has become a candidate for county commissioner of Cook County. His candidacy is endorsed by many leading physicians.——Dr. Milton J. Rosenau, professor of pathology in Harvard University Medical School, is to deliver the Harris Lectures for 1912 at Northwestern University. These lectures were established by the gift of Mr. Norman W. Harris.——Dr. B. Georgas is convalescing from appendicitis at Lincoln Hospital.——Dr. B. C. Corbus has gone to Berlin to investigate the new Ehrlich treatment.

Funds for Tuberculosis Institute.—The Chicago Tuberculosis Institute is endeavoring to raise a midsummer fund of $2,500 with which to support the work until fall. The eight free tuberculosis dispensaries are handling from twenty to sixty patients a day. Every month about 240 new cases are examined, and the eleven nurses are making nearly 1,700 visits a month in homes of the patients. In addition three of the nurses devote a portion of their time to three open air schools for anemic children maintained at the Libby School, Penn School and Lake View High School. There are 35 children in each school.

Health Conditions.—For the first time during the summer the weekly death rate in the city was below that of last year, for the week ending August 13 the rate being 13.6 per 1,000 as against 13.9. Diphtheria was unusually prevalent, there being 79 new cases as against 49 for the corresponding week of last year, with 8 deaths as against 4 last year. The health commissioner, in addressing residents of the Twenty-ninth Ward, where sanitary conditions have been particularly bad, said "there is no such thing as a public standard until there is a proper standard of private living." Clean up day in the city was arranged for Tuesday, August 16, and was well observed.

IOWA

New Wing to University Hospital.—The state has purchased the Asa Moler property east of the present hospital site and will erect a new wing to the University Hospital.

Personal.—Dr. Campbell Howard, Montreal, Que., has accepted the chair of internal medicine at Iowa State University, Des Moines, and Dr. Erwin Schenck, Des Moines, has been made professor of skin diseases.

Visiting Nurses' Association.—At Burlington the work of the visiting nurses' association has been organized and Miss Augusta M. Jones, Moline, Ill., will have charge. Among those directing the work will be Drs. John C. Fleming and George B. Little.

Poliomyelitis.—About fifty cases of poliomyelitis have been reported from Mason City. Isolated cases have also been reported from other places. The State Board of Health held a conference August 17 to consider the best way of dealing with the disease.

Infant Mortality.—According to a statement of Dr. G. H. Sumner, secretary of the State Board of Health, one third of the babies in Iowa under one year of age have died since the hot weather set in. The deaths are due principally to cholera infantum, infantile paralysis, poor milk and improper care. Cholera infantum and infantile paralysis have become so serious that the board has called a special convention of physicians throughout the state to discuss means of handling the situation.

KANSAS

Personal.—Dr. Seth A. Hammel, Topeka, has been appointed first lieutenant in the medical department of the Kansas National Guard, in the place of Dr. J. W. Graybill, Wichita.

Kansas City Health Board Changed.—Kansas City has passed an ordinance abolishing the old board of health and establishing a health department under a health commissioner, who is to be a graduate physician skilled in laboratory work. There will be in addition to the commissioner, three field men, a laboratory assistant and a clerk. It is hoped by this method to lessen the expense and at the same time attain a more efficient administration of health matters.

State Board on Poliomyelitis.—The July number of the *Bulletin of the Kansas State Board of Health*, aside from the table of vital statistics is almost wholly taken up with an article on epidemic anterior poliomyelitis, a disease which prevails to some extent in Kansas. In addition to the symptomatology, course and pathology of the disease, the history of the present epidemic is given. The bulletin is illustrated with micro-photographs of sections of the spinal cord taken from fatal cases, and the whole bulletin makes a valuable contribution to the subject of infantile paralysis. The health board has issued to the people of Kansas a set of rules looking to the prophylaxis of poliomyelitis among the children.

MARYLAND

State Society Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty will be held at Annapolis, September 12-14. The Anne Arundel County Medical Society has appointed a committee to prepare for their entertainment. A joint meeting with the Maryland Psychiatric Society will be held. The membership of the state society now is 1,069. The publication committee estimates that the saving during the past year by the publication of the *Bulletin* has been about $700.

Baltimore

Report of Insane Hospital.—In the sixty-seventh annual report of Mount Hope Retreat, Dr. Charles G. Hill, physician-in-chief, gives the total number of patients treated last year as 985; 257 were discharged and 63 died. Dr. Hill discusses interestingly the causes and circumstances surrounding the insane.

Death from Rabies.—A child five years old died from rabies at Mercy Hospital, August 10. This is the fourth death of those treated at the Pasteur Institute in the eighteen years of its existence. The child was bitten with eight others May 23 last. There were two bites in her cheek. The other cases were all treated and are doing well.

Druggists and Soothing Syrups.—It is said that at the meeting of the Baltimore Retail Druggists' Association, to be held in September, the druggists will decide not to handle soothing syrups now fed to children by mothers. There is no law prohibiting their sale, unless they contain laudanum, and all do not contain it. Following the action of the government, many cities have already taken decided action in the matter.

Personal.—Dr. Alfred Whitehead is in the Berkshire Hills, Mass.——Dr. William S. Halstead has returned from Europe.——Dr. Arthur P. Herring, secretary of the Lunacy Commission, is reported to have narrowly escaped drowning in the natatorium of the Hotel Chamberlin at Old Point Comfort, Va., August 7.——Dr. Andrew H. Whitridge was operated on for appendicitis early last week at Interlaken, Switzerland.——Dr. Howard W. Jones has been sued for $10,000 damages for the death of a boy, alleged to be due to injury inflicted by the doctor's automobile.

MASSACHUSETTS

Typhoid in Worcester.—Twelve cases of typhoid fever have been reported in Worcester. It is said that all of the cases have been traced to the use of milk distributed by one dealer.

Open Air School for Children.—The gratifying experience of Boston's open-air school conducted last winter for tuberculous and anemic children has led the authorities to extend this plan for the coming winter.

Infantile Paralysis.—At Springfield, in view of the increasing death rate from infantile paralysis, the local board of health has increased the quarantine period from two to four weeks. The disease has attacked a number of adults, and one death of an adult has occurred.

Preventing Blindness.—Dr. Mark W. Richardson, secretary of the state board of health, has been sending to every physician of the state a vial of 1 per cent. nitrate of silver solution to be used for the prevention of ophthalmia neonatorum, and has issued a circular giving suggestions as to its use.

Governor Approves Work of Physicians.—At the annual dinner of the Massachusetts Medical Society, in Boston, Governor Draper addressed the physicians and said: "I believe there is no profession which is bringing forward so many innovations for the benefit of mankind as this old and honorable profession of yours. Medicine has made bigger strides and developed more than any other profession."

Unsanitary Condition of River.—Protest has been made by citizens against the unsanitary condition of the upper section of the Charles River, including the Lower Falls and Upper Falls districts of the Metropolitan Park district. Concerted action will be taken by the citizens of the towns along the river to ask the next legislature to clean out the river and prevent further pollution by mills and factories.

Medical Inspection of Schools.—The board of health of Boston has submitted to the mayor a plan of reorganization of the corps of medical inspectors in the public schools. By this plan the board of medical inspectors will be reduced from eighty to forty and the salaries increased from $200 to $1,000. In addition ten physicians will devote their entire time to infections diseases, and the salary to be paid them will be $500 per year each.

Personal. Dr. George D. Henderson has been appointed medical inspector at Holyoke. He will examine school pupils wishing to go to work. — Dr. Richard C. Cabot, Boston, was presented with a loving cup by the summer class at the Massachusetts General Hospital. Dr. and Mrs. Cabot entertained the class at their summer home at Cohasset. —Dr. William J. Brickley, Charlestown, has been given charge of the City Hospital relief station in Haymarket Square, Boston, to succeed Dr. Edwin L. Drowne.

New Child Labor Law.—The law passed by the last legislature providing that children between the ages of 14 and 16 must be inspected by a physician before going to work in factories, workshops or mercantile establishments went into effect August 1. The committee on medical inspection of the State Child Labor Committee has issued a statement calling the attention of the public to the new law. It is found that many minors in Massachusetts factories are in ill health and unfit to work.

MICHIGAN

Personal.—Dr. John H. Pettis, West Branch, has been appointed to a position in the State University at Ann Arbor.

New Emergency Hospital.—A new emergency hospital for contagious diseases will be erected at Flint, on the site of the present hospital, at a cost of $2,500.

Gift of Sanitarium. C. W. Post, Battle Creek, has given to the Traders' and Workers' Association at Battle Creek the Phelps Sanitarium building erected several years ago at a cost of $400,000. It will be used for hospital purposes by the association.

Smallpox in Michigan. Smallpox is prevalent in a number of places throughout the state at the present time. There has been one case reported from Mackinac Island and one or two suspected cases are being watched for developments. The disease is being taken care of by the local health authorities of the state, cooperating with the state board of health.

Work Against Tuberculosis. The City of Kalamazoo has arranged to establish open-air schools for children with tuberculosis and for anemic pupils, who need plenty of fresh air. ——Muskegon has begun a poster campaign against tuberculosis by placing on billboards in various parts of the city posters nine feet high pointing out the essentials for the prevention of tuberculosis. According to Secretary Murray of the State Board of Corrections and Charities a great deal of tuberculosis exists in the county infirmaries, jails and other public institutions, and the situation calls loudly for relief.

NEW YORK

De Peyster Home May Close.—This institution, located at Verbank, near Poughkeepsie, which has been in existence for nearly a century, may be forced to close for want of funds unless money is forthcoming at once. There are about one hundred invalid children in the home at present.

Health Field Day at Rochester.—Rochester's health field day, participated in by the military companies, civic and athletic societies and the school children of the city, and generously supported by the public, was a great success and resulted in a fund of $5,000 for the benefit of the children's free dispensary.

Personal. Dr. A. T. Bull, the oldest practitioner in Buffalo, hale and hearty until a few weeks ago, at 85 has been made an honorary member of the Erie County Medical Society and an honorary life member of the Buffalo Academy of Medicine. Two weeks ago, however, in attempting to board a street car he was thrown to the street and seriously injured. He is still in a critical condition and may not recover.

New York City .

Coal Lands for Hospital. By the will of Normal I. Rees St. Luke's Hospital will receive about 6,000 acres of coal and iron lands in Virginia and West Virginia.

Women Want Internships. Dr. Maud Glasgow has initiated a movement to get women admitted as interns into the larger hospitals of New York. There are said to be only two smaller hospitals in Greater New York where women can be admitted as interns.

German Hospital Needs Money.—The addition to the German Hospital of Brooklyn which was so urgently needed has been begun without provision having been made to defray the entire cost, so the board of trustees has appealed to the general public for funds with which to carry on the work.

Another Move by Osteopaths. The osteopaths are still struggling for recognition by the health board. A motion has just been argued before the Supreme Court of Brooklyn for an injunction to restrain the board of health from enforcing Section 163A of the Sanitary Code, which provides that no transit permit shall be granted for the burial of a person who has been treated by an osteopath until the body has been examined by a regular physician. Justice Putnam reserved his decision.

Milk Dealers Willing to Cooperate. The board of health has placed its ban on all pasteurized milk in bulk as food for infants unless it is boiled and Dr. Lederle has suggested that dealers and dairymen cooperate with the department in producing milk of definite grades suitable for young children. Dealers have expressed their willingness to do what they can and are considering plans which they will submit to the board of health. Of the 1,600,000 quarts of milk received daily in this city only about 2 per cent. is certified or guaranteed. The aim of the department is to get a sufficiently good quality of milk for babies at a reasonable price, such as is sold in many European cities.

Harvey Lecture Program. The Harvey Society elected the following officers for the year 1910-1911: President, Dr. Simon Flexner; vice-president, Dr. John Howland; treasurer, Dr. Edward K. Dunham; secretary, Dr. Haven Emerson; council, Drs. Graham Lusk, S. J. Meltzer and James Ewing. The following program for the next series of lectures has been arranged:

October 15.—Prof. Dr. H. Chiari of Strassburg, Germany, on "Die Bedeutung der pathologischen Autopsie und sonstiger pathologisch-anatomischen Untersuchungen."
November 12.—Prof. W. E. Castle of Harvard University, on "Unit Characters in Heredity."
December 10.—Prof. Harvey Cushing of Johns Hopkins University, on "Certain Clinical Aspects of Dyspituitarism."
January 14.—Prof. Arthur R. Cushny of the University of London.
February 4.—Dr. Thomas B. Osborne of the Connecticut Agricultural Experiment Station, New Haven, on "The Chemistry of the Proteins."
February 25.—Prof. Jacques Loeb of the Rockefeller Institute for Medical Research.
March 18.—Prof. H. Gideon Wells of the University of Chicago.

These lectures are open to the public and are given on Saturday evenings at the New York Academy of Medicine.

NORTH CAROLINA

Free Dispensary. A new free dispensary at Asheville was opened August 15, in charge of Drs. Frazer, Ringer and Herbert. The dispensary was founded by the Associated Charities

Pure Water. Sixty-three municipalities of this state have public water supplies which have collectively received during 1,486 examinations in the state laboratory of hygiene with the net result of finding only 5 per cent. of contaminated water. Practically all of those found deficient have, under direction of the State Board of Health, corrected the defective water service.

State Health Secretary on Vaccination. The annual report of the secretary of the State Board of Health in the June *Bulletin* of the board discusses the question of quarantine for smallpox. The secretary approves of the action of Minnesota and South Carolina in abolishing quarantine, and says that if it was generally known that there would be no quarantine nearly everybody would be vaccinated. He then says that the minority would consist of two classes of people:

> The first class are those whose sense of responsibility for community health is such that they are more influenced by the anticipated slight personal discomfort of a sore arm than they are influenced by considerations of the public weal The second class are our esteemed friends who do not believe in the protective power of vaccination. To these science is dumb and experience is a liar. And yet to protect these two classes we quarantine To protect them when they alone last year spread the disease all over our fair state, put the state to an expense of $40,000 to $50,000! Do these civic irresponsibles deserve an altogether unnecessary expenditure of $50,000 by those who have discharged their civic obligation in the matter of smallpox? My answer is: No.

Free Diphtheria Antitoxin. For more than a year past the State Board of Health has provided diphtheria antitoxin at actual cost to all indigents who reside in counties applying for the same the cost eventually being borne by the counties themselves; forty-nine counties and thirteen cities during the past year availed themselves of the privileges of the reduced cost in diphtheria antitoxin. There is a move now on foot to secure such legislation from the coming legislature as shall enable the state to establish a plant for the production of its own antitoxin.

Judgment Against Physician.—In the Superior Court at Wilmington last week judgment was obtained against Dr. Lionel H. Love, formerly of that city, but for the three years past a resident of Monterey, Cal., in the sum of $5,000 for damages in an action brought by a former patient whose dislocated and fractured arm was treated by Dr. Love some ten years ago. Dr. Love admitted the arm was out of joint but insisted the plaintiff would not consent to an anesthetic, without which, owing to local conditions at the time, it was impossible to make a correct diagnosis. Appeal was taken to the Supreme Court.

Personal.—Dr. Robert L. Gibbon, Charlotte, is convalescing from a severe attack of typhoid fever.——Dr. O. L. Holler, Taylorville, while driving to a patient during a severe storm August 1, was struck by a falling tree, sustaining a fracture of the skull. Unconsciousness supervened immediately, trephining was done by Dr. H. F. Long of Statesville, and later Dr. Holler regained consciousness with a fair prospect of recovery.——Dr. J. S. Lafferty, Charlotte, is doing postgraduate work in Berlin.——Dr. J. Herbert Mease of Canton has been nominated by the democrats for representative in the state legislature for the ensuing term of two years.

Hospital Investigation.—The State Board of Internal Improvements spent several days in session at Greensboro last week hearing evidence relating to the charges preferred against Dr. J. R. Brooks, superintendent of the State Sanatorium for Tuberculosis at Montrose, and the trustees of the institution, by Dr. John Roy Williams of Greensboro. The trustees include three well known physicians besides six other prominent citizens. The State Sanatorium was opened early in 1908 when the accommodations were probably insufficient and the exhaustion of the legislative appropriation prevented the completing of the full equipment of the sanatorium. The findings were wholly at variance with the charges made, and the trustees and Dr. Brooks were vindicated fully in the report to the governor.

Examination of Troops for Hookworm.—Dr. John T. Ferrall, working under the joint auspices of the State Board of Health and the Rockefeller Commission as special assistant, has just completed the examination of the members of the state guard at the annual encampment. As a result it appears that the Second Guard Regiment (from eastern or coastal Carolina), showed 57 per cent. of infection, and the First Regiment (from the western or mountain section), 37 per cent. The examination of the Third Regiment (central Carolina), was not so complete as were those of the other two regiments, but apparently it showed about 40 per cent. of its men infected with hookworm. Much interest is being manifested by physicians of the state in diagnosing the disease, a report from the state laboratory of hygiene at Raleigh showing an average of twenty-five specimens of feces arriving daily for microscopic study and report.

PENNSYLVANIA

Personal.—Dr. B. H. Detwiler of Williamsport, is seriously ill with paralysis. His whole right side is affected.

Infantile Paralysis.—Two deaths from and three new cases of infantile paralysis were reported to the health authorities at South Bethlehem, August 8.

State Sanatorium Bids.—Bids for the construction of the buildings of the State Tuberculosis Sanatorium to be erected at Cresson show that the work will cost about $250,000.

Typhoid at Wilkes-Barre.—On August 8 seven new cases of typhoid fever were reported in Wilkes-Barre, making a total of 50. The state health authorities have been asked to make a thorough investigation.

Rittersville Investigation.—The report of Mr. Lindley Johnson, the consulting architect retained last May by the State Board of Public Grounds and Buildings to investigate the work of the State Homeopathic Hospital for the Insane at Rittersville, was made public by Governor Stuart on August 12. The work was begun nine years ago and not one of the buildings has been completed. Appropriations by various legislatures for this work total $1,703,750, and contracts already let for the work amount to $1,482,445.83. To complete the buildings will require $349,000. The balance in the state treasury is $272,781.40, so that an additional appropriation of $76,219.60 will be required to finish the work, according to Mr. Johnson's ideas. He says that the work is well executed and that the hospital can be put in condition to receive some patients within four months, though at least a year will be required before the institution can be completed. He also reports that many of the buildings have suffered from exposure to the weather in an incompleted state. Many walls have been disfigured and much plastering ruined, but the buildings have not been structurally weakened.

Philadelphia

Personal.—Dr. Louis J. Burns sailed for Europe August 11 and Dr. George E. de Schweinitz August 13.——Dr. Edward P. Davis sailed August 10 to attend the International Gynecologic Congress in St. Petersburg, to which he is a delegate from the American Gynecological Society and the Jefferson Medical College.

Unlicensed Druggists Arraigned.—In the crusade against unlicensed drug-stores and the compounding of prescriptions by "quack" pharmacists, the State Pharmaceutical Board had four druggists of "Little Italy" arraigned before Magistrate Beaton August 12. In each case the druggists who violated the law were held under $600 bail for court.

Typhoid Increase Due to Carelessness.—Investigation of typhoid fever cases reported in the two weeks ending August 13, showed that 72 per cent. were men between ages of 17 and 32, and 28 per cent. were women. Chief Vogelson of the Bureau of Health said that the history of many of the cases showed that young men on boating trips had drunk raw river water.

Hospital for Midvale Steel Works.—Plans have been prepared for a two-story fire-proof hospital building, 54 by 80 feet, containing emergency wards, dispensary and quarters for a doctor. At present, a physician makes daily visits to the Midvale Steel Works, but because of frequent accidents in the shops, it has been found necessary to have a doctor in constant attendance.

Maker of Soothing Syrup Arrested.—Following the resolutions made by the Retail Druggists' Association to stamp out the indiscriminate sale of doped soothing syrups, a warrant was sworn out before Magistrate Beaton, by Dr. Christopher Koch, vice-president of the State Pharmaceutical Board, for the arrest of Mrs. M. M. Harvey, manufacturer of "Mother's Comfort," a medicine which has been found to contain one-third of a grain of morphin to the ounce.

Free Dental Treatment.—A dental clinic is to be established in the city hall, under the direction of the Department of Health and Charities. An appropriation of $3,000 for this purpose was made by councils several months ago. The committee to have charge of the dental dispensary is composed of P. B. McCullough, chairman, and Drs. W. A. Jacquette, Edward C. Kirk, J. J. Burke and Charles B. Schupack. One hundred dentists have volunteered their services, and rooms will be fitted up with all the modern appliances. It has been estimated that 80 per cent. of the public and parochial school children are in need of dental treatment.

War Against Doped Soft Drinks.—Up to August 13, 60 warrants had been sworn out by Special Agent H. P. Cassidy, of the State Dairy and Food Department, for the arrest of bottlers, who are charged with putting harmful substances into bottled soft drinks. Fourteen were ordered to appear for a hearing before Magistrate Beaton August 16. Some have already been convicted of adulterating their products and have paid heavy fines. Samples were taken of the cheap varieties of soda by Agent Cassidy and were analyzed by Prof. Charles H. Lawall, chemist for the State Dairy and Food Department, and were found to contain saccharin and soap bark. Children are the principal purchasers of the cheap drinks and it is thought that much of the illness among children in the tenement district is due to this fact.

Space on Recreation Piers to be Increased.—As a result of an inspection tour made on August 9 by Dr. Neff, Chief Eisenhower, of the Bureau of City Property, and Select Councilman Ryan, the space on the Chestnut and Race Street piers will be greatly increased. The report of the work on the Chestnut Street pier is as follows: Daily attendance, sick infants, 20; well infants, 24; older children, 36. Total attendance of children, 80. The attendance at the Race Street pier was equally good. Large quantities of medicines and modified milk have been distributed since the centers were opened ten days ago. Figures relative to the work being done in connection with the campaign for the reduction of infant mortality, show that during the week ending August 13, 19 nurses were engaged. They made a total of 1,374 visits and assisted in the care of 224 infants.

SOUTH CAROLINA

Personal.—Dr. Charles Speissegger, Jr., Charlestown, has received his commision as army surgeon with the rank of first lieutenant.

Pasteur Institute.—The board of health of Charlestown has opened a Pasteur institute for the treatment of rabies. It will be in charge of Drs. John M. Green and George M. Mood.

New City Hospital.—A charter has been secured and building will be begun immediately on a new city hospital at Gaffney. The capital stock is $10,000. Dr. R. T. Ferguson is secretary-treasurer of the organization.

Medical Society Meetings. At a meeting of the Palmetto Medical Association, composed of colored physicians of the state, the following officers were elected: President, Dr. H. C. Hardy, Spartanburg; vice-president, Dr. L. S. Edwards; secretary, Dr. Issac N. Macon, Rock Hill, and treasurer, Dr. J. S. Allen, Chester.——Lancaster County Medical Association was organized at Lancaster recently and the following officers elected: President, Dr. Thomas J. Strait, and Dr. William F. Laney, secretary, both of Lancaster.

VERMONT

Personal.—Dr. Richard G. Eaton, Wakefield, Mass., has been appointed by the trustees of the Brattleboro Retreat second assistant physician, to succeed Dr. Park R. Hoyt, recently resigned.

Health Officers Meet.—The twelfth annual school of instruction for health officers was in session at Montpelier for four days, beginning August 1. Dr. George M. Kober, Georgetown University, Washington, D. C.; Dr. Henry A. Wood, Waltham, Mass., and Dr. Livingston Ferrand, New York, secretary of the National Association for the Study and Prevention of Tuberculosis, were the guests of the meeting. State's Attorney H. B. Shaw, Burlington, read a paper on "Legal Points in Health Work" and then answered legal questions raised by the health officers. He gives it as his opinion that the state board of health has no power to give to the health officer of a city or town the right to act in an adjoining town or city where a health officer has been appointed. He also ruled that complaints of nuisances must be made to the local health officer and not to one in an adjoining town or city. The proposition for a national department of health was endorsed.

VIRGINIA

Hookworm Examinations. Dr. Roscoe C. Carnel, representative of the Virginia Board of Health, has been spending some time in Suffolk, cooperating with the physicians in that place in the study of hookworm cases.

School Inspection and Sanitation. Medical inspection of the school children of the Norfolk public schools will be inaugurated for the coming term. The common drinking cup has been abolished and sanitary drinking fountains will be installed in all the schools.

New College Board.—In the reorganization of the University College of Medicine, Richmond, all the medical representatives of the board of trustees resigned and the new board is made up of laymen, except Dr. John W. Dunn, secretary. Dr. Stuart McGuire was elected president of the faculty.

Society Organized.—More than fifty physicians, representing the counties of Warren, Frederick, Clarke, Rockingham and Shenandoah, met at the Memorial Hospital in Winchester, August 10, and organized the Shenandoah Valley Medical Society. Dr. Durus D. Carter, Woodstock, was elected president and Dr. Cox, Winchester, secretary-treasurer. The organization will meet quarterly. Dr. Stuart McGuire, Richmond, was chosen councilor in the State Medical Society.

Work Against Tuberculosis.—The tuberculosis hospital at Petersburg, the first to be established in the state, is to enlarge and extend the sphere of its usefulness. The Hill Crest Settlement has purchased the farm on the southern border of the city, containing twenty acres and a dwelling house of ten rooms. The capacity of the institution will be enlarged.——Realizing the necessity of work among negroes in order to make effective the fight against tuberculosis, it has been determined to organize leagues among teachers and students in the colored schools in the state. This work will be done under the direction of the State Antituberculosis Association, which recently held a meeting in the office of the state health department, Richmond. Dr. Charles P. Wertenbaker, United States Public Health and Marine Hospital Service, was detailed by the surgeon-general to attend this meeting. Dr. William F. Drewry, Petersburg, was elected chairman of the committeee. The colored people of the state are awakening to the necessity of combating the disease and are taking interest in the work of the colored antituberculosis league of Virginia. The first meeting of the league was held at Hampton, August 11, and a campaign along lines suggested by the state health department will be carried on among colored people in every part of the state.——The seaside camp at Cape Henry, under the direction of the Norfolk Antituberculosis League, which takes care of children whose parents have died from tuberculosis, reports a very successful season. The camp opened June 12 and will remain open until September 1.——The new tuberculosis camp on the city farm, Richmond, is completed and was opened August 15. There will be no resident physician, but Dr. Giles B. Cook will act as medical examiner.

GENERAL NEWS

Fighting Tuberculosis in the Philippines.—Hon. Jacob M. Dickinson, secretary of war, who has been visiting the Philippine Islands, assisted at Manila in the organization of a national society to fight tuberculosis. The disease has been making great inroads among the Filipinos.

International Red Cross Conference.—The ninth international conference of the Red Cross will be held in Washington, D. C., in May, 1912. Red Cross endowment fund committees of prominent men have recently been appointed in Chicago, St. Louis, Cincinnati and Washington by President Taft, and effort will be made to raise a fund of $2,000,000 for the American Red Cross.

International Epilepsy Congress.—An international association for a systematic study of epilepsy and care and treatment of epileptics was organized at Budapest last year, and the first general meeting is to be held at Berlin Oct. 4 to 7, 1910. Prof. A. Tamburini of Rome and Prof. J. Donath of Budapest are, respectively, the president and the secretary of the association. Professor Veith will discuss the criminality of epileptics and a number of statistical works will be presented. The transactions will appear in the journal *Epilepsia*.

Health and Mortality in the Canal Zone.—The report of the Department of Sanitation of the Canal Zone for the month of May compares the mortality among the employees for the past four years. It shows that the number of deaths among the 39,000 employees in 1907 was 98, while among the 52,800 employees in 1910 it was only 34. The death rate per thousand during May among the white employees during American control was, 1907, 18.34; 1908, 14.59; 1909, 14.11; 1910, 6.98, and among the black employees during the same month, 1907, 34.48; 1908, 8.72; 1909, 7.87; 1910, 6.98. The average number of employees constantly sick per 1,000 in hospitals, sick camps and quarters, is, white, 46.48; colored, 15.80.

Mississippi Valley Meeting.—The annual meeting of the Mississippi Valley Medical Association will be held this year at Detriot, September 13, 14 and 15. The headquarters will be at the Hotel Pontchartrain. Dr. Frank P. Norbury, Hospital, Ill., is president; Dr. Henry Enos Tuley, Louisville, Ky., secretary, and Dr. Henry O. Walker, Detroit, chairman of the entertainment committee. A preliminary program has been issued, which may be obtained from the secretary on request.

Cholera May Prevent Medical Meeting. The meeting of the International Gynecologic Congress, which was to be held in St. Petersburg in September, may not convene in that city on account of the epidemic of cholera prevailing there. Dr. Charles A. L. Reed, Cincinnati, president of the American committee and government delegate to the meeting, has cabled the Russian committee that if the meeting cannot be held there the American profession will welcome the organization to this country. The meeting of 1908, which was to be held in St. Petersburg, was deferred for the same reason.

Tuberculosis in Prisons.—Through the investigation of the National Association for the Study and Prevention of Tuberculosis, as set forth in a bulletin recently issued, there are 12,000 tuberculous prisoners in state, federal and local prisons and jails in the United States, or an average of 15 per cent. of the prison population. Only twenty-one prisons in fifteen states and territories have provided special places for the treatment of tuberculous prisoners. These institutions can accommodate only 800 patients. In three fourths of the larger prisons and jails no provision is made for isolating these patients. New York and Massachusetts are the only states where any systematic attempt has been made to transfer tuberculous prisoners to one central station. Tuberculosis is also exceedingly prevalent in the prisons of the Philippine Islands, and the largest tuberculosis hospital is in Manila where accommodation for 200 tuberculous prisoners is provided. The Clinton Prison Hospital in New York provides for 150. The 100,000 prisoners annually discharged from jails and prisoners, 15 per cent. of whom are tuberculous, present a serious problem in the distribution of tuberculosis.

FOREIGN

New Large Public Hospital at St. Petersburg.—The corner stone of the Peter the Great Hospital was laid at St. Petersburg last month. It is to be the largest hospital in Russia, with thirty-seven separate buildings, and is expected to cost over $10,000,000.

Personal.—The Astley Cooper prize has been awarded by the Guy's Hospital School to Professor E. Starling, F.R.S.—At the meeting of the Berlin Academy of Sciences on June 30, commemorative addresses were made on Frederich Kohlrauch, by Professor Rubens; on Hans Landolt, by Professor van't Hoff, and on Robert Koch, by Professor Rubner.

Russian Cholera Epidemic.—The cholera in Russia continues to spread, particularly in St. Petersburg and in the southern mining districts, and is approaching the proportions of the epidemic of 1908. Figures of the central sanitary bureau show that in the week ending July 30 there were 15,244 cases of cholera and 6,944 deaths. The government has decided to send to the mining regions a special commission to study the situation, empowered to organize sanitary preventive work. Industrial conditions are seriously handicapped in the afflicted regions.

Deaths in the Profession Abroad.—Besides those mentioned elsewhere the profession has lost the following eminent medical men: Larra y Cerezo, M.D., of Madrid, a high military medical officer and president of the Medical Press Association of Spain.—J. Grünfeld, M.D., of Vienna, prominent in syphilology and a pioneer in the field of endoscopy. He was 70 years old.—H. Berestnew, M.D., of Moscow, one of the leading bacteriologists of Russia.—George Herbert Rowe, M.R.C.S., Leeds, trustee and senior surgeon of the Leeds Dispensary, aged 53.—Claude Muirhead, M.D., F.R.C.P., consulting physician to the Royal Infirmary, died at Edinburgh June 22, aged 75.—Dr. G. B. Halford, late professor of physiology in the Melbourne University at Melbourne, Australia, aged 86.

MANILA LETTER

(From Our Regular Correspondent)

MANILA, June 21, 1910

Medical Surveys of Native Towns

The medical survey party has returned from one of the northern provinces where it has been making investigations. It has been planned to send out at least one of these survey parties each year. They are arranged by the Bureau of Health, the Philippine Medical School and the Bureau of Science and are usually sent out during the vacation period of the medical school. Under a director the survey party goes to a typical native town of a district or province and with the aid of the presidency, the local head of the government, establishes a dispensary and makes a medical investigation of the town. The object is to inquire into the sanitary conditions of the inhabitants, the water supply and sewage disposal, to determine what contagious diseases, if any, are present and to what extent, to find what diseases are most prevalent—special attention being given to smallpox, plague, cholera, typhoid and dysentery—and to look into the midwife practice and infant mortality. Some difficulty is often encountered in overcoming the natural reserve and suspicion of the inhabitants. On this account locating the various people who are sick and inquiring into their mode of living often becomes quite a problem. The inhabitants will not always come to the free dispensary of their own accord until they have looked the intruders over and satisfied themselves of their purpose. In addition many cases of serious illness are likely to go unnoticed even after the best of relations have been established between the doctors and the natives. To overcome these difficulties a happy plan was put into practice last year. This consisted in the taking of a complete civil census of the town as the first part of the program. After the dispensary, laboratory and living quarters were established a house-to-house canvass was made. Thus the survey party soon became acquainted with the people and nearly all the cases of serious illness as well as insanitary homes, etc., were early located.

At Taytay last year a complete medical and geographic survey, as well as an anthropologic study of the people were made. The whole is published in a recent number of the *Philippine Journal of Science*. These surveys serve at least three purposes: They add to our knowledge of the variety, severity and extent of tropical diseases in the Orient and particularly in the Philippines. They materially aid the Bureau of Health in determining the sanitary condition of the average town of the various provinces of the Philippines, the geographic distribution of the rare diseases and of the more common epidemic diseases. The members of the parties become intimately acquainted with the Filipinos and are thus better able to carry into effect from time to time their program of sanitation; finally the Philippine Medical School is kept in close touch with the practical side of medical questions as they appear in the islands and it is enabled to vary the curriculum accordingly.

Polished Rice and Beriberi

In the Philippines in all specifications for commissary stores where rice is required for either the Army or Navy unpolished rice is specified. Polished rice is no longer used as a diet in either the Army, the Navy or in the public institutions of the islands. The supposed relation of polished rice, as a diet, to the development of beriberi is the direct cause of this ban. In so far as statistics are available and reliable, it would seem that since the introduction of improved rice-milling machinery into the Philippines the amount of beriberi among the natives has increased. Of course due allowance must be made in these considerations for a great number of cases reported as beriberi which are, to say the least, of a doubtful diagnosis. Since beriberi has been so much in the limelight of recent years in the Orient, it would hardly be an exaggeration to say that there has been a tendency to include various nervous disturbances under the heading of beriberi which in reality should have been classed as something else. In spite of this, a number of competent medical men both in the Philippines and in other parts of the Orient have observed an increase in the number of cases of this disease since polished rice has supplanted the hand-milled rice as the staple article of diet. In many sections the natives have early shown a preference for polished rice. It is rather noteworthy also that beriberi is decidedly more frequent among that class of natives whose staple and principal article of food is polished rice, and that in those remote regions where the Filipino still uses the unpolished rice, although rice is the principal article of diet, beriberi is relatively rare. These observations go hand in hand with the observations of Dr. de Haan that, in Netherlands India, it has been found beriberi could be kept very much in abeyance by adding to the white rice diet a form of green pea which is called "*Katchung idj ju*" and is said to be rich in phosphorus, as well as with the results of the experiments of Dr. Frazier and Dr Stanton at the laboratory for medical research at Kuala Lumpur, Federated Malay States, who find "that fowls fed on highly polished rice suffer, within from 4 to 6 weeks, from a condition of inflammation of the nerves which closely resembles and may be identical with the condition of the nerves found in beriberi in human beings." All these things taken together suggest some indication of the etiology of the disease. It seems evident that beriberi is primarily a disease of nutrition and metabolism, and in local medical circles by many it is considered doubtful that beriberi is caused by an organism. Perhaps the most widely accepted view is that advocated by Dr. Frazier who points out that in a steady diet of polished rice, as is often the case here in the Orient, the individual fails to obtain sufficient nourishment for the peripheral nerves. He showed that the unpolished rice grain contains beneath the skin or pericarp a layer of cells rich in fat and phosphorus and that the central portion of the rice grain consists entirely of pure starch. In polished rice the outer fat containing layer has been polished away. Rice prepared in the ordinary native fashion by hand milling contains a large amount of these oil-bearing layers. It is, moreover, the experience of the Bureau of Health of the Philippine Islands that a little meat or even the rice polishings mixed with a diet of white rice will lead to an improvement of beriberi patients in the early stage.

Peculiar Case of Helminthiasis

Last year a young woman very much emaciated generally but with a large protruding abdomen very much like the pot-bellied appearance of the native Filipino pig, came to the Philippine Medical School for treatment. For a long time she had been looked on with suspicion by the inhabitants of the town; it was considered that some curse was cast upon her by the Great Evil Spirit or some of the other numerous evil spirits. Consequently, she came very much into disrepute. According to one view it was thought that she had been loose in her morals and that for punishment she could not give birth to the child but must carry it indefinitely or until the spirits were appeased. After treatment by the American physicians she was delivered of 11 pounds of worms, regained her virtue and soon became a well woman.

LONDON LETTER

(From Our Regular Correspondent)

London, Aug. 6, 1910.

Infant and Child Mortality

The local government board has issued a report prepared by its chief health officer, Dr. Newsholme, on infant and child mortality in England and Wales. This is the first systematic attempt to investigate the localization and extent and incidentally the causes and effects of a condition regarded as a blot on our civilization. In the last four years there has been a wide-spread awakening to the national importance of child mortality and a largely successful endeavor to diminish it. The object of the present report is threefold: to determine whether the reduction of infantile mortality implies any untoward influence on the health of the survivors to later years; to indicate the communities which are characterized by a continuing high rate of infant mortality, and to assess the different factors by which such mortality is brought about. An extraordinary difference is found in the infantile death-rates in different parts of the country, the mortality per 1,000 births in the first year of life varying from under 90 to over 150. In the first five years of life the mortality is also unequally distributed, being twice as high in some counties as others. Excessive infant mortality implies excessive mortality in later life. Counties having excessive infant death-rates have also excessive death-rates throughout the first twenty years of life, and counties having low infant death-rates have low total death-rates in this period. In the recent decline of infant mortality a higher standard of education, especially in its moral aspects, is considered an important factor. In 1906 and in 1908 national conferences on infant mortality were held and had a great educational influence. The Notification of Births Act of 1907 crystallized public opinion on the subject. Voluntary health associations as well as public health officials then concentrated on the problem of infant mortality and aided in the development of the "sanitary conscience." The main cause of excessive infant mortality is neglect of sanitation. For this the local health authorities are often responsible. So long as they permit excreta to be kept near houses in towns and allow streets to be unpaved domestic sanitation has not a fair chance. In many manufacturing districts, such as Durham, in which the death-rate of children is excessive, the laboring population is compelled, by the inaction of the local authorities, to live on a soil and in an atmosphere laden with filth, which contaminates food, clothing and person. Reports of this condition are constantly made by inspectors of the local government board, but they have no effect on the local authorities. Usually the health officer is a busy local physician who receives a small salary, which these authorities regard as a sop to keep him quiet, or he is unwilling to offend his patients by calling attention to their misdoings. In towns where the health officer devotes his whole time to the work he is more independent.

The British Pharmaceutical Conference

The forty-seventh annual meeting of the British Pharmaceutical Conference was opened at Cambridge on July 26. A large number of delegates attended from all parts of the United Kingdom. The presidential address was delivered by Mr. Francis Ransom, who emphasized the great need for pharmaceutic research and pointed out that the universities of this country are now offering increased facilities for the study of certain branches of science intimately connected with pharmacy. Looking over the vast amount of work done during the last 50 years by pharmacologists on the one hand and by chemists on the other, the question arose as to whether they might not have achieved more valuable results if there had been a definite system of organization to bring together the two classes of investigators. He suggested that a *joint* committee should be appointed to consist of representatives of the British Pharmaceutical Conference and of the British Medical Association with a view to organizing medical research between physicians and pharmacists. This committee would be able to establish the value or worthlessness of any remedy. An investigation could be undertaken by the pharmacologists to determine its remedial value, by the physiologist to determine its action, by the chemist to ascertain its composition and by the pharmacist to determine a suitable preparation. Mr. Ransom also referred to the necessity for studying the cultivation of medicinal plants with the object of ascertaining under what condition the best results could be obtained. At present there was much diversity of opinion as to the cause of temporary variation in the quality of certain drugs, and this afforded scope for botanic investigation. Thus there was a remarkable divergence in the percentage of active principle in jalap of commerce; a similar divergence had been noted in belladonna root, some plants yielding thrice as much alkaloid as others. Again, it was generally thought that the value of many medicinal preparations was not entirely dependent on the alkaloids which they contained, but also on other constituents. This question opened up a wide field for research.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 5, 1910.

The Third International Congress of Educational Hygiene

The formal opening session of the third Congrès international d'hygiène scolaire was held on August 2 at the Sorbonne, under the honorary presidency of Professor Landouzy, dean of the Paris college of medicine. The congress was attended by 1,600 persons, most of whom were from the northern countries, especially Sweden, Norway, Denmark and England. The vacation season was both favorable and unfavorable. It brought to Paris a great number of foreign members, but many French members were kept away by attendance at other scientific meetings, as I mentioned in a previous letter (The Journal, July 23, 1910, p. 325). In his opening address, Dr. Landouzy took for his subject the rôle of the physician in educational hygiene. He showed how much this rôle has been enlarged since to-day on the school physician rest many duties, such as the sanitary supervision of the school, the prophylaxis of contagious diseases, the keeping of the sanitary records of the school building and of the individual pupils; the instruction of the teachers in hygiene, and the consideration of the programs, methods and the hours suitable for the various ages, the two sexes and for the various subjects of instruction. The great philosopher Descartes wrote almost prophetically in the seventeenth century: "Principally also, for the preservation of health, which is doubtless the first good thing, and the foundation of all other good things of this life, if it is possible to find anything which will make man wiser or more skilful than he has been hitherto, I believe that we must seek it in medicine."

The congress is divided into eleven sections, some of which are presided over by physicians and some by educators. The first section, that on school buildings and furniture, is presided over by Dr. J. A. Courmont, professor of hygiene in the Lyons college of medicine; the third, that on medical inspection of schools, by Dr. Le Gendre, physician of the hospitals of Paris; the fifth, that on the prophylaxis of contagious diseases, by Dr. Hutinel, clinical professor of children's diseases in the Paris college of medicine; the eighth section, that on the instruction of teachers in hygiene, by Dr. Pinard, professor in the Paris college of medicine; the eleventh section, that on the hygiene of the sight, the hearing, the mouth and the teeth, by Dr. Truc, professor of clinical ophthalmology at the Montpellier college of medicine. The other sections are concerned with the physical education, hygiene outside of schools (fresh-air schools, vacation colonies), hygiene among the teaching force, programs and methods of instruction in their relation to educational hygiene, special schools for abnormal children, etc.

Besides the work in sections, the congress has already held several general sessions. One of these sessions was devoted to the question of the standardization of the methods of the physical examination of pupils, on which a report was made by Dr. Méry, *agrégé* professor at the Paris college of medicine, and Dr. Dufetel, medical inspector of schools of the city of Paris, who recommend that the weight, the height and the circumference of the thorax of pupils be measured in a uniform way, so that the results obtained by various observers may be compared to advantage. The general session devoted to the delicate question of the sexual education of children brought together a large attendance. Dr. Doléris, member of the Académie de médecine of Paris, in his paper especially emphasizes the necessity of organizing in the normal schools, special courses, taught by physicians, for the purpose of enabling teachers to give sexual instruction to their pupils.

The congress passed a resolution in favor of the adoption of the vertical handwriting and of the erection of bathrooms and shower baths in primary schools. It also advocated dental inspection by specialists, each school semester, the offices of inspecting dentist and practicing dentist being distinct, and the family being allowed entire liberty in the choice of the practicing dentist. The congress also voted the adoption of the conclusions of the report of Dr. Cazalet, president of the Union des Sociétés de gymnastique de France, in regard to the necessity of rendering physical education compulsory in all educational establishments.

Personal

Dr. A. Gilbert, professor of therapeutics at the Paris college of medicine, has been recently appointed professor of clinical medicine to replace Dr. Dieulafoy. The council of the college unanimously proposed for the chair of therapeutics, thus made vacant, Dr. Marfan, *agrégé* and physician of the Paris hospitals. The new professor is known especially for his work on pediatrics. He has published a treatise on breast-feeding and artificial feeding, which has had great success.

At the Bordeaux college of medicine, Dr. Lagrange, *agrégé*, has been chosen professor of clinical ophthalmology in place of Dr. Badal. At the same college, Dr. Auché has been chosen professor of hygiene, replacing Dr. Layet. At the college of Nancy, Dr. Hoche, *agrégé*, has been chosen professor of pathologic anatomy.

Measures Adopted Against Cholera

The *Journal Officiel* has just published a decree, stating the sanitary measures to be taken for preventing the importation of cholera into France. Every person coming from a cholera-infected region who presents suspicious symptoms on arriving at the French frontier will be detained at the frontier station by a special commissioner and isolated. The following articles are prohibited from entering France by the land frontier: soiled clothing and bedding, rags (except baled rags, transported in bulk) and fruit and vegetables growing under the soil or on the surface of the soil. Every person giving lodging to a traveler who comes directly from infected regions, or has left such regions within less than eight days, is bound to report the fact to the mayor of the commune, or in Paris, to the prefect of police, within twenty four hours. Every case suspected of being cholera must be immediately reported to the mayor's office, by the physician, the head of the family, the persons in charge of the patient or by those with whom he is lodging. Infractions of this decree are punishable by imprisonment of from fifteen days to three months and by a fine of not more than $100 (500 francs).

Yellow Fever

An English packet, the *Augustine*, bound from New York to Liverpool, was to have put in at Cherbourg, but several cases of yellow fever having broken out on board, the packet was obliged to put in at Havre, in order to be quarantined and put in sanitary condition.

Rioting by Pharmacists' Assistants

As I mentioned in one of my previous letters, the association of pharmacists' assistants obtained from the pharmacists, after long negotiations, the closing of the drug stores at 9 o'clock in all of the arrondissements of Paris, beginning August 1. But out of 1,300 of the drug stores in Paris four or five situated in the center, the special feature of whose business was to keep open all night, refused assent to this agreement and continued open as in the past. To compel them to close the clerks in the association decided to employ the methods of violence which were used by the employees of shops for novelties and the grocers' clerks. About three hundred collected before the drug stores in question and created a disturbance. The threatened pharmacists have no intention of yielding while the drug clerks have declared their intention of renewing the agitation each night. The police [illegible] to take measures to protect the pharmacists.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 27, 1910.

Personal

July 16 the senior of German pediatricians, and indeed of pediatricians in general, Prof. E. Henoch, celebrated his ninetieth birthday. He has lived in Dresden since leaving the Berlin faculty and enjoys comparatively great physical and mental vigor. At his jubilee congratulations were sent to him from all sides, including those of the imperial couple, who regard themselves as indebted to him for the care of their children.

The University of Edinburgh has awarded Professor Bier the Cameron prize, which was offered by the university for that benefactor of mankind who should have made an especially important step in the progress of medicine during the last five years.

Professor Feer of Heidelberg has recived a call to Zürich as pediatrician.——The search for a successor of Professor Bumm, who, as is well known, has received the chair of Professor Olshausen, is now happily finished. In order to avoid further declinations a gynecologist was chosen who it could be assumed would surely accept, namely, Professor Franz of Kiel. Professor Franz is a former assistant of Bumm, aged 36; he has accomplished little of importance and is scarcely known in the wider German medical circles, to say nothing of foreign countries. The same procedure has been followed here as in the case of the successor of von Leyden, when Professor His was selected because it was thought that no better investigator could be got. In this way, at any rate, the fame of the Berlin medical faculty is diminishing, since it has lost Virchow, Helmholtz, Dubois Reymond and Koch. ——Professor Olshausen has been given a title of nobility on his departure from the faculty. Medical titles of nobility with us will soon be as common as blackberries.

Insurance Against Mental Disease

The attempt to transfer the burdens of the individual by means of insurance to the shoulders of the many has been extended by a German psychiatrist (Medical Councillor Fischer) to the provision for the care of the insane. The idea of insuring against insanity may seem strange at first sight; but insanity is not so rare and when it occurs it affects the life of the family quite as much as any other misfortune against which insurance is commonly secured. Fischer recommends insurance in connection with an institution for annuity and life insurance. In Nuremberg there has been for twenty-five years a society that makes a business of such insurance.

Admission to the Berlin Faculty

This question, which I have previously treated, has reached a new stage. The minister of education has informed the faculty that he contemplates repealing the secret ballot in the voting on the admission of new privat-docents. This method was introduced by the faculty in 1904 because its members believed that in this way their mutual independence would be better preserved, especially when the election of an assistant of an influential professor was under consideration. The faculty will undoubtedly agree with the view of the minister, inasmuch as this plan has had in fact no influence on the great excess of privat-docents admitted. As to the proposal to elect privat-docents for a short period, the minister has not yet expressed an opinion, but his decision may be unfavorable. For the removal of the nuisance complained of there remains as the surest method simply the principle to impose the strictest scientific requirements for admission. Evidence in favor of this is afforded by the fact that in the last semester not a single privat-docent has been admitted to the medical faculty.

Campaign Against Alcoholic Intemperance Among Children

To avoid the dangers that the use of alcohol entails on children the German Association Against the Misuse of Alcoholic Beverages prepared a warning circular which is to be distributed to parents under the direction of the Prussian department of education on occasion of public vaccination, medical inspection of schools, etc. The teachers are to speak of the circulars while teaching and place them in the school books, and they are also distributed by the midwives to lying-in women and by the officials at the announcements of births and weddings, and by factory managers, paymasters, ministers, etc. Altogether in this way 2,000,000 copies of this circular were distributed in 1909.

Marriages

Harry D. Cartmell, M.D., to Miss Oradelle DeMoulin, both of Greenville, Ill., August 11.

C. Hugh McKenna, M.D., to Miss Evelina Marguerite Beauvais, both of Chicago, August 10.

Herbert Seymour Gay, M.D., to Miss Marjorie Florence Dearborne, both of Boston, August 3.

Warren D. Miller, M.D., Weaver, W. Va., to Miss Louise Davis Lawrence, at Baltimore, August 6.

Thomas Roy Campbell, M.D., Arthur, N. D., to Miss Margaret Adile Luse, of Iowa City, Iowa, August 11.

Oscar R. Micklethwait, M.D., Portsmouth, Ohio, to Miss Laura Allen, of Jackson, Ohio, at St. Charles, Mo., recently.

Deaths

William Frederic Ridgway, M.D. Jefferson Medical College, Philadelphia, 1904; a member of the American Medical Association; pathologist to the Atlantic City, (N. J.) Hospital; died at that city, August 5, following an operation for appendicitis, aged 38. Resolutions were passed on his death by the Atlantic County Medical Society.

William Newlon Miller, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the Medical Society of the State of Pennsylvania; a veteran of the Civil War; said to have been the oldest practicing physician in Allegheny County; died at his home in Pittsburg, August 3, from pneumonia, aged 83.

James Lot Bullock, M.D. Meharry Medical College, Nashville, Tenn., 1895; a member of the National Medical Association; secretary of the North Carolina State Medical, Dental and Pharmaceutical Association for several years; died at his home in Greensboro, February 14, from tuberculosis, aged 39.

Silas Smith Cartwright, M.D. College of Physicians and Surgeons, New York City, 1853; a veteran of the Civil War; a member of the legislature from Delaware County in 1884 and 1885; postmaster of Roxbury, N. Y.; died at his home in that place, July 31, from heart disease, aged 76.

Abraham S. Raudenbush, M.D. Jefferson Medical College, Philadelphia, 1864; a member of the American Medical Association; one of the founders of the Reading (Pa.) Hospital and for some years a member of its staff; died suddenly at Pottstown, Pa., August 5, aged 69.

Edwin C. Buell, M.D. New York Homeopathic Medical College and Hospital, 1876; a member of the California State Board of Medical Examiners from 1901 until 1907; of Los Angeles; died in Genoa, Italy, while touring Europe, July 20, from appendicitis, aged 57.

James P. Moore, M.D. Medical College of the State of South Carolina, Charleston, 1852; a member of the American Medical Association; surgeon in the Confederate Army during the Civil War; died at Yazoo, Miss., August 5, from cholera morbus, aged 83.

George B. Jennings, M.D. Medical College of Virginia, Richmond, 1860; a member of the Medical Society of Virginia; for twelve years superintendent of schools of Green County, Virginia; died at his home in Ruckersville, August 2, from heart disease, aged 72.

Francois H. DeVaux, M.D. Hospice Bicetre, Paris, 1867; for a number of years United States army surgeon; at one time superintendent of the State Board of Health of North Dakota; died at his home in Chicago, August 7, from angina pectoris, aged 59.

Chesterfield W. Harper, M.D. George Washington University, Department of Medicine, 1860; contract surgeon for the United States army during the Civil War; was found dead in his room at Russellville, Ky., August 5, from heart disease, aged 74.

Theodore M. Togus, M.D. University of Vermont, College of Medicine, Burlington, 1886; a member of the New Hampshire Medical Society; a member of the board of health of Hookset, N. H.; died at that place, July 28, from heart disease, aged 57.

Joseph R. Ryan, M.D. University of Louisville (Ky.) Medical Department, 1865; surgeon in the Union army during the Civil War; of Des Moines, Iowa; died at the home of his daughter in Waterloo, Iowa, August 2, from cancer, aged 70

John J. A. Burke, M.D. University of Buffalo (N. Y.) Medical Department, 1877; for nine years health officer of Rochester, N. Y.; died at Clifton Springs, N. Y., where he had gone for treatment, August 1, from paralysis, aged 60.

Frank Camm, M.D. University of Maryland, School of Medicine, 1885; a member of the Medical Society of Virginia; assistant surgeon at Camp Alger during the Spanish-American war; died at Lynchburg, August 5, aged 62.

Jesse S. Reagan, M.D. Rush Medical College, Chicago, 1851; a member of the Indiana State Medical Association; a practitioner of medicine in Indiana for fifty-seven years; died at his home in Lebanon, February 9, aged 81.

Levi Drakely Rood, M.D. University of Vermont, College of Medicine, Burlington, 1881; a member of the American Medical Association; died at his home in Des Moines, Iowa., August 8, from appendicitis, aged 49.

Charles Edwin Shumard, M.D. Cincinnati College of Medicine and Surgery, 1891; a member of the Cincinnati Academy of Medicine; died at his home in Venice, Ohio, August 2, from angina pectoris, aged 48.

Nathaniel Seward Parsons, M.D. University of Vermont, College of Medicine, 1874; a member of the Illinois State Medical Society; died at his home in Kewanee, Ill., August 8, from Bright's disease, aged 56.

James Henry, M.D. Bellevue Hospital Medical College, New York City, 1870; a veteran of the Civil War; formerly of LaHarpe, Ill.; died at his home in Galesburg, Ill., August 2, from paralysis, aged 69.

Nathaniel C. Wilson, M.D. University of Pennsylvania, Department of Medicine, 1853; a retired practitioner of Houston Heights, Texas; died at his home in that city, August 5, aged 93.

John Adam Krug, M.D. Medico-Chirurgical College of Philadelphia, 1889; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, August 6, aged 54.

William Gilman Perry, M.D. College of Physicians and Surgeons, New York City, 1847; a trustee of the state hospital for many years; died at his home in Exeter, N. H., August 2, aged 87.

Myron E. Knapp, M.D. Chicago Homeopathic Medical College, 1882; of Detroit, Mich.; died at the home of his sister in Byron, Mich., July 29, from cerebral hemorrhage, aged 62.

Charles S. Parker, M.D. Castleton (Vt.) Medical College, 1847; a practitioner at Three Mile Bay, N. Y., for more than sixty years; died at his home in that place, July 28, aged 89.

Gustave Aftel, M.D. University of Warsaw, Russia, 1869; a member of the Ohio State Medical Association; died at his home in Toledo, August 5, from septic poisoning, aged 60.

John H. Whitehead, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1874; a veteran of the Civil War; died at Bowling Green, Ohio, August 6, from diabetes, aged 69.

Solomon Secord, M.D. Medical Department of Victoria College, Toronto, Ont., 1856; a Confederate veteran; died suddenly at his home in Kincardine, Ont., April 21, aged 76.

Charles H. Moore, M.D. University of Pennsylvania, Department of Medicine, 1868; a veteran of the Civil War; died at his home in Wheeling, W. Va., July 28, aged 67.

Joseph H. Lukens, M.D. Eclectic Medical College of the City of New York, 1875; a retired practitioner of Seattle, Wash.; died at his home in that city, July 23, aged 67.

George William Harrison, M.D. Miami Medical College, Cincinnati, 1873; formerly of Newtonia, Mo.; died at Chester, Mo., August 2, from heart disease, aged 58

Frederick Augustus Jewett, M.D. Harvard Medical School, Boston, 1852; a member of the Massachusetts Medical Society; died in Grafton, February 8, aged 85.

William Leslie Dewees, M.D. Medical College of Indiana, Indianapolis, 1883; died at Mooresville, Ind., August 5, from cerebral hemorrhage, aged 60.

Edwin Cowles, M.D. Hahnemann Medical College, Chicago, 1866; died at his home in El Dorado, Kan., July 28, from paralysis agitans, aged 80.

John Jackson Brower, M.D. Eclectic Medical Institute, Cincinnati, 1869; died at his home in Coshocton, Ohio, July 30, from paralysis, aged 71.

Lycurgus Coon, M.D. Physio-Medical Institute, Cincinnati, 1868; died at his home in Springfield, Mo., August 6, from tuberculosis, aged 72.

Pharmacology

[illegible] American Medical Association

AROMATIC DIGESTIVE TABLETS

W. A. Puckner and L. E. Warren

[illegible] pepsin and pancreatin [illegible]

[illegible]

[illegible]

[illegible]	4	grains
[illegible]	1	grain
[illegible]	½	grain
[illegible]	½	grain
[illegible]	½	grain
[illegible]	½	grain

[illegible]

[illegible]

[illegible]

[illegible] acid is made. Further tests showed that hydrochloric acid in [illegible] combination was present essentially in the amounts [illegible] in three of the specimens. In two of the others hydrochloric acid was entirely absent. In the remaining one [illegible] traces of hydrochloric acid could be found.

H. K. Mulford Company

"Digestive Aromatic"

[illegible]	4	grains
[illegible]	1 [illegible]	grain
[illegible]	[illegible]	grain
[illegible]	1 [illegible]	grain
[illegible]	1 [illegible]	grain
[illegible]	1 [illegible]	grain

Dose: [illegible] tablets.

[illegible] each tablet is said to contain [illegible] grain [illegible] acid. This amount is equivalent to [illegible] gm. [illegible] hydrochloric acid. Analyses demonstrate that each tablet contains about [illegible] gm. hydrochloric acid [illegible] HCl or essentially the amount [illegible]. The average dose of diluted hydrochloric acid [illegible] Pharmacopeia is 1 c.c., equivalent to 0.1049 gm. [illegible] hydrochloric acid. To obtain this quantity from the above preparation the patient would be required to swallow [illegible] of the tablets.

Wm. S. Merrell Chemical Company

"Digestive Aromatic Compound"

[illegible]	[illegible] parts
[illegible]	[illegible] parts
[illegible]	1 part
[illegible]	1 part
[illegible]	[illegible] parts
[illegible]	[illegible] parts

[illegible] that each tablet should contain about [illegible] gm. of absolute hydrochloric acid. The analyses [illegible] that each tablet contains about [illegible] gm. hydrochloric acid [illegible] or practically the amount [illegible] hydrochloric acid [illegible] of the tablets.

Parke, Davis & Company

"Digestive Aromatic"

[illegible]	4	grains
[illegible]	1	grain
[illegible]	½	grain
[illegible]	½	grain
[illegible]		
[illegible]		

Dose: [illegible] tablets.

[illegible] is present in small amounts [illegible] that hydrochloric acid [illegible] combination is absent. [illegible] salt is present [illegible].

Sharp & Dohme

"Digestive Aromatic"

[illegible]	4	grains
[illegible]	1	grain
[illegible]	[illegible]	grain
[illegible]	½	grain
[illegible]	[illegible]	
[illegible]	[illegible]	

[illegible] are present. [illegible] hydrochloric acid [illegible] combination [illegible] in very small amounts [illegible] about [illegible] of the [illegible]. [illegible] is absent. [illegible] would be required [illegible] hydrochloric acid [illegible]

[illegible] & Company

[illegible]

[illegible] pepsin, pancreatin [illegible] hydrochloric acid and aromatics [illegible] hydrochloric acid [illegible] combination. A trace of [illegible]

[illegible]

[illegible]

The Fraser Tablet Company

"Pepsin Sacch.	80 parts
"Pancreatin, Pure	10 parts
"Diastase	1 part
"Lactic Acid	1 part
"Hydrochloric Acid	3 parts
"Aromatic Powder	6 parts

Dose: 1 or 2 tablets
"Each tablet represents (5) grains of the above mixture."

According to the formula hydrochloric acid (31.9 per cent. absolute HCl) represents 3 parts in 101 of the preparation from which the tablets are made. Each tablet (containing 5 grains of the mixture) should have 0.00307 gm. absolute hydrochloric acid. Analysis showed that each tablet contains hydrochloric acid in protein combination equivalent to an average of 0.003066 gm. absolute hydrochloric acid, or essentially the amount claimed. It would be necessary to give 34 tablets to administer a pharmacopeial dose of hydrochloric acid.

Editorial Note: The above indicate that the use of such tablets is irrational, unscientific and should be condemned. The only constituent of these tablets, other than the aromatics, which might possibly be of benefit in stomach troubles, is the pepsin. But even if it be assumed that the diastase and pancreatin could exert their characteristic effects, their aid to digestion (metabolism) would be but slight, because their amounts in the tablets are too small to be of any value.

It is claimed that the tablets contain disastase in amounts varying from 1/20 to 1/4 grain. Assuming the diastase used to be of first-class quality, i. e., capable of converting 200 times its own weight of starch into soluble products, the quantity in one tablet would be capable at the most of digesting but from 10 to 50 grains of starch, an amount equal at the most to but a small spoonful of oatmeal or a very dainty bite of bread. In the same way the quantity of pancreatin is insufficient to be of any material aid in digestion should it in some way escape destruction in the stomach and still retain its full activity when it reaches the alkaline juices of the intestines. One grain of pancreatin of full United States Pharmacopeia strength will digest only 25 grains of starch or the proteids in about 100 c.c. of milk.

Saccharated pepsin, which was formerly official, was required to digest 300 times its own weight of moist egg albumin, while the pepsin that is now official is required to digest ten times that amount, or 3,000 times its own weight. It is evident, therefore, that the tablets should contain sufficient pepsin to digest appreciable amounts of protein. No intelligent physician would prescribe these tablets simply for the pepsin they contain or are supposed to contain; if he wanted to give pepsin he would prescribe the drug in the simple form.

Clinical experience has shown that in the majority of cases of so-called dyspepsia the stomach contents contain too much rather than too little hydrochloric acid, and wherever there is a sufficiency of acid there is usually no decrease in the secretion of pepsin. In many of such cases, too, digestion is normal, or even more active than normal, but even when it is imperfect there is seldom any lack of pepsin.

Insufficient digestive power is most often due to a deficiency of hydrochloric acid and not to lack of pepsin in the stomach contents. In the tablets under consideration, however, hydrochloric acid is present if at all in the most ridiculously minute quantities; quantities that are so small as to preclude any therapeutic effect except that due to the psychic element.

These tablets, with their six or more ingredients, are typical "shotgun prescriptions." Such prescriptions catch the unthinking doctor as well as the self drugging public, for, while clinical experience and physiologic experiments have demonstrated that the old ideas regarding the value of these digestives and ferments were erroneous, the public and many members of the medical profession still seem to be influenced by the old theories.

In conclusion we must not lay all the blame on the manufacturing firms for supplying these absurd combinations; the physician who prescribes them should assume a large share of it. If the doctors did not use them the manufacturing concerns would soon stop putting them on the market. We hope, however, that those manufacturing concerns that like to be classed as reputable will cease to disgrace their catalogues with what they know to be therapeutic absurdities.

Lung Germine

To the Editor: I was much interested in the article on "Lung Germine" that appeared in The Journal, Aug. 6, 1910. Two years ago, when I was at Adell, Wis., a young man, aged 26, came to my office complaining of "lung trouble." His temperature was 103 F., pulse 120, appetite poor and he had lost weight in about eight weeks from 170 to 130 pounds. He complained of great weakness, shortness of breath, persistent cough and sleeplessness. I found a tuberculous patch in the right upper lobe and the examination of the sputum was positive. I put him on the open air treatment, rest, diet, etc. Six months later his temperature was normal, his weight had increased from 130 to 165 pounds, expectoration and cough very much decreased; he slept well, had a ravenous appetite and was able to take long walks without tiring himself.

About this time he called on me and wanted to know when he could go to his work again as bookkeeper. I advised him to wait another six months. This apparently seemed too long for him and he got in correspondence with the Lung Germine Co., and began to take their Lung Germine. Immediately after he commenced using it, he became weaker, began to show signs of cyanosis in the tips of his fingers and ears; was very restless, lost appetite and could not sleep. From day to day he grew worse, but on communicating with "Dr." C. R. Wendt of the Lung Germine Company, he was told to keep right on with the medicine as these were favorable symptoms and he surely would get well. In 10 or 12 days I was called in to see him. I found him very cyanosed over the entire body with frothy expectoration from the mouth and nose and very rapid breathing. Five minutes later he was dead. I called a coroner's inquest and signed the death certificate: cause of death due to the use of Lung Germine.

After the patient's death, I wrote to the Michigan State Board of Medical Examiners and asked for information concerning this Dr. C. R. Wendt. The secretary informed me that Dr. C. R. Wendt had no license to practice medicine in Michigan.

C. F. Senn, M.D., Milwaukee, Wis.

Comment: The experience of our correspondent seems to verify the statement made in the exposé of this wretched fraud, *viz.*, that the nostrum is not only worthless but positively dangerous. If it were possible to get information on the point, we do not doubt that it would be found that hundreds of poor victims had had their lives very materially shortened by the use of this vile concoction.

"Every man who trades in this market, whether he pockets the profits of the maker, the purveyor or the advertiser, takes toll in blood. He may not deceive himself here, for here the 'patent medicine' business is nakedest, most cold hearted. Relentless greed sets the trap and death is partner in the enterprise."

Correspondence

One Medical Aspect of the Prize Fight

To the Editor: The medical man may read much between the lines as to the reason for the defeat of a former champion in a recent famous prize fight. There was much more at the bottom of this inglorious disaster than mere inability to get back into training.

The stress laid on the reports, at the time of the early arrangements for the fight that the former champion had been examined by noted medical men to see if he could expect to get into good training again, together with the current rumors as to the habits of dissipation common to this class of athletes, would give ground for the suspicion that there may have been a definite and specific reason for such a careful preliminary examination. One noted ring follower states that no man with a normal brain could have been so utterly helpless before an opponent, another that "he was as helpless as an old woman," another writer states that the victor delivered fifty five blows while the loser gave but fourteen, and that not one of these did any particular damage. One of the seconds states in an interview that the loser swayed so in walking down the aisle to the ring that he (the second) twice supported the champion by laying a hand on each shoulder to keep him from falling. The picture published by a prominent national weekly shows the fighter with his feet spread so far apart that the two legs defined an equilateral triangle. The prize-fighter complained afterward that he saw double during the fight; that he could not estimate the distance of his opponent; that he saw plenty of openings for good blows but could not get his fist there in time. The papers were filled with reports of the attempts of reporters and visitors to see the champion in his boxing practice, but he would not box before prying eyes, even practicing at 3 a. m. to avoid observation.

Such evidences of mental failure, ataxia and incoordination point almost certainly toward some degenerative process affecting the nervous system, the cause of which it is not difficult to imagine.

J. N. Hall, M.D., Denver.

Fixing the Eyeball in Cataract Extraction

To the Editor: Since the publication of my paper, read at the St. Louis meeting, I have been informed by my friend, Dr. Ziegler of Philadelphia, that my method of fixing the eyeball in cataract extraction was first resorted to by Macnamara. The following is quoted from page 54 of the fourth edition of his book: "Suppose the right eye is to be operated on; the surgeon, standing behind his patient, with a pair of fixing forceps, seizes a fold of the conjunctiva, together with the tendon of the internal rectus, so as to have a steady, firm hold on the eyeball." On page 56 he mentions the fact that the tendon grasp is continued while he dislocates and delivers the cataract with a scoop. Of course I must surrender my claim of originality, so far as *the grasp of the tendon of the internal rectus muscle is concerned.* My astonishment is that this method, although introduced prior to 1882, disappeared from both practice and literature, and I knew nothing about it until it occurred to me to put it into practice. There is no other method of fixation comparable to it. My other claims, as made in my paper, have not been refuted, and I am sure cannot be. Please publish this as a full surrender of my claim on fixation of the globe by a grasp of a tendon of the internal rectus.

G. C. Savage, Nashville, Tenn.

The Dependence of Neurology on Internal Medicine *

To the Editor: I think the article by Drs. Joseph Collins and Pearce Bailey, of New York (The Journal, July 30, 1910, p. 393), was read with great interest and received extensive comment by those of us who are interested in the teaching of neurology. As a general proposition most of the premises advanced by the authors of this article are correct. All of us are agreed that neurology has been neglected, both in the lecture room and hospital ward, but the statement that "In all America there is scarcely a general hospital with neurologic wards worthy of the name, etc.," will not hold water. So with the statement "The profession who teaches them having no hospital patients of their own can demonstrate only such patients as are able to walk to the clinic;" and so on throughout the entire article are many statements that are really misleading and do an injustice to some of our neurologists and general hospitals.

Last year I did neurologic work at the University of Pennsylvania. I found the neurologic wards in Blockley Hospital properly organized and containing over four hundred patients; among this number could be found all of the ordinary nervous diseases and many of the unusual and rare cases. These wards were organized in 1877 by Dr. Charles K. Mills, and all of the material found in them is available for teaching purposes by the medical colleges of Philadelphia, and for many years ward classes have been a prominent feature in neurologic teaching in this hospital.

The attending neurologic staff at Blockley has an equal standing with the attending physicians and surgeons. Cases are assigned directly to them; they are studied by separate interns and the department of neurology is just as much an independent unit of the organization controlling the hospital, as is the surgical or medical. Post-mortems are conducted under the direction of the attending neurologist, and the material is properly worked up and studied by his assistants and the hospital pathologist.

Neuropathology is comparatively new in America; but this branch is now receiving careful attention in all of our medical schools. I have no doubt that within a few years the courses in this branch offered to students in America will compare very favorably with those given in the laboratories abroad; in fact I have been told by men who have taken extensive work in Europe that the work of American investigators and teachers of neurology is attracting attention and receiving the favorable consideration to which it is entitled.

So while we cannot point to any endowed institutions for the special study of nervous diseases, let us be thankful that most of our new municipal hospital boards are recognizing the importance of giving this branch more attention, and buildings are being constructed with the idea of providing for the better care and proper study of nervous cases, and that competent neurologists are being appointed on the staffs holding equal rank with the surgeon and internist.

R. E. Castelaw, Kansas City, Mo.

Registration of Foreign Physicians

To the Editor: Dr. Hoenes in his letter on this subject (The Journal, Aug. 6, 1910, p. 520) certainly makes an exceedingly important, though neglected, point. During the development of North Dakota, Canadian physicians rushed in, and now very largely occupy the land. What is true of North Dakota is probably true of other northern states. But when one of us wants to get into some virgin territory in Canada, he is blocked at the very start. This matter should be taken up by our legislatures. I hope that you will use your influence and call attention to it often.

C. E. McReynolds, M.D., Goodrich, N. D.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

WHAT IS THE DISEASE?

To the Editor:—A peculiar disease has been observed in a family. It resembles hoof and foot disease in animals. The attack is sudden, the disease starts between the toes and spreads to the heel. Itching, large vesicles which run together, high fever, delirium, and a very bad odor, like decayed animal matter, are features. The pain after four days extends up to the leg. The disease seems to be highly infectious. What can it be?

F. P. Dorsey, Hartington, Neb.

CAPITALIZATION IN PRESCRIPTIONS

To the Editor: In writing the following in prescriptions should the I and P be capital letters?

℞ Fluidextracti cannabis indicae
Balsami peruviani

P. W. Bushong, Pittsburg, Pa.

Answer: In writing the Latin of prescriptions there is a tendency to follow national usage. Thus in foreign pharmacopeias and prescriptions, nouns are frequently capitalized as in the native language while the adjectives, even when derived from proper names begin with a lower-case letter. On the other hand, the custom in Latin texts is to capitalize the adjectives derived from proper names, i. e., *populus Romanus.* This would seem to afford authority for beginning the words referred to in the query with capitals. Most books on medical Latin capitalize the second term of a pharmaceutic title in prescriptions as a rule, so that they afford no guide in the particular case under discussion. The usage of works on pharmacology is divided but the majority print these words with lower-case letters. There is a tendency in English for the proper adjective to change its capital initial to lower-case after long usage, and this may account for the similar tendency in the Latin of prescriptions. We may conclude therefore that the preponderance of the best usage is in favor of using lower-case letters.

---

* Another letter on this subject is published in The Journal Aug. 13, 1910, page 613.

ELECTRIC ANESTHESIA

To the Editor:—Please give references to be found in medical literature, if any, giving facts concerning the use of electricity as an agent for producing anesthesia. D. M.

ANSWER.—Robinovitch, L. G.: Electric Anesthesia, *Jour. Ment. Path.*, viii, No. 3, 1908.

Leduc, S.: Electric Sleep. *Presse Médicale*, 1907, xv, 129. Abst. in THE JOURNAL, April 6, 1907, p. 1220.

Tait, D., and Russ, R.: Electric Sleep, THE JOURNAL, Nov. 13, 1909, p. 1611.

Johnson, M. M.: Electric Anesthesia, *Med. Rec.*, April 23, 1910; abstr. in THE JOURNAL, May 7, 1910, p. 1577.

ACUTE INDIGESTION AND SUDDEN DEATH

To the Editor:—Please give me references to some of the latest literature on so-called acute indigestion as the cause of sudden death. W. H. J.

ANSWER.—We find no references to this subject in recent literature. Brouardel ("Death and Sudden Death," Edition 2, 1902) refers to cases in which sudden death was supposed to be due to acute indigestion, but concludes that the evidence that indigestion was the sole or principal cause is insufficient. He says (p. 274), "I have read all the cases which authors have recorded, but I have not met with a single case in which preexisting lesions in other organs than the stomach were not sufficient to account for death; in most cases the patient had some renal affection, or was convalescent from typhoid fever."

X-RAY STERILITY

To the Editor:—Is the sterility produced by the *x*-ray permanent, or only temporary; and how long exposure will produce the same? Does it affect male and female alike? B. Y.

ANSWER.—The duration of sterility produced by the *x*-ray depends on the length of exposure, the distance of the tube, etc. The effect will be permanent if the exposures are of sufficient duration. The organs of the female are better protected from the rays than are those of the male, but, aside from this, both sexes are affected.

The Public Service

U. S. Public Health and Marine-Hospital Service

Changes for the 7 days ended Aug. 10, 1910:

Guiteras, C. M., surgeon, granted 4 days leave of absence from Aug. 9, 1910.

Stimpson, W. G., surgeon, granted 20 days leave of absence from Aug. 11, 1910.

Blue, Rupert, surgeon, granted 8 days leave of absence from Aug. 7, 1910.

Moore, Dunlop, passed asst.-surgeon, granted 14 days leave of absence from Aug. 10, 1910.

Fox, Carroll, passed asst.-surgeon, relieved from duty in the Hygienic Laboratory and directed to proceed to Manila, P. I., and report to the Chief Quarantine Officer for duty, Aug. 5, 1910.

Vogel, C. W., passed asst.-surgeon, granted 15 days leave of absence from Aug. 10, 1910.

Glover, N. W., passed asst.-surgeon, leave of absence for 10 days from July 25, 1910, amended to read 3 days from July 25, 1910.

Bahrenburg, L. P. H., passed asst.-surgeon, granted 6 days leave of absence from July 26, 1910, on account of sickness.

Cleaves, F. H., acting asst.-surgeon, granted 6 days leave of absence from Aug. 1, 1910.

Deerhake, Wm. A., acting asst.-surgeon, granted 5 days leave of absence in July, 1910, under paragraph 210, Service Regulations.

Elfers, J. G., acting asst.-surgeon, granted 30 days leave of absence from Aug. 8, 1910.

Hart, George C., acting asst.-surgeon, granted 12 days' leave of absence from Aug. 18, 1910.

Horning, Henry, acting asst.-surgeon, granted 7 days' leave of absence from Aug. 3, 1910, under paragraph 210, Service Regulations.

McLarty, A. A., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 1, 1910.

Onuf, B., acting asst.-surgeon, granted 8 days' leave of absence from Aug. 16, 1910.

Richter, H. C., acting asst.-surgeon, granted 30 days leave of absence from Aug. 1, 1910.

Rush, John O., acting asst.-surgeon, granted 14 days' leave of absence from Aug. 10, 1910, with pay, and 4 weeks' leave of absence from Aug. 24, 1910, without pay.

Savage, Walter L., acting asst.-surgeon, granted 30 days' leave of absence from Aug. 12, 1910.

Schwartz, Louis, acting asst.-surgeon, granted 7 days' leave of absence from Aug. 8, 1910, under paragraph 210, Service Regulations.

Stevenson, J. W., acting asst.-surgeon, leave of absence for 30 days from Aug. 3, 1910, amended to read 30 days from Aug. 8, 1910.

Stewart, W. J. S., acting asst.-surgeon, granted 1 month's leave of absence without pay from July 23, 1910.

Townsend, W., acting asst.-surgeon, granted 8 days' leave of absence from July 28, 1910.

Wallace, C. R., acting asst.-surgeon, granted 14 days leave of absence from Aug. 22, 1910.

Medical Department, U. S. Army

Changes for the week ended Aug. 13, 1910.

Boyer, Perry L., capt., relieved from temporary duty at Fort Mason, Cal., and as attending surgeon, San Francisco, and on expiration of present sick leave of absence will proceed to Fort Clark, Tex., for duty.

Collins, C. C., major, on expiration of present leave of absence will proceed to Fort Robinson, Neb., for duty.

Church, James R., major, relieved from duty at Fort Robinson, Neb., and ordered to Fort Ontario, N. Y., for duty.

Gray, William W., col., ordered to proceed to Omaha, Neb., and report Sept. 1, 1910, for temporary duty as Chief Surgeon, Department of the Missouri.

Brechemin, Louis, col., relieved from duty in the Philippines Division, and will proceed on the transport to sail from Manila, P. I., Jan. 15, 1911, to San Francisco. Colonel Brechemin will proceed thence to Omaha, Neb., for duty as Chief Surgeon, Department of the Missouri, relieving Colonel William W. Gray, Medical Corps, who will return to his proper station.

Brownlee, Charles Y., major, on expiration of leave of absence will proceed to Fort Des Moines, Iowa, for duty at that post.

Vose, William E., major, relieved from duty at Fort Des Moines, Iowa, and ordered to Jackson Barracks, La., for duty at that post.

Usher, F. M. C., major, relieved from duty at Jackson Barracks, Mo., and ordered to Fort Sam Houston, Tex., for duty at that post.

Metcalfe, R. F., capt., on expiration of leave of absence will proceed to the Army General Hospital, San Francisco, Cal., for duty.

Vedder, Edward B., capt., detailed as a member of board for the purpose of studying tropical diseases as they exist in the Philippine Islands, vice Captain E. D. Kilbourne, Medical Corps, to take effect on departure of Captain Kilbourne from the Philippine Islands.

Casaday, George H., dental surgeon, relieved from duty at Presidio of Monterey, Cal., and will proceed from San Francisco, Sept. 5, 1910, to the Philippine Islands, for duty.

Graham, George D., dental surgeon, relieved from duty at Fort Leavenworth, Kan., and will proceed from San Francisco, Cal., Sept. 5, 1910, to Fort Shafter, H. Ty., for duty. Dental Surgeon Graham will stand relieved from Fort Shafter about December 15, and will then proceed to the Philippine Islands for duty.

Baker, Frank C., major; O'Connor, R. P., major, and Davis, William R., capt., August 4, will proceed at the proper time to the Camp of Instruction at Ft. Benj. Harrison, Ind., for duty, and on the completion thereof will return to their proper stations.

Smart, William, capt., August 4, granted 2 months' leave of absence about Sept. 7, 1910.

de Krafft, S. Chase, M.R.C., August 4, relieved from duty (active) in that Corps, to take effect Aug. 14, 1910.

Springwater, Samuel A., M.R.C., August 4, granted leave of absence to and including Sept. 4, 1910. First Lieutenant Springwater is honorably discharged from the service of the United States, to take effect Sept. 4, 1910, his services being no longer required.

Kremers, E. D., lieut., August 2, ordered to proceed from Presidio of San Francisco to Ft. Miley, Cal., for temporary duty.

Casper, Lieut. (Joseph), August 1, left Ft. Du Pont, Del., en route to Pine Camp, N. Y., for duty.

Lynch, Edward C., M.R.C.; Ferenbaugh, Thomas L., lieut.; Hughes, Leonard S., M.R.C., August 4, report for duty at Camp E. S. Otis, Wyoming.

Craig, Charles F., capt., August 5, directed to proceed to New York City and to New Haven, Conn., on official business pertaining to the Medical Department.

Hess, Louis T., Waterhouse, S. H., Geddings, Edward F., majors, August 4, assigned to duty as Inspector-Instructors at state encampment at Gettysburg, Pa., from Aug. 11 to 20, 1910.

Gibson, Paul W., M.R.C., July 30, left Ft. Yellowstone, Wyo., on practice march with Troop F, Fifth Cavalry.

Bundesen, H. N., M.R.C., August 4, left Ft. D. A. Russell, Wyo., en route to Camp E. S. Otis, Wyo.

Connor, C. H., major; Owen, Leartus J., capt.; Beery, Harry R., lieut., July 28, designated for duty at the Camp of Instruction, Fort Benjamin Harrison, Ind.

Vose, William E., major, Aug. 5, 1910, orders to duty, Camp of Instruction, Ft. Riley, Kan., revoked.

Smith, Allen M., major, August 1, in addition to his other duties will assume charge of the office of the Chief Surgeon, Department of Texas.

Harris, H. L., M.R.C., August 9, reported for temporary duty at Pine Camp, N. Y.

Fauntleroy, P. C., major, August 4, detailed for duty as Inspector Instructor, organized Militia of Illinois, encampment at Peoria, Ill., Aug. 20-27, 1910.

Hall, James F., capt., Aug. 5, 1910, ordered to make the physical examinations of captains and lieutenants on duty at Rock Island Arsenal, Ill.

Graham, George D., D.S., August 8, granted 10 days' leave of absence, Aug. 20, 1910.

Ingalls, R. E., dental surgeon, August 2, on completion of duty at Ft. Wingate, N. M., will proceed to Ft. Apache and Huachuca, Ariz., thence to Whipple Barracks, Ariz., for duty.

Hallett, H. J., M.R.C., August 9, reported at Fort Hamilton, N. Y., for temporary duty.

Register, E. C., M.R.C., August 11, reported for temporary duty at Ft. Michie, N. Y.

Maguire, David F., M.R.C., August 10, left Ft. Myer, Va., en route to Ft. McHenry, Md., for temporary duty and reported at Ft. McHenry, Md., Aug. 11, 1910.

Robbins, Chandler P., major, August 8, left Ft. McHenry, Md., en route to Ft. Monroe, Va., for temporary duty.

Clayton, J. B., major, August 10, granted leave of absence for one month and fifteen days, about Oct. 1, 1910.

State Boards of Registration

North Dakota July Report

Dr. H. M. Wheeler, secretary of the North Dakota State Board of Medical Examiners, reports the written examination held at Grand Forks, July 5-7, 1910. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 16, of whom 13 passed and 3 failed. Eleven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Northwestern Univ. Med. School (1903) 80	(1910)	82, 86, 91
College of Physicians and Surgeons, Chicago	(1910)	84
Harvard Medical School	(1903)	88
Univ. of Mich., Dept. of Med. and Surg.	(1903)	90
Hamline University	(1909)	76, 83, 85
Jefferson Medical College	(1910)	82
Marquette University, Milwaukee	(1910)	78
University of Toronto, Ontario	(1908)	82

FAILED

College	Year Grad.
Chicago Physiomedical College	(1896)*
Indiana University	(1909)*
Queen's University, Kingston, Ontario	(1905)*

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Illinois Medical College	(1907)	Wisconsin
College of Phys. and Surg., Chicago (1905)	(1908)	Illinois
Northwestern University Medical School	(1908)	Illinois
Jenner Medical College	(1906)	Illinois
Detroit College of Medicine	(1896)	Wisconsin
University of Minnesota, College of Medicine, (1903)	(1905)	Minnesota
University of Michigan, Dept. of Med. and Surg.	(1907)	Michigan
Barnes Medical College	(1906)	Illinois
McGill University, Canada	(1906)	Minnesota

* No percentage given.

The following questions were asked:

ANATOMY

1. Describe the hip joint, naming ligaments. 2. Give a description of the femoral artery and its relations. 3. Describe circulation of blood through the heart. 4. Describe the scapula. 5. Describe the axilla and what does it contain?

PHYSIOLOGY

1. Give the physiology of the kidneys. 2. Describe the process of digestion of fats. 3. What is the function of bile? 4. How is the waste material of the body thrown off? 5. Describe the function of the eye.

HISTOLOGY

1. Describe karyokinesis. 2. Describe the different cells found in the blood. 3. Describe a cross-section of the stomach at pyloric end. 4. Describe a cross-section of the middle of a long bone. 5. Give the histology of the kidney.

PATHOLOGY

Answer any five questions. 1. Describe atrophy and degeneration as separate pathologic conditions. 2. Describe a thrombus, embolus, an infarct. 3. Differentiate between a lipoma and malignant tumor. 4. Define inflammation. 5. Describe the pathologic changes in lung tissue resulting from tubercular infection. 6. Differentiate between sapremia and septicemia. 7. What are the postmortem appearances in typhoid fever? 8. Give the pathology of leukemia. 9. What pathologic conditions produce necrosis? 10. Describe the process of fatty degeneration.

OBSTETRICS

1. Describe the pelvic straits. 2. Give indications and technic of high delivery. 3. Diagnose and treat a case of placenta previa. 4. What is your idea regarding causes of puerperal sepsis? 5. What would lead you to suspect some retained placenta in an [illegible] case (two weeks after delivery)? Give your treatment.

EYE AND EAR

1. Give prophylaxis and treatment of ophthalmia neonatorum. 2. Give prognosis and treatment of a cornea in which is imbedded a [illegible]. 3. Define (a) astigmatism, (b) blepharitis. 4. Define and give etiology of glaucoma. 5. Symptoms and treatment of [illegible] suppurative median otitis. 6. Give indications for [illegible] operation. 7. Give anatomic divisions of the ear and [illegible] of each. 8. What is the best method of removal of a foreign body—as a pea—from the ear?

CHEMISTRY AND TOXICOLOGY

1. Define the following terms as applied to chemistry: Reagent, [illegible], volatility, valency, atomicity. 2. Describe a method of detecting free HCl in stomach contents. 3. Describe a quantitative test for urea. 4. Give the Esbach method for quantitative test for albumin in urine. 5. Give the composition and [illegible] of good drinking water. 6. Symptoms and treatment of poisoning by carbolic acid, corrosive mercury, opium, strychnin and arsenic.

PRACTICE

Answer any five questions. 1. Give etiology, symptoms and treatment of [illegible]. 2. Give diagnosis of cerebral hemorrhage. 3. Differentiate between typhoid fever and malaria. 4. What are the symptoms of intestinal perforation in typhoid fever? 5. [illegible] 6. [illegible] symptoms and treatment of chlorosis. 7. Differential diagnosis between mitral stenosis and regurgitation. 8. Write a prescription [illegible] constipation. 9. Etiology and treatment [illegible] fever. 10. Differentiate between gastritis, carcinoma and ulcer of stomach.

PREVENTIVE MEDICINE

1. By what method can we prevent the occurrence of diseases? 2. How prevent pitting in small-pox? Ring worm from spreading? 3. In eruptive fevers, as small-pox, scarlet fever and measles how guard against or prevent? 4. Prevention of scurvy. 5. What preventive measures can we take to check the spread of venereal diseases? 6. Give the means of propagation and the preventive measures in typhoid fever. 7. Can ophthalmia neonatorum be avoided and what would be your method of prevention? 8. What preventive measures can you suggest for cerebrospinal meningitis? 9. Who appoints the health officers, state, county and city, and what qualifications are required? 10. Diarrhea and dysentery, how caused and can they be prevented?

MATERIA MEDICA

1. What is an acid? Composition of Dover's powder. 2. What preparations of mercury are employed as cathartics. 3. What are agents employed in the treatment of disease called? 4. Through what medium is the influence of medicine exerted on remote parts of the body? 5. How does the time of administering medicines modify their action? 6. Name three effective emetics. 7. What drugs cause eruptions of the skin? 8. What are the medicinal uses of alcohol, and what effect have they on diseased conditions? Do you employ them, if so why? 9. What are the uses of narcotics? Name the principal ones. 10. Give the maximum dose for an adult, of strych. sulph., atropia, chloral, morphin, pilocarpin.

MEDICAL JURISPRUDENCE

1. (a) What are the duties of the State Board of Medical Examiners of the State of North Dakota? (b) What does the statute of this state command that the recipient of a license from this board to practice medicine and surgery in this state shall do with it? (c) What is the penalty, if any, for practicing medicine in the state without first obtaining license from this board? 2. (a) What is medical expert testimony? (b) On what is it generally based? (c) Who is competent to give it? (d) Should a physician and surgeon hesitate to give expert testimony, in a worthy cause and after careful preparation on the issue involved? 3. A young woman, pregnant two months, in company with her parents, the man responsible for her condition, and the states attorney of the county in which they all live, called on a physician in this state and requested him to abort her. All agreed that from a social standpoint it was for the best interests of all concerned that the physician comply with the request, and each and all further promised in writing that no matter what the consequences might be, the physician should be excused from civil and criminal liability. The physician complied with the request. She rapidly recovered and all interested were pleased. The physician received $500. Was he guilty of a crime under the laws of this state? If so what is the punishment? If you answer in the affirmative give your reasons. 4. A regularly licensed physician and surgeon is called by a farmer 15 miles from the physician's office and in the country, at 2 o'clock in the morning. At the time there was a heavy downfall of cold rain. The roads were bad, but not impassible. The physician is supplied with a rig suitable and convenient with which to make the trip. The farmer tells him his wife has suffered an injury by accidentally falling from a mowing machine in front of the knife, and that a limb was severed at the knee, that the wound was bleeding profusely and it seemed impossible to stop it. The farmer was a tenant and without any means whatever, and unable to pay the doctor then or in the immediate future, which fact the doctor well knew. There was no other physician within 50 miles of the farmer's home. The doctor refused to respond to the call and go to the relief of the suffering woman, solely on the farmer's inability to pay him for his services and because it was raining. The farmer was unable to get into communication with any other physician and the woman survived 20 hours, when she died of hemorrhage and blood poison. A postmortem was held and 5 competent and creditable physicians declared that if the woman had had medical attendance within [illegible] hours after the accident she would have survived. Was the doctor guilty of any crime under the law of this state? If so what crime and what is its punishment? Would a civil action lie against him for damages on behalf of the surviving husband? 5. (a) What is malpractice? (b) What degree of skill does the law require a physician and surgeon to exercise in the practice of his profession? (c) What is the statutory limitation of the prosecution of an action against a physician and surgeon for damages about malpractice in this state?

DISEASES OF WOMEN AND CHILDREN

1. Symptoms, subjective and objective retroversion uteri, treatment of same. 2. Pelvic hematocele, symptoms, causes and treatment. 3. Symptoms, subjective and objective of laceration of cervix uteri of long standing. 4. Symptoms and complications of gonorrhea in female. 5. Dysuria in female, causes and treatment. 6. Symptoms and treatment capillary bronchitis. 7. Causes and treatment enuresis. 8. How feed an infant of three months deprived of mother's milk? 9. Treatment of enterocolitis. 10. Treatment of pertussis.

NERVOUS DISEASES

1. Differential diagnosis of cerebral hemorrhage and tumor. 2. What is myxedema? Give symptoms and treatment. 3. Define migraine. Give causes, symptoms and treatment. 4. How would you treat a case of delirium tremens? 5. Symptoms, prognosis and treatment chorea. 6. Infantile paralysis; (a) What part of cord is involved? (b) Give symptoms and treatment in full from the onset.

SURGERY

1. How would you diagnose a subcoracoid dislocation? Name [illegible] employed in its reduction, with the different steps in the operation. 2. Give your treatment in detail for fracture of humerus just above the condyles. 3. Give your method of treatment for a nail wound of foot. 4. Differential diagnosis of intracapsular fracture and dorsal dislocation of head of femur and give your treatment for this fracture in a woman 70 years of age. 5. How would you diagnose a case of complete inguinal hernia from a hydrocele, and describe the radical cure for hydrocele. 6. Describe in full Bassini's method of operation for the radical cure of hernia.

Rhode Island July Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 7-8, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 80. The total number of candidates examined was 10, of whom 6 passed, 3 failed and one withdrew. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Baltimore	(1909)	84.1
Tufts College Medical School	(1910)	84
Boston University	(1899)	80.3
Columbia Univ., College of Phys. and Surg.	(1878)	80
Jefferson Medical College	(1908)	93.3
University of Vermont	(1910)	82.9
FAILED		
Baltimore Medical College	(1909)	77.5
University of Maryland	(1910)	69.9
Laval University, Canada	(1905)	72.5

Medical Economics

Insurance and Industrial Cooperation for the Promotion of Public Health

The importance of systematic and widespread efforts for the improvement of public health are evidently appreciated by the insurance interests—both the old-line and the fraternal organizations. A number of the leading old-line companies have inaugurated campaigns among their policy-holders with this object in view. In a recent number of the *Metropolitan*, an insurance publication, appear articles on flies, the refrigerator, etc., as well as a reproduction of the now celebrated poster originated by the Florida Board of Health showing, with graphic but wholesome unpleasantness, the manner of life of the ordinary house fly.

An insurance company sent to its policy-holders a pamphlet on "Living and Sleeping in the Open Air," prepared by Dr. Thomas S. Carrington, assistant secretary of the National Association for the Study and Prevention of Tuberculosis. This pamphlet contains plans and photographs for sleeping porches and shelters adequate for use on roofs and in back yards. The details will make it easier for many persons to secure places for out-door sleeping.

Another company has issued a number of bulletins prepared by the Policy Holders' Health Bureau, established to assist in guarding the health and lives of the policyholders. One bulletin deals largely with the influence of alcohol on the death rate and the dangers of the use of alcohol as a beverage. Obesity, the hookworm disease, sanitary neglect in rural districts and hygienic hints for winter and early spring are also considered. Another is devoted largely to the dangers of "patent medicine" and the folly of self-drugging. Narcotic drug habits, hygiene of the mouth, malaria, yellow fever and health hints for hot weather are also considered.

The *Western Review*, a monthly journal devoted to the interests of fraternal benevolent societies, has established a "Department of Public Health," under the supervision of the medical director of one of the societies and has made this department a feature in several of its recent numbers.

A shoe company has issued a vest-pocket book "for the welfare of its employees," which praises the Safe and Sane Fourth idea, gives the text of the Massachusetts law on the subject, and supplies terse directions for treating Fourth of July accidents. For good measure instructions on the prevention of tuberculosis are added, and attention is called to the privilege of examination by the company's physician and of being cared for in a free bed which the company maintains at a certain hospital.

The increased attention paid to public health matters by business interests is of especial significance as it is an evidence of general recognition of the wastefulness of preventable sickness and disease and the economic value of good health.

Book Notices

DIE EXPERIMENTELLE PHARMAKOLOGIE ALS GRUNDLAGE DER ARZNEIBEHANDLUNG. Ein Lehrbuch für Studierende und Aerzte. Von. Dr Hans H. Meyer und Dr. Gottlieb, Professoren der Pharmakologie. Paper. Price, 12 marks. Pp. 483, with 62 illustrations. Berlin: Urban & Schwarzenberg, 1910.

This collection of the date of experimental pharmacology from the standpoint of medical practice forms a noteworthy contribution to pharmacology and treatment. While pharmacology from the point of view of pure science is to be regarded as a section of biology, from the medical point of view it is an applied science and finds its justification as a vital part in the equipment of the modern physician only when it considers the action of drugs in relation to the disease processes. Such a consideration necessitates an adequate fundamental conception of the normal physiologic processes and the manner in which they may be influenced by drugs, an understanding of the alterations in the normal which constitute the pathologic, and wise judgment in correlating drug-action with these altered processes. The task of correlating the data of pharmacology and pathology with the view of providing a rational basis of drug therapy is one of extreme difficulty.

In this work the authors adopt a classification of drug actions into two groups, organotropic, i. e., action influencing function, and etiotropic, i. e., action on causes of disease. As illustrating the present development of the science it is interesting to note that the greater part of the book is devoted to drugs possessing organotropic action. The consideration of these is subdivided, according to the function chiefly affected, into sixteen chapters. These include the pharmacology of motor nerve-ends, of the central nervous system, of sensory nerve-endings; of the vegetative (involuntary nervous) system, of the eye, of digestion, of uterine movement, of the circulation, of respiration, of renal function, of sweat secretion; of metabolism, of muscles, of the blood, of the heat-economy and of inflammatory processes. The consideration of etiotropic drugs is included in one chapter, which takes up the general antiseptics, specific antiseptics and concludes with a brief outline of serum therapy.

This method results in the concentration of the attention on the physiologic process under discussion. Nearly every chapter begins with a concise exposition of the physiology involved. The action of the drugs which affect the function is described and explained, and finally the alterations of the process in disease and the connection of the drug-action with this are indicated. The physiologic considerations are concise, illuminating and decisive; more dogmatic than would be allowable in a treatise on pure physiology. It is worthy of note that in many instances the reaction of an organ to drugs throws important light on the mechanism of its function, and in this respect the authors have contributed materially to physiology by pointing out such cases.

A short general chapter on the relation of drug-action to the vegetative nervous system is of great service in understanding the action of drugs on the particular organs controlled by it. The action of drugs on metabolism is presented only in outline, but the state of development of that field of pharmacology is such that its consideration is of necessity schematic; but there is left in the mind of the reader a clear, general conception of the effects produced by such drugs as iodids, phosphorus, arsenic, etc., which heretofore have so often been relegated to the mysterious realm of "alteratives." The discussion of circulatory conditions in which drugs may be indicated, and their rational application, is carried out under three broad headings—cardiac insufficiency, cardiac and vasomotor paralysis, and vascular spasm. One could wish that the authors had considered more specifically the nature of pathologic processes. It is evident that they regarded only broad discussions in this relation as within the scope of the book.

One might wish for a fuller explanation of the effects of such drugs as atropin, cocain and bromids on the central nervous system. Differences of opinion will arise as to some of the conclusions drawn; e. g., as to the identity of action of nicotin and pilocarpin on the heart, the action of morphin on sensory nerve-ends, the action of calomel in causing diuresis, etc., but one feels that the explanations advanced require serious consideration. It is disappointing to find American work so scantily represented, and it is difficult to believe that this is the result solely of lack of worthy research by American investigators. The discovery of anesthesia by subdural cocain injection is ascribed to Bier; no mention is made of the astonishing results on resuscitation obtained by Crile; of Sollmann's work on the kidney; of Embley's (English) work on the effects of chloroform on the inhibitory cardiac center, etc. On the whole, however, the references to the literature are a valuable and satisfactory feature of the work. The data regarding drugs, being grouped about the consideration of function, have received the logical arrangement, but at the inevitable cost of a scattering of information regarding any particular drug. To cite a single instance, the action of morphin is separately considered in eight different chapters. The toxicology of various drugs, and the preparations in which drugs are available, are given subordinate and sometimes anomalous place in this scheme. This does not affect the value of the book in its broadest application, but does limit its usefulness as an instrument of teaching in this country, at least. The student would find difficulty in getting from it a broad, consecutive understanding of all pharmacology, but the study of the book after a preliminary training in this subject according to our present methods, would make such training vital in the study of the treatment of disease.

Medical Electricity and Röntgen Rays. With Chapters on Phototherapy and Radium. By Sinclair Tousey, M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Cloth. Price, $7 net. Pp. 1116, with 750 illustrations. Philadelphia: W. B. Saunders Co., 1910.

In this work the author has undertaken to cover completely the subjects of the therapeutic and diagnostic uses of electricity, and Roentgen rays; not content with this he goes even beyond his title, and considers also the uses of radiant heat and radium. The work is an enormous mass of detail. The physics of electricity, as bearing on the medical uses of the agent, first comes in for extended consideration—over 250 pages. With this there is a very full description of apparatus. Then are given—not enumerating all topics—physiologic effects of electricity, electropathology, electrodiagnosis, ionic medication by electrolysis, physiologic and therapeutic effects of electromagnets, electricity in diseases of the nervous system, and high-frequency currents; to each of these is given a chapter or more. Phototherapy, *x* rays with all of their apparatus and uses, and finally radium are then considered. One can hardly look in the vast fields for a topic which the author has not considered, but the inexperienced reader will find more difficulty in getting systematic instruction from the work than he will in getting isolated facts. Everything is given, without a sense of perspective as to the relative value of different parts, and the parts of the work are of very unequal merit. The consideration of apparatus, of electricity and *x* rays in diagnosis are good; the therapeutic parts are much less satisfactory and are not, in our belief, a conservative guide.

The Diseases of the Nose, Mouth, Pharynx and Larynx. A Text Book for Students and Practicians of Medicine. By Dr. Alfred Bruck (Berlin). Edited and Translated by F. W. Forbes Ross, M.D., Late Civil Surgeon, His Britannic Majesty's Guards Hospital, London. Assisted by Friedrich Gans, M.D. Cloth. Price, $5. Pp. 617, with 217 illustrations. New York: Rebman Company [1910].

This book has been written to meet the needs of the general practitioner. Each of the four subjects is divided into a general and a special section, the former dealing with the anatomy, physiology, methods of examinations and general therapy, the latter dealing with the diseases pertaining to the subjects under discussion. The anatomic descriptions cover the essential points and are accompanied by good illustrations. The methods of examination are discussed in a way that will appeal to the general practitioner who has not had special training in these fields. In dealing with the treatment of the different diseases special emphasis has been laid on procedures that may be used by those who have not had the opportunity to become schooled in the technic of the more difficult operations. The arrangement of the material of this work is systematic and the discussions are clear and concise, meeting admirably the needs of men in general practice.

Medicolegal

Giving Medical Treatment for Eyes, Practice of Medicine—Admissibility of Evidence—Advertising—Claiming to Be an "Ophthalmologist" No Defense

The Kansas City Court of Appeals says that the evidence in the case of State vs. Blumenthal (125 S. W. R., 1188), tended to show that the defendant had an office in a hotel, and that on his door was the sign, "Dr. H. M. Blumenthal;" that a woman went to his office and engaged him to treat her eyes, he telling her that she had a cataract, astigmatism, and other ailments of the eyes, which he treated by prescribing ointments or salves and eyewashes, for which he charged her $10; that he likewise furnished and fitted eyeglasses, for which he charged $15. The eye medicine was sent to her by her brother at one time and delivered personally by the defendant at several other times. In view of such evidence, there can be no doubt that the defendant was practicing medicine within the meaning of the law.

It was decided by the Supreme Court of Illinois (People vs. Smith, 208 Ill., 31) that a traveling optician who invited persons, by advertisements, who were afflicted with dizziness, neuralgia, etc., to visit him and obtain relief by purchasing spectacles, and disclaimed medical or surgical treatment, was not treating, operating, or prescribing for physical ailments under the statute of that state. That was no more than to say that one who merely sold and fitted eyeglasses was not practicing medicine, and the trial court gave such declaration of law in this case. But the facts which the evidence tended to prove against the defendant in this case were that he not only sold and fitted spectacles, but gave medical treatment for the eyes.

Objection was made to the admission of the evidence showing the sign at the defendant's room door at the hotel, as set out above, but the ruling was proper. It tended, connected with the other evidence, to support the charge made.

The trial court likewise properly admitted evidence of the defendant advertising as a practitioner of medicine. It is true that the Missouri statute constitutes the act of advertising as a physician as an offense within itself, yet that fact does not exclude the fact as probative of the offense of practicing. The fact that evidence having a tendency to prove the offense charged may also tend to prove some other offense not charged does not necessarily render it incompetent.

There was some claim made by the defendant that he was an ophthalmologist. If that be accepted as true, it would not serve him any purpose since that is a branch of medical science, and its practice would fall within the terms of the statute. That term seems to signify some disease or diseases of the eye, and the court can see no reason why one who prescribes medicines for such diseases would not be as guilty as by any other name. It is the act committed, and not its designation, which constitutes the offense.

The court was not impressed with the defendant's argument as to lack of proof as to his practicing. His sign, office, advertisement, treatment for a considerable period of the prosecuting witness was ample evidence.

Examination of Body for Defendant in Homicide Case Does Not Create Relation of Physician and Patient, or Privilege

The Supreme Court of Nebraska says, in Ossenkop vs. State (126 N. W. R., 72), a homicide case, that, after the homicide, the defendant employed a physician to examine the body of the deceased person and to report the result. Later the same physician was selected by the state to make a post mortem examination. He performed the service and testified at the trial to the conditions disclosed. The defendant contended that knowledge of all of the facts to which the physician testified was obtained as a result of confidential communications properly intrusted to him by the defendant. The point was that the physician's testimony was admitted in evidence in violation of the provision of the statute that no practicing attorney, physician, surgeon, minister, etc., "shall be allowed, in giving testimony, to disclose any confidential communication, properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline." As applied to physicians, the purpose of the statute is to prevent the improper disclosure of secrets or facts learned by means of the confidential relation. The relation protected is that of physician and patient. Outside of that relation the parties are on an equal footing, where the rule of the statute and the reasons of public policy on which it is founded do not follow. In this case the physician was not employed to examine or treat the defendant or any member of his family. The relation of physician and patient did not exist between them. The exhumed body contained no secrets which could be kept within the exclusive knowledge of the defendant and the physician. The means of ascertaining the condition of the body was equally within the reach of the defendant and the state. The court was entitled to know the truth. The purpose of the statute is to protect patients from objectionable disclosures; but it was never intended to shield the defendant in his position. Consequently the ruling of the trial court in admitting the physician's testimony must be approved.

Aider in Abortion Punishable as Principal

The Supreme Court of New Jersey says that it was contended in State vs. Wilson (75 Atl. R., 776) that the history of the statute of that state passed in 1872, and now in force, was such as to compel the conclusion that the legislature intended to legitimize the procuring of abortions, or at least to grant immunity to all who knowingly aided or assisted in the commission of such offense. This rather startling proposition was based on the circumstance that the original act of March 1, 1849, contains the words, "and every person with the like intent knowingly aiding and assisting such offender or offenders," which were omitted from the act of 1872. But the court suggests that the legislature may have concluded in 1872 to retain the principal offense only with its legal incidents as to who were to be held as principals in the commission of such misdemeanor. As between this intelligent and officious purpose on the part of the legislature and the imputation to it of an express intention, if not to legitimize, at least to condone one of the gravest offenses against society, the court, as a co-ordinate branch of the government, ought not for a moment to be skeptical. So it is held that if A directs a woman in an early stage of pregnancy—i. e., before the child is quick—to go to B to have a miscarriage produced, which is accomplished by B by the use of instruments, A may be indicted as a principal offender under the New Jersey statute, and, on proof of a concert of action between him and B, may be convicted under the rule that all concerned in a misdemeanor are equally guilty.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 6

1 *Hysteria under Psychoanalysis. G. M. Parker, New York.
2 *External Urethrotomy without a Guide. C. L. Gibson, New York.
3 *Vaccines in Treatment of Bacterial Infections in Infants and Young Children. E. M. Sill, New York.
4 *A Theory as to the Origin of Leprosy. J. Atcherley, San Francisco.
5 The Genesis of Hysterical States in Childhood, and Their Relation to Fears and Obsessions. T. A. Williams, Washington, D. C.
6 *An Unusual Case of Congenital Absence of Anus and Lower End of Rectum. J. Wiener, New York.

1. **Hysteria Under Psychoanalysis.**—Parker* gives a summary of the interpretation of hysteria by the psychology of Janet.

2. **External Urethrotomy Without a Guide.**—In Gibson's operation an exaggerated lithotomy position is maintained under general anesthesia. The index finger of the left hand passed into the rectum acts as a guide to the membranous urethra. An incision is made in the middle line, the knife being held perpendicularly through the tissues until it enters the well-dilated membranous urethra. A suitable probe is passed along the knife, which is still held perpendicular, the finger having been removed from the rectum. Along this probe or director the stricture is divided. A small urethrotome or bougie is passed toward and through the anterior urethra, and a filiform bougie is entered. The knife is fitted into the staff and pushed home through the stricture, after which an Otis urethrotome is passed and the operation completed by cutting the stricture through. Bladder drainage is instituted.

3. **Vaccines in Treatment of Various Bacterial Infections.**—Sill treated 49 children with local suppurations with vaccines made from the dead bacteria removed from the patients under treatment. Of these 49 children, all under 5 years of age, 30 were cases of subacute or chronic otitis media. Of these 28 children were cured, 10 improved, and one not improved. The earlier in the discharge the vaccines were used the better were the results. Pneumonia and erysipelas were cured by vaccines. The vaccines were given in doses of from 2 to 8 million bacteria. Other treatment was abstained from.

4. **Origin of Leprosy.**—According to Atcherley, leprosy is a chronic, diathetic disease, with gradual onset and irregular course, characterized by an inflammatory fibroid degeneration of the nerve tissue generally, which precedes the deposit of the lepra bacillus. This nerve degeneration is the result of defective food pabulum supplied by the blood, from the ingestion of improper food. This theory is based on the fact that the pathologic changes in leprosy bear a striking analogy to those of scurvy.

6. **Congenital Absence of Anus and Rectum.**—Wiener reports the case of a new-born infant, in whom there was absence of anus and lower part of rectum; an immediate operation, by incision of the perineum, with pushing down of the closed pouch of rectum, and suture, saved the life of the infant.

New York Medical Journal

August 6

7 Medical Allusions in Hudibras and Butler's Remains. F. H. Garrison, Washington, D. C.
8 *Study of the Leukocytes in Pulmonary Tuberculosis. M. Solis-Cohen and A. Strickler, Philadelphia.
9 Extrauterine Pregnancy from the Standpoint of Clinical Experience. J. M. Keyes, New York.
10 Laryngeal Syphilis. H. Smith, New York.
11 *Concomitant Epigastric Hernia and Gastric Ulcer. H. W. Soper, St. Louis.
12 Lane's Conception of Chronic Constipation and its Management. A. B. Cooke, Nashville, Tenn.
13 Medical Theory and Practice of the Natives of the Heart of Africa. J. Knott, Dublin, Ireland.
14 The Sound Block. E. T. Senseney, St. Louis.

8. **Leukocytes in Pulmonary Tuberculosis.**—The authors undertook this study (1) to determine whether the leukocytes in cases of pulmonary tuberculosis in a sanatorium a little above sea level present a constant picture in the various stages of the disease, and in accordance with the improvement or retrogression of the patient; (2) to see what are the average proportions of the different white blood cells in phthisis. They found:

1. The percentage of polymorphonuclear neutrophils was diminished in incipient and moderately advanced cases, being less in the former. It was also diminished in patients who were improving.

2. The percentages of the different forms of polymorphonuclear neutrophils, classified according to the number of nuclei they contained, bore no constant relation to any stage or to the progress of the disease.

3. The percentage of lymphocytes was increased in incipient and moderately advanced cases and in improving patients.

4. The percentage of large mononuclear and transitional cells, grouped together, while within normal limits, was greatest in incipient and in improving cases.

5. The percentage of eosinophils was greatest, though normal, in incipient cases.

6. In moderately advanced cases were found the lowest percentage of large mononuclear and transitional cells, grouped together, and of eosinophils, and the highest percentage of large mononuclear cells.

7. In patients whose condition was stationary occurred the highest percentage of polymorphonuclear neutrophils and the lowest per-

centage of lymphocytes, of large mononuclear cells, and of large mononuclear and transitional cells grouped together.

8. Whenever one extreme was exhibited by moderately advanced cases or by stationary cases the other extreme was furnished respectively by incipient cases or by improving patients. Far-advanced and retrograding cases respectively held a middle position, which approached the condition found in incipient and in improving cases respectively, rather than the other extreme.

9. In addition to the mononuclear basophilic cells, the blood occasionally contains polynuclear basophilic cells, easily distinguishable from other leukocytes.

11. **Concomitant Epigastric Hernia and Gastric Ulcer.**—Fourteen years ago Soper's patient was operated on for hemorrhoids and fistula. Stomach trouble developed soon after. Symptoms were distress and burning sensation accompanied by eructations of gas and acid-tasting liquids, attacks lasting from a few minutes to several hours, and were usually relieved by taking food. Occasional vomiting occurred of very acid mucus and food particles. Patient often had attacks in the early part of the night. These symptoms with remissions and exacerbations persisted. During the past year more severe attacks of pain and vomiting frequently occurred. The abdomen presented very large fat deposit. There was tenderness over the celiac axis and in the median line just below the ensiform cartilage. Gastric ulcer was diagnosticated. The pains were absent while a bland diet was followed, always recurring when coarse vegetables or meats were eaten. Operation was advised but refused.

On Nov. 13, 1909, she was seized with a severe attack following a meal of pork and sauerkraut. The epigastrium was very tender to pressure, the hernia extremely so. Despite strict ulcer cure régime the pains and vomiting persisted. On November 26 she was operated on. The hernia consisted of a thin band of the lesser omentum containing a mass of fat about the size of an almond. The stomach was explored and a slightly indurated ulcer of about the size of a silver half dollar was found in the middle of the lesser curvature in the anterior wall. The incision was closed. The patient was kept in bed for four weeks under strict bland diet. Recovery was interrupted by an attack of influenza occurring in January; since then, uneventful. There has been no recurrence of the hernia, pain, or gastric distress.

Lancet-Clinic, Cincinnati

July 30

15 Flexner's Antimeningitis Serum in Treatment of Epidemic Cerebrospinal Meningitis. H. Woolery, Bloomington, Ind.
16 Lichen Ruber Acuminatus. F. H. Shields, Cincinnati.
17 The Relation of Malaria to Life-Insurance Examinations. A. E. Cox, Helena, Ark.

Northwestern Lancet, Minneapolis

July 15

18 Epigastric Hernia. L. P. Quain, Bismarck, N. Dak.
19 A Trip Around the World. G. C. Barton, Minneapolis.
20 Tuberculosis: Its Origin and How to Prevent It. W. Hambrøer, Eden Valley, Minn.

Medical Fortnightly, St. Louis

July 25

21 Pellagra. B. Allison and W. Allison, Fort Worth, Texas.

Journal Missouri State Medical Association, St. Louis

July

22 *The Relation of the Physician to the Public. T. Brown, Hamilton.
23 The Future Policies of the Medical Profession. N. P. Wood, Independence.

22. **The Physician and the Public.**—It is pointed out by Brown that the most important problem concerning the dignity and material welfare of the medical profession to-day is to convince men, women and children that we are striving to be helpful and protect them from the disasters following ignorance, superstition, incompetence and disease, that while physicians live by their work, they still sacrifice for the public service much in their lives that men hold good, that they are seeking after medical truth, and desire the fellowship of all who are working for the same great object. If these were the fixed belief of the public the advice and desires of physicians would be speedily translated into laws regulating the profession and protecting the public health. Physicians would not then plead in vain for securing the higher standard of education, morality and scientific attainments for the medical profession. Protests against the use of preservatives in food products would not be ignored by competent lawmakers. The triumph of the profession in conquering pain, sepsis, smallpox, yellow fever, malaria, diphtheria, rabies; in robbing all the infectious diseases of many of their terrors; in creating a substantial hope for many now tainted with the white plague; developing the astounding successes of modern surgery, would be acclaimed the highest and most useful achievements of mankind.

Detroit Medical Journal

July

24 Etiology of Summer Diarrheas. J. E. Davis, Detroit.
25 Treatment of Summer Diarrhea in Infants. H. M. Rich, Detroit.
26 The Thymus Gland. G. Pratt, Detroit.

Medical Herald, St. Joseph, Mo.

July

27 *Why the Indifference of the Profession to Morphinism Should be Changed. S. G. Burnett, Kansas City.
28 Fundamental Principles the Violation of Which Evolves Nervous and Mental Diseases and Limit Our Usefulness as Good Citizens. J. M. Aiken, Omaha.
29 *Neglect of the Sacroiliac Joint by the General Practitioner. E. Evans, La Crosse, Wis.
30 Calx Sulphurata. W. C. Abbott, Chicago.

27. Abstracted in THE JOURNAL, April 2, 1910, p. 1159.

29. Abstracted in THE JOURNAL, March 26, 1910, p. 1075.

American Journal of Physiology, Boston

August

31 *The Alleged Specific Anesthetic Properties of Magnesium Salts. C. C. Guthrie, St. Louis, and A. H. Ryan, Pittsburg.
32 *The Relation of the Pancreas to the Blood Diastases in the Dog. H. Otten and T. C. Galloway, Chicago.
33 *Effects of Thyroidectomy on the Resistance of Rats to Morphin Poisoning. W. H. Olds, Chicago.
34 The Mechanism of Tone in Plain Muscle. D. J. Lingle, Chicago.

31. **Specific Anesthetic Properties of Magnesium Salts.**—Meltzer and Auer have attributed specific anesthetic powers to the magnesium salts but Guthrie and Ryan explain the effects on the ground that asphyxia is produced, and in the present article they describe further experiments in support of this view. Their principal experiments were made on frogs and lead them to conclude that a very marked early effect of magnesium salts when injected subcutaneously in sufficient doses is a paralysis of the peripheral neuromuscular apparatus of voluntary muscles. An animal in such a condition is sensitive, but ordinarily does not respond to sensory stimulation because it is paralyzed. Paralysis of the more distal skeletal muscles is followed by a gradual paralysis of the respiratory muscles which results in a decrease in the pulmonary ventilation. This, in conjunction with the probable action of the salt on other processes concerned in respiration, produces a state of partial asphyxia manifested by the usual symptoms. Anesthesia may or may not occur at this stage, depending on the degree of asphyxiation. They believe, therefore that the anesthesia that may follow the infection of magnesium sulphate solutions is due chiefly to asphyxia. Magnesium salts cannot be regarded as having marked specific anesthetic properties.

32. **Relation of the Pancreas to Blood Diastases in the Dog.**—The work of Otten and Galloway indicates that the source of the diastases in the blood is not exclusively in the pancreas. That the pancreas plays an important rôle in the production of the diastases or in their destruction, is indicated by the fact that after removal of the pancreas, there is a markedly diminished concentration of the diastases in the blood which does not keep pace with the progressive marasmus nor correspond to the state of nutrition or kind of food. This concentration approaches a constant level, neither falling below a certain point nor returning to normal. Since the concentration of the diastases in the blood and in the lymph does not seem to parallel the hyperglycemia and diabetes after pancreatectomy, the diastatic ferments, as Schlesinger has pointed out, seem to have no direct relation to sugar metabolism, and as Carlson and Luckhardt suggest, appear to be waste products. It may be, however, as Schlesinger considers, that in some mammals the main bulk of the blood diastases are pancreatic diastases reabsorded from the external

secretion. If this is so, then on removal of the pancreatic factor, the blood and lymph diastases remaining would be those of the liver and other tissues, such as the intestinal mucosa, and possibly the leukocytes. Two factors must then be considered in connection with the diastases of the blood. First, the diastases of pancreatic origin, exogenous in a sense, and of no significance in carbohydrate metabolism; and second, endo-enzymes, possibly largely from the liver, which before leaving the tissue cells may play an important rôle in the destruction of glycogen.

33. **Resistance of Rats to Morphin Poisoning.**—Hunt found that after thyroid feeding, rats and mice are less resistant to morphin poisoning than before. According to Olds, thyroidectomized rats show the same resistance to morphin poisoning as normal rats, at least, within a period of from 8 to 28 days after the operation. These facts seem to question or at least limit the Hunt test as a test for the concentration of thyroid secretion in the body fluids.

Old Dominion Journal of Medicine and Surgery, Richmond

July

35 A Half Century in Medicine. S. Baruch, New York City.
36 Hyperchlorhydria. C. A. Caton, New Bern, N. C.
37 The Heart in Lobar Pneumonia. G. Baughman, Richmond.
38 Suppuration of the Retroperitoneal Glands in Typhoid Simulating Perforation. B. M. Randolph, Washington, D. C.

Journal Indiana State Medical Society, Fort Wayne

July

39 Diagnosis and Treatment of Cerebrospinal Meningitis. W. D. Hoskins, Indianapolis.
40 Standardization of Medicinal Preparations. A. D. Thorburn, Indianapolis.
41 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
42 Pellagra in Indiana. G. D. Marshall, Kokomo.

Alabama Medical Journal, Birmingham

July

43 The Value of Employment and Its Relation to Certain Neuroses and Psychoses. W. D. Partlow, Tuscaloosa.
44 *Cholecystitis Complicating Typhoid. E. M. Prince, Birmingham.
45 Orthopedic Dressings and Appliances. R. C. Evans, Birmingham.
46 Pterygium Operations. H. C. Crelly, Birmingham.
47 *Obliteration of the Craving for Narcotics.—Review of Article of Dr. Lambert. G. E. Pettey, Memphis.

44. **Cholecystitis Simulating Typhoid.**—Prince adds two cases to three previously published. In the first case the symptoms led to the diagnosis of perforation of the intestines. An incision was made in the median line and the small intestines rapidly examined, which showed no symptoms of perforation. The gall-bladder was then examined by palpation and found very much distended. Eight or ten stones were removed and some bile was discharged after the first flow of pus. In the second case a diagnosis of typhoid complicated by cholecystitis was made. The gall-bladder contained clotted bile.

47. Practically the same article was published in The Journal, May 14, 1910, p. 1593.

Journal of Biological Chemistry, Baltimore

July

48 The Hemocyanin of Limulus Polyphemus. C. L. Alsberg and E. D. Clark, Boston.
49 The Preparation of Cystin. O. Folin, Boston.
50 *Experiments Relating to the Mode of Decomposition of Tyrosin and of Related Substances in the Animal Body. H. D. Dakin, New York.
51 The Fate of Inactive Tyrosin in the Animal Body. H. D. Dakin, New York.
52 The Mode of Oxidation of Phenyl Derivatives of Fatty Acids: A Correction. H. D. Dakin, New York.
53 Alkylamines as Products of the Kjeldahl Digestion. C. C. Erdmann, Waverley, Mass.
54 The Alleged Occurrence of Trimethylamin in Urine. C. C. Erdmann, Waverley, Mass.
55 The Study of Autolyses of Physicochemical Methods. R. L. Benson and H. G. Wells, Chicago.
56 A Method of Treating and Preserving Large Quantities of Urine for Inorganic Analysis. E. A. Slagle, Baltimore.
57 Phosphorus in Beef Animals. C. K. Francis and P. F. Trowbridge, Columbia, Mo.
58 Chemical Tests for Blood. P. A. Kober, W. G. Lyle, and J. T. Marshall, New York.

* 50. **Decomposition of Tyrosin.**—The decomposition of tyrosin has attracted considerable attention because of the fact that it is the precursor of homogentisic acid which appears in the urine in alkaptonuria. It has been claimed that homogentisic acid is an intermediary step in the normal catabolism of tyrosin and the similar compound phenylalanin. Those who maintain this view consider that alcaptonuria is simply due to a failure of the organism to oxidize the homogentisic acid formed. Dakin attempted to determine this question by administering a compound of tyrosin, and found no evidence of the formation of homogentisic acid. In further experiments with the administration of inactive tyrosin in such quantities that some of it appeared unchanged in the urine, no homogentisic acid could be detected, so that the author concludes that this substance is not a necessary step in the metabolism of tyrosin.

Southern California Practitioner, Los Angeles

July

59 Symptoms and Differential Diagnosis of Ulcer of the Stomach and Duodenum and Gall Stones. W. A. Edwards, Los Angeles.
60 Idem. E. C. Moore, Los Angeles.
61 Ankylostomiasis. C. L. Cole, Prescott, Ariz.
62 First Aid in Eye Injuries. F. W. Miller, Los Angeles.
63 Medical Expert Testimony. E. Wing, Los Angeles.

New Orleans Medical and Surgical Journal

July

64 Disease in the Tropics. C. Wellmann, Oakland, Cal.
65 Hemorrhage from the Genitals of the Female New-Born Infant. M. A. Shlenker, New Orleans.
66 The Nose, Throat and Ear in Influenza. A. I. Weil, New Orleans.

Gulf States Journal of Medicine and Surgery and Journal of the Southern Medical Association, Mobile

July

67 *The Expenses Necessary for Sanitation in the Tropics. W. C. Gorgas, Ancon, Canal Zone.
68 Pellagra. E. M. Mason, Mobile.
69 Geographic Distribution of Uncinariasis in Alabama. G. J. Winthrop and H. P. Cole, Mobile.
70 *Uncinariasis with Post Mortem. W. E. Ross, Jacksonville, Fla.
71 The Prophylaxis of Uncinariasis. G. Dock, St. Louis.
72 Symptomatology of Yellow Fever. C. H. Mohr, Mobile.
73 Radium Therapy. F. G. Hodgson, Atlanta.

67. **Sanitation in the Tropics.**—The object of Gorgas' paper is to show that the necessary sanitation in the tropics can be so economically done that it is within the reach of all, and that sanitary work on the Isthmus will demonstrate to the world that the white man can live and work in any part of the tropics and maintain good health, and that the settling of the tropics by the Caucasian will date from the completion of the Panama Canal.

70. **Uncinariasis.**—The post mortem report and anatomic diagnosis in Ross' case was as follows: Anemia; emaciation; ascites; cardiac dilatation with relative mitral and tricuspid insufficiency; myocardial degeneration; edema of lungs; chronic splenitis; lymphadenitis; excoriation and ulceration of lining of jejunum and ileum, and fatty infiltration of liver.

Wisconsin Medical Journal, Milwaukee,

July

74 *Medical Education and Medicine. E. Evans, La Crosse.
75 The Medical Experiences of Benvenuto Cellini. A. W. Myers, Milwaukee.

74. Abstracted in The Journal, July 23, 1910, p. 342.

Memphis Medical Monthly

June

76 Duties and Responsibilities of the Surgeon and Some of the Things the Public has a Right to Expect of Those Assuming to do Surgery. F. D. Smythe, Memphis.
77 Rheumatism and Infection of Joints. M. G. Thompson, Hot Springs, Ark.
78 Important Requirements in Doing Abdominal Surgery. J. A. Crisler, Memphis.
79 Cancer of the Female Breast. J. T. Allen, Brownsville, Tenn.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

July

80 Treatment of Leukemia by the Roentgen Ray. R. W. Wilcox, New York.
81 *Diabetes as an Infectious Disease. A. King, Portland, Me.
82 The Growth of Therapeutic Nihilism. F. S. Mason, New York.
83 Alcohol as an Active Cause of Insanity. F. Woodbury, Philadelphia.
84 Alcohol in Therapeutics. C. E. deM. Sajous, Philadelphia.

81. Abstracted in The Journal, May 28, 1910, p. 1811.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

July

85 *Study of the Functional Activity of the Kidneys by Means of Phenolsulphonephthalein. L. G. Rowntree and J. T. Geraghty, Baltimore
86 Practical Method for the Preparation of Phenolsulphonephthalein. E. A. Slagle, Baltimore.

85. **Functional Activity of the Kidneys.**—In all, over 200 functional tests with phenolsulphonephthalein have been performed by Rowntree and Geraghty on 150 different subjects. In normal cases the drug appears in the urine in from 5 to 10 minutes, and 40 and 60 per cent. of the 6 gm. dose, the average being about 50 per cent., is recovered in the first hour. From 15 to 25 per cent. of the drug administered is recovered in the second hour, making the total recovery for two hours from 61 to 85 per cent. The authors do not consider the time of total elimination as of so much value as the amount of elimination for a definite period. The time of appearance of phthalein in the urine is from 5 to 10 minutes when the secretion of urine is free, but even in health this may be delayed when the secretion is very scanty. Following its appearance the intensity rapidly increases and reaches its maximum in from 15 to 20 minutes. At the end of from an hour to an hour and a half, as a rule, an appreciable decrease in the density becomes manifest. A tapering diminution occurs from the end of the first hour. At the end of the second hour only a definite pink is obtained on addition of an alkali. In the majority of instances excretion is practically complete at the end of two hours. The application of this test in the various types of nephritis has given the following results:

In 3 cases of acute nephritis no increased permeability of the kidney has been demonstrated, but in 2 out of the 3 cases a marked decrease in the amount of elimination has been observed. In 8 cases of parenchymatous nephritis with one exception there has been a marked decrease in the amount excreted. In one case only 10 per cent. was excreted in two hours. The greatest decrease has been noted in cases in which clinically marked secondary sclerotic changes were considered to be present. In 10 cases of chronic interstitial nephritis a low output was encountered in each instance, the decrease being usually proportionate to the degree of severity of the disease as estimated clinically. In 2 cases only a trace of the drug—less than 1 per cent.—was eliminated in the course of an hour. Both patients died of uremia within 2 months. In 60 cases with obstruction in the lower urinary tract, almost all being patients with hypertrophy of the prostate, the phthalein test has given valuable information. As a rule, the test has demonstrated the greatest impairment of function in those cases which have large residual urine and have not been leading a catheter life. In many instances in which the output of the drug was low when the patient was first seen adequate regimen has resulted in a decided improvement of the kidney function as indicated by the test. When the time of appearance is delayed beyond 25 minutes and the output of the drug is below 20 per cent. for the first hour, operation is postponed regardless of the patient's clinical condition. If under routine treatment, the output remains low but constant, the renal function is probably in a stable condition and the operation may be undertaken, care being taken to select an anesthetic which will not further depress the renal function. In one instance, a successful operation was performed with an output of 8 per cent. for the first hour, but this output had remained constant for a period of 5 weeks. The low output here was ascribed to chronic interstitial changes in the kidney, and nitrous oxid was accordingly employed. Repeated determinations should be made, and except when unavoidable operations should not be performed when the tests indicate a decreasing function. Again, when only a trace of dye is excreted operation should not be attempted as grave renal changes exist.

The test has made it possible, the authors declare, to select a time for operation when the kidneys have regained their full functional power and stability. In no case in which the functional test indicated an efficient or stable renal function prior to operation, has any evidence of renal inefficiency become apparent subsequently. The authors conclude that phenolsulphonephthalein itself is better adapted for use as a functional test than any other drug previously employed for the same purpose on account of its early appearance in the urine and the rapidity and completeness of elimination by the kidney.

Ophthalmic Record, Chicago

July

87 Importance of Prompt X-Ray Examination in Penetrating Wounds of the Eyeball in which the Foreign Body can Neither be Seen nor Accounted For. R. L. Randolph, Baltimore
88 Transient Complete Opacity of the Cornea Following the Use of Obstetric Forceps. J. Green, St. Louis
89 Alternating Illumination. N. M. Black, Milwaukee
90 A Traumatic Cataract Operation. W. S. Windle, Oskaloosa, Ia.
91 Device for Pneumomassage of the Eye. F. B. Eaton, Portland, Ore.
92 *Conjunctival Flaps in Ophthalmic Surgery. W. G. M. Byers, Montreal.
93 The Joint Removal of Capsule and Lens. R. Sattler, Cincinnati.
94 Colored Toric Glass for Use in Examining Cases of Ocular Paralysis. W. G. M. Byers, Montreal
95 Criticism of the Smith Indian Cataract Operation of Extraction in the Capsule. P. P. Kilkelly, Bombay, India
96 A Splinter of Wood in the Left Orbit for Fifteen Years. H. E. Randall, Flint, Mich
97 An Eye-Shade for the Iris Diaphragm Chimney, Combined with Device for Holding a Retinoscope. J. N. Rhoads, Philadelphia.

92. Published in the *Montreal Medical Journal*, July, 1910.

Journal of Ophthalmology and Oto-Laryngology, Chicago

July

98 Etiology of Cataract. L. Stricker, Cincinnati.
99 Tone Perception. W. S. Bryant, New York.

Kansas City Medical Index-Lancet

July

100 Stigmata of Nervous Diseases. J. Punton, Kansas City.
102 The Tuberculin Blister Reaction. H. deC. Woodcock, Leeds, England.
103 Nursing for the Neurologist, the Psychic Factor: What to Avoid, the Principles that Guide. T. A. Williams, Washington, D. C.

Atlanta Journal Record of Medicine

July

104 Hydrotherapy. L. Amster, Atlanta, Ga.
105 Thoughts on Tuberculosis. G. Brown, Atlanta, Ga
106 Is There Too Much Surgery? W. W. Mangum, Rome, Ga.
107 Aphasia. T. A. Williams, Washington, D. C.
108 Tics in Children, and Their Treatment. H. C. Whelchel, Douglas, Ga
109 An Unusual Instance of Poisoning with Argyrol Injected into the Deep Urethra and Bladder. E. G. Ballenger, Atlanta, Ga.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

July 23

1 An Exercise on Heart Disease. N. Moore.
2 *Epilepsy. W. A. Turner.
3 Ferro-Silicon: The Poisonous Gases Liable to be Evolved Therefrom. H. W. Bake.
4 The Notification of Consumption. R. Farquharson.
5 *Dermato-Myositis with Recovery. N. C. Gwynn and W. Gordon.
6 Examination of the Blood Serum of Idiots by the Wassermann Reaction. H. R. Dean.
7 The Medical Proposals of the Minority Report: An Appeal to the Medical Profession. H. Beckett-Overy, S. Hastings and A. Freeman.
8 Tuberculosis in Its Relation to the Generative Functions. J. T. R. Davison.
9 Suppurative Perichondritis of the Larynx in the Course of Acute Pneumonia. Recovery. J. Collier and H. S. Barwell.
10 *The Treatment of Rheumatism by Bee Stings. F. H. Maberly.

2. **Epilepsy.**—There is no single specific remedy in the treatment of epilepsy, says Turner, although the alkaline salts of bromin come nearest to this definition. But the influence of the bromids on epileptic convulsions is variable and uncertain. In the first place, bromid medication may arrest the seizures immediately, or within a short period of their administration, temporarily or permanently. Second, the bromids may induce a lessening in the severity and frequency of the seizures. Third, the bromids may exert no influence at all on the disease, or may even augment the frequency or severity of the seizures. Under the influence of the salts

of bromin a considerable number of cases of epilepsy are temporarily "cured" or materially improved. Bromid treatment should be commenced at the earliest possible time after the onset of the fits. If benefit does not follow a daily dose of from 45 to 75 grains of one or a combination of the bromid salts, some other remedy or method of treatment should be sought for and applied. Turner holds that the large doses sometimes prescribed—from 100 to 150 grains daily—although no doubt suppressing the seizures for a time, induce other and more serious phenomena.

Of the combinations of the bromids with other remedies Turner has found Gelineau's formula the most useful and satisfactory. It is prescribed in the form of dragées, containing 1 gram of potassium bromid, ⅓ milligram of picrotoxin, and ½ milligram of the arseniate of antimony. He has used the dragées in all forms of epilepsy with considerable success. The method of prescribing them is simple: One dragée to be taken either during or immediately after a meal thrice daily for a week, an additional dragée being added weekly until the patient is taking 4, 5 or 6 per diem. Turner has found 6 dragées a day usually sufficient to hold the fits in check, although according to Gelineau as many as 10 or 12 may be taken daily. In patients with confirmed epilepsy with mental deterioration the use of bromids is of relatively little value. Their continued administration in these cases does, however, produce a diminution in the number, and perhaps in the severity, of the seizures.

5. **Dermato-Myositis.** The case reported by Gwynn and Gordon seems a fairly typical one, but presents no new features and affords no fresh clue to the etiology. The clinical picture suggested a toxemia arising from some infection of the alimentary canal, and efforts were therefore directed to disinfection of the mouth, throat, stomach and bowels.

8. **Tuberculosis and the Generative Functions.**—Davison points out that Koch's bacillus can only successfully invade organisms which lack proper defense; we know that the lines of natural defense are weakened when the organism loses its vigor; we know that sexual functions exercised in immediate degree, or exercised by organisms in a state of degeneration, spend inordinately the strength of the individual. Finally, we know that modern hygienic measures snatch from a sure death many children who afterward pass on to the reproductive epochs of life with frail organisms. This simultaneous occurrence of the great sexual activity, or sexual activity exercised under disadvantageous conditions (maturity in both sexes and advanced maturity in the male), and great mortality from tuberculosis cannot, therefore, be a mere coincidence—the first must be the cause of the second.

10. **Treatment of Rheumatism by Bee-Stings.**—Maberly reports several cases of chronic, apparently intractable cases of rheumatism which were cured to all intents and purposes by being exposed to bee-stings at regular intervals. One, a man about 35 years of age, had been laid up three times with rheumatic fever for 6 or 7 months each time, and found his joints increasingly stiff with each attack. In his case the bee stings did marvels. His feet had always been stiff from the first attack, but now he could walk anywhere and "did" about 20 miles every Sunday. His ankle movements were perfect and he stood on his toes quite easily. He says that he always ate and drank what he liked, and whenever he could catch a bee in his garden he did so and put it on. Maberly saw a number of other cases, some of old-standing chronic rheumatism, both in elderly and younger subjects, and all were doing well, while in nearly all the usual remedies had been tried without any good results.

British Medical Journal, London

July 23

11 Duodenal Ulcer. G. Rankin.
12 *Tubercle Bacilli in the Feces in Tuberculosis. R W Philip and A. E. Porter.
13 *Experimental Evidence for the Theory of the Neurogenic Co-ordination of the Heart Pulse. H. Kronecker.
14 *Ocular Condition of Mongolian Imbeciles. F H. Pearce, R. Rankine and A. W. Ormond.
15 Chronic Toxemia at Vittel. H. J. Johnston-Lavis.
16 Scarlatina Maligna. A. Gregory.
17 *Recurrent Monstriparity. E. N. Purrett.
18 *Turpentine Enemata in the Treatment of Enteric Fever. W. J. J. Arnold.

12. **Tubercle Bacilli in the Feces.**—Altogether 109 different specimens were examined by Philip and Porter. Of these, 99 were from patients suffering from pulmonary tuberculosis, in different stages of the disease. None of the patients had intestinal tuberculosis. The other specimens were from one case of tuberculous peritonitis and from patients without a suspicion of tuberculous infection. Of the 109 patients, only 34 had sputum in which tubercle bacilli had been discovered; 42 had sputum in which no bacilli were found, and 24 had no sputum whatever. Of the 100 tuberculous patients examined, 79 were found to yield tubercle bacilli, and only 21 were negative. Of the 9 specimens from presumably normal subjects none yielded tubercle bacilli. Of the tuberculous patients all those with bacilli in the expectoration, with one exception, presented tubercle bacilli in the feces. Of the 42 patients in whom bacillary examination of the sputum was negative, 29 gave tubercle bacilli in the feces. Of the 24 without sputum, 17 showed bacilli in the stools.

Philip and Porter claim that the occurrence of the tubercle bacilli in the feces is independent of the presence of an intestinal lesion. Indeed, their presence has little reference to abdominal tuberculosis. They were actually absent from the only case of tuberculous peritonitis which was examined. The remarkable frequency of their occurrence in relation to pulmonary tuberculosis, not only in cases in which tubercle bacilli were determinable in the sputum, but also in cases in which either bacilli were absent or there was no sputum whatever, would seem to afford an important addition to their means of diagnosis in doubtful cases of pulmonary tuberculosis.

13. **Neurogenic Coordination of Heart Impulse.** Kronecker's observations show that the coordination of the different parts of the heart is brought about through a nervous channel.

14. **Mongolian Imbeciles.**—The authors examined 28 patients corresponding to 56 eyes. Nineteen patients had lens changes (67.8 per cent.); 18 had typical lens changes (64.3 per cent.); 35 eyes had cataract changes of some sort (62.5 per cent.); 33 eyes had typical changes in the lens (58.9 per cent.); 10 patients had some inflammation of the lids (35.7 per cent.); 7 patients had squint; 4 had chorioidal changes, and 2 had nystagmus. The age of the youngest patient was 5 years and the oldest 43. The youngest showing cataract was 9 years, and the oldest patient had a well-developed typical cataract of the kind described. Fourteen patients had the interpalpebral fissure directed upward and outward.

17. **Recurrent Monstriparity.** The patient, aged 35, a strong, healthy woman, gave birth to a full time female child having a large cephalocele presenting from the vertex. The first pregnancy went to term, when a normal male child was born. The second pregnancy ended in abortion at the end of the third month; the fetus was anencephalic. The third pregnancy ended in abortion at the fifth month; the fetus (male) was anencephalic. The fourth pregnancy concluded at term, and is the subject of the present report.

18. **Treatment of Typhoid Fever.** Arnold says that none of the various methods of treatment have hitherto been successful in definitely controlling the course or limiting the duration of typhoid fever. A measure employed at the Civil Hospital, St. Helena, during the past 4 or 5 years, has resulted in a distinct shortening of the average duration of illness, and in a remarkable amelioration of all the symptoms. This particular measure consists in the administration by the bowel of turpentine and olive oil from the first day of treatment, and its regular use at stated intervals until the temperature has been normal for at least ten days. When the case first comes under observation an enema of turpentine ℥j and olive oil Oj is given by a funnel and tube. The foot of the bed being well raised, the emulsion is allowed to find its way slowly up the bowel. On the next day, or the day after, the same quantities are repeated. A preliminary thorough cleansing of the bowel by a dose, or preferably small divided doses, of calomel, followed by castor oil, prepares the ground for the action of the turpentine.

Clinical Journal, London

July 20

19 Vaccine Therapy. H. White, G. Ball, G. T. Westers, Dr. Holder and B. Harris.

Annals of Tropical Medicine and Parasitology, Liverpool

June

20 Sanitary Conditions and Diseases Prevailing in Manáos, North Brazil, 1905-1909. H. W. Thomas.
21 Pathologic Report of Esophagostomiasis in Man. H. W. Thomas.
22 Zoologic Study of *Esophagostome de Thomas.* A. Railliet and A. Henry.
23 "Mossy" Foot of the Amazon Region, an Infective Verrucose Condition Affecting the Skin of the Upper and Lower Limbs. H. W. Thomas.
24 Guarana. P. H. Marsden.
25 Chemical Constituents of Guarana. M. Nierenstein.
26 Yellow Fever. H. W. Thomas.
27 Mosquitoes of the Amazon Region. R. Newstead and H. W. Thomas.

Archives Générales de Chirurgie, Paris

May, IV, No. 5, pp. 411-550

28 Arteriovenous Anastomosis. C. Monod and J. Vanvert. Commenced in No. 4.
29 Tumor of Accessory Parotid Gland. M. Florence.
30 Pathologic Anatomy and Treatment of Suppuration in the Prostate Due to the Gonococcus. Paxton Gardner (New York).
31 Efficacy of Continuous Extension in a Case of Sciatica. P. G. Zezas.

June, No. 6, pp. 551-660

32 Double Luxation of the Astragalus. Tréuel, Worms and A. Boeckel.
33 Experimental End-to-End Suture of Vessels. (L'anastomose circulaire des vaisseaux par suture ou par appareils prothétiques.) C. Fleig.
34 Metal Brace for Fracture of Long Bones. (Procédé d'ostéosynthèse pour les fractures des diaphyses par brassière métallique.) P. Juvara.
35 Shortening and Fastening the Cecum Supplementary to Appendicectomy. (Cæcoplicature et cæcopexie complémentaires de l'appendicectomie.) P. Mauclaire.

Bulletin de l'Académie de Médecine, Paris

July 5, LXXIV, No. 26, pp. 1-47

36 Serotherapy of Acute Articular Rheumatism and Wright Vaccine Treatment of Rheumatism. G. Rosenthal and F. Widal.
37 *Method for Collecting Vital Statistics. (Vérification des décès et déclaration des maladies qui en ont été la cause.) M. Marquez.
38 *Granular Cirrhosis of the Liver. (Etiologie et prophylaxie de la cirrhose granulée du foie, dite encore cirrhose atrophique, cirrhose alcoolique, œnolique, de Laennec, etc.) M. Lancereaux.
39 *Suprahepatic Ballottement Sign of Echinococcus Cyst in the Liver. (Le ballottement sus-hépatique signe nouveau des kystes hydatiques de la convexité du foie.) A. Chauffard.
40 Pathologic Anatomy of Pachypleuritis. M. Letulle.

July 12, No. 27, pp. 48-80

41 *Incomplete or Anomalous Form of Coxalgia. E. Kirmisson.
42 *Preservation of Vaccine by Refrigeration. (Pulpes vaccinales et basses températures.) Kelsch.

37. **Improved Death Certificates.**—The mayor of Hyères in Southern France is a physician, and a double perforated certificate blank is in use there, to obviate the necessity for informing the friends of the cause of the death. Both blanks are filled out at the same time. The first is to be given to the family to be handed to the authorities as the death notice, and records the name, sex, age, residence, profession, date and physician's signature. The twin certificate records sex, age, married or single, profession, date of death, cause of death and the signature of the physician. The patient's name is not given in this certificate which the physician seals and mails to the mayor. When it is received at the city hall it is deposited in a special locked urn and this urn is opened and the contents officially examined and recorded only once or twice a year. There is thus nothing to conflict with the obligation of professional secrecy, the cause of death not accompanying the name of the individual, but all other details necessary for vital statistics are duly recorded. This system has been in use for nearly two years at Hyères and the workings have been exceptionally satisfactory.

38. **Cause of Gin Liver.**—Lancereaux has been conducting experimental research for years, the conclusions of which are that cirrhosis of the liver of this type is the result of the action of substances used in wine, beer, etc., for their preservation, especially potassium bisulphate. He was able to produce the typical lesions of gin liver by feeding animals with this salt. The other salts of potassium did not seem to cause disturbances of this kind.

39. See Paris Letter, July 30, page 413.

41. **Incomplete Form of Coxalgia.**—Kirmisson has encountered 5 cases of a hip joint disease which is distinguished by lack of severe local symptoms and yet it entails extensive destruction of the joint. A little pain and slight limping were the maximum of the disturbance. In such a case described in detail, a boy of 11 showed no signs of vicious attitude and walking was not painful, but the joint seemed to be unusually relaxed, the condition resembling congenital dislocation. After the trouble had lasted about a year without any aggravation of symptoms, radioscopy revealed extreme atrophy of the head of the femur; it had almost disappeared, explaining the special form of the lameness. At each step the head slipped up on the ilium. Nothing except radioscopy would have suggested such extensive lesions. In another case the youth complained of his knee and limped a little; nine months later atrophy of the muscles on the same side was noticed. The limb was in slight abduction with outward rotation but no pain except when the hip joint was completely flexed. The general condition was good but radioscopy revealed manifest lesions in the head of the femur. In none of the 5 cases reported was there any difference in the length of the legs. In 1 case the symptoms were banished by extension but after an intercurrent measles the hip trouble returned and its tuberculous nature became manifest. As this form of hip joint disease develops so insidiously, it is liable to be confounded with coxa vara.

42. See Paris Letter, July 30, page 413.

Presse Médicale, Paris

July 9, XVIII, No. 55, pp. 521-536

43 *Resection of the Rectum with Continent Sphincter. A. Desjardins.
44 Sporotrichosis in Man from Laboratory Inoculation. De Beurmann and L. Ramond.
45 *Pleurisy and Hydrothorax with Heart Disease. R. Cruchet and R. Lautier.
46 Electricity in the Service of Medicine. (Les bases physiologiques de l'électricité médicale; électrothérapie dans ses rapports avec la rééducation et la psychothérapie.) A. Zimmern and P. Cottenot.
47 Tridigital Exploration of the Head of the Femur. M. J. Gourdon.
48 *Kaolin Technic for Functional Stomach Tests. (De la mesure du volume total du contenu gastrique et de l'étude de la secrétion moyenne de l'estomac.) L. Meunier.

July 13, No. 56, pp. 537-544

49 *Syphilitic Pleurisy. H. Roger.
50 Ethyl Chlorid in General Anesthesia. (De l'anesthésie génerale de courte durée prolongée; nouveau dispositif instrumental.) L. Camus.

July 16, No. 57, pp. 545-552

51 The Primary Axillary Triangle in Hepatization of the Lung. E. Weill and G. Mouriquand.
52 Modified Catheterization of the Ureters. (Nouveau procédé de cathétérisme urétéral.) M. Gudin.

43. **Resection of the Rectum with Continent Sphincter.**—Desjardins introduces into the rectum a hard rubber cylinder with cross bar handle; the diameter is nearly that of the rectum and a deep groove is cut just below the rounding tip. Through an abdominal incision the rectum above the lesion is tied to the cylinder, the thread drawn into the groove. The abdomen is then sutured and the rectum, fastened to the cylinder, is then drawn out through the anus. The lesion can thus be resected outside the body. The protruding stump of the bowel is sutured to the anus just above the sphincter. The results have been complete recovery in two cases of cancer removed by this technic. In another case the cylinder was a straight one and the operation failed; since then he uses a curved cylinder that fits perfectly into the rectum. One of the patients operated on rides horseback now without any disturbances.

45. **Pleurisy and Hydrothorax with Heart Disease.**—The practical conclusions of this study of effusion in the pleura in the course of heart disease emphasize the importance of relieving the heart by prompt evacuation of the fluid as any effusion in the pleura imposes extra work on the heart.

48. **Kaolin Technic for Functional Tests of the Stomach.**—Meunier found that the various tests in vogue for estimating the functioning and functional capacity of the stomach all failed to yield reliable findings on account of the fact that the contents of the stomach do not blend to form a homogeneous mass but lie in layers. A portion of the stomach content taken for examination will give entirely different findings according to the spot from which it was taken. All this can be remedied, he states, by having the patient ingest

a suspension of kaolin or fuller's earth, 10 gm. in 100 c.c. of water, before the stomach contents are to be withdrawn. This forms a suspension with the stomach contents, and he aids in blending it by blowing in a little air with the sound just before withdrawing the stomach contents after the test meal. The stomach content thus withdrawn forms a milky suspension entirely homogeneous and with this the various tests are applied as under other conditions. As the amount of kaolin in each c.c. is known, evaporating a given amount of stomach content and calcining it leaves an ash which is practically nothing but kaolin, and from the amount of this in a given amount of stomach content it is easy to deduce the total volume of the latter.

49. **Syphilitic Pleurisy.**—Roger reports two cases of apparently typical pleurisy but the positive Wassermann reaction, the absence of albumin and of tubercle bacilli in the effusion, the negative results of inoculation of guinea-pigs and the rapid recovery under mercurial treatment, all confirmed the assumption of a syphilitic process in the pleura. In four other patients with tuberculous pleurisy but scanty pulmonary manifestations, the reaction for albumin in the sputum was always positive. He refers to two other recently published cases of tertiary syphilitic pleurisy; the Wassermann reaction was positive in both effusion and blood serum, and recovery was soon complete under mercurial treatment.

Semaine Médicale, Paris

July 20, XXX, No. 29, pp. 337-348

53 *Clinical Forms of Amyotrophic Rheumatism. M. Klippel and M. P. Weil.
54 *Distant Signs of Abdominal Cancers. F. Lejars.

53. **Clinical Forms of Rheumatism with Amyotrophy.**—Klippel and Weil call attention to the form of polyarthritis with ankylosis and such a degree of muscular atrophy that the latter may be said to dominate the clinical picture. In some cases only one joint is affected and the atrophy is restricted to this limb. In Deroche's case the ankylosis of the shoulder, elbow and hand was followed in less than 5 weeks by atrophy of the entire arm. They are inclined to ascribe the atrophy and also the joint trouble to some change in the axis-cylinder, especially as painful spasms, edema and fibrillary twitching in the muscle were frequent in their two cases on a gonorrheal basis. They review the literature on the subject in detail.

54. **Remote Signs of Abdominal Cancer.**—Lejars discusses the enlargement of the supraclavicular glands and the patch of induration in the pouch of Douglas and the tough shrivelling of the umbilicus as instructive signs of internal cancer. The ovary is a frequent location for transplantation metastasis of gastric or intestinal carcinoma, and the same effect of gravity is seen in the pelvic deposit in the pouch of Douglas. It is equally important to examine the umbilicus, induration and shrivelling at this point sometimes being the first clue to cancer within. In one such case, a robust man of 58 had complained of a little discomfort in the umbilicus and occasional slight pain. Otherwise he was in apparent perfect health, free from any gastro-intestinal disturbances. The umbilicus looked like orange skin, and there was induration but none beyond or below. Lejars diagnosed a deep latent cancer and this was confirmed by the death of the patient from cachexia in less than a year. In another case the umbilicus was apparently normal except that one side had retracted and palpation showed a small nodule below. There was suspicion of gastric cancer in this case and this finding in the umbilicus hastened operative treatment. It is possible that the secondary umbilicus cancer may be taken for a hernia or an umbilical hernia may develop a cancerous nodule.

Berliner klinische Wochenschrift

July 4, XLVII, No. 27, pp. 1261-1308

55 *Treatment of Syphilis with Ehrlich's "606." (Behandlung der Syphilis mit Dioxydiamido-arsenobenzol.) W. Wechselmann.
56 *Diagnosis of Syphilis and Its Activity by Test Mercurial Injections. (Erkennung der Syphilis und ihrer Aktivität durch probatorische Quecksilberinjektionen.) F. Glaser.
57 Albumin Bodies and Fat Deposits in the Liver. (Eiweisskörper und Leberverfettung.) G. Rosenfeld.
58 *Prophylaxis of Caisson Disease. (Versuche über die Prophylaxe der Pressluftkrankheit.) A. Bornstein.
59 Changes in Organs after Extensive Saline Infusion. (Welche Organveränderungen bewirken grosse subcutane Kochsalzinfusionen?) S. Widerøe.
60 Mechanical Vibratory Treatment of Functional Vocal Disturbances. (Eine neue Methode zur Behandlung der funktionellen Stimmstörungen nebst Bemerkungen zu ihrer Pathologie und Therapie.) T. S. Flatau.
61 Proportions of Diastase in Human Blood and Its Connection with Diabetes Mellitus. O. J. Wynhausen.

July 11, No. 28, pp. 1309-1352

62 *Chronic Febrile Ulcerative Procto-Sigmoiditis. H. Strauss.
63 Diphtheria Antitoxin. (Resultate der Serumtherapie bei 1251 tracheotomierten und intubierten Diphtheriepatienten, verglichen mit denen bei 665 Fällen vor dem Serum.) H. Timmer.
64 Serodiagnosis of Echinococcus Cyst. (Zur Kasuistik der Erkennung des multilocularen Echinococcus vermittelst der biologischen Komplementablenkungsreaktion.) A. N. Dobrotin.
65 *Idem. (Serodiagnostik der Echinokokkenerkrankung.) K. Meyer.
66 *Endobronchial Therapy. A. Ephraim. Commenced in No. 27.
67 Nitrites, etc., as Causal Factor in Cholera. (Nitrit, salpetrige Säure und Stickoxyd als Choleragifte.) R. Emmerich.
68 Arabinosuria. (Ueber inaktive und rechtsdrehende Arabinoseausscheidung im Harn.) L. Schuler.
69 Lipoidemia. M. Adler.
70 Influence of Modern Lights on the Eye. (Einfluss der modernen Beleuchtungsquellen auf das Auge.) Helbron.

55. **Treatment of Syphilis with Ehrlich's "606."** The main points in Wechselmann's communication were mentioned in the Berlin Letters of July 23, page 326, and August 13, page 609.

56. **Test Injection of Mercury in Syphilis.**—Glaser reasoned that with a positive Wassermann reaction but no apparent manifestations of syphilis, an injection of mercury might destroy enough of the spirochetes to release endotoxins and cause fever from their absorption. He has consequently applied this test injection as a diagnostic measure and found the febrile reaction a delicate and reliable index. He gives a few typical curves to show the abrupt rise in temperature liable to follow an intragluteal injection of 0.05 or 0.1 gm. of salicylate of mercury. In some cases the febrile reaction was not observed until after the second, third or fourth injection; the fever generally lasted for one to three days. He regards it as a sign that further antisyphilitic treatment is needed, but he does not venture to draw any therapeutic conclusions from the absence of a febrile reaction in cases of latent syphilis giving a positive Wassermann reaction.

58. **Prophylaxis of Caisson Disease.**—Bornstein presents evidence to prove that retention of nitrogen is the main cause of the disturbances from caisson work, and that muscular exercise on coming out from the caisson works off this excess of nitrogen more rapidly than any other measure. Even climbing a long flight of steps on coming out is sufficient to throw off the surplus nitrogen. Since the workmen have had to climb nearly 75 feet to the surface in the work on the Elbe tunnel at Hamburg the proportion of workmen affected has dropped from over 3 to less than 0.4 per cent.

62. **Chronic, Febrile, Ulcerative Proctosigmoiditis.**—Strauss gives the autopsy findings in a case in which his diagnosis during life was confirmed post mortem. The process did not extend beyond the upper part of the sigmoid flexure and the pathologic changes were more pronounced downward. He describes further two more cases in which this localized inflammation induced fever but no tumefaction could be palpated and the sigmoid region was not tender. This lack of swelling and tenderness he has noticed in other cases of ulcerative processes in the sigmoid flexure, but the anus is liable to gape. The autopsy findings demonstrate that medical and local measures have little prospect of success in case of such extensive lesions and that operative treatment is necessary. Hermann reported in 1904 24 cured and 11 improved of 50 patients under operative treatment. Strauss advises an artificial anus made in the cecum or the lowest part of the ileum, to leave the inflamed section in peace. Operative treatment is indicated when the general health is suffering and months of local and internal measures have given no permanent relief. Medical measures alone will generally answer the purpose, as he shows by a case in which a young woman had an ulcerative inflammation for 17 cm. above the anus, but was entirely cured by local and general treatment kept up for several months.

66. **Endobronchial Therapy.**—Ephraim has an apparatus for spraying the bronchial ramifications, the flexible instrument being introduced down to the bifurcation, and reports its application in 68 cases of bronchial asthma, the ages ranging from 8 to 71. Only 53 were given the treatment systematically and of these 35 seem to be permanently cured, 6 improved, 5 transiently improved and in 7 no effect was manifest. He uses for the spray a solution of an anesthetic with epinephrin (novocain-suprarenin).

Deutsche medizinische Wochenschrift, Berlin

July 14, XXXVI, No. 28, pp. 1305-1352

71 Antiformin Test for Scanty Tubercle Bacilli in Scraps of Tissue, etc. (Anwendung des Uhlenhutschen Verfahrens zum Nachweis spärlicher Tuberkelbazillen in Gewebsstücken.) H. F. Hoffmann.
72 *Traumatic Tuberculosis. A. Kappis.
73 *The Superficial Lymph Glands of the Thorax in Pulmonary Tuberculosis. (Die subkutanen Lymphdrüsen des Thorax bei Lungentuberkulose.) E. v. Zebrowski.
74 Traumatic Incomplete Rupture of Sound Heart and Mitral Valve. (Traumatische inkomplette Herzruptur und Mitralsegelzerreissung.) W. Berblinger.
75 *Diagnosis of Duodenal Ulcers. (Zur Diagnose der Duodenalgeschwüre.) A. O. Günzburg.
76 *Granulomatous or Condylomatous Proliferation with Gonorrhea. V. Klingmüller.
77 *Torsion of the Omentum. (Netztorsion.) P. Steiner.
78 *Leukoplakia of the Bladder. (Zur Leukoplakie der Harnblase.) P. A. Herzen.
79 The Causal Agent of Trachoma. (Natur des Trachomerregers.) K. Lindner.
80 Mite as Endoparasite. (Eine Milbenart von Glyciphagus als Endoparasit.) T. Tsunoda.

72. **Traumatic Tuberculosis.**—Kappis relates the history of a roofer, about 25 years old, previously strong and apparently healthy, who fell from a height of three stories, a compound fracture of the right thigh resulting. An acute osteomyelitic process developed at the point of the fracture, of tuberculous nature, evidently traceable to an old apical tuberculous process. Amputation became necessary and the much debilitated patient succumbed to the loss of blood although this was only 200 c.c. If the extent of the process had been suspected before the operation the Momburg belt constriction would have been applied. Kappis adds that the family made no claim for damages from the industrial accident but such a claim would certainly have been allowed by the courts in this case.

73. **Enlarged Superficial Lymph Glands with Pulmonary Tuberculosis.**—Zebrowski found enlarged glands on the side of the chest in 186 out of 929 patients with unmistakable tuberculous lesions in the lungs or pleura, that is, in 20 per cent. He also found the enlarged glands in 2.58 per cent. of 1,629 patients without manifest signs of tuberculosis. In 14 in this latter group with enlarged glands the skin and conjunctiva tuberculin tests elicited a positive response, and these tests were not applied in the other 28 patients in this group. Nothing pathologic could be discovered by casual examination in 11 in this group. The enlarged glands were found along the middle axillary line or a little inward from this, along the long thoracic artery. In 12 of the 228 patients presenting these enlarged glands, they could be distinctly traced along the line of the pulsating vessel when looked at from the side, generally at about the fourth interspace and mostly on the right side. In one case the discovery of the enlarged glands first suggested possible tuberculosis of the lungs, and the glands subsided to normal size as the tuberculous process healed under treatment. He discusses the anatomic conditions responsible for involvement of these glands in the pathologic process beyond.

75. **Diagnosis of Duodenal Ulcers.**—Günzburg remarks that the pathologic anatomists still are discovering many duodenal ulcers that had escaped the clinician. In 8 of his total of 18 cases of duodenal ulcer autopsy confirmed his diagnosis. It was based on the pains coming on two or three hours after the meal and relieved by eating, also pains sometimes occurring at 1 or 2 a. m. These attacks of pain may recur through days and months; they are difficult to influence and appear and disappear with periodical regularity. With a history of this kind, duodenal ulcer is almost certain, especially if there is more or less blood in the stools or delay in evacuating a Boas test meal beyond seven hours. The enlargement of the duodenum is also liable to induce a characteristic tympanitic percussion sound over the quadrate lobe of the liver. This tympanitic zone in the region of the quadrate lobe is caused by the dilated duodenum passing behind this lobe. When the duodenum returns to normal size, as after gastroenterostomy, this resonance is no longer perceived. It appears only when the liver is in its normal place, and when the dulness over the left lobe of the liver can be distinguished from the cardiac dulness. The colon must be emptied before percussing.

76. **Anal or Vulvar Condyloma with Gonorrhea.**—Klingmüller has encountered 8 cases of condylomatous proliferation around the anus or on the perineum of women with a gonorrheal process in the rectum and a case of a granulomatous growth on the prepuce of a male. He ascribes these proliferations to the gonococcus.

77. **Torsion of the Omentum.**—Steiner reports a case of ileus due to torsion of the omentum and compares the clinical picture with 66 similar cases on record. A coexisting hernia is mentioned in nearly every case; this leads to adhesions and the omentum becomes fastened and nodules are liable to develop in it, all favoring torsion. It was readily relieved by laparotomy and resection of the whole of the twisted part of the omentum in his case.

78. **Leukoplakia of the Bladder.**—Herzen reports a case in which he resected a patch of leukoplakia in the bladder, with the involved mucosa and submucosa, after high incision. The patch was 8 or 10 cm. long by 3 to 5 cm. wide; the bleeding surface left was cauterized with the Paquelin and the bladder wall drawn up over it with catgut sutures. The symptoms previously had been dysuria and bacteriuria but no tubercle bacilli had been found. The patient, a man of 24, has been in good health since the operation.

Medizinische Klinik, Berlin

July 17, VI, No. 29, pp. 1123-1162

81 *Diagnosis of Pancreas Disease. (Diagnose der Pankreaserkrankungen.) K. Glaessner.
82 *Diagnosis of Syphilitic Disease of Upper Air Passages. J. Zange.
83 *Psychopathology of the Tuberculous. (Psychopathologie der Tuberkulose.) G. Liebe.
84 Primary Hemorrhagic Glaucoma. W. Feilchenfeld.
85 Case of Aneurism of the Aorta from Articular Rheumatism. J. Ruppert.
86 Is it Necessary to Protect the Eyes against the Ultraviolet Rays? (Ist Schutz der Augen vor ultravioletten Strahlen notwendig?) F. Schanz and Stockhausen.
87 Idem. (Schlusswort.) Best.
88 *The Melostagmin Reaction with Cancer. (Klinische Erfahrungen mit der Melostagminreaktion bei bösartigen Geschwülsten.) P. De Agostini.
89 Physiologic Action of Radioactive Saline Springs. F. Krieg.

81. **Diagnosis of Pancreas Disease.**—Glaessner describes the various tests to aid in the diagnosis of pancreatic affections and advises their application. The main point, however, he remarks, is to have the possibility of pancreas trouble occur to one's mind.

82. **Diagnosis of Syphilitic Disturbances in the Upper Air Passages.**—Zange regards the Wassermann reaction as a powerful aid in differentiating suspicious lesions; negative Wassermann findings should impose caution. The lesions themselves are not characteristic, only their mode of development and history. Spirochetes are comparatively rare in tertiary lesions but inoculation of animals with scraps of suspicious tissue will at least exclude tuberculosis. He relates 11 case histories in which the Wassermann reaction gave the clue and led to effectual treatment. In a case with negative Wassermann reaction the findings seemed to be characteristic for gumma or a primary sore on the tonsils but the lesions subsided spontaneously in the course of a few weeks; the retrospective diagnosis was Vincent's angina, and mercurial treatment would have been an error. In another case the bones of the nose were being eaten away and everything except the negative Wassermann reaction indicated syphilis but an operation revealed a chronic osteomyelitic process and a prompt cure followed its evacuation. A mercurial injection for diagnostic purposes has little differential value in the tertiary phase of syphilis, as in many cases the system in this stage seems to be refractory to mercury and iodid.

83. **The Psychopathology of the Tuberculous.**—Liebe relates some of his experiences as director of a tuberculosis sanatorium and states that they could easily be duplicated by other sanatorium physicians, all showing a peculiar egotistic, irritable, spoiled-child attitude of many of the sanatorium patients, entirely contrary to what the same individuals presented in health. He regards these manifestations as part of the disease and states that the complaints and criticisms sometimes made of the institutions, sanatoriums, medical and other attendants, etc., belong also in this category.

88. **The Meiostagmin Reaction with Cancer.**—The experiences with 27 cases of cancer which are reported indicate that Ascoli's meiostagmin reaction may prove an instructive specific means of differentiating malignant disease. The reaction proved positive in all the cancer cases but positive only in 3 out of 27 cases of non-malignant affections.

Münchener medizinische Wochenschrift

July 12, LVII, No. 28, pp. 1481-1528

90 *Diagnosis and Treatment of Duodenal Ulcer before Perforation. (Nicht perforierte Duodenalgeschwüre.) J. P. zum Busch.
91 *The Hypophysis. A. Kohn.
92 *Combined Electric Treatment of Cancer. (Eine neue Behandlungsmethode bösartiger Geschwülste.) C. Müller.
93 Experiences with Spinal Anesthesia. R. R. v. Arlt.
94 *Local Anesthesia for Minor Operations by the General Practitioner. J. Rothmann.
95 *Congestion Dermatoses. (Zur Diagnose und Therapie der Stauungsdermatosen.) P. Strauss.
96 Durable Moving Picture Apparatus for Recording Movements. (Apparat für photographische Registrierung von Bewegungsvorgängen.) R. Ohm.
97 Radiologic Activator. (Ueber Kreuznacher Aktivatorkonstruktionen.) C. Ramsauer.
98 *Importance of Anesthetics to Reduce Appetite during Dietetic Treatment. (Anästhetika als Genussmittel und Arzneimittel für Diätkuren.) W. Sternberg.

90. **Duodenal Ulcer.**—This communication from London reports 14 patients with duodenal ulcer cured by operative treatment although one succumbed a month later to pneumonia. Another patient has required two operations since on account of ulcer in the jejunum. In 3 cases there was a concomitant gastric and duodenal ulcer. The operation was done under the diagnosis of cancer in some of the cases but in the others the trouble had been correctly diagnosed from the "hunger pain." This pain is ascribed by zum Busch to the opening of the pylorus when digestion is concluded, the passage of the chyme into the duodenum causing the characteristic pain at this time. In 5 other cases a duodenal ulcer was suspected but no operation was done; 3 of the patients have died, another is still living with much pain, the other has been lost to sight. He does not advocate surgical measures in the early cases but at once when there is recurrence or when the lesion may be regarded as chronic or there are hemorrhages and motor symptoms on the part of the stomach. The gastroenterostomy must always be followed by careful after-treatment, rest and dieting, as the operation alone does not heal the ulcer.

91. **The Hypophysis.**—Kohn reviews what is known to date in regard to the hypophysis and the interrelated ductless glands, remarking that it seems to be certain that the loss of the little parathyroids, not larger than a bean in size, is more serious for the general health than amputation of both legs. Research with extracts of the hypophysis have not given much information to date.

92. **Combined Electric Treatment of Cancer.**—Müller reports 18 cases of cancer in which he has applied a combination of Roentgen rays and high frequency currents with excellent effect.

94. **Local Anesthesia for Minor Operations by the General Practitioner.**—Rothmann recapitulates the details of the Schleich, Braun, Bockenheimer and other technics for local anesthesia and urges their more general use in office practice, enumerating the various minor lesions, boils, etc., for which these methods are particularly adapted.

95. **Skin Disease Due to Congestion.**—Strauss has been able to cure previously intractable skin affections by applying treatment based exclusively on relief of congestion in the parts—this cause for the trouble not having been suspected before. In one case a robust man of 34, a druggist, had been obliged to change his occupation on account of the severe itching eruption on both legs. It had tormented him for 25 years and had resisted all kinds of treatment, Roentgen rays, etc. Strauss diagnosed the case as a simple lichen maintained by varices in the deep veins, the superficial veins being apparently normal. The patient had applied for a course of Finsen treatment as a last resort, but Strauss dissuaded him from this and applied a compressing bandage after the legs had been elevated for an hour. Under this simple treatment for deep congestion with soothing applications to the superficial lesions, aggravated by scratching, the patient was completely cured in two months. He still wears a compressing bandage on his legs but the tissues feel soft and elastic and except for cicatricial traces there is nothing left of his old trouble.

98. **Anesthetics for Reducing Appetite and Thirst.**—Sternberg thinks that there is a field for the use of substances to dispel hunger in the course of dietetic restrictions as in treatment of gastric ulcer, etc. Cocain reduces hunger and thirst, and this is one of the principal uses for it among the African natives. In treatment of obesity and gastrointestinal ulcers, the abolition of subjective hunger and thirst would aid materially in the cure, and he thinks that this can be accomplished by administration of minute doses of cocain or chloroform water. The anesthetics may also come into play in treatment of dipsomania, bulimia, diabetes, gastrectasia, etc.

Wiener klinische Wochenschrift, Vienna

July 14, XXIII, No. 28, pp. 1025-1064

99 Tuberculosis in Suckling Guinea-pigs. (Ueber Tuberkuloseinfektion im Säuglinsalter des Meerschweinchens.) J. Bartel.
100 *Tetany in the Elderly. (Tetanie im höheren Alter.) W. Wirth.
101 Muscular Rigidity as Sign of Pulmonary Disease. (Zur Frage der Muskelrigidität als Zeichen zur Erkennung von Lungenkrankheiten.) O. Orszag.
102 Operation on the Hypophysis. J. Fein.
103 Determination of Degree of Autointoxication in Diabetes by the Simple Ronchese-Malfatti Test for Ammonia in Urine. (Zur Beurteilung der Azidosis auf Grund eines einfachen Verfahrens der Ammoniakbestimmung im Harne der Diabetiker.) E. Marcovici.
104 *Impressions of America. (Aerztliche Reiseeindrücke aus Nordamerika.) A. v. Eiselsberg.
105 Experiences with Spengler's I. K. M. Gantz.

100. **Tetany in the Elderly.**—Wirth reports three cases of tetany in elderly persons with a chronic stomach or bowel trouble, the tetany being evidently of gastric origin and proving fatal in each case. Dilatation of the stomach preceded the tetany and the latter did not always develop in a complete form. In every case of dilatation of the stomach he advises applying the tests for tetany and, with positive findings, operative treatment without delay. The parathyroid glands may have something to do with the tetany, he suggests, becoming insufficient under the influence of the autointoxication. There is reason to suppose, he adds, that these cases of incomplete tetany are more common than is generally recognized.

104. **Impressions of America.**—In the course of these travel notes Professor von Eiselsberg remarks that the Americans are masters in the art of anesthetization and still cling to ether as it behaves so magically in their hands that there is no ground for seeking to improve on it. He comments on the composure of the American surgeon which nothing apparently can disturb, and the avoidance of speaking during operations, referring to Dr. Brewer's sign language which has been devised for the attendants to avoid speaking. He cites as a curious and interesting fact that in one large office building in Chicago 150 physicians have their offices "without its coming to any differences between them." He adds that none of the surgeons in chief at the hospitals is paid for his services, but on the other hand none has to pay a license fee as in Austria. In his country the hospitals are all built and maintained by the state or community, and he comments with admiring envy on the many privately endowed hospitals in this country and the quarters for pay patients in the various hospitals, remarking that rooms for pay-patients were included in the plans for reconstruction of the great Vienna city hospital but were afterward abandoned, for one reason, he was told, on account of the objections of the general practitioners. In America, he tells his readers, the practitioners

never objected to this provision for pay-patients, he believes, and there would certainly have been opposition if it had conflicted in any way with any professional interests. The bond between the members of the profession is very close and any infringement of the rights of other members is rigorously punished (*Es ist das Gefuhl der Kollegialitat ein sehr feines*). Thus the American Medical Association, he continues, has been able with great energy and the best success to attack medical advertisements in the daily papers; one daily paper gets even, however, for the loss of this advertising patronage by printing almost daily communications from the camp of the antivivisectionists. He comments with astonishment on the fact that examination by a state board is required for practice in each separate state and that the right does not extend beyond the borders of the state, saying that when von Pirquet was called from Vienna to Baltimore as professor of pediatrics he had to take the state examination before being allowed to enter on his work. Visits to the leading surgeons are described at length and special points learned from them are emphasized. In conclusion he advises European physicians, and especially surgeons, to take a trip occasionally to America for postgraduate work and inspiration. American surgeons, to say the least, he adds, are abreast with the best in Europe so far as technic is concerned, and the scientific life there is so earnest and so active in the various scientific institutes and it is so stimulated and facilitated by the magnificent endowments, that there can be no doubt that in these institutes also the American colleagues keep pace with the best in Europe. Science and humanity can only benefit by this friendly rivalry between the various nations.

Zeitschrift für klinische Medizin, Berlin

LXX, Nos. 5-6, pp. 359-507. Last indexed June 4, page 1914

106 Tenacity of Cellular Activity and Its Relation to Pathology. (Ueber die Tenazität der Zelltätigkeit und ihre Beziehungen zur Pathologie.) W. Leube.

107 Roentgen Ray Examination of the Peristalsis of the Colon. E. Stierlin.

108 Digitalis and Hypertrophy of the Heart. (Digitalis und Herzhypertrophie.) A. Caro.

109 Significance of the Dicrotic Pulse after Experimental Administration of Amyl Nitrite. (Bedeutung des dikroten Pulses nach Versuchen mit Amylnitrit.) A. Levy.

110 Behavior of Blood Pressure during Recuperation from Muscular Exercise. (Das Verhalten des Blutdrucks beim Menschen während der Erholung von Muskelarbeit.) B. Fantus and R. Staehelin.

111 Cardiac Neuroses and Conditions Suggesting Exophthalmic Goiter and their Different Behavior under Functional Tests with Epinephrin. (Ueber Herzneurose und Basedowoid und ihr verschiedenes Verhalten gegenüber der Funktionsprüfung mit Adrenalin.) B. Aschner.

112 Research on the Viscosity and Gas Content of Human Blood. (Viskosität und Gasgehalt des menschlichen Blutes.) H. Determann and E. Weil.

113 The Lung Capacity in Disease. (Untersuchungen über die Lungenfüllung bei Krankheiten.) A. Bittorf and J. Forschbach.

114 *Three Hundred and Eighty-three Cases of Bubonic Plague. (Zusammenfassende Betrachtung der 383 Pestfälle in Osaka während der letzten vier Jahre.) M. Masuyama.

114. **Treatment of Plague.**—Masuyama states that only 4 recovered out of 163 patients with bubonic plague treated by the ordinary medical measures alone, and in these 4 the suppurating bubo opened spontaneously. In 82 cases in which the bubo was enucleated or merely incised, 47 recovered, 28 of the 57 with enucleation and 25 with incision alone. Only 9 recovered out of 89 patients treated with serotherapy alone but serotherapy supplemented by incision as soon as there was fluctuation in the bubo was followed by recovery in 78.1 per cent. of the 32 patients treated in this way, and by recovery of 31.2 per cent. of the 32 treated by serotherapy and enucleation. Japanese antiplague serum was used, and in large doses.

Zentralblatt für Chirurgie, Leipsic

July 16, XXXVII, No. 29, pp. 953-976

115 Sterilization of the Hands. (Zur Händedesinfektion.) O. Langemak.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 10, XXXI, No. 82, pp. 857-872

116 *Fat Embolism from Severe Burns. (Importanza dell'embolia adiposa e delle alterazioni che si hanno nel sangue per spiegare il meccanismo di morte rapida da scottatura.) G. Pacinotti.

July 12, No. 83, pp. 873-880

117 *Syphilis and Acute Infectious Diseases. C. Nicolini.

July 14, No. 84, pp. 881-888

118 Artificially Induced Pneumothorax in Case of Pulmonary Tuberculosis. R. Ferrario.

116. **Fat Embolism from Burns.**—In the case of fatal scalding reported by Pacinotti there was evidence of fat embolism probably responsible for the early death.

117. **Syphilis and Acute Infectious Disease.**—Nicolini relates the favorable influence in two cases of mercury given in the course of typhoid coming on about a year after syphilitic infection. The mercury did not aggravate the intercurrent infection while it seemed to modify favorably the syphilitic soil on which the infection was developing.

Ugeskrift for Læger, Copenhagen

July 7, LXXII, No. 27, pp. 803-828

119 Comparative Experiences with Various Methods for Examination of the Sputum. (Om Værdien af forskellige Homogeniserings- og Sedimenteringsmetoder til Paavisning af Tuberkelbaciller i Expektorat.) G. Jørgensen. Commenced in No. 26.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

ŒDEMA. A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. By Martin H. Fischer, Professor of Pathology in the Oakland School of Medicine, Oakland, California. The 1909 Nathan Lewis Hatfield Prize Essay of the College of Physicians of Philadelphia. Republished with the consent of the Board of Trustees from the transactions of the college. Cloth. Price, $2 net. Pp. 209, with illustrations. New York: John Wiley & Sons, 1910.

HOOKWORM DISEASE. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By George Dock, M.D., Professor of the Theory and Practice of Medicine, Medical Department Tulane University of Louisiana, New Orleans, and Charles C. Bass, M.D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department Tulane University of Louisiana, New Orleans. Cloth. Price, $2.50. Pp. 250, with 50 illustrations. St. Louis: C. V. Mosby Co., 1910.

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY. Part 28, pp. 2169-2250 (Authors: Sim to von Stenitzer). Part 29, pp. 2251-2326. (Authors: Stenroos to Szymanski). By Ch. Wardell Stiles, Ph.D., Consulting Zoologist, Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Assistant Zoologist, Bureau of Animal Industry. Bureau of Animal Industry. Bull. 39, U. S. Dept. of Agric. Paper. Washington: (Superintendent of Documents) Government Printing Office, 1910.

MEDICAL SERVICE IN CAMPAIGN. A Handbook for Medical Officers in the Field. By Major Paul F. Straub, Medical Corps (General Staff) United States Army. Prepared under the direction of the Surgeon-General, United States Army, and published by authority of the War Department. Morocco. Price, $1.50. Pp. 164, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

THE DISEASES OF CHILDREN. By James F. Goodhart, M.D., Consulting Physician to the Evelina Hospital for Sick Children. Ninth Edition. Edited by George F. Still, M.D., Professor of Diseases of Children, King's College, London. Cloth. Price, $5. Pp. 931, with 34 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

ARBEITEN AUS DEM PHARMAZEUTISCHEN INSTITUT DER UNIVERSITÄT BERLIN. Von Dr. H. Thoms, Professor und Direktor des Pharmazeutischen Institutes der Universität Berlin. Volume VII. Comprising the work of 1909. Cloth. Price, 8.50 marks. Pp. 312, with illustrations. Vienna: Urban & Schwarzenberg, 1910.

TRANSACTIONS OF THE SEVENTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH AND MARINE HOSPITAL SERVICE. Washington, D. C., June 2, 1909. Cloth. Pp. 86. Washington: (Superintendent of Documents) Government Printing Office, 1910.

PROCEEDINGS OF THE THIRTY-SECOND ANNUAL MEETING OF THE MISSOURI PHARMACEUTICAL ASSOCIATION. Held at Maryville, June 14-17, 1910. Constitution and roll of members. Missouri Board of Pharmacy Annual Report and Official Notice. Paper. Pp. 177, with illustrations.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND. Vol. XXXVIII. Edited by James Craig, M.D., General Secretary, Physician to the Meath Hospital and County Dublin Infirmary. Cloth. Pp. 490. Dublin: John Falconer, 53 Upper Sackville St., 1910.

STUDIES IN RELATION TO MALARIA. By Samuel T. Darling, M.D., Chief of Laboratory of the Board of Health, Department of Sanitation, Isthmian Canal Commission. Paper. Pp. 38. Washington: (Superintendent of Documents) Government Printing Office, 1910.

TWENTY-FIRST ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF FLORIDA, 1909. Approved by the Board in Annual Session Feb. 8, 1910, Jacksonville, Fla. With Vol. IV (1909) Florida Health Notes. Paper. Pp. 216, with illustrations.

REPORT FOR THE FIFTH FISCAL YEAR OF THE NATIONAL ASSOCIATION FOR THE STUDY AND EDUCATION OF EXCEPTIONAL CHILDREN. April, 1910. Paper. Pp. 26. Registered office "Watchung Crest," Plainfield, New Jersey.

GYNECOLOGICAL DIAGNOSIS. By Walter L. Burrage, M.D., Fellow of the American Gynecological Society. Cloth. Price, $6. Pp. 656, with 20[illegible] illustrations. New York: D. Appleton & Co., 1910.

The Journal of the
American Medical Association

Published under the Auspices of the Board of Trustees

Vol. LV, No. 9 CHICAGO, ILLINOIS AUGUST 27, 1910

RECENT PROGRESS IN THE SERUM DIAGNOSIS OF SYPHILIS *

HOWARD FOX, M.D.
NEW YORK

In reviewing the literature on the serum diagnosis of syphilis that has appeared since the last meeting of this Association, I have attempted to call attention to the progress that has been made during the year rather than to discuss at length the present status of our knowledge of the subject. The continued interest in the Wassermann reaction, and in various other serodiagnostic tests for syphilis, is shown by the large number of serious researches and clinical reports that have appeared during the past year. Four excellent books on the subject have been published in German, English and French. It was proper that the first of these should have been written by one of the discoverers of the Wassermann reaction, Carl Bruck,[1] whose personal experience with the test has been enormous. He has given a most excellent presentation of the whole subject from both the theoretical and practical standpoints. Noguchi[2] has also written a book of great value, in which special attention is devoted to his own modification. Interesting booklets have also been published by Gastou and Girauld[3] in France, and by Mulzer[4] in Germany.

VARIOUS SERODIAGNOSTIC TESTS

Before discussing the more important subject of the Wassermann reaction I should like to call attention to some of the serodiagnostic tests for syphilis, depending on principles other than those of complement-fixation. I had supposed that the status of the various precipitation tests for syphilis was fairly well settled at the last meeting of this association. In a paper read on that occasion Wieder and L'Engle,[5] from experiments with sodium taurocholate and glycocholate, lecithin, taurin and water, concluded that the proportion of positive results in non-syphilitics was too high to make the test of value. This seemed to be the prevailing opinion last year and is, I think, at present, in spite of two recent reports on the subject. Rosenfeld and Tannhauser,[6] in a series of 131 cases, obtained results that compared favorably with those of the Wassermann test. Tanton and Combe,[7] from an examination of sixteen cases, concluded that the precipitation method was equally specific, in addition to being much simpler than the Wassermann reaction. Sourd and Pagniez,[8] however, found that the precipitation test gave six positive reactions in non-syphilitic cases, and Paris and Sabaréanu,[9] from an examination of fifty-three cases, conclude that the test is of no diagnostic value whatever. A similar opinion is expressed by Laub and Novotny[10] in regard to the value of the reaction for pathologic-anatomic diagnosis, their experiments including a simultaneous test of ninety-eight cadaver serums. Unfavorable results are also reported by Minelli and Gavazzeni.[11] In all of the above communications the test with glycocholate of soda was the one employed.

Since the publication of Noguchi and Moore[12] last July on the butyric acid test in the metasyphilitic and nervous diseases, nothing further has been written on this method. In their experiments the writers found that the test was not absolutely specific, positive reactions having been obtained in two out of thirty-seven psychoses not in any way related to syphilis. In his book on serum diagnosis Noguchi states that the butyric acid test while not entirely specific, is at times more valuable than the Wassermann reaction in excluding syphilis, for instance, when the reaction is negative.

Assuming that the modus operandi of the Wassermann reaction depends on a precipitation, Jacobsthal[13] suggests a method which he terms the "optic serodiagnosis of syphilis." The patient's serum is mixed with alcoholic extract of syphilitic liver in the proportion of 1 to 10 and the resulting precipitate is examined with the dark-field illuminator. A strong positive reaction appears as a clumpy precipitate, a weak positive reaction as a small conglomeration of little fat particles, while a negative is shown as a thick emulsion of very fine dancing fat particles. In comparing his method with the Wassermann reaction Jacobsthal claims that, after having acquired the necessary experience, his results with the two tests were identical.

---

[*] Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[*] Because of the space required, this article is abbreviated in THE JOURNAL, but it appears in full in the Transactions of the Section and in the author's reprints.

1. Bruck, C.: Die Serodiagnose der Syphilis, Julius Springer, Berlin, 1909.

2. Noguchi, H.: Serum Diagnosis of Syphilis, and the Butyric Acid Test for Syphilis, J. B. Lippincott, New York, 1909.

3. Gastou, P., and Girauld, A.: Guide pratique du diagnostic de la syphilis, J. B. Baillière et Fils, Paris, 1910.

4. Mulzer, P.: Praktische Anleitung zur Syphilisdiagnose auf biologischem Wege, Julius Springer, Berlin, 1910.

5. Wieder, H. S., and L'Engle, E. M.: Some Studies of the Precipitation Test for Syphilis, THE JOURNAL A. M. A., Nov. 6, 1909, p. 1535.

6. Rosenfeld, F., and Tannhauser: Die Serodiagnose der Lues mittels Ausflockung durch glykocholsaures Natrium, Deutsch. med. Wchnschr., 1910, xxxvi, 165.

7. Tanton and Combe, E.: Le sérodiagnostic de la syphilis par la méthode de Porges, Compt. rend. Soc. de biol., 1910, lxviii, 436.

8. Le Sourd, L., and Pagniez, P.: La réaction précipitante du sérum syphilitique vis à vis des solutions de glycocholate de soude, Compt. rend. Soc. de biol., 1909, lxvi, 84.

9. Paris, A., and Sabaréanu: La séro-précipitation chez les syphilitiques par le glycocholate de soude, Compt. rend. Soc. de biol., 1910, lxviii, 290.

10. Laub, M., and Novotny, J.: Ueber die Brauchbarkeit der Porgesschen Ausflockungsreaktion für die Diagnose der Lues an Leichen, Ztsch. f. Immunitätsforsch., 1909, iii, 394.

11. Minelli, S., and Gavazzeni, G. A.: Il metodo di Porges nella sierodiagnosi della sifilide, Gazz. med. ital., 1909, lx, 191.

12. Noguchi, H., and Moore, J. W.: The Butyric Acid Test for Syphilis in the Diagnosis of Metasyphilitic and Other Nervous Diseases, Jour. Exper. Med., 1909, xi, 605.

13. Jacobsthal, E.: Die optische Serodiagnose der Syphilis, München. med. Wchnschr., 1909, lvi, 2607.

It can hardly be of more than historical interest to discuss the color reaction suggested by Schürmann,[14] that has been so thoroughly discredited by subsequent experimentation. Indeed, it seems strange that so much has been written on the subject when it seemed almost from the start that the method was valueless. A few words about this proposed method may aid in preventing others from further experimentation. Schürmann thought that there might possibly be some substance in the blood of syphilitics whose presence could be recognized by a color reaction. It occurred to him that lactic acid might play a part in the reaction, as this substance had been present in one of his most reliable extracts. His first experience with Uffelmann's reagent being unsuccessful, he was led to use perhydrol in combination with phenol and chlorid of iron. According to Schürmann, when the reagents were mixed with normal serum a light green color appeared at the upper portion of the mixture. This either disappeared or changed to a light green tint on shaking, the solution remaining clear. When syphilitic serum was used a blackish-brown dull tint appeared almost immediately, the solution giving the impression of a thick mixture.

Employing his method in eighty-four cases simultaneously with the Wassermann test, Schürmann claimed to have obtained identical results. In a comparison of the Schürmann with the Wassermann test in 154 cases of undoubted syphilis Meirowsky[15] obtained 62.3 per cent. of positive reactions for the Wassermann test as opposed to 11.9 per cent. for the Schürmann method. The list of investigators whose results have been unfavorable, and who conclude that the test is of no clinical value, includes Biach,[16] Bonola,[17] Braunstein,[18] Bruck,[1] Galambos,[19] Roth and Goldner,[20] Schminke and Stoeber,[21] C. Stern,[22] Stühmer,[23] Symanski, Hirschbruch and Gardiewski.[24] According to the chemical examination of Braunstein,[18] the reaction is a process of oxidation, the perhydrol oxidizing the phenol by means of the iron chlorid.

Interesting results have been obtained by Nicolas, Favre and Gautier[25] with dermic and intradermic reactions in syphilis, analogous to the reaction caused by tuberculin for the diagnosis of tuberculosis. For this purpose the experimenters used a concentrated glycerinated extract of liver of syphilitic fetus which they termed "syphiline." When this extract was used by the dermic method (as in the von Pirquet test), no change was noted. When, however, the extract was injected intradermically a reaction consisting of redness and nodular infiltration was obtained in a large proportion of the twelve cases examined. In a second contribution the same authors[26] give the results in fifty cases, of a comparison of their test with the Wassermann reaction. The results were in agreement in forty-two cases. Of the remaining eight cases five seemed to favor the correctness of the diagnosis by the intradermic test, while one favored the Wassermann method.

The relation of the Wassermann test to the antitryptic power of the blood in syphilis was studied by Fuerstenberg and Trebing.[27] The determination of the antitryptic index (using a modified method of Müller and Jochman) was made simultaneously with the Wassermann method in sixty-one cases of syphilis and other diseases. It was found that in cases of undoubted syphilis giving a positive reaction the antitryptic titer or index was never increased. In the majority of cases it was diminished. Whether this test will prove of value, from the fact that an increased antitryptic titer would seem to exclude syphilis, can be judged only after further investigation with this method.

According to Achard, Benard and Gagneux,[28] the so-called leukodiagnosis, which is based on specific sensitiveness of leukocytes *in vitro* to certain normal or pathologic products, may also be applied to syphilis. The specific principle used by these writers was a glycerinated extract of spleen of a congenitally syphilitic infant containing *Spirochæta pallida*. The strongest influence on the leukocytes was obtained with a 5 per cent. dilution of the extract. In this strength the leukocytic activity was found to be more or less increased in syphilis, while it was not at all influenced in healthy subjects. It was found in their investigations that the strongest reactions correspond to the period of early secondary syphilis, while the reactions were weaker in hereditary manifestations of the disease and in tabes and paresis.

The reaction first described by Much and Holzmann was tried by Hamburger[29] in twenty-two cases of syphilis simultaneously with the Wassermann test. The results obtained were entirely contradictory, the writer concluding that the test has no value in syphilis. The reaction which has previously been seen only in certain insane persons, especially dementia præcox, consists in an inhibitory action to the hemolysing power of cobra venom.

In experimenting with various hemolysing agents in different diseases it was found by Richard Weil[30] that the erythrocytes of syphilitics were especially resistant to the hemolysing power of cobra venom. This fact has been utilized as the basis of a diagnostic test for syphilis that promises to be of considerable value. The technic of the procedure is as follows: Blood is drawn into a 2 per cent. solution of sodium citrate, washed and made into a 1 per cent. suspension in normal salt solution. It is then tested on the following day. Equal amounts of venom at 1 to 800 and 1 to 1,500 are added and after one hour of incubation the results are read. It has been found that syphilitic cells resist a solution of 1 to 1,800; that is, twice as strong as that which destroys the control. The reaction was found to be marked in 90 per cent. of the cases of syphilis, the percentage of positive reactions being smaller in tabes than in paresis. In several non-syphilitic affections in which the Wassermann test was positive (three cases of scarlatina, two cases of polycythemia and one case of scleroderma) the Weil test showed a negative reaction. Some advantages which Weil claims for his test are that it can be used in cases of jaundice. It is positive for some time after mercurial treatment has abolished the Wassermann reaction. It is finally positive in a very large percentage of old quiescent cases in which the Wassermann test is negative. Dr. Weil informs me in a personal communication that he considers his test too delicate for general use, as a very considerable amount of practice is required in order to interpret the results obtained.

---

[14] Schürmann, W.: Luesnachweis durch Farbenreaktion, Deutsch. med. Wchnschr., 1909, xxxv, 616.

[15] Meirowsky, E.: Die Schürmannsche Methode des Luesnachweises mittels Farbenreaktion, Deutsch. med. Wchnschr., 1909, xxxv, 937.

[16] Biach, M.: Ueber Luesnachweis durch Farbenreaktion, Wien. klin. Wchnschr., 1909, xxii, 606.

[17] Bonola, F.: Sulla reazione cromatica di Schürmann per la sierodiagnosi della sifilide, Riforma med., 1909, xxv, 682.

[18] Braunstein, A.: Ueber die Schürmannsche Farbenreaktion bei Lues, Ztschr. f. klin. med., 1909, lxviii, 345.

[19] Galambos, A.: Ueber den Wert der Farbenreaktion bei Lues, Deutsch. med. Wchnschr., 1909, xxxv, 976.

[20] Roth, A., and Goldner, V.: Ueber die Farbenreaktion bei Lues, Orvosi hetil., 1909, No. 19. (Review in Monatsh. f. prakt. Dermat., 1909, l, 129.)

[21] Schminke and Stoeber: Zur Kritik der Schürmannschen Farbenreaktion bei Lues, Deutsch. med. Wchnschr., 1909, xxxv, 937.

[22] Stern, C.: Ueber die Bewertung einer Serum-Farbenreaktion zum Luesnachweis, Berl. klin. Wchnschr., 1909, xlvi, 1068.

[23] Stühmer, A.: Luesnachweis durch Farbenreaktion, Fortsch. d. Med., 1909, xxvii, 711.

[24] Symanski, Hirschbruch and Gardiewski: Luesnachweis durch Farbenreaktion, Berl. klin. Wchnschr., 1909, xlvi, 874.

[25] Nicolas, J., Favre, M., and Gautier, C.: Intradermoréaction et cutiréaction avec la syphiline chez les syphilitiques, Compt. rend. Soc. de biol., 1910, lxviii, 257.

[26] Nicolas, J., Favre, M., and Charlet, L.: Comparaison des résultats fournis par l'intradermo-réaction à la syphiline et par la séro-réaction de Wassermann, Bull. et mém. Soc. méd. d. hôp. de Paris, 1910, xxvii, 140.

[27] Fuerstenberg, A., and Trebing, J.: Die Luesreaktion in ihren Beziehungen zur antitryptischen Kraft des menschlichen Blutes, Berl. klin. Wchnschr., 1909, xlvi, 1357.

[28] Achard, C., Benard, H., and Gagneux, C.: Leuco-Diagnostic de la Syphilis, Compt. rend. Soc. de biol., 1910, lxviii, 323.

[29] Hamburger, J.: Ueber die Beeinflussung der Kobra-Gift-Hämolyse durch Seren von Haut- und Geschlechtkrankheiten, Dermat. Ztschr., 1909, xvi, 787.

[30] Weil, R.: The Resistance of Human Erythrocytes to Cobra Venom, Jour. Infect. Dis., 1909, vi, 688; The Variation in the Resistance of Human Erythrocytes in Disease to Hemolysins, with Especial Reference to Syphilis, Proc. Soc. Exper. Biol. and Med., 1910, vii, 2.

The meiostagmin reaction suggested by Ascoli and used by him as a diagnostic procedure in typhoid fever has been applied by Izar[31] to syphilis. The test is a physico-chemical reaction of immunity depending on a change in surface tension of the fluids employed. When the serum of a syphilitic is mixed with its corresponding antigen and placed in the thermostat for two hours there is a diminution in surface tension as shown by an increase in the number of drops of a measured amount of the fluids. According to Izar the test was found to be entirely specific. A positive reaction was obtained in twelve cases of syphilis, while all of the non-syphilitic cases gave negative results, including two cases of leprosy in which the Wassermann reaction had been positive.

WASSERMANN TEST AND ITS MODIFICATIONS

In reviewing the recent progress of the Wassermann reaction I should first like to discuss some of the more important and practical contributions that relate to the technic of the method. A simple means of obtaining the patient's blood for examination has been suggested by Muck.[32] The superficial veins of the neck are compressed by Bier's method and the mucous membrane of the anterior portion of the septum is scratched with a small needle or knife. In about three minutes as much as 20 c.c. of blood can be readily secured. The bleeding stops on removal of the compression, or on introduction of a pledget of cotton into the nose. Another method of obtaining blood where a venepuncture is difficult or not desirable, as in infants, is suggested by Somani.[33] After scarifying the skin he applies a cupping apparatus with an outlet below attached to a test-tube to receive the blood, and a suction-pump attached in the center. To this and other cupping methods Mulzer makes the objection that the apparatus is difficult to sterilize and that unsightly scars are left which if the method were widely adopted and known to the laity might at times prove compromising.

Finkelstein[34] has devised an apparatus for determining quantitatively the strength of a positive reaction. He uses a glass funnel (of a shape to fit a centrifuge), at the bottom of which a graduated tube is fused. The undissolved corpuscles of the case to be examined and of the known positive cases are poured into two separate funnels, which are then centrifugalized and the result mathematicaly read. A somewhat similar apparatus has been recently suggested by Heimann.[35]

As yet no one has produced the much-desired artificial antigen which shall prove as reliable and specific as the various organ extracts now in use. The artificial antigen of Sachs and Rondoni has, however, been found in the hands of Eisenberg and Nitsch[36] to be the equal of organ extracts, while unfavorable results in its use were obtained by Isabolinsky.[37] An artificial antigen has been suggested by Schürmann[38] which, in addition to lecithin, contains glycerophosphate of sodium and ammonium vanadinate. This has been tested by Rajchman and Zygmunt[39] with disappointing results. They conclude that artificially prepared antigens are not reliable substitutes for alcoholic organ extracts, as in weak doses they often fail to give positive reactions with syphilitic serums and in stronger doses give a positive reaction with normal serums.

It was recently pointed out by Wechselmann[40] that the failure to obtain higher percentages by positive reactions in cases of undoubted syphilis might be due to interference from the presence of complementoids. By removing these disturbing bodies, by shaking the serum with barium sulphate, better results were obtained than with the regular Wassermann method. This procedure has been tried by Lange[41] with strikingly good results in a series of 800 cases, in which both methods were simultaneously performed. In 551 syphilitic serums the Wechselmann test yielded 85 per cent. of positive reactions, as against 77 per cent. for the Wassermann method. In non-syphilitic control cases the Wechselmann test gave only negative reactions. Shaking the serum with barium sulphate not only adds to the delicacy of the test, but also destroys the complement, making it unnecessary to inactivate the patient's serum by heating to 56 C. for a half hour. Lange, therefore, at the present time uses the barium sulphate treatment of the serum as a substitute for inactivation by heat.

In order that positive and negative control serums may always be at hand Hecht[42] recommended that they be preserved by means of drying. Small amounts, such as 0.5 c.c., are dried in watch crystals. When the serum is needed it is dissolved in an equal amount of salt solution, after which equal amounts of distilled water are added. The combination of salt solution and water is advised, as when distilled water is added to the dried serum certain substances (possibly globulins) remain undissolved and float about in the mixture as cloudy masses.

---

[31] Izar, G.: Ueber eine spezifische Eigenschaft luetischer Blutsera, München. med. Wchnschr., 1910, lvii, 182.

[32] Muck, O.: Die Schleimhaut der Nasenscheidewand eine besonders geeignete Stelle für die Blutentnahme zu der Wassermannschen Reaktion und zu anderen serologischen Untersuchungszwecken, München. med. Wchnschr., 1909, lvi, 2321.

[33] Somani, B. P.: Quantitative Bestimmung der luetischen Serumveränderung mittels der Reaktion von Wassermann, Neisser und Bruck, Arch. f. Dermat. u. Syph., 1909, xcviii, 73.

[34] Finkelstein, J. A.: Zur Technik der Wassermannschen Reaktion, Berl. klin. Wchnschr., 1909, xlvi, 1611.

[35] Heimann, W. J.: A Method for the Mathematical Reading of the Original Wassermann Reaction, The Journal A. M. A., May 21, 1910, p. 1684.

[36] Eisenberg, R., and Nitsch, R.: Ueber Wassermannsche Reaktion mit künstlicher Antigen, Przeglad Lekarski, 1909, No. 12 (Reviewed in Monatsh. f. prakt. Dermat., 1909, l, 131.)

[37] Isabolinsky, M.: Weitere Untersuchungen zur Theorie und Praxis der Serodiagnostik bei Syphilis, Ztschr. f. Immunitätsforsch., 1909, iii, 143.

[38] Schürmann, W.: Ein künstlicher Extrakt zur Anstellung der Luesreaktion, Med. Klin., 1909, v, 627.

[39] Rajchman, L., and Zygmunt, S.: Praktische Bemerkungen zu der Frage der Wassermannschen Reaktion, Przeglad Lekarski, 1909, No. 25. (Reviewed in Monatsh. f. prakt. Dermat., 1909, l, 138.)

[40] Wechselmann: Ueber Verfeinerung der Wassermannschen Reaktion durch Komplementoidverstopfung, Ztschr. f. Immunitätsforsch., 1909, iii, 525.

[41] Lange, C.: Ergebnisse der Wassermannschen Reaktion bei Vorbehandlung der Sera mit Baryumsulfat nach Wechselmann, Deutsch. med. Wchnschr., 1910, xxxv, 217.

[42] Hecht, H.: Zur Technik der Seroreaktion bei Syphilis, Ztschr. f. Immunitätsforsch., 1910, v, 572.

According to Blanck and Friedmann[43] alcoholic extracts of syphilitic liver at times lose their usefulness for the Wassermann reaction by being kept in the ice-chest or in a cold solution. They found that in some cases this could be remedied by allowing the extract to remain in a thermostat for several days. To preserve their efficiency best it is advised to keep extracts in a warm room.

Further researches on the feasibility of using urine in place of serum for the Wassermann reaction have been made by Pollio.[44] His conclusions are similar to those of Höhne, that the use of the urine has no practical value, as too large a percentage of positive reactions are given in non-syphilitic cases. Even Blumenthal and Wile, who first experimented with urine, admitted that it was not quite as reliable as blood-serum for the Wassermann test. Bauer and Hirsch[45] conclude that in positive reactions obtained by using urine the inhibition of hemolysis is due to the globulin fraction of the urine. They obtained negative results in non-syphilitic urine containing albumin and in syphilitic urine containing no albumin, or albumin in small amounts.

In a discussion by Stern[46] of uncertain and paradoxic reactions that are so often obtained by every serologist, some of the rules are given that are at present followed in the laboratory of the Neisser clinic at Breslau. Every serum is tested both by the original Wassermann and by the Stern method; that is, in both active and inactive condition. When the results are not in accord the serums of the cases that are clinically doubtful are tested once or more times, using various extracts known to be reliable. The same procedure is followed in serums giving a partial inhibition of hemolysis and in serums of apparently healthy persons giving a positive reaction.

That the Wassermann reaction as originally performed is not absolutely satisfactory from either the theoretical or practical standpoint is apparent from the many attempts that have been made to improve and simplify the test. Of the different methods depending on the principle of complement-fixation there are eight which might be termed systems, which were published before June, 1909. The principles on which these different systems are constructed are very plainly shown in a comparative table by Noguchi in his book on serum diagnosis.

Since last June another "system" has been added to the list by Foix,[47] who suggests the use of rabbit's blood for the indicator in place of sheep's blood. During the past year the modifications[48] of Bauer, Tschernogubow (second method), and more especially those of Hecht and Stern have been the subject of a good deal of investigation in Europe, while the method of Noguchi has received especial attention in America. The final word is yet to be pronounced on these various modifications, as there is not yet an absolute opinion as to their value.

Very favorable results with the Hecht test are reported by König,[49] who finds it superior to both the original method and that of Margarete Stern. In a more recent communication on the method of Hecht, the same writer[50] concludes that it fulfils all the requirements of any modification, which are that: 1. It must have a scientific basis. 2. It must be simpler and more delicate than the original method. 3. It should never give erroneous results. Demanche and Ménard[51] conclude that the results of the Hecht test are practically as reliable as those of the original method. Scholtz[52] speaks of the test as simple and reliable. From his experience with 500 cases performed simultaneously with the Wassermann test, Werther[53] considers the Hecht method preferable, as it gives less often an incomplete inhibition; e. g., doubtful results. Favorable expressions of opinion on this method are also given by Stanculéanu and Liebreich[54] and by Sabrazès and Eckenstein.[55] Unsatisfactory results with the Hecht and with the Bauer test are reported by Hügel and Reute,[56] while both of these methods, as well as those of Stern and Tschernogubow, are condemned by Isabolinsky as giving less certain results than the Wassermann test.

The modification of the Hecht test, still further simplified by Fleming by the use of very small amounts of the ingredients, is condemned on the one hand by Bassett-Smith[57] and recommended on the other hand by Clemenger.[58] The former found that hemolysis failed to occur in 30 per cent. of his cases, whereas the latter found only 5 per cent. of failures.

Opinion on the second method proposed by Tschernogubow (the first method having been abandoned) do not seem to entirely agree. Stühmer,[59] from a comparative examination with the Wassermann test in over 300 cases, concludes that the procedure of Tschernogubow represents a great simplification and that its results are at least as reliable as those given by the original method. On the other hand, Guth[60] considers the test unsuited for a large laboratory, as the serum must be used immediately after being obtained, while for practicing physicians its performance is difficult.

---

[43] Blanck and Friedmann: Ueber thermoreversible Zustandsänderungen der bei der Wassermannschen Reaktion verwendeten alkoholischen Leberextrakte, Ztschr. f. Immunitätsforsch., 1909, [illegible], 108.

[44] Pollio, G.: La reazione di Wassermann eseguita colle urine ha valore pratico, Riforma med., xxv, [illegible].

[45] Bauer, R., and Hirsch, A.: Beitrag zum Wesen der Wassermannschen Reaktion, Wien. klin. Wchnschr., 1910, xxiii, 6.

[46] Stern, M.: Ueber die Bewertung der unsicheren und paradoxen Reaktion bei der serodiagnostischen Untersuchung der Syphilis, Ztschr. f. Immunitätsforsch., 1910, v, 201.

[47] Foix, C. H.: Sur une technique simplifiée de réaction de fixation, Compt. rend. Soc. de biol., 1909, lxvii, 171.

[48] The modification of Bauer dispenses with immune (artificial) antisheep amboceptor and depends on the natural antisheep amboceptor present in the patient's serum. The Hecht method dispenses not only with the immune amboceptor but also with the guinea-pig complement, utilizing the complement normally present in the patient's serum. Stern in her modification also relies on human complement but, unlike Hecht, uses the immune amboceptor. Tschernogubow in his second method employs the red corpuscles of the guinea-pig instead of the sheep as his indicator. He also makes use of human complement. [illegible] employs human corpuscles as the indicator, [illegible] for complement and antihuman amboceptor.

[49] König: Warum ist die Hechtsche Modifikation der Wassermannschen Luesreaktion dieser und der Sternschen Modifikation vorzuziehen? Wien. klin. Wchnschr., 1909, xxii, 1127.

[50] König: Ueber die Hechtsche Modifikation der Wassermannschen Seroreaktion, Deutsch. med. Wchnschr., 1910, xxxvi, 508.

[51] Demanche, R., and Ménard, P. J.: Valeur de la méthode de Hecht pour le séro-diagnostic de la syphilis; comparaison avec la réaction de Wassermann, Compt. rend. Soc. de biol., 1910, lxviii, 714.

[52] Scholtz, W.: Ueber die jetzige Bedeutung der Wassermann-Neisser-Bruckschen Reaktion für die Diagnose und Therapie der Syphilis, Klin.-therap. Wchnschr., 1909, xvi, 1190.

[53] Werther: Ueber das Wesen und den Wert der Wassermannschen Reaktion und 500 eigene Untersuchungen mit der Hechtschen Modifikation, Monatsh. f. prakt. Dermat., 1910, l, 147.

[54] Stanculéanu, G., and Liebreich, N. E.: Die Anwendung der Methode von Bauer-Hecht für die Serumdiagnose bei Augenkrankheiten, Rev. [illegible] Med., 1909.

[55] Sabrazès, J., and Eckenstein, K.: Note on a Simple Method of Fixation of the Complement in Syphilis, Lancet, London, 1910, [illegible].

[56] Hügel and Reute: Bisherige Erfahrungen über die Serodiagnostik der Syphilis an der dermatologischen Universitätsklinik zu Strassburg, München. med. Wchnschr., 1910, lvi, 79.

[57] Bassett-Smith, P. W.: The Diagnosis of Syphilis by Some Laboratory Methods, Brit. Med. Jour., 1909, ii, 377.

[58] Clemenger, F. J.: The Diagnosis of Syphilis by Some Laboratory Methods, Brit. Med. Jour., 1909, ii, 575.

[59] Stühmer, A.: Ueber die von Tschernogubow angegebene Modifikation der Wassermannschen Reaktion, Deutsch. med. Wchnschr., 1909, xxxv, 1717.

[60] Guth, H.: Ueber eine die von Tschernogubow angegebene Modifikation der Wassermannschen Reaktion, Deutsch. med. Wchnschr., 1909, xxxv, 2313.

In reviewing the results obtained with the Stern modification we again find conflicting reports. An unfavorable opinion is given by Kleinschmidt,[61] who thinks that the use of this procedure may lead to errors in diagnosis. In a comparative examination of 200 cases discrepancies were found to the advantage of the Wassermann method in twenty-five cases. In 5 per cent. of the cases there was not sufficient complement to complete the hemolysis. Jacobeus and Bachmann[62] consider the modification of Bauer and Stern unreliable, as they give too many positive reactions in non-syphilitic cases. As treated cases of syphilis generally show an increased amount of amboceptor and complement, they suggest that a positive Bauer reaction (depending on natural amboceptor) or a positive Stern (depending on natural complement) might be considered as giving an unfavorable prognosis and indicating prolonged treatment. Schlimpert[63] and Meirowsky[64] warmly recommend the Stern modification, though both of these writers urge that it be performed simultaneously with the original Wassermann method.

NOGUCHI TEST

From this cursory review of the modifications that have been tested with considerable thoroughness abroad it is easy to see that no one method has succeeded in replacing the original procedure of Wassermann. It is unfortunate that the system of Noguchi has not as yet been more seriously considered by our foreign colleagues. In the recent book on serum diagnosis by Gastou and Girauld[3] the method is described at some length, although it has been practically performed only in a few cases. Among those of us in America who have had experience with the Noguchi method there is little doubt as to its very great value. The principles of the test, as well as minute instructions for preparing the reagents, are so plainly described in Noguchi's book that it seems strange that the method has not at least been given a trial in some of the foreign laboratories. In a recent contribution Noguchi[65] has tabulated the work of different American investigators who have experimented with his method, and it may be said that the results speak for themselves. The test has now been tried in over 8,500 cases, many of these in comparison with the regular Wassermann test. Kaplan, who formerly reported 8 per cent. positive reactions in non-syphilitic cases, states that during the past five months no such non-specific reactions have occurred. To meet the objections of Swift, who found thirty-five positive reactions in 201 non-syphilitic cases, Noguchi recently gave a public demonstration of his test at the clinic of the Pennsylvania Hospital. The serums of fifty-nine patients were simultaneously examined by Dr. Noguchi with his method, and by Dr. Swift, using the original technic of Wassermann. The results were absolutely identical.

SPECIFICITY OF WASSERMANN REACTION

The question of the specificity of the Wassermann reaction finally appears to be nearing a solution. The list of non-syphilitic diseases in which a positive reaction can be obtained more or less often is becoming more definitely settled. To this list, which includes leprosy, frambesia, sleeping-sickness, scarlatina, and malaria, must now be added, apparently, lupus erythematosus acutus. Fortunately these conditions do not often present any difficulty in being clinically differentiated from syphilis.

Several communications on the Wassermann reaction in leprosy have recently appeared in which the number of patients examined was fairly large. While agreeing that leprosy in general often gives a positive reaction, they do not agree as to the type of the disease in which the reaction is found. Thus Ehlers and Bourret,[66] in forty-seven cases of nodular and anesthetic types, found positive reactions in all except two cases. On the other hand, Eliasberg,[67] in fifty cases, found a much higher proportion of positive reactions in the nodular than in the anesthetic type. My own results[68] in an examination of sixty patients agree closely with those of Eliasberg, the latter obtaining only three reactions in nineteen anesthetic cases, while I found three reactions in twenty-two cases of this type.

Teissier and Bénard[69] in 100 cases of scarlatina found the reaction partially or completely positive in 81 per cent. of the cases. The reaction appeared at times as early as the third day and invariably disappeared at the end of convalescence. Using extract of human heart as antigen, Nann-Muscel and Titu[70] obtained only negative reactions in 12 cases of malaria. In 8 cases the examination was made at the height of the paroxysm when the blood showed the presence of the plasmodium. According to Boehm[71] a positive reaction can be obtained in malaria only when the parasites are present in the blood.

In a case of that very rare condition, lupus erythematosus acutus, Reinhart[72] obtained a positive Wassermann reaction on two different occasions. After the patient's death a positive reaction was obtained from the blood. The autopsy showed no evidence whatever of syphilis. A second case of this disease is reported by Hanck,[73] in which on two occasions a positive reaction was found. In this case the patient survived and failed to show the reaction after the acute symptoms had subsided.

Interesting results are recorded by Wolfsohn[74] from an examination of 50 patients shortly after ether narcosis. A more or less strong positive reaction was found in 13 cases. Two of these patients were syphilitics, in whom the positive reaction persisted, while in the other cases the reaction disappeared in a few days. Wolfsohn concludes that in 22 per cent. of the cases a temporary positive reaction may be present as a result of ether narcosis. He considers his results as a new proof of the biologic non-specificity of the Wassermann test, and of its close relation to lipoid bodies, as the lipoid substances of the brain and cord are the ones that are bound up in the anesthetic and cause narcosis.

---

[61] Kleinschmidt, H.: Ueber die Sternsche Modifikation der Wassermannschen Reaktion, Ztschr. f. Immunitätsforsch., 1909, iii, 512.

[62] Jacobeus, H. C., and Bachmann, E. L.: Sur les différentes modifications de la réaction de Wassermann, Compt. rend. Soc. de biol., 1909, lxvii, 449.

[63] Schlimpert, H.: Beobachtungen bei der Wassermannschen Reaktion, Deutsch. med. Wchnschr., 1909, xxxv, 1368.

[64] Meirowsky, E.: Ueber die von M. Stern vorgeschlagene Modifikation der Wassermann-Neisser-Bruckschen Methode, Berl. klin. Wchnschr., 1909, xlvi, 1310.

[65] Noguchi, H.: Further Studies on the Serum Diagnosis of Syphilis with Especial Reference to the Antihuman Hemolytic System, Internat. Clin., 1910, Series 20, i, 22.

[66] Ehlers and Bourret: Wassermann Reaktion ved Spedalskhed. Ugesk. f. Laeger., 1909, No. 49. (Reviewed in Ztschr. f. Immunitätsforsch., 1909, Ref. ii, 1007.)

[67] Eliasberg, J.: Komplementablenkung bei Lepra mit syphilitischem Antigen, Deutsch. med. Wchnschr., 1909, xxxv, 1922.

[68] Fox, H.: The Wassermann and Noguchi Complement Fixation Test in Leprosy, Am. Jour. Med. Sc., 1910, xxxix, 725.

[69] Teissier, P., and Bénard, R.: Recherches sur la réaction de Wassermann dans la scarlatine, Compt. rend. Soc. de biol., 1910, lxviii, 272.

[70] Nann-Muscel, J., and Titu, V.: La réaction de Wassermann dans la malaria, Compt. rend. Soc. de biol., 1910, lxviii, 188.

[71] Boehm, W.: Malaria und Wassermannsche Reaktion, Malaria, 1909, i, 191.

[72] Reinhart, A.: Erfahrungen mit der Wassermann-Neisser-Bruckschen Syphilisreaktion, München. med. Wchnschr., lvi, 2092.

[73] Hanck: Positiver Ausfall der Wassermann-Neisser-Bruckschen Syphilisreaktion bei Lupus erythematosus acutus, München. med. Wchnschr., 1910, lvii, 17.

[74] Wolfsohn, G.: Ueber Wassermannsche Reaktion und Narkose, Deutsch. med. Wchnschr., 1910, xxxvi, 505.

The rather surprising statement is made by Gjorgjevic and Savnik[77] that in examining 24 psoriasis patients giving no history or signs of syphilis, a positive reaction was obtained in 20 cases. As the majority of the reactions were only weakly positive their results will have to be disregarded unless confirmed by other investigators.

Actuated by the report of Bass, who, using lecithin as antigen, found 6 positive reactions in 6 pellagra patients, I examined 30 patients[78] with this disease with the Noguchi modification. My conclusions were that pellagra does not often give a positive reaction. The few reactions obtained were weak and easily distinguished from those found in cases of syphilis. In a discussion of my paper Dr. Bass stated that in subsequent examinations in which he used organ extracts as antigen his results were similar to mine.

To show finally how small after all is the proportion of positive reactions obtained in non-syphilitic cases, Bruck has collected from the literature 5,028 control cases in which only 59 positive reactions were found. This seems indeed a small number when the possibility of unrecognized latent infection is considered.

FIELD OF APPLICATION OF SERODIAGNOSTIC TEST

Of great importance are the results that have been obtained in diseased conditions of the heart and arteries. Donath[79] concludes that the syphilitic etiology of aortic insufficiency and aneurism, as well as cases of clinically suspicious mesaortitis, is proven by having obtained a positive Wassermann reaction in 85 per cent. of the cases. Bruckner and Galesco[80] think that syphilis plays the principal rôle in the etiology of aortic insufficiency, as they found a positive reaction in 17 out of 22 cases. The five patients giving a negative reaction were younger persons, from 14 to 20 years of age, who had suffered from repeated attacks of rheumatism. From an examination of twenty-five cases of various lesions of the heart (Øgaard[81]) found positive results in patients suffering from aortic aneurism and uncomplicated aortic insufficiency while negative reactions were obtained in those with lesions of the mitral valve. In 8 out of 9 cases of aortic insufficiency the reaction was also found to be positive by Krefting.[82]

From a study of 130 cases of disease of the eye in which the Noguchi test was performed, Martin Cohen[83] found some interesting results. He considers that "in brain cases with choked discs in which the indications for operations are doubtful and lues is suspected, the presence or absence of the reaction furnishes a valuable confirmatory aid which is speedier or probably more satisfactory than the therapeutic test." He further states that some light may be thrown on the heretofore obscure etiology of retinitis pigmentosa from the large proportion of positive reactions obtained. His conclusion that the Wassermann test is of value in the diagnosis of diseases of the eye is shared by Schumacher[84] and by Hessberg.[85]

The application of the Wassermann reaction to otologic cases has apparently added to our knowledge of the cause of nerve-deafness. In examining 29 patients with this condition Busch[86] found 15 strongly positive reactions, or 52 per cent., from which he concludes that syphilis plays a more important rôle in the etiology of nerve-deafness than has previously been supposed. Similarly Beck[87] has found 10 positive reactions in 34 cases of internal ear disease in which there was no disease of the sound-conducting apparatus. In a recent examination (Noguchi test) of 128 cases of ear disease by E. P. Fowler[88] it was found that the greater number of positive reactions in adults were obtained in cases of nerve-deafness and chronic catarrhal disease of the middle ear.

Some opinions regarding the relationship of syphilis to ozena may have to be revised in the light of recent experience with the Wassermann reaction. The results thus far obtained would seem to indicate that syphilis plays little or no part in the etiology of this disease. Sobernheim[89] has recently examined 4 cases of ozena of long standing in which evidences of very recent syphilitic infection were present. The cases, as would be expected, gave a positive reaction. The same writer had previously tested 17 cases of ozena in all of which the results were entirely negative. Weinstein[90] obtained only negative results in examining 8 cases of ozena and the same results were found by Alexander[91] in a series of 26 cases.

Additional light has been thrown on the intensely interesting problems of syphilitic heredity by recent investigations with the Wassermann reaction. Knoepfelmacher and Lehndorff[92] in examining 116 apparently healthy mothers of syphilitic children, found positive reactions in 62 per cent. of the cases, corroborating the work of the others that had been done in this direction. The inference might be drawn that the mothers were suffering from latent syphilis, a fact which might offer an explanation of Colles' law. That the inference is not to be drawn from the results of the Wassermann reaction alone has been set forth by Baisch.[93] He also found a large proportion of his reactions in apparently healthy mothers of syphilitic infants, and thinks that such findings might be explained on theoretical grounds in three ways. In the first place, the mothers might have been victims of latent syphilis. In the second place, the mothers might have been healthy, the positive reaction being due to inhibitory substances that had been produced in the child and passed through the dividing wall of the placenta into the mother's circulation. In the third place, the mothers might have been immune to syphilis, assuming that the inhibitory substances represent immune bodies produced in either fetal or maternal organism and circulating in the mother's blood. To settle the question Baisch combined the serologic examination of the mother and child with examinations for the *Spirochæta pallida* in the placenta. He found in these clinically healthy women, giving a positive Wassermann reaction, that the spirochetes could be found in both fetal and maternal portions of the placenta as well as in the maternal circulation, apparently proving the first possibility, namely, that the mothers were the bearers of latent syphilis.

---

[77] Gjorgjevic, G., and Savnik, P.: Ueber die Wassermannsche Reaktion bei Lues und bei Psoriasis vulgaris, Wien. klin. Wchnschr., 1910, xxiii, 626.

[78] Fox, H.: The Wassermann Reaction (Noguchi Modification) in Pellagra, New York Jour., 1909, xc, [illegible]

[79] Donath, K.: Ueber die Wassermannsche Reaktion bei Aortenerkrankungen und die Verwertung der provokatorischen Quecksilberbehandlung für die serologische Diagnose der Lues, Berl. klin. Wchnschr., 1909, xlvi, 2015.

[80] Bruckner, J., and Galesco: Syphilis et insuffisance aortique, Compt. rend. Soc. de biol., 1910, lxviii, 74.

[81] Øgaard: Wassermann Reaktionens Betydning ved Hjerte og Karsygdomme, Hosp. Tid., 1909, No. 49. (Reviewed in Ztschr. f. Immunitätsforsch., 1910, ii, 1008.)

[82] Krefting, R.: [illegible] und die Wassermannsche Syphilisreaktion, Deutsch. med. Wchnschr., 1910, xxxvi, 366.

[83] Cohen, M.: The Value of the Serodiagnosis of Syphilis in Ophthalmology: A Preliminary Report, Arch. Ophth., 1910, xxxix, 93.

[84] Schumacher, G.: Die Serodiagnose der Syphilis in der Augenheilkunde nebst Bemerkungen über die Beziehungen der Tuberkulose zur Syphilis bei Augenleiden, Deutsch. med. Wchnschr., 1909, xxxv, 1915.

[85] Hessberg, R.: Beiträge zur Bedeutung der Serodiagnose der Syphilis für die Augenheilkunde, Klin. Monatsbl. f. Augenh., 1910, xlviii, Beilageheft, p. 60.

[86] Busch, H.: Wassermannsche Seroreaktion bei nervöser Schwerhörigkeit und Otosklerose, Beiträge Ohres, Nase, Halses, 1909, iii, 42.

[87] Beck, O.: Ueber die Erkrankungen des inneren Ohrs und deren Beziehungen zur Wassermannschen Seroreaktion, Monatschr. f. Ohrenh. u. Laryngo-Rhinol., 1910, xliv, 28.

[88] Fowler, E. P.: The Serodiagnosis of Syphilis in Its Relation to Disease of the Ear, Ann. Otol., Rhinol. and Laryngol., 1910, xix, 367.

[89] Sobernheim, W.: Ozaena and Syphilis. Neue Beobachtung, Arch. f. Laryngol. u. Rhinol., 1909, xxii, 130.

[90] Weinstein, J.: Ueber die Bedeutung der Wassermannschen Syphilisreaktion für die Rhino-Laryngologie, Deutsch. med. Wchnschr., 1909, xxxv, 1696.

[91] Alexander, A.: Serodiagnostische Untersuchungen zur Frage der Beziehungen zwischen Ozaena und Syphilis, Ztschr. f. Laryngol., 1909, i, 669.

[92] Knoepfelmacher, W., and Lehndorff, H.: Das Collesche Gesetz, Med. Klin., 1909, v, 1606.

[93] Baisch, K.: Die Vererbung der Syphilis auf Grund serologischer und bacteriologischer Untersuchungen, München. med. Wchnschr., 1909, lvi, 1929.

Speaking further for this explanation and against the possibility of the reaction being due to inhibitory bodies passing from the child to the mother, is the fact that the positive reaction in the mother does not disappear after the birth of the child. Furthermore, the reaction can be positive in the mother and negative in the child. Bruck has pointed out that a number of cases have been reported in which a syphilitic child gave a negative reaction at birth, and later when manifestations appeared the reaction became positive. In spite of this the mother at the time of the birth gave a positive reaction. In these cases a passage of the inhibitory bodies from child to mother was certainly impossible. The most difficult cases to explain would be the ones in which the mothers, in addition to being clinically healthy, gave a negative reaction while their offspring were shown to be undoubtedly syphilitic from demonstration of the presence of the spirochetes. It might be thought that in these cases we had to deal with pure paternal heredity, or the explanation might be found in the failure of the Wassermann test to show a positive reaction. The proof that the explanation lay in the failure of the test was apparent from the fact that in the negative as in the positively reacting mothers, spirochetes were found in both portions of the placenta and in the maternal circulation.

Not only may our ideas concerning Colles' law have to be revised, but also those concerning the law of Profeta, which says that apparently healthy children of syphilitic parents are immune to syphilis, at least up to the time of puberty. The presence of a positive Wassermann reaction in a large number of these supposedly healthy children goes far to prove that here again the immunity to syphilis is only apparent.

That not only hereditarily syphilitic infants but also older children suffering from hereditary syphilis give a higher proportion of positive reactions has been shown by Bertin and Gayet.[94] In examining 25 undoubted cases of hereditary syphilis they found positive reactions in all but one case. Knoepfelmacher and Lehndorff[95] also conclude that older heredo-syphilitic children give a positive Wassermann reaction more often than adults in the late stage of acquired syphilis.

In conclusion it would seem that there has been some very substantial progress during the past year in the serum diagnosis of syphilis. The continued investigations on the Wassermann test have not only added much that is new to our knowledge, but have tended to confirm the view that the reaction is one of very great practical value. The results obtained in a number of other diagnostic tests for syphilis must at least be considered as encouraging.

SUMMARY

1. The various precipitation tests for the diagnosis of syphilis are too unreliable to be of much practical value.

2. The Schürmann color reaction has been extensively tried and found to be worthless.

3. The favorable results that have been claimed for the intradermic reaction are at least encouraging, as the performance of the test seems to be simple.

4. Excellent results have been claimed by Richard Weil for his cobra venom test. They are, however, somewhat lessened in value by the fact that very considerable experience is required to perform the reaction.

5. Further investigations are required to show whether the leuko-diagnosis, the antitryptic index or the meiostagmin reaction can be used as diagnostic aids in syphilis. The results obtained with the Much-Holzmann reaction appear to be of no value.

6. The artificial antigens of Sachs and Rondoni, and of Schürmann for the Wassermann reaction have not succeeded in replacing the use of organ extracts.

7. The use of barium sulphate suggested by Wechselmann to remove the disturbing complementoids from the patient's serum has apparently given a greater proportion of positive reactions than those obtained by the original Wassermann method.

8. The use of urine in place of serum for the Wassermann reaction is not to be recommended.

9. No single modification has as yet entirely replaced the original Wassermann method. The modifications of Hecht and of Stern have apparently given good results abroad, while the Noguchi test has received almost universal recognition in America. The methods of Bauer and of Tschernogubow (second test) appear to be of much less value.

10. To the list of non-syphilitic diseases which at times give a positive Wassermann reaction, must apparently be added lupus erythematosus acutus. It has also been found that many cases give a positive reaction following ether narcosis.

11. The diagnostic value of a positive reaction is generally recognized. There is no general agreement as yet regarding the value of the test as a guide for treatment.

12. From recent serologic investigations it would appear that syphilis plays a very important role in the etiology of aortic insufficiency. Syphilis is probably of more importance in the causation of nerve deafness than has been previously supposed. There is apparently little or no relation between syphilis and ozena.

13. A new field seems to have been opened by the Wassermann reaction for the discussion of the problem of the inheritance of syphilis and of the interpretation of the laws of Colles and Profeta.

14. In the field of pathologic-anatomic diagnosis the Wassermann reaction seems to be of considerable value.

15. Serologic examinations have shown that the percentage of syphilitic infections in prostitutes is extremely high.

616 Madison Avenue.

---

[94] Bertin and Gayet: Syphilis héréditaire et réaction de Wassermann, Rev. de méd., 1910, xxx, 395.

[95] Knoepfelmacher, W., and Lehndorff, H.: Untersuchungen heredoluetischer Kinder mittels der Wassermannschen Reaktion. Das Gesetz von Profeta, Wien. med. Wchnschr., 1909, lix, 2230.

PELLAGRA *

J. D. LONG, A.M., M.D.
Passed Assistant Surgeon, Public Health and
Marine Hospital Service
WASHINGTON, D. C.

While engaged in the study of 130 cases of amebiasis (amebic dysentery) during portions of 1907, 1908 and 1909, at the Marine Hospital in San Francisco, it was noted that the majority of the patients showed symptoms of secondary complications. Some complained of rheumatic pains and neuralgias; others complained of headache and indigestion and became constipated at times; others showed lesions on the hands, feet and legs which were thought to be trophic in character and which were usually in the form of dryness of the skin, or in the form of small pinhead-sized vesicles, which tended to coalesce and later to form bullæ. There was also more or less marked interference with the mobility of the various joints and of the spine.

In searching for the cause of these symptoms the *x*-ray demonstrated that the rheumatic pains, neuralgias, etc., were apparently caused by the presence of some sort of deposit on the articular surfaces of the vertebræ, which so encroached on the foraminæ giving exit to the nerves, particularly at the posterior portion, as to produce mechanical pressure on the nerves at their exit. The headache, constipation and indigestion seemed to be due to injury to the intestinal mucous membrane by the amebas. Microscopic examination of the feces constantly showed muscle-fibers, starch, vegetable cells and fibers, ammonium and magnesium phosphate crystals, fatty acid crystals, oxalate of calcium crystals, cholesterin plates, mucus, pus, blood, blood-pigment, soaps and fats, amebas, monads and frequently eggs of other parasites, as hookworm, roundworm, whipworm and, at times, the hyphæ and sporangiæ of molds. The trophic lesions were thought to be due to the mechanical pressure on the nerves, which had been so long continued as to interfere with their functions; the loss of motion in the spine and the joints to the pressure of the deposits, above mentioned, which could be seen in the *x*-ray plates. On examining my first pellagra patient, last November in Columbia, I was much struck by the resemblance pellagra had to the cases of amebiasis above mentioned. After reading all the literature on pellagra that I could, and from talking with Lavinder and others who had had experience with pellagra, the following working hypothesis was formulated, and the studies carried out in Columbia, S. C., were directed toward proving or disproving the various parts of the hypothesis.

WORKING HYPOTHESIS REGARDING THE NATURE OF THE DISEASE

The hypothesis is as follows: Pellagra is a disease resulting from an injury to the intestinal mucous membrane, produced by the ameba. As a result of the ulceration there is an inflammatory process extending throughout the alimentary tract which interferes with the absorptive power of the intestine and the manufacture of the digestive ferments normally produced in the intestines. Later, owing to long-continued inflammation in the intestine, the pancreas and liver undergo inflammatory change which interferes with the quality and quantity of the digestive juices that they produce, with the result that the food ingested is improperly digested. The presence in the intestine of undigested food favors fermentation and putrefaction of its elements, with the production of certain toxins, ptomains and intermediate products of digestion which are harmful to the body.

As it has been shown by Herter that the *Bacillus aerogenes capsulatus* is present in the intestines of carnivora, and readily ferments proteid matter, it was decided to look for it as one of the possible causes of the fermentation. The fermentation of the carbohydrates could be accounted for by the colon bacillus.

The insanity of pellagra was assumed to be due to the severe and long-continued toxemia. The lesions on the hands, neck, feet, face and genitalia were assumed to be due to two factors: first, the mechanical pressure on the nerves at their exit from the spinal canal, and second, the degeneration of the nerves themselves as a result of the toxemia. The degeneration of the cord was assumed to be due to the long-continued mechanical pressure on the posterior roots of the spinal nerves, which would tend to have the same effect as section of the nerve.

It was assumed that the seasonal recurrence of the disease was due to the extremes of atmospheric temperature which exist during the socalled pellagra season, namely, March, April and May, and September, October and November. This assumption was not formulated until I had been in Columbia some time and had noted the changes myself.

INVESTIGATION OF HYPOTHESIS

An outline of the work done along the above lines will now be given: Examination of the stools of fifty-two of the patients showed amebas constantly present in the stools of fifty. In the two cases in which amebas were not found the stools were not satisfactory, in that they were not sufficiently liquid, and other specimens could not be obtained. Ulceration and damage to the intestine was shown, in all stools examined, by the presence of mucus, pus, blood pigment and blood.

That the liver and pancreas were damaged was shown at autopsy by the fact that both of these organs revealed cirrhotic changes, the pancreas especially being so hard as to be almost leathery in consistence; this was also evidenced by the presence of muscle fibers, vegetable cells and fibers, starch, soaps and fats in the stools. The latter observation, in addition to the fact that a damaged and ulcerated intestine cannot absorb as well as a normal one, might also be accepted as partial evidence as to faulty absorptive power on the part of the intestine.

Fermentation and putrefaction were shown by the presence of crystals in quantity in the stools, by the odor, by the fact that the stools were frequently fermenting and giving off bubbles of gas in the paper cups in which they were brought to the laboratory. The stools were invariably acid in reaction, frequently requiring as much as 5 to 10 c.c. of a 1/10 normal solution of sodium hydroxid to produce a reaction with phenolphthalein in 25 to 30 c.c. of stool. Van Noorden states in effect, in his work on "Metabolism and Nutrition," that acid fermentations, in that they will draw bases from the blood to form compounds with the acids produced, diminish the alkalinity of the blood, and produce serious results.

The *Bacillus aerogenes capsulatus* was found in one case, according to the method of Welch, by injecting fecal matter into the ear vein of a rabbit, after a few minutes killing the rabbit, and allowing it to remain on the top of the incubator till the following day, when it was seen that the body was swollen with an inflammable gas, the organs were much decomposed, and the tissues generally were edematous.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June 1910.

In one case which had been under treatment until the stool was neutral in reaction, and in which crystals and the other signs of fermentation and putrefaction could not be found, the *Bacillus aerogenes capsulatus* could not be recovered. On account of the limited time and the difficulty of obtaining animals more experiments of this kind could not be made.

As regards the cause of the insanity, nothing definite was worked out, but it was noted that sudden changes in the atmospheric temperature made the cases much more toxic, and whereas the patients may have been fairly sane, they would become excited and would frequently have to be placed under restraint. This applied not only to the pellagrins, but to other patients in the asylum as well. This I cannot satisfactorily explain, unless it be due to the alternating warming and chilling of the surface of the body, causing the blood to leave the surface capillaries and producing an engorgement of the vessels of the intestines, and by so doing increasing the activity of the processes at work therein.

As to the lesions on various parts of the body, in every case of pellagra in which radiographs were made the plates showed deposits in the spinal foramina which apparently produced pressure on the nerves. As to the part played by toxic degeneration of the nerves themselves, I can only repeat what I was told by Dr. Achucaro of the Government Hospital for the Insane, Washington, D. C., that experiments show that when various tissues, such as nerve, muscle and fat, are allowed to decompose, the nerve, being the most highly specialized of all the tissues, shows evidences of degeneration first.

It is possible that several factors may be concerned in the seasonal recurrence of the disease: First, renewed activity and new infections with amebas in the spring of the year; second, engorgement of the intestines due to chilling of the body surface; third, the growth of molds in food products, with resulting changes in these products, which could favor fermentation in a person already debilitated.

As to the degeneration of the posterolateral columns of the spinal cord, Marie made the observation that the degeneration began in the posterior roots of the spinal nerves; the radiographs show that the pressure does come on the posterior roots of these nerves, at about the site of the ganglion. Further, at the only autopsy I could obtain, it was noticed that the foramina were so filled with what seemed to be a firm cartilage-like deposit that the nerves were wedged therein, and a large-sized sewing-needle or a Japanese toothpick could not be pushed through the foramina. The spinal canal was also partially filled.

In Gray's "Anatomy" the following statements are made:

> The roots of the cervical nerves increase in size from the first to the fifth and then remain the same size to the eighth. The posterior bear a proportion to the anterior as 3 to 1, which is much greater than in any other region.

It may be seen from the skeleton and the radiographs that the foramina in the cervical region decrease in size from above downwards, whereas as above stated, the nerves increase. These facts would seem to account for the lesions on the hands (fifth, sixth, seventh, eighth cervical and first dorsal), face and neck (third and fourth cervical).

With reference to the dorsal nerves Gray says, "The roots of the dorsal nerves are of small size, and vary but slightly from the second to the last." Examination of the skeleton shows these foramina to be larger than the lower cervical, and therefore there are no lesions on the parts innervated by the dorsal nerves.

The lesions on the legs and feet are due to pressure on the first and second sacral nerves, of which Gray says, "The roots of the upper sacral nerves are the largest of all the spinal nerves; while those of the lowest sacral and coccygeal nerves are the smallest." The foramina are larger than the other intervertebral foramina but are more tortous, and as the spinal canal in the sacrum is incomplete posteriorly and flattened, it is possible that any deposit here will produce pressure symptoms as in the other vertebræ.

TREATMENT

The amebiasis was treated by enemas of quinin bisulphate in normal salt solution. After a preliminary purge, the patient was put on a diet of milk, toast, rice and starchy foods. To aid the pancreas, pancreatin was administered in capsules coated with phenylsalicylate, in order that the hydrochloric acid of the stomach could not act on and destroy the pancreatin. To assist the pancreatin and neutralize the acidity present in the intestine, sodium bicarbonate was given, also in capsules coated with phenylsalicylate. To prevent accumulations of food and resulting fermentations, small doses of salts were given often enough to cause one or two bowel movements per day, not counting the results of the enema as a movement. The deposits were treated by inunctions of mercury and the internal administration of iodid of potassium, both pushed to the therapeutic limit. Rest in bed was ordered till the acute symptoms had subsided.

In all, twenty-five patients were treated, with the following results: Three died; of these, two died of chronic amebic dysentery, the pellagra lesions having practically disappeared; the other, just prior to death, was having from eighteen to twenty stools per day, and the pellagra lesions had improved, until the week before death, when secondary infections began in the lesions, and they became purulent. Twelve patients improved in varying degrees, both mentally and physically. Since these were insane negroes and no cooperation could be received from the patients themselves, it was surprising that they improved at all. Six others also were improved, the last time I saw them, and, in accordance with information just received, they are continuing to improve. Four recovered, and all symptoms of pellagra had disappeared, except a slight increase in the patellar reflexes.

While many of the studies seem more or less suggestive, and while the percentage of improved and recovered seems encouraging, I feel that, in accordance with accepted medical standards, no conclusions can be drawn as yet, and that much longer and more detailed studies will be needed to prove or disprove the value of the researches just outlined.

In conclusion, I wish to acknowledge my indebtedness to Dr. J. W. Babcock, of the State Asylum at Columbia, for his kindnesses, assistance and many courtesies. I also wish to thank Dr. R. W. Gibbes, of Columbia, for the excellent radiographs he has taken, and the members of the asylum staff and the physicians of Columbia for permission to study their cases.

Since completing my studies in Columbia, I have seen nine positive and sixteen suspicious cases in the Philadelphia Hospital for the Insane. Of twelve specimens of stools examined from these cases, all showed amebas.

THE FARM: THE NEXT POINT OF ATTACK IN SANITARY PROGRESS*

ALLEN W. FREEMAN, M.D.
Assistant State Health Commissioner of Virginia
RICHMOND, VA.

The careful student of sanitary progress in the United States to-day is early impressed with the great contrast between the sanitary conditions in country districts and those in the cities. Recent years have witnessed great progress in the cities. Effective health departments have been organized, and the effect of measures such as the supervision of water and milk-supplies, the visiting nurse and the tuberculosis dispensary, medical inspection of schools and the accurate control of contagious diseases has been so pronounced as to place their work on a firm basis, and to insure its continuance and extension. While much remains to be done in the cities, the foundation has been laid and the methods of work more or less standardized. It is not too much to say that we are within sight of the solution of many of the problems of municipal sanitation.

While these facts are true of the cities, in those states with which we are familiar no such condition exists in the country districts. They remain as they have been for years, without efficient organization, depending on the methods and beliefs of thirty years ago. In only a few states is there adequate supervision of the rural communities; only a few states require the reporting of even the most dangerous of contagious diseases, and in most cases what activity there is in the country districts is confined to the control of smallpox, diphtheria and scarlet fever, with occasional attention to a flagrant nuisance. The vast contributions of modern science to the prevention of disease are for the most part lost to the people of the country for the lack of organization and education. There are, of course, isolated exceptions to this statement, such for instance as the wonderful work of the Pennsylvania Department of Health in connection with tuberculosis in rural districts, but for the most part conditions are as stated.

The reasons for this contrast are, in the main, perfectly obvious. There is in the first place a greater survival of the individualistic idea of life in the country than in the city. Government touches the life of the individual in the country to a limited degree only. His personal liberty, so called, is seldom invaded. He is, and he considers himself to be, a law unto himself. In the city the communal idea prevails; no man lives unto himself alone; government is at the elbow of every citizen. In the second place, the very isolation of the country makes it almost impossible in the circumstances to educate the country people in the importance of health measures. A single successful campaign against measles or diphtheria or impure milk will generally convince the people of the city of the importance of health measures. As such a campaign is difficult or impossible under present conditions in the country, education comes more slowly and the support of health measures is always more doubtful. In the third place, the contrast between country and city is largely due to the fact that health measures are more obviously necessary in the city than in the country. The crowded city demands health protection. Where our nearest neighbor lives half a mile away he may suffer from a wide variety of diseases and we may never feel the danger, but where we are separated from contagious disease only by the partition wall of an apartment house, we feel the necessity for and yield more readily to preventive measures.

The explanation for this contrast, however, is not its justification. The country, no less than the city, needs health education. The country, even more than the city, stands in need of fundamental health precautions. The very mass of disease in the country districts of itself requires that this problem be attacked, but the bearing of rural sanitation on the health of our cities is perhaps a still more immediate reason why our point of attack should be shifted. The health of the city depends in a large measure on the health of the country. Practically all the food-products of the city come from more or less remote country districts. A single case of typhoid fever on a dairy farm may, under certain conditions, infect a whole city, and emphasize to all the intimacy of the sanitary connection. In the same way, close intercourse between cities and the country renders the former particularly liable to infection from the latter. Our experience in Virginia, which is doubtless borne out by that of other states, has convinced us that the prevention of smallpox in the cities is very largely dependent on the close inspection of smallpox in the country, since most cases of this disease are brought into the cities from rural districts or small towns. Then, again, there is a crying need for better rural sanitation because of the more or less general residence of city people in the country during vacation time. We have found in Virginia that the country boarding-house is one of the great sources of our typhoid fever, and many of the cases which appear in the cities after vacation can be traced directly to the bad sanitation of country resorts. If, therefore, the health of the cities is to be improved, the health of the country must also be bettered. And if the nation is ever to stamp out disease, it must be by a general attack in both the city and the country.

In addition to the crying need for such work rural conditions offer to the scientific sanitarian the attraction of almost unparalleled opportunities for research work in the transmission of disease. In typhoid fever particularly, we in Virginia are firmly of opinion that the key to the eradication of our summer typhoid is to be found in the country. To trace the means of dissemination of typhoid bacilli in a city, with its manifold sources of food-supply, the complication of the milk-supply, with daily contact between thousands of persons any one of whom may be in the incubative stage of the disease or may be a typhoid carrier, and with the constant temptation to attribute the infection to the water-supply, is beset with so many difficulties as to make it almost hopeless. The best that can be done is to draw general conclusions from the study of large groups of cases, and even here it is difficult to exclude the general factors of flies, milk and water.

In the country, conditions are very different. Given a country district free from typhoid for several years, the first case is easily discovered, and the transmission of the disease may often be worked out with mathematical accuracy. Water and milk are, of course, easily excluded; flies may be considered with some accurate idea as to their importance as a factor in transmission; and the actual amount of contact resulting in infection may often be determined exactly. We have been able to do this in Virginia in a number of instances with results of the greatest interest. This work extended over a large area, and, combined with careful statistical studies will throw more light on the city problem than can be obtained in the city itself by any means known at present.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Nor is typhoid the only disease which can be advantageously studied in the country. We have found the study of the transmission of smallpox in rural districts to be of great interest by reason of the fact that the time, place and manner of contact can be worked out with ease and certainty. Diphtheria and scarlet fever, studied case by case in rural districts, should throw great and much-needed light on the transmission of these diseases.

It may not be amiss at this point to call attention to the value of the case method of study of infectious diseases in rural work. A personal visit to each patient, the collection of the data needed at the place where the disease occurred, and the interpretation of the epidemiologic evidence in the light of the other information secured by a visit to the premises, offers by far the most promising method for the solution of the problems now pressing for solution.

The rural districts, however, offer even greater possibilities in practical prevention than as a field for studies in the transmission of disease. The separation of individual cases, the slowness and freedom from complication of the intercommunication, render health work in the country much easier than in cities. With trained men, and an adequate system for promptly collecting and studying morbidity statistics, preventive work in rural districts may be made to have the efficiency of a well-oiled machine.

Even here, however, it is obvious that all the phases of sanitation which arise in the study of rural conditions cannot be studied fully by the limited force at the disposal of the average state health department. Some limitations must be made and some problems in the country must receive more attention than others. In Virginia we have carefully considered the subject and have concluded that, for the present at least, typhoid fever and hookworm diseases should receive first attention. The reason for this decision will, I think, be obvious to all. Typhoid fever is and will probably remain the greatest single problem of rural hygiene. High as is the death-rate from typhoid fever in the country as a whole, it is highest in the South; and awful as is the toll which most Southern cities pay to this disease, their burden is not so heavy as that of the rural sections of the same territory. Hookworm has been placed beside typhoid fever in this work because we are convinced that hookworm plays a part hardly less important than that of typhoid fever in the South and is essentially a disease of the country.

If we must study rural hygiene for its own importance, and if we must limit our study for the present at least to these diseases which are the most disastrous, we must begin our study on the farm. We should not, of course, omit the small towns, as they offer problems intermediate between those of the city and those of the country. But a study of these towns convinces us that in the main the dangers are essentially those of the farm, and the problem is practically the same in its fundamental aspect as that to be encountered in the country.

The farm is the point of attack, and in the work against the diseases I have mentioned the farm is the unit both in the spread and prevention of infection. Each farm is, to all intents and purposes, a separate community, with its own population, its own problems of sanitation, and its own forces for good and evil. The work we would do for the improvement of rural conditions of sanitation must be done for the improvement of the farm.

Studies of sanitary conditions on farms, such as those of Stiles, show facts that are almost unbelievable in the light of our knowledge regarding soil pollution. These studies have been confirmed by our work in Virginia. We have inspected in the course of our work against typhoid and hookworm diseases thousands of farms, and it is the exception rather than the rule that we find even the most primitive sanitary arrangements in use by the people. The privy, if existing at all, is old, in bad repair and of antiquated design. Its use is confined almost exclusively to the female members of the family, the males relying on still more primitive methods of disposal. The contents are open to the chickens, the hogs, the dogs and the flies, and these agencies are relied on to take care of the small amount of material actually deposited in them.

Water-supplies follow the same general tenor, the wells being usually carelessly dug, carelessly protected, if protected at all, and carelessly kept. The well tops, almost without exception, show wide cracks through which filth is washed at all times into the well; the buckets are handled by all kinds of hands and then carefully lowered into the well for the only cleaning they ever get. The personal habits of the average inhabitant of a rural district are of a character in keeping with the other sanitary conditions. The absence of running water, and particularly hot water, make effectual cleanliness, especially in cold weather, difficult, and the amount of water used per capita per day is exceedingly small.

It must, of course, be admitted that in every rural community there are those of sufficient intelligence, self-respect, and ability to rise above these conditions and to provide themselves with modern sanitary conveniences, but, particularly in regions where the economic standard of rural life is low, these exceptions are few, and for the most part conditions are as I have described them.

Even under these conditions, amazing as it may seem, there are many rural communities which are and have been for many years practically free from typhoid, despite the prevalence of the disease in this country. There are others in which hookworm has apparently never gained a foothold, but the introduction of a single case of typhoid under favorable conditions is sufficient to give rise to a wide-spread outbreak of the disease, and hookworm infection, though slower in its spread, is equally certain to infect the entire community under these conditions.

These conditions, then, fix the problem of the farm, if they do not solve it, and indicate the direction our work must take. The building of a proper privy with its habitual use by every member of the farm community, its regular and frequent cleaning and proper disposal of the material, the safeguarding of the water-supply, and the instruction of the people as to the necessity of obeying the Scriptural injunction to wash before meat, are not of themselves difficult, expensive or revolutionary procedures. Moreover, when we take into account the fact that the carrying out of these procedures will do much to secure the immunity of the inhabitants of the farm from soil-pollution disease, it does not seem that it would be difficult to secure their adoption. When we face the problem in Virginia, however, of putting these measures into effect on hundreds of thousands of farms, scattered over forty thousand square miles of territory, and containing a population of one and a half million, who live under a governmental system which promotes the idea of individualism and individual rights, the question does not seem so simple.

The problem must, of course, be attacked in detail, county by county, district by district, farm by farm and individual by individual.

It has seemed to us that in attempting to solve this problem in the State of Virginia we could well take a leaf from the book of modern industrial enterprise; that the methods which have been worked out by the marvelous organizations of commercial interests might well be of use in a work of this kind. The problem of a man who would teach the people proper sanitation is not essentially different from the problem of the man who would sell them a book, or a safety razor, or induce them to buy an improved churn. The proposition is a selling proposition, and our forces may well be modeled on the sales force of any modern industrial enterprise.

The first question is that of advertising, or, as we are accustomed to speak of it, of education. At the outset it should be insisted on that such health education or advertisement should be an education regarding the fundamental principles and established facts and not regarding individuals or experimental ideas. In our advertising campaign to reach the farmers we must suppress all personal references and make our advertising carry sound and proved facts of sanitation. We must advertise our product and not our sales-manager.

The forms of publicity to be used in this educational campaign are varied, and practically all of them are to-day being used in common by commercial and health organizations. Press notices, which are easily secured at small cost by a proper press-agent, are of enormous value; special stories are gladly carried by newspapers if they do not carry too much self-advertisement; bill-boards, magazine stories and articles, and special publications of various health departments are being used daily in this work. In addition, lectures, exhibits, special railroad exhibit cars, demonstrations in railway stations and public places, all have their place and all are being used by public health agencies.

But these are not of themselves sufficient. They arouse the interest or excite the curiosity of those whom we wish to reach, but they do not give the individual the necessary impulse for immediate action. We must have something more personal, more direct and impelling to obtain the results that are necessary. Here again the analogy with selling forces of commercial concerns becomes striking.

We must have a detailed field force. We must have a force which will personally reach every farm whose sanitary condition we would improve. While all local health organizations have this end in view, and the individual physician constitutes a powerful force, even these must be aroused to their opportunities, must be educated and stimulated as much as our lay constituency. They correspond, in the analogy we have drawn, to the trade for the regular distribution of our product. We have not created the need for the product until our detail man has visited the consumer.

The effort to meet the need for detail work, especially in connection with hookworm in Virginia, has resulted in the appointment of what we call the rural district inspector. Each rural district inspector is assigned to an area of four or five counties, conveniently located and accessible from some one point as headquarters. This district inspector is the detail man in our selling campaign. He goes into the district and visits first the physician, taking with him his microscope, his literature and a small amount of properly prepared medicine. He is a graduate physician, qualified to practice medicine, but his whole time is devoted to the work and he is allowed to accept no fees. On his visits to the individual physician he interests him in the hookworm disease, diagnoses a few cases for him, and treats several in order to be sure that the physician is thoroughly acquainted with the practical details of the work he is going to be called on to do. Then, with the cooperation of the physician, working in the practice of one physician at a time, he visits the individual farm, talks with the head of the family, or better still, with the mother, points out the children who are probably infected, gets specimens, leaves literature, suggests treatment and refers them to the family physician. In this way, within a comparatively short time, he has covered the territory of the physician with whom he is working, has secured a few object-lessons of treatment, has prepared the physician to take care of the cases when they come, and has started the current toward the physician. He also inspects schools, gives public lectures and demonstrations, and, in general, agitates the question until everyone in the community is thoroughly acquainted with the facts regarding the disease.

The detail work so far has been very successful. The patients who are treated recover so rapidly and exhibit such marked improvement as to constitute an unanswerable argument for the truth of the contentions of inspector and physician as to the importance of the disease.

The whole community rapidly becomes interested in the subject; the worst cases are soon treated, and the mild cases come later; and with the spread of the truth regarding the prevalence of the disease and methods of its spread comes the desire for better sanitary conditions.

The amount of territory which can be covered by an active man in this way is very large, and, though we have not exactly determined it, we estimate that four or five badly infected counties can be cleaned up in a year's time, and that then the inspector may be moved to a fresh district. In this way four or five years should see Virginia thoroughly canvassed for hookworm disease, and the extirmation of the disease should be in the way of accomplishment.

The work in connection with hookworm will undoubtedly yield an extra result in typhoid fever equal in value to that from hookworm, and we believe that the successful carrying forward of the present campaign will result in a marked reduction in rural typhoid. In addition—and by no means least important—the demonstration of the practical benefits of systematic and scientific work in rural districts afforded by a successful campaign of this character will place preventive work on a new and firm basis before the country people, and should render the systematic and permanent extension of this work, embracing all diseases, easy of accomplishment.

We believe, therefore, in conclusion, that present rural sanitary conditions must not be allowed to continue; that the problem must be attacked in detail; that detail work will yield tremendous benefits both in contribution to our present knowledge regarding the transmission of many diseases and in the actual prevention of thousands of unnecessary cases of preventable diseases.

1110 Capitol Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LONG AND FREEMAN

Dr. Charles W. Stiles, Washington, D. C.: The center of the hookworm problem is, of course, the farm. I would like to touch on the next point geographically in the distribution of the disease, namely, the cotton mill village, its sanitary conditions and the proportion of distribution from that point.

It should be recalled that many of the mills send out to the farms and bring the families in to work in the mills. Many of these families have never used a privy before going to the mills. For these families, therefore, almost any thing in the shape of privy is to be viewed as a sanitary improvement in their surroundings. Many of the families not only are unaccustomed to a privy, but are opposed to it. I have seen families which actually had to be "housebroken" to the use of a privy. Such persons will even stool on the floor, rather than use an outhouse. I have seen the effects of this dislike, and, further, mill managers have repeatedly told me of the difficulties with which they have to contend in order to stop promiscuous defecation. I know of at least one cotton-mill which starts its families in certain houses on the outskirts of the mill village and doesn't move them into better-situated houses until after some few months, or a year or more, when the families have become less dirty in their habits. That these families will spread hookworm disease through promiscuous defecation is self-evident. It may, therefore, be taken for granted that some hookworm disease does actually spread in this way, in some of the mill villages of the South.

Dr. Marshall Langton Price, Baltimore: Human sewage is a particularly dangerous class of waste material which like many other waste materials may be classified as a nuisance dangerous to public health if disposed of in a manner whereby it may give offense or danger. Like other nuisances it may be dealt with under the common law, either by civil suit or by injunction proceedings. Statutory remedies are not always superior to those afforded by the common law. It is well, therefore, to consider first what remedies the common law affords against the dangers of sewage disposal and especially of privies. Human sewage may under certain circumstances become a nuisance under the common law on two grounds: (1) offensive character; (2) danger to public health. Since the common law is not fixed, except by a few well-established precedents, but fluctuates with public opinion, knowledge and experience, and in particular with the interpretation placed on these various factors by the superior courts, it is important that these courts should declare the deposit of sewage on an exposed surface or its discharge into a stream of insufficient volume a nuisance *per se*. Decisions of this kind in regard to other far less dangerous nuisances have been made by various superior courts.

Thus the Maryland Court of Appeals decided in the case of Woodyear vs. Schaeffer—a suit on petition for an injunction—that the discharge of blood from a slaughter-house into a stream was *per se* a nuisance and as such to be enjoined. Since remedy by common law is often clumsy, slow and inadequate, statutory regulation becomes necessary, and the question then arises of the best method of statutory control of sewage disposal. Certain general powers are granted to all sanitary departments of the government under which the question of sewage disposal could be reached but the problem is so very important that specific statutes should be everywhere enacted and enforced. It would appear proper and logical to leave the enforcement of these statutes to local sanitary governments, subject to regulation by the central authority.

In Maryland I introduced into a local sanitary law the first specific provision relative to sewage disposal in effect in that state. The provision authorized the county commissioners to pass rules and regulations to govern the disposal of urinary and fecal matter within the county. The county commissioners have not yet passed regulations under the act, but after we have studied the problem carefully in the state and the necessity can be shown, they undoubtedly will adopt such regulations under proper advice. It appears, considering the weakness of local sanitary government in many states, that the best way to deal with this problem is to allow local authorities the power of adopting rules and regulations governing sewage disposal and make them subject to revision by the central authority. We are also very much in need in all of our states of a method of procedure like the local government board in England. Where the sanitary authorities are weak, state authorities should have and should exercise the power of superseding the local sanitary government and carrying out, themselves, the necessary measures of intervention.

Dr. John L. Jelks, Memphis, Tenn.: Dr. Stiles visited my city not long since and saw a case of amebiasis, in which he suspected hookworm. I found myiasis, which induced me to prepare another paper on dysentery, the title of which was "Have You Dysentery? Bell Your Flies." In my chapter on dysentery in Hirschman's book, and in previous papers, I have referred for several years to the crime of polluting gardens and truck-farms with excreta. In a paper read before the Tennessee State Society in April, I reported cases of skin lesions associated with amebiasis, and then presented before that society a case of pellagra in which I found the *Entamœba histolytica*; I presented an opinion that there probably was an etiologic relationship between pellagra and this and other parasitic intestinal infections, such as amebiasis and uncinariasis.

For two years I have been alluding to certain skin manifestations or complications of amebiasis. I have made about one thousand examinations, microscopic and proctoscopic, during the last ten or twelve years. In this period I have found only three hookworm cases. I have observed during this same period about five hundred amebic cases. All of these but three were among white people; most of them were in males. I have observed one case of myiasis; I have observed two cases of pellagra. In one of these pellagrins I was permitted to make microscopic and proctoscopic examination, and I found the *Entamœba histolytica*, the other has not permitted proctoscopic and microscopic examination. Professor Andre refers to skin manifestations of muco-membranous colitis. I reported six cases yesterday, and previously, last year, reported three cases. Professor Andre's cases, I judge from his own description, were amebic. I have observed associations between pellagra and parasitic infections (hookworm and ameba), and I have seen skin lesions in a number of chronic amebic cases. Bass finds good evidence that pellagra is of protozoan origin, in that the Wassermann test is positive.

If preventive medicine is worthy of our nation's effort, if prevention of hookworm is worthy a philanthropist's millions, may we in the delta and alluvial districts not share his and the nation's magnanimity in preventing a more serious and prevalent infection in the alluvial valley of the Mississippi.

Dr. C. C. Bass, New Orleans: I don't want the idea and theory advanced by Dr. Long's paper to go unchallenged and unquestioned. I believe that, answering the question of amebiasis it is only necessary to call on those who have examined large numbers of specimens, and large numbers of patients, for amebas. We should remember that the *Amœba coli* are non-pathogenic, do not damage the intestinal canal at all, and that they are far more numerous, and the dysentery amebas are far less numerous. In institutions the water supplies of which becomes infected with amebas, especially with *Amœba coli*, the majority of the patients are likely to be infected. Unless we examine at the same time a corresponding number, or a much larger number, or other individuals in the same institution or from the same source, the presence of amebas in the stools of pellagra patients in such institutions would not throw much light on the possible etiologic relation of amebiasis to pellagra.

With reference to the presence of hyperacidity of the feces noted by Dr. Long we must remember that in the presence of any lowered condition of vitality, such a condition as obtains for days, weeks and months before patients die of pellagra and actually has already obtained by the time the patients show any symptoms by which we can diagnose the disease, their vitality, their resistance to intestinal infection, bacterial or protozoan is very much lowered. This would increase the acidity due to bacterial growth.

We must remember also that one factor appears certain as a cause of pellagra, though there are more than one, probably several causative factors. I believe I can show, with some pictures I have, that exposure to sunlight is absolutely one of the factors in the production of the skin symptoms of pellagra. The skin lesions are usually minor and terminal symptoms of pellagra are seldom the important early symptoms of the disease.

In one instance an insane woman had a peculiar habit of keeping one hand in her bosom all the time, while the other one was exposed to the sunlight. The exposed hand developed pellagrous lesions; the other remained absolutely free. In another instance a woman wore a finger-ring on one finger on each hand. A short time after she had developed the disease she pulled the ring off from one finger and continued to expose herself to the sunlight for the benefit of her health, taking buggy rides in the sun. She continued to wear the other ring, until she was sick with a well-developed attack of pellagra. When first seen by me she had a perfectly clear, normal skin under the ring; the remainder of the hand presented a severe form of pellagrous skin lesion.

Dr. James W. Babcock, Columbia, S. C.: I think that we are all under a debt of much obligation to Dr. Long for his paper, and particularly for emphasizing once more the importance of the presence of amebiasis in pellagra, and furthermore for the observation of the deposit within the spinal foramina, thus giving another theory to explain the presence of the skin lesions.

I think most of us who have studied pellagra for any length of time are beginning to realize that we are dealing with a big problem. The trouble is that each one of us approaches the subject from too narrow a viewpoint. The dermatologist sees in the condition purely a dermatologic condition; the asylum man sees in it insanity, and so on; and each one approaches this big subject in too narrow a way. The observation of parasites in pellagra is an old one, established long ago in almost all the cases that were admitted to the Cairo (Egypt) asylum. Allen, of Charlotte, N. C., last fall demonstrated the almost constant association of amebiasis with cases of pellagra in his section of the country.

I have an associate who sees in pellagra merely an expression of the hookworm disease; and the positive denial by Dr. Stiles that he had ever seen this expression of the hookworm disease does not satisfy this friend of mine at all; it is probable that pellagra and ankylostomiasis will to him always be synonymous. Reference has been made to Dr. Bass' observation of the Wassermann reaction in pellagra. In connection therewith, I think it should not be forgotten that Dr. Howard Fox of New York has studied 30 cases of pellagra with the Noguchi modification and failed to establish the presence of the Wassermann reaction, so we have two observations one pointing to the presence of a parasite and the other denying it.

Sir Patrick Manson mentions the presence of intestinal parasites in a condition similar to pellagra and warns observers not to associate these conditions as of cause and effect. Manson in the fourth edition of his "Tropical Diseases" says: "The novice in tropical medicine will be greatly puzzled over these cases of beriberi. If he examines the blood of these patients, possibly in a proportion of them he will find *Filaria nocturna* or some other blood worm. Very likely he will then think that the cases are forms of filariasis, and he may construct theories to explain how the filaria produces the symptoms. If he examines the feces, in nearly all cases, he will find the ova of the *Ankylostomum duodenale*. On this evidence he may conclude that these are cases of ankylostomiasis. He had better, however, not commit himself to such a diagnosis until he has ascertained how it fares with the rest of the population as regards these parasites, for he will find that the ankylostomum and the filaria are quite as prevalent outside as inside the hospital and in the healthy as well as in the sick."

It is very important in the treatment of pellagra to remove these various parasites, but I think we shall find out in the end that the removal of the parasites does not *per se* cure the pellagra.

Dr. Seneca Egbert, Philadelphia: I would like to emphasize the point Dr. Price has cited about the matter of control. From our experience in Pennsylvania I believe it will pay any of the commonwealths in the south, or anywhere else for that matter, to have enacted a very strict and comprehensive health law, and then, if they can, get a commissioner that has nerve enough to enforce the act wisely and conscientiously, appointing under him county and other local health inspectors. I was very much interested in Dr. Freeman's talk on the work of the county or the farm inspector, for that seems to me an admirable way of carrying out what I was talking about this morning—the matter of popular education—and also to attain our object of improving public health.

We in Philadelphia are interested in this matter of pellagra because, I am told, we have had some cases of the disease in our city hospital, although I have not personally seen them. But you have typhoid fever in the south, as well, and if you can get rid of that at the same time that you are getting rid of your hookworm and your pellagra your gain will be so much the greater.

It seems to me that with the kind of work that is being done by the City of Richmond, and by Virginia, in sending out live, intelligent, up-to-date men who go out into the rural districts and show the people about these diseases and also show them how to rely on the talk of the local doctor, we have the popular education which is needed as a basis; and then with a proper set of health tracts for general distribution and with increasing work, it seems to me your problem down there in regard to the hookworm, pellagra and all of these troubles—typhoid not the least of them—is going to be, not easy of solution, but capable of solution within a shorter time than you or we, perhaps, anticipate.

Dr. John D. Long, Washington, D. C.: My paper may sound misleading as to my intent. The work is somewhat different from any work that has been done in pellagra before, and for that reason I wish to say that I do not mean to pretend or assume in any manner that the pellagra question is solved. I am simply giving the hypothesis on which I worked in Columbia and an outline of the studies that were carried out in accordance with a working hypothesis.

Dr. Charles W. Stiles, Washington, D. C.: I believe in a license system for the privy. Certain of the southern towns (Chapel Hill and Richmond) at present charge householders about $5 per year license for every privy. The town then furnishes the disinfectant and pails and does the cleaning, the expense for which is covered by the license fees. It seems to me that that is a very excellent system. We must come to the point of view that the privy, despite the fact that "privy" refers to "private"—is not a private institution but a public institution. I believe also in the compulsory privy law which is being introduced in certain southern localities; but there is one factor in the south which we must not overlook, and that is that after we have the sanitary privy introduced we have an element in the male negro population which is going to be difficult to control. The white women now are using the privies when they are present; it will not be a difficult proposition to get the white men to use them; many of the negro women are using them; but it is going to be a very difficult task to teach the negro man to use them. I do not personally believe that there is any way to do this except by compulsion. Eventually we shall have to come to the standpoint in the southern states that an insanitary act means a service on the chain-gang; and eventually, I think, the chain gang will be the school of cleanliness for the male negro.

Dr. Allen W. Freeman, Richmond, Va.: We have solved an exceedingly distressing condition in Richmond, Va., as regards the privies. We had three years ago some 5,000 open privies, a great many of which were never cleaned at all; they were mostly in territory which had only recently been annexed to the city. Dr. Levy, the health officer, with his customary energy, had an ordinance passed requiring every privy in the city to be rebuilt in accordance with standard specifications which were drawn up and printed. Within six months some 5,000 privies were built or remodeled. They are cleaned regularly by a city officer. The cost of cleaning is a charge on the property and is collected just like any other tax. I am glad to say that the reduction in typhoid following this procedure was immediate. This reduction did not follow an enormous amount of work on the milk supply, on other foods and on the individual cases to secure the disinfection of infectious material at the bedside. The typhoid death-rate, which had never been below 44 per hundred thousand per annum, dropped last year to 24; and we hope to see it go still lower.

CERTAIN LEGAL ASPECTS OF DOMESTIC QUARANTINE*

HENRY BIXBY HEMENWAY, A.M., M.D.
EVANSTON, ILL.

The word "quarantine" was originally used to designate the forty days of Lent. Then it was applied in the English law to the forty days after the death of her husband, during which a widow had the privilege of remaining in her husband's mansion house, and during which time her dower was to be assigned. Next we find the term employed with reference to the forty days during which a vessel might be detained without intercourse with the shore, after arrival from an infected port. After it was learned that forty days' isolation was not invariably necessary, the original signification was dropped, and the word came to refer only to the isolation of the vessel. The same idea, and the same methods, applied to protection at a land frontier; and later to the isolation of persons, or places contaminated with infectious disease. It is interesting here to note that syphilis was a subject of land quarantine in Europe during the earlier years.

The present domestic quarantine is no more anomalous as to original signification, than it is as to either law or science. We know well that in the case of yellow fever, for example, it is far less necessary to prevent intercourse between the patient and healthy individuals, than it is to exterminate the stegomyia mosquitoes. A typhoid patient is not properly isolated if his discharges are thrown into the public sewage system before disinfection. The complete disinfection of these discharges must be an integral part of such quarantine, yet that fact is not generally realized by the citizens of this country. As to the legal side, we have made practically no advance in the last hundred years. Neither the rights nor restrictions of either state or individual, are much more clearly recognized to-day than they were when this nation was born. Just as in industrial pursuits, to preserve the same general line of action, we must alter our methods to conform to recent scientific advances, so in law we must alter our statutes and institutions, to conform to the decisions and discoveries of a progressive people. Fundamental law must be flexible, and change in form according to conditions. Is it not time that our archaic practice as to quarantine should be critically examined and revised?

The first step from absolute monarchy is the establishment of institutions. Institutions may be safeguarded by constitutions. Though ours is a constitutional government, there are certain institutions which have survived which are more dictatorial than constitutional, and quarantine is one of these. It overrides all constitutional rights. Though we are supposed to have guaranteed to us the right of liberty, any person may be imprisoned by a health department, without a previous trial, and without even having a formal complaint lodged against him. Is a retail merchant a criminal simply because a patient suffering with a mild form of smallpox happens to come into his store to make a purchase? Yet such a dealer may have his store closed, and be himself imprisoned, and he is practically without redress.

It is well recognized that the greatest liberty for the individual, as well as the greatest safety for the nation, is to be found in the observation of constitutional provisions. Wherever two courses are open it is our duty therefore to take the constitutional route. It is sometimes necessary, however, to suspend constitutional protection. Thus when the spirit of anarchy settles on a community, and a mob rules a city, the slower operations of ordinary law are unable to cope with the danger, and martial law must be declared. So too, a man's house is his castle, and the stranger may not enter without permission; neither must he take therefrom aught which is not his own; but when the house catches fire, no portion is so private that those who are fighting the fire are restrained thereby. It is contrary to both constitutional and statutory law to kill a human being; but "self-preservation is the first law of nature," and it is not deemed criminal if the killing be in self-defense, or, as in the case of a policeman in the line of duty. Self-preservation on the part of the community may demand the imprisonment, either at home or elsewhere, of an individual afflicted with, or exposed to, an infectious disease. If the ordinary liabilities were more clearly defined in the statutes, and the duties of health officials were thus definitely prescribed, much possible opposition would thus be removed, and even in those occasional extraordinary emergencies when it is necessary for the health officer to take martial command, he would have more of the confidence of the citizens, and more active support. The present system is unconstitutional, un-American and despotic in many states. Whether the powers are used for good or bad, whether as a help to the community, or a means of oppression, depends entirely on the individual officer. It is true that the power is seldom abused, but we must remember the possibility. During the old Tweed régime in New York City we are told that the health department was systematically used as a tool for collecting blackmail.[1]

There is another form of abuse of sanitary authority which is more or less common. It forms an argument against boards of health, as compared with health commissioners; and it is an evidence that health officials should not be engaged in private practice. Here is an illustration: A widow in Clark County, Illinois, sold milk in a neighboring village. Her son came home from Brazil, Indiana, sick with typhoid fever. The mother nursed him, still continuing in the milk business. The local board of health consisted of three physicians, unpaid. One of these was the attendant on the typhoid patient. Knowing that the widow was dependent on her business for support, he was reluctant about forbidding her to sell the milk. The other members of the board hesitated to act, lest their motives might be misunderstood, and jealousy charged. After some thirty cases of typhoid had occurred on her route, the sale of milk was stopped, and no further cases occurred.

It is true that we have at present a check on the abuse of the power now possessed by health officials, in the form of court supervision, but that check may very easily prove a source of annoyance or oppression to the health departments, and the ends for which they are created be thereby defeated. For example: Suppose that the members of a household are quarantined for malaria. Every sanitarian knows that in the presence of the anopheles such a family is a source of danger to the community, and the individuals should be restricted as to liberty. It would not be difficult, however, in most communities to find physicians who have the respect and confidence of the citizens, and who would deny in court the relationship of mosquitoes to the disease, and who would assert that malaria is not infectious like yellow fever, but that it is due to some indefinite miasm which is present in certain localities. Under such conditions it would not be strange if a judge should decide that the disease is not infectious, and he might even render a judgment for damages against the health officer. In the absence of statutory provisions to the contrary, the opinion of one physician is as good in law as that of another, and a health officer is only a physician under such conditions.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Autobiography of Andrew D. White.

The three great objects of government are: The maintenance of national existence; the maintenance of right or justice; and the public welfare.[2] Health departments have to do with each of these objects. Their powers are of the nature technically called police powers. While the Federal government may exercise certain of the functions of health administration in the United States, *authority* of action rests in the individual states. Certain powers may be delegated by the states to the municipalities. These delegated powers are always subordinate to state action. Thus, among the powers of cities and villages granted in the statutes of Illinois we find:[3] "Sixty-seventh.—To appoint a board of health, and prescribe its duties;" and "Seventy-eighth.—To do all acts, make all regulations, which may be necessary or expedient for the promotion of health, or the suppression of disease." Acting under these provisions the City of Chicago passed an ordinance making vaccination obligatory as a requisite for attending the public schools. The Supreme Court, however, in Jenkins *vs.* Board of Education,[4] held that the legislature of the state had not made such a requirement, and that it had not delegated the power to do so to the city.

In order more perfectly to control the collection of manure in the City of Chicago, an ordinance was passed and a contract made, after advertising for bids. One Landberg, who had made a business of collecting and selling stable manure, was thereby thrown out of his occupation. He objected, and the Supreme Court found the ordinance unconstitutional, on the ground that it created a monopoly, and interfered with legitimate business. The city may regulate such occupation, by license or otherwise, but it may not, without specific power granted by the legislature, create a monopoly, or destroy a private calling.[5]

McGehee[6] holds differently, stating: "The property interests in the noxious materials must be subordinated to the general good." He refers to California Reduction Co. *vs.* Sanitary Red. Works, 199 U. S., 306, and Gardner *vs.* Michigan, 199 U. S., 325.

In these cases the matter of monopoly was distinctly considered, as well as the interference with private business. Both of these cases were mentioned in the brief of the appellees in the Landberg case. Since these decisions were from the highest court in the land, it seems strange that in differing from the Federal court the Illinois court did not specially mention these decisions in its opinion. It is the contention of the Chicago Department of Health that the present method does injure the community, and that the method proposed in the ordinance was necessary to safeguard the interests of the citizens.

The general rule governing such matters is thus stated by Freund.[7]

> Under the principle of local self-government local authorities cannot be vested with powers necessarily exceeding their territorial jurisdiction; those matters therefore which equally affect the people of the state at large, and cannot be confined locally, must be reserved to the state legislature. Moreover, the inauguration of a novel policy in matters of safety and health, the prohibition of articles of consumption possibly but not undoubtedly injurious to health, the establishment of monopolies, the restriction of the right to pursue established avocations, may under circumstances be conceded to the legislature of the state, but cannot be introduced by local authorities under mere general grants of power.

Such a limitation of municipal power is reasonable. If left to the individual municipalities, confusion, and lack of protection is likely to arise, and local feeling may lead sometimes to excess of reasonable action. Thus adjoining municipalities may establish very different regulations as to quarantine. It is necessary, therefore, that there be a general supervision, and coordination.

In spite of the delegation of powers to cities and villages in Illinois, as cited above, we find that as amended in 1907 the Revised Statutes,[8] say of the State Board of Health that it "shall have supreme authority in matters of quarantine, and may declare and enforce quarantine when none exists, and may modify or relax quarantine when it has been established." Such a provision would be all right if it were made more definite, but there is nothing in the statutes making it requisite on any one to report infectious diseases to any one, specifying what diseases are to be quarantined, or defining in the least how, or to what degree such quarantine is to be exercised. It puts into the hands of the executive of the board almost unlimited power. Some time ago in a dairy district supplying Chicago with milk, families were quarantined for scarlet fever. A representative of the state board appeared and abolished the quarantine. If the law is constitutional, he had the undoubted legal right to do so autocratically. There was no appeal.

It is possible that such a law as that just mentioned might be declared by the court unconstitutional, for the reason that it gives to a man, or body of men, an arbitrary power, without limitation, and violates the provisions of the fifth and fourteenth amendments to the Federal Constitution. Health boards, and officers, have only executive power. They must not act in a legislative capacity. There is nothing in the statutes of the State of Illinois which limits quarantine of human beings to infectious, or contagious diseases. Though animals afflicted with contagious diseases are especially mentioned in the statutes, and provision is made against the spread of hog cholera, glanders, and cattle fever, so far as the state statutes are concerned human beings are permitted to communicate their diseases to others with impunity. On the other hand, there is nothing in the statutes which would prevent the state board of health, through its executive officer, from quarantining a man afflicted with any disease, nephritis for example, though the common law practice might prevent such action. Still court action is not rapid, and a corrupt politician might thus gain the temporary seclusion of an opponent.

---

[2] Freund: The Police Power, Sec. 4.
[3] Chapter 24, Art. V, and Section 62.
[4] 234 Ill. 422.
[5] Landberg vs. City of Chicago, 237 Ill. 112.
[6] Due Process of Law, p. 338.
[7] Police Power, Sec. 142.
[8] Chapter 126a, Sec. 2.

As set forth by Prof. Goodnow[9] there are three ways possible by which a nuisance may be determined; by the common law, by legislation, and perhaps by executive action when so authorized by legislative enactment. In common law, the courts are supreme, and boards of health have no power to enlarge common law nuisances. Smallpox is a common law nuisance, but malaria is not. As to the right of legislatures to enact such laws, there is no question. The restrictions on boards of health, or health officers, are not so generally recognized by sanitarians. In the most excellent decision of Pott *vs.* Breen,[10] the Supreme Court of Illinois said of the State Board of Health:

> It had and could have no legislative power. Its duties were purely ministerial, and the provision of the statute authorizing the board to make such rules and regulations as it should from time to time deem necessary for the preservation or improvement of public health cannot be held to confer that broad discretionary power contended for.

And:

> We are of the opinion that the powers of the board are limited to the proper enforcement of the statutes, or provisions thereof, having reference to emergencies requiring action on the part of the agencies of government to preserve the public health and prevent the spread of contagious or infectious diseases.

And again:

> Its duty to recommend legislation is repeated more than once in the act in connection with specifications of the powers and duties of the board.

The Supreme Court of Wisconsin gave a similar opinion in State *vs.* Burge.[11]

The Minnesota Supreme Court, in State *vs.* Young,[12] said:

> It is a principle not questioned that, except where authorized by the constitution as in respect to municipalities, the legislature cannot delegate legislative power—cannot confer on any body or person the power to determine what shall be law. The legislature only must determine this.

So we find in Dowling *vs.* Insurance Company[13] that it was an unconstitutional act when the legislature attempted to leave to the insurance commissioner the decision as to what form of a policy must be used. So too in Schaezlein *vs.* Cabaniss[14] it was illegal to leave to an executive officer the power to determine the particular form of appliance which should be used in factories to limit the dangers therein, and making it compulsory on the owners to comply with his orders.

Freund summarizes:[15]

> It cannot be left to an administrative officer to determine conclusively the existence of a danger, and the choice of measures to be taken against it, since that would involve an unconstitutional delegation of legislative power.

The fifth amendment to the Federal Constitution provides that no person shall "be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation." The fourteenth amendment says in Section 1: "No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law."

What is "due process of law?" Pomeroy says:[16]

> Due process of law implies primarily that regular course of judicial proceeding to which our fathers were accustomed at the time the Constitution was framed; and, secondly, and in a subordinate degree those more summary measures which are not strictly judicial but which had long been known in the English law and which were in familiar use when the Constitution was adopted. These summary measures generally, though not universally, form a part of that mass of regulations which many writers term "Police," and which relate to the preservation of public quiet, good order, health, and the like. . . . The summary measures which may form a part of due process of law are those which have been admitted from the very necessities of the case to protect society by abating nuisances, preserving health, warding off imminent danger, and the like, when the slower and more formal proceedings of the courts would be ineffectual.

In Murray's Lessee *vs.* The Hoboken Land Company,[17] Mr. Justice Curtis says:

> Though due process of law generally implies and includes actor, reus, judex, regular allegations, opportunity to answer, and a trial according to some settled judicial proceedings, yet this is not universally true. There may be, and we have seen that there are, cases under the law of England after Magna Charta, and as brought to this country and acted on here, in which process in its nature final, issues against the body, lands and goods of certain public officers without any such trial.

Due process is not necessarily judicial process.[18] The term, therefore, is now frequently applied to legislation, the underlying principles being that all persons interested may have an opportunity of being heard, and that the legislation does not represent arbitrary acts of government.[19]

An arbitrary statute is not due process.

> The just cause of legislation is the legitimate function of government. A statute not supported by such cause is not due process.[20]
>
> Practically the present system of judicial control over legislation has meant in many cases that unless all three departments of government are convinced of the justice and reasonableness of a radical change in social or economic policy it cannot become embodied in principles of law.[21]

A recognition of these principles, in the place of restricting the liberty of action for health officials, really increases their power. A man walking on uncertain ground must go carefully. When assured of its safty, he may step boldly and with speed. If the infectious nature of a disease is not legally established, no matter how sure the official may be, he is liable to be blocked by *habeas corpus* proceedings. He must then establish before the court the correctness of his diagnosis, the infectious nature of the malady, and that the measures taken are both reasonable and necessary. If he fails to satisfy the court on every point, the case is lost.

General rules and regulations have not the same standing as statutes.[22]

Such rules and regulations should only be issued in conformity with the clear and evident intent of the statutes. In Kirk *vs.* Wyman, *et al.*,[23] before the Supreme Court of South Carolina, we find this statement:

---

[9] Columbia Law Review, II, 203.
[10] 167 Ill., 67.
[11] 70 N. W. Rep. 347.
[12] 29 Minn. 551.
[13] 92 Wis. 63.
[14] 135 Cal. 466.
[15] Police Power, Sec. 34.
[16] Constitutional Law, Sec. 246.
[17] 18 Howard 272.
[18] Reetz vs. Michigan, 188 U. S., 507.
[19] Johnson, J., in Bank of Columbia *vs.* Okley, 4 Wheaton, 235; also People *vs.* Smith, 21 New York 595, and People *vs.* Adirondack R. Co. 160 New York 225, affirmed in 176 U. S. 335.
[20] Freund: Police Power, Sec. 20.
[21] Freund: Police Power, Sec. 21.
[22] Health Dept. *vs.* Knoll, 70 N. Y., 530, and also Reed *vs.* People, 1 Park Cr. 481.

> From this it follows that boards of health may not deprive any person of his property or his liberty unless the deprivation is made to appear, by due inquiry, to be reasonably necessary to the public health; and such inquiry must include notice to the person whose property or liberty is involved, and the opportunity to him to be heard, unless the emergency appears to be so great that such notice and hearing could be had only at the peril of public safety.

In this case the court held that the health department exceeded its authority in removing a case of anesthetic leprosy to a pest-house. Sanitarians would agree that typhoid and malarial fevers are infectious, dangerous to the community, and legitimate objects for some form of quarantine. These facts have been recognized for some time. However, for a board of health, or a commissioner of health so to declare, or rule, would in fact be an act of legislation exceeding his authority. It would be giving neither due notice, nor opportunity to be heard. The quarantine of such a case could hardly be justified on the ground of an emergency, for the general conditions have long been known, without any attempt on the part of the executive to secure proper legislation. The case of epidemic poliomyelitis might be different. The disease has generally been considered non-infectious, and therefore not a proper object for quarantine. The fact has only recently been demonstrated that it is infectious. The statutes should be sufficiently elastic in construction to permit health officials under such conditions to control and quarantine such a disease until such time as the legislature could reasonably be expected to act. If the health executive has placed the facts properly before the legislative body the responsibility rests on the law-makers, and the executive no longer has the right, in the absence of new facts, to declare such a disease quarantinable. So too, some well-known disease, which there seemed no reasonable probability would ever enter the particular community, might not have been mentioned in the statutes, and its appearance would constitute an emergency. In the case of Jenkins *vs.* Board of Education[24] it seems that the Commissioner of Health had issued orders declaring smallpox epidemic. The court held that he had exceeded his authority.

> There is nothing in the nature of an emergency in the occasional recurrence of the well-known disease of smallpox in a city like Chicago, which may not be provided for by general rules and regulations prescribed by the legislative authority of the city.

It must be recognized that in all these litigations the health department runs the risk of defeat, and so of loss of prestige; and that even when the final decision is on the side of the health service, adverse decisions in the lower courts involve loss of time as well as expense.

The statutes of the states are generally silent on the authority of diagnosis, and in the cases which have come to court there is some difference of opinion. An infectious disease is a nuisance. In Kenedy *vs.* The Board of Health,[25] it was said:

> The determination that a thing is a nuisance is final under the Pennsylvania statutes, and in a suit to collect expenses or abate the nuisance the defendants could not offer evidence to show that there was no nuisance.

In Brown *vs.* Purdy,[26] as to a question of the diagnosis by the health officer, it was held:

> If there was any case for his judgment, or any fact or appearance or symptom as to which a question of smallpox or not could arise, his determination was final as to the legality or propriety of removal.

On the other hand, in Miller *vs.* Horton,[27] a board of health was held liable for the killing of a horse, at the order of the commissioner of contagious diseases of animals, who had decided that the horse had glanders. His diagnosis was disputed in court by unofficial testimony, and the court took on itself the responsibility of deciding that the horse did not have glanders. If the responsibility of diagnosis is not placed on the health officer, it must be remembered that the legal diagnosis must be made by the court, which is not supposed to have a medical education.

It will be noticed that in Brown *vs.* Purdy there is another question, namely, the authority of the health officer to remove a patient afflicted with an infectious disease. In Maine a police officer and the city physician, acting under the direction of the mayor of Bangor, after seeking a more peaceable entrance, broke into a house, and took a child sick with smallpox out of its mother's arms, to a hospital. Action for trespass was dismissed, because the statute permitted health officers of a town in which a person was affected with a disease dangerous to the public health to remove such a person to a separate house; but the court called attention then to the fact that such power must be clearly given in the statutes.[28]

In an early case in Maryland,[29] the court held that the health officer must send a patient to the hospital if in his opinion such a course were necessary, and it further held that the health officer alone could decide how much it was necessary to do, and the captain of the boat on which the smallpox had been found must pay the bill. It is doubtful if a court to-day would go so far. In State *vs.* City of New Orleans,[30] the legislative power of the state to decide where smallpox patients were to be treated, was upheld. As opposed to the authority of the health officer to remove a patient against his will, in Boom *vs.* City of Utica,[31] the court said: "A person sick of an infectious or contagious disease in his own house, or in suitable apartments at a public hotel, or boardinghouse" is not a nuisance.

In Kirk *vs.* Wyman,[32] the court further uses this expression:

> Inasmuch as it is the province of the legislative branch to determine what laws and regulations are necessary to the public health, statutes and regulations made and measures taken under such statutes and intended and adopted to that end are not subject to judicial review; but the courts must determine whether there is any real relation between the preservation of the public health and the legislative enactment, or the regulations and proceedings of boards of health under authority of the statute.

There is an old adage: "In time of peace prepare for war." If we wait for an epidemic before the due process of law, we may find our hands occupied with the preliminary preparations, when we should be engaged on the firing line. That has been the experience in the beginning of most great epidemics. Due process includes the argument of the defense. Education is a portion of that due process. The education is not complete until a decision is reached. The decision may be in the legislature. If it is not there, it is likely that it will be in a court. For the benefit of each side the decision should be reached when time is not an important element. If the conclusions are definitely stated in legislative enactment, the fight in the epidemic will not be along the whole line, but in a limited section. On the other hand, in the absence of such definite statutory enactments, long usage may give a health officer a confidence which is unwarranted, and he may suddenly wake up, as the result of a court decision, to a realization of the fact that his method is illegal. Lieber[33] calls attention to the fact that institutions, though not viciously conceived, may become injurious. They may become hollow and like the empty boxes in an ill-managed house, become catch-alls for rubbish, and thus nuisances. McGehee[34] advises that, when in doubt as to authority, health officials have the matter determined in advance by the courts, for self-protection.[35] It matters not how desirable an object may be of attainment, if the method used is even slightly illegal, it should be abandoned, and a more just way found. In Potts *vs.* Breen,[36] the court admitted the advisability of vaccination, and pointed out the legal method of its attainment. In Boyd *vs.* United States,[37] Mr. Justice Bradley says:

---

[23] 65 S. E. R. 387.
[24] 234 Ill. 427.
[25] 2 Pa. St. 366.
[26] 8 N. Y. St. Rep. 143.
[27] 152 Mass. 540.
[28] Haverty *vs.* Bass, 66 Me. 71.
[29] Harrison *vs.* Mayor of Baltimore, 1 Gill 264.
[30] 27 La. 521.
[31] 2 Barb. 104.
[32] 65 S. E. R. 387.

> Illegitimate and unconstitutional practices get their first footing in that way, namely, by silent approaches and slight deviations from legal modes of procedure.

A person who knowingly and willfully exposes another to infection is in fact a criminal and he is also liable for civil damages. Intentional wrongdoing is not necessary; all that is necessary to be shown is that due precautions have not been used.[38] To-day, many cases of infectious disease are kept hidden, through fear of placards, or of quarantine, or of loss of trade. In many mild cases no physician is employed for these reasons, and because the persons involved do not recognize their responsibility to the community. In this way not only is the danger to the community increased, but very often valuable time is lost, as in diphtheria, and the life of the patient is sacrificed by the delay. A statutory enactment is educational as well. The parent is no longer able to quote the conflicting theories of physicians, of whose relative authority and competence he is incompetent to judge.

Without considering the legal responsibility of the community to care for those quarantined; or the duty of the health service to pay for articles seized, or destroyed; or the liability of a community to those who innocently contract an infectious disease through the inefficiency of a health department; or the desirability of an enactment making school inspections obligatory; it is suggested that much of our present confusion, and possible inefficiency, will be relieved by securing certain statutory enactments.

First: The statutes should definitely specify certain diseases as infectious, and require that they be reported to proper officials.

Second: The hiding, concealing, or neglecting to report such diseases, or a suspicion of their presence, should be made a misdemeanor, punishable by fine or imprisonment.

Third: The knowingly or wilfully exposing a person to infection, through neglect of the principles of quarantine, should be specifically made a misdemeanor, and punishable by fine or imprisonment.

Fourth: The statutes should make it obligatory on health officials to maintain quarantine, and the minimum requirements of such quarantine should be stated. It must be recognized that the problems of a thinly settled community are very different from those of the densely populated cities, and power should be given to local authorities to make more stringent regulations in the form of ordinances. In such statutes it must be remembered that the essentials of efficient quarantine differ according to the character of the diseases.

Fifth: The legal status of disease carriers, especially typhoid and diphtheria, should be definitely stated. They should be obliged to report regularly to the local health officer (though not for treatment), and should by law be restricted from engaging in certain occupations, such as around dairies, or restaurants, or other places where they would be likely to spread the disease. No such person should be given a clear bill of health, until after examination by the legal guardian of the public health he shall be found free from evidence of disease.

Sixth: The diagnosis of the health official should be considered final, subject only to an appeal to his superior. In a recent case in California, in one of the lower courts, physicians were permitted to testify to fact, not expert opinion, in the diagnosis of disease. It was recognized that they used their expert training to make the diagnosis, but having made it, the court accepted it as fact, not opinion. There is no reason why a man should not testify that a disease is typhoid, more than that he should not testify that a certain animal is a horse. In the absence of such a declaration on the part of the legislature, the diagnosis of a competent health officer may be off-set in the courts by the testimony of an irresponsible private physician. Mistakes of diagnosis may occur, and private individuals be injured thereby, but the danger to the community will justify such a provision. *Salus populi est suprema lex.*

Seventh: In the case of an infectious disease it should be obligatory on the local health officer to give to the persons responsible for the care of the patient printed instructions, or orders, regarding the case, including the care of discharges from the patient, and violations of such orders should be punishable. Such instructions should not be left to the attending physician, unless he be official.

Eighth: Release from quarantine should be only on the signed permit of the official. School boards should not be permitted to accept such certificates from the attending physicians, unless they be official.

Ninth: Health officers should be obliged by the statute to keep as complete a record as possible of the circumstances of the infection, and trace, if possible, the source of infection, and the means of the communication. For legal, as well as scientific reasons, such a record should show the result of bacteriologic or blood examinations, and whether such tests were made officially, or by private practitioners.

---

[33] Civil Liberty, Chap. 26.

[34] Due Process of Law, p. 374.

[35] People *vs.* Board of Health, 140 N. Y., 1.

[36] 167 Ill. 67.

[37] 116 U. S. 616-635.

[38] Helland *vs.* Bridenstine, 104 Pac. R. 626, a physician was assessed damages for communicating gonorrhea by the use of unclean instruments. Supreme Court of Washington sustained. A railroad ticket agent worked while suffering with smallpox. Passengers contracted the disease from him, and were awarded damages against the company (Court of Civil Appeals of Texas, approved M. K. & T. Ry. Co. *vs.* Raney, 99 S. W. Rep. 589). Damages awarded against a city for typhoid fever from an infected public water supply (Milnes *vs.* Huddersfield, L. R. 10 Q. B. Div. 124). According to The Engineering News, April 28, 1910, p. 906, the Civil Court, London Assizes, recently awarded damages to the amount of $2,430 against a milk dealer for typhoid fever contracted by a user of the infected milk. The principles are the same as those holding railway companies specially liable for injury to stock when the company neglects fences. Also see City of Pekin *vs.* McMahon, 154 Ill. 141, and the sheep case of Herrick *vs.* Gary, 65 Ill. 101.

Tenth: The statutes should give to the health officials authority to remove a person sick with an infectious disease to a hospital, or other suitable place for treatment and isolation. Such removal should be made discretionary, not obligatory.

Lastly, provision should be made for emergencies, and health officers should have certain liberty of action in the presence of danger, which is not provided against in the statutes.

701 Davis Street.

ABSTRACT OF DISCUSSION

Dr. John H. White, New Orleans: There was a time when we were compelled to resort to regulations in health matters, rather than legislation, because of the very scanty knowledge we had of the methods by which the various diseases were diffused in our communities. Fortunately that time is passing. All legislation must be carefully framed so as not to bring the health officer up against a stone wall. There must be some loophole left for him to use discretion. The state from which I come practically entrusts its state board of health with the power to legislate—a power which is absolutely unconstitutional, and which will be thrown down any time that anybody chooses to take it into the supreme court, and leave the boards of health helpless to defend themselves, even though they have been doing exactly the right thing.

Dr. Hemenway's remark about the confidence that the health officer will have when he is backed by law and not by regulation appealed to me very strongly. He can go forward then, because his backing is in line with the law of the land. I have had some experience of my own; by depriving men of their liberty—imprisoning them in box-cars to keep them from disseminating yellow fever—with absolutely no law or regulation behind me. I have run the risk of being deprived of my own liberty; and I have done it so much that had I not passed the statute of limitation on this matter I would be rather afraid to live in the state now.

The health officer, in any community which is able to pay a health officer, should under no circumstances follow a private practice. No matter how honest a man may be, he will have an unconscious leaning, if nothing more, toward his own patients; he will feel averse to getting them into trouble. But in a country village that is utterly unable to pay the health officer more than $100 or $200 a year, the officer is obliged to resort to the practice of medicine, and the village must do the best it can.

The one thing that stood out as one of the most salient points to me, however, was this matter of the insufficient authority of the health officers and others, evidenced in our own work in immigration service, to make a diagnosis and to have it legally sustained. I have had the courts take away a case of trachoma on the evidence of men who said it was not trachoma because there was no law to say that the decision of the medical officer in that case was final. The plague was announced in the city of San Francisco; a judge of the United States bench declared from the bench that he had had evidence submitted to him sufficient to justify him in the assertion that there was no plague in the city of San Francisco and offered to put Kinyoun in jail for saying that there was plague in San Francisco. We can have no stronger evidence than that of the necessity of having law back of the health officer in every particular in which law can be substituted for regulation.

I know of many instances in which the law against concealment of disease by physician or patient prevented disaster in the endeavor to wipe out disease. Without the ability to force the unwilling to tell the truth it is almost impossible to wipe out an epidemic in a community. With that ability, the health officer's hands are held up mightily. Such laws as Dr. Hemenway advocates, adroitly framed, leaving as much discretion to the health officer as is consistent with the constitution and enacted in every state in the Union, would double the capacity of the health authorities for the extirpation of disease.

Dr. W. A. Evans, Chicago: If Dr. Hemenway will read the *Engineering News* for May he will find reference to a civil suit for damages when the act committed was selling milk, which spread typhoid fever. Health officers do not know enough law, and courts take peculiar views on health questions. The Jenkins and Landberg cases are in court. Each of these was decided on the facts and in neither were the facts before the court, or rather each was an expert opinion on the facts and neither witnesses as to the facts nor expert witnesses had been heard. All health department work is based on police power. No health case has had its day in court until the facts have been heard.

Dr. W. F. Snow, Sacramento, Cal.: Vaccination laws have been mentioned during this discussion. I received this morning a letter which states that the vaccination case in California was decided in favor of the State Board of Health. The district courts had decided that our compulsory law was unconstitutional on account of class legislation and that the State Board had no authority in the public schools—the decision as to when vaccination was necessary resting solely with school trustees. The appellate court has just reversed this decision of the lower court and declared the law to be constitutional. The state board now intends to proceed with its enforcement.

Dr. Henry B. Hemenway, Evanston, Ill.: The courts have certain methods of procedure which may hardly be gotten around; and the supreme court considers the questions of law, rather than the questions of fact.

VARIATION OF DOSAGE DEPENDENT ON THE METHOD OF ADMINISTRATION *

ROBERT A. HATCHER, M.D.
Professor of Pharmacology, Cornell University; Member of the Council on Pharmacy and Chemistry of the American Medical Association
NEW YORK

This paper is merely a preliminary report intended to call attention to the necessity for the systematic investigation of the rate of absorption of different drugs after different modes of administration and the ratio of absorption to excretion and destruction, and also to one of the methods which may be employed in investigating the subject. Different drugs will require different methods of procedure, and in all cases various species of animals must be employed before we can transfer the results to man.

It is well known that the toxicity of certain drugs varies with the mode of administration, but the exact cause of this variation has not been studied sufficiently in many cases, though it is obvious that the therapeutic dose must usually vary in much the same way that the toxicity does. A large number of experiments will be required to determine the comparative activity of the various potent drugs administered in different ways, but until such determinations have been made with far greater accuracy than has been done with most of them, prescribing must lack that degree of precision which we are coming to demand in every branch of medicine.

It has been said that dosage is the most vulnerable part of therapeutics, yet the one on which the healing art mainly depends, and since the correct dosage depends on the rate of absorption compared to that of excretion and destruction, it is obvious that we should have a fairly accurate knowledge of these processes, but reference to the literature will show that our knowledge of the subject is fragmentary in the extreme.

---

* From the Laboratory of Pharmacology of Cornell University Medical College. Presented at the International Congress of Medicine and Hygiene, Buenos Ayres, May 25, 1910. Certain facts presented in this paper were stated in a paper read at the meeting of the American Society for Pharmacology and Experimental Therapeutics, Boston, Dec. 29-30, 1909. These will be presented in greater detail in subsequent papers from this laboratory.

Thus, many of the leading text-books on pharmacology are silent regarding the rate of absorption and excretion of such important drugs as digitalis, and the questions of the absorption, excretion and destruction of the various members of this group have been neglected almost completely by pharmacologists.

Maurel[1] has determined the fatal doses of numerous drugs for different animals by various modes of administration, but his experiments, with strophanthin at least, have little bearing on the therapeutic dose for man. Experiments made in this laboratory during the past three years show that the absorption of the different drugs belonging to the digitalis group from the alimentary canal of animals is very variable. The variability is extreme in the case of strophanthus and amorphous strophanthin as well as in that of crystalline ouabain, or the so-called crystalline strophanthin. The results obtained on animals are supported by observations made on man, and they tend to throw grave doubt on the value of many of the clinical observations made with strophanthus in the past, when the drug was administered orally.

Despite the want of systematic studies of these questions of absorption, excretion and destruction, there is an opinion, which is fairly widespread, that when one knows the oral dose of a drug one can compute the amounts suited for rectal and subcutaneous use by certain rules, but of course, no one denies that there are numerous exceptions to the rules given for the computations.

The following quotations, which might be multiplied almost indefinitely, illustrate what has just been said on this point:

> Sollmann, "Text-book of Pharmacology," 1906, 2nd. ed., p. 134, states that "the rectal dose may approach very closely to the subcutaneous, especially with very active poisons. The hypodermic dose is about one-third of the oral dose."
>
> Cushny, "Pharmacology and Therapeutics," 3rd. ed., 1903, p. 34, states: "*Hypodermic method.*—As a general rule about one-half of the ordinary amount is sufficient. *By rectum.*—The rate of absorption from the rectum as compared with that of the stomach and bowel is still a disputed point, and some physicians recommend that the dose be reduced to three-fourths, while others recommend one or one and a half times that given by the mouth."

The mere presence of a drug in the general circulation does not prove that the action is the same, quantitatively, irrespective of the way in which it was administered, but the physiologic action as a rule must be very nearly proportional to the amount present in the circulation at any one time, or in a unit of time.

Those drugs which are absorbed from the alimentary canal but which are destroyed in the liver before they reach the general circulation might as well remain unabsorbed, so far as their systemic action is concerned, and in our experiments such absorption has been disregarded, but no appreciable destruction of crystalline ouabain or amorphous strophanthin occurs in the liver of the cat or dog in the course of a few hours after the oral administration.

While the degree of dilution has a marked influence on the toxicity of certain poisons, such as strychnin, by subcutaneous injection,[2] this must be regarded merely as a question of alteration of the ratio of absorption to excretion and destruction, for we have found that the slow intravenous injection of strychnin permits of the administration of several times as much as is fatal when the injection is made more rapidly.

We must suppose that the dilution of most drugs must be maximal after the oral administration, since the slow absorption from the stomach and intestine permits of the distribution throughout the body tissues. Mere dilution appears to play no important rôle in the action of the members of the digitalis group, particularly when these are very slowly injected, as in our experiments.

METHOD USED IN ESTIMATING ABSORPTION

We found that the absorption of a slight excess over the minimal fatal vein dose of crystalline ouabain, amorphous strophanthin, digitalis, strychnin and some other drugs into the general circulation was followed promptly by death, after typical symptoms, regardless of the way in which these drugs were administered, hence it remained merely to insure that the minimal fatal vein dose should enter the circulation. This was accomplished as follows: A measured amount of the drug to be examined was placed in the stomach, rectum or subcutaneous tissues, according to which structure was to be studied, and after the desired interval of time enough of the drug was injected intravenously to cause death. The fatal dose by intravenous injection being known, it was only necessary to subtract that required under the above conditions from the ordinary fatal dose by the vein, the difference being equal to that absorbed.

The following will illustrate the point: One part of crystalline ouabain injected into the femoral vein of the cat is fatal to ten millions of times its weight of animal, or, 0.1 mg. of crystalline ouabain is fatal to one kilogram of cat in this way. A cat received by the stomach 0.3 mg. ouabain per kilo of weight and after four hours it required 0.076 mg. per kilo to cause death. The difference between 0.1 mg. and 0.076 mg. being 0.024 mg., or 24 per cent. of the fatal dose by vein, it follows that the cat had absorbed an amount equal to 24 per cent. of the fatal vein dose, but only 8 per cent. of that administered by the stomach.[3] The correctness of the method of estimating absorption is attested by the results obtained by the intravenous injections of variable proportions of the fatal dose of different digitalis bodies, death always resulting when the sum of the fractions administered equaled one hundred per cent. of the fatal dose. Fifty per cent. of the fatal dose of amorphous strophanthin by subcutaneous injection and fifty per cent. of the fatal dose of crystalline ouabain by the vein were also found to be fatal at once. We must conclude, therefore, that death follows the absorption of the fatal vein dose of one of the digitalis bodies into the general circulation, regardless of the method of administration.

This statement requires some modification. Since a barely fatal dose of crystalline ouabain might be absorbed slowly and a part excreted before the last had been absorbed without death occurring, it is more accurate to say that the presence in the general circulation of an amount equal to the fatal vein dose, is fatal to the animal.

---

[1] Maurel's papers will be found in Compt. rend. Soc. de biol. during the past ten years.

[2] Meltzer, S. J.: Jour. Exper. Med., 1901, v, 645.

[3] The details of the method of injection are given in the Am. Jour. Pharm., 1910, lxxxi. The absorption of some of the digitalis bodies is estimated more conveniently by substituting crystalline ouabain for the drug under examination for the intravenous injection, since we have found that these are capable of replacing each other in the proportion of their activity when injected by the vein.

In a series of experiments extending over several years we were able to get extraordinary uniform results with several of the digitalis bodies with intravenous injections into cats. Quite recently we have found a much larger number of cases in which the animal was more tolerant than just stated, but we have rarely seen animals succumb to smaller doses than that indicated except in the case of very fat animals. The results with strychnin are quite uniform when the duration of the injection is the same.

TABLE 1

Absorption of Crystalline Ouabain From the Cat's Alimentary Canal

	Dose Mgs. Per Kg.	Doses Daily	Total Doses.	Per Cent. of Total Absorbed.	Per Cent. of Fatal Vein Dose Absorbed.
A	0.1	4	5	10	42
B	0.1	2	2	..	..
	0.05	4	14	7*	20
C	0.1	2	2	..	..
	0.05	4	14	9*	55
D	0.2	2	6	2.5	8
E .	0.2	2	2	.	.
	0.1	4	14	11*	69
F	0.4	2	2	5	41
G	0.4	..	1	.	.
	0.2	3	9	9*	69
H .	0.4	..	1	.	.
	0.2	3	6	8	52
I ..	0.5	..	2	5	48
J	0.6	.	1	.	.
	0.2	2	3	0	0
K . .	0.6	..	1	.	.
	0.3	2	7	0*	0
L .	0.6	..	1	.	.
	0.3	2	7	1*	7

* The percentage of absorption is computed for the amount administered during the last 36 hours only

often impossible because of the frequency with which emesis follows the absorption of less than the fatal dose.

Table 1 gives the absorption from the cat's alimentary canal where the administration extended over a number of days. The variability in the percentage of the fatal vein dose actually in the circulation, as shown in the last column, is of especial significance in view of the fact that strophanthus, (as well as crystalline ouabain) is used clinically in doses which would be immediately fatal if administered by the vein.

The death of cat "A" affords a striking example of the rapidity with which absorption may occur, just as "L" and "N" illustrate the opposite extreme. Fasting and alcohol certainly appear to favor absorption, and this is true perhaps of other mild irritants, though it did not follow the use of mustard, small doses of which were ineffective while larger doses caused emesis. It should be observed that the figures after the decimal points in the dose are multiples of the lethal vein dose; thus cat "A" had twice the lethal vein dose, while "M," "N" and "O" had eight times the lethal dose by vein.

The fall of blood pressure caused by large doses of hydrated chloral may have some influence on absorption, but this is variable and uncertain. The results with dogs are only approximately accurate, the dose by vein required to cause death being variable.

TABLE 2

Absorption of Crystalline Ouabain from the Cat's Alimentary Canal (After Single Doses)

	Dose Mgs. Per Kg.	Duration Hours.	Duration Minutes.	Per Cent. of Dose Absorbed.	Per Cent. of Fatal Vein Dose Absorbed.	
A	0.2	2	35	..	100	....
B	0.3	18	..	0	0	....
C	0.3	1	40	0	0	With mustard; emesis in 15 minutes.
D	0.3	3	40	5	15	With alcohol.
E	0.3	4	10	8	24	After fasting 42 hours.
F	0.3	6	10	0	0	With oil turpentine.
G	0.3	5	50	3	10	With oil turpentine.
H ...	0.3	19	10	6	18	After hydrated chloral.
I	0.3	2	10	10	30	After hydrated chloral.
J	0.5	6	30	0	0	....
K	0.5	18	55	3	15	After hydrated chloral.
L	0.5	18	..	0	0	....
M .	0.8	19	35	4	30	....
N . .	0.8	19	35	0	0	After hydrated chloral.
O.	0.8	5	..	5	10	After hydrated chloral.
Dogs						
A .	0.3	6	30	0	0	....
B	0.3	..	40	..	100	After fasting 36 hours.
C .	0.5	3	0	12	50	....
D ..	0.6	6	40	2	10	....

The question which presents itself naturally is why do we not determine the rate of absorption from the alimentary canal by the simple process of administering enough of the poison by the mouth to cause death? There are several objections to this apparently simple method in many cases. It has been found[4] that the rate of absorption of strophanthin from the alimentary canal of the cat and dog depends on the amount administered. Not only is a larger total amount of a very large dose absorbed than of a small dose, but a larger percentage of the larger dose is also absorbed. In fact, no absorption whatever appeared to follow moderately large doses in many cases, whereas death sometimes occurred promptly from large doses.

Another objection to the attempt to study the rate of absorption by the oral administration of the just fatal dose, depends on the fact that a very large number of experiments would be required to fix the just fatal dose by the mouth of such drugs as digitalis, and in fact it is

TABLE 3

Absorption of Strychnin from the Cat's Alimentary Canal

	Dose Mgs. Per Kg.	Duration Hrs.	Duration Min.	Per Cent of Dose Absorbed.	Per Cent of Fatal Vein Dose Absorbed.	
A .	0.35		28	.	100	Stomach full of meat.
B	0.5	1	20	40	100	After fasting
C	0.5	..	.	.	...	Death occurred 33 minutes after rectal dose
	0.25*	..	33	30	70	....
D	0.5	1	51	4	10	....
E	0.5	3	7	0	0	....
F	0.5	.	54	14	33	....
G	0.5*	1	28	30	70	....
H ...	0.33†	..	..	..	...	Equal to 1½ times fatal vein dose

* Rectum

† Subcut; animal survived.

Table 3 shows the amount of strychnin in the circulation after the expiration of the time indicated, rather than the actual amount absorbed, since excretion takes place rapidly, soon after its absorption, though it is stated that some days elapse before excretion is complete. Our experiments seem to indicate that the strychnin leaves the circulation very promptly, a part of it being fixed in the tissues probably, or it may be that some of the strychnin administered by the stomach escapes absorption into the circulation.

---

[4] Hatcher, R. A.: Am. Jour. Physiol., 1909, xxv, 303.

In the table, "E" is given as having absorbed no strychnin, since it required the full fatal dose by vein to cause death. But the animal had a typical convulsion before the beginning of the intravenous injection, hence we must infer that excretion was equal to the amount absorbed from the alimentary canal. It is of the utmost interest that "A" died after 0.35 mg. by the stomach while that organ was full of meat, whereas "H" survived almost exactly that dose administered subcutaneously. Absorption of strychnin from the rectum appears to be more rapid as a rule than from the stomach.

TABLE 4

Absorption of Digitalis from the Cat's Alimentary Canal

	Dose Mgs. Per Kg.	—Duration— Hours.	Minutes.	Per Cent. Total Absorbed.	Per Cent. Fatal Vein Dose Absorbed	
BY STOMACH						
A.	100	3	26	16	16	Infusion
B.	100	3	2	7	7	Infusion
C.	100	3	9	34	30	Tincture
BY RECTUM						
D.	100	2	12	8	10	Tincture.
E.	100	4	37	2	2	Infusion
F.	100	4	3	12	10	Infusion.

Table 4 shows the absorption of digitalis from the stomach and rectum. The limits of error are probably a little greater with digitalis than with crystalline ouabain. The fatal dose in the above table refers to the amount required by vein to kill at once, and is a little higher than the minimal lethal vein dose.

In this small series of experiments the absorption of digitalis from the rectum is decidedly less than from the stomach, but the number of experiments is entirely too limited to justify conclusions on this point. They certainly show the need of further studies in absorption of digitalis and these are now in progress in this laboratory. Different specimens of digitalis were used in the experiments tabulated, but in all cases the dose used was not far from the minimal lethal vein dose.

TABLE 5

Absorption of Amorphous Strophanthin from the Cat's Alimentary Canal

	Dose Mgs. Per Kg.	—Duration— Hours.	Minutes.	Per Cent Dose Absorbed.	Per Cent Fatal Vein Dose Absorbed
BY STOMACH					
A	0.2	4	17	35	40
B.	0.2	4	55	12	15
C	0.2	4	5	17	20
BY RECTUM					
D	0.2	4	1	15	17
E	0.2	3	10	20	23
F	0.2	4	26	0	0

Table 5 shows that the absorption of amorphous strophanthin is very irregular, varying from none from the rectum of "F" to 40 per cent. of the fatal vein dose in the case of "A," but even this series does not show as great irregularities in the absorption as we have found in previous experiments. The dose of amorphous strophanthin used in these experiments is but little above the minimal lethal vein dose.

SUMMARY

The absorption of many of the digitalis bodies and of strychnin from the alimentary canal of the cat into the general circulation is very variable. But strychnin may be absorbed at times from the full stomach quite as rapidly as from the subcutaneous tissues.

Alcohol and perhaps other mild irritants favor the absorption of crystalline ouabain from the alimentary tract.

There is no general ratio of absorption of drugs from the stomach, rectum and subcutaneous tissues, and we are in urgent need of accurate observations of the rate of absorption of different drugs after various modes of administration.

There is a particularly urgent need for the investigation of the various digitalis bodies.

I am indebted to Dr. J. G. Brody for the care and patience with which he has carried out many of the experiments tabulated.

414 East Twenty-sixth Street.

STUDY OF SOME CASES OF ACUTE OTITIS MEDIA, SEEN IN CONSULTATION*

HIRAM WOODS, M.D.
Professor Eye and Ear Diseases, University of Maryland
BALTIMORE

If the better class of general practitioners in Baltimore is typical of their associates in other cities, it is evident that appreciation of early ear troubles is keener than it was a few years ago. Physicians are learning that the welfare of the ear or, possibly, the issue of life and death, depends on the diagnostic acumen of the man who first sees the case. The lesson which specialists have been trying for so long to impress on general practitioners is being taken home at last.

During the past few years consultations regarding a possible otitic origin of systemic conditions have greatly increased. These consultations have developed a number of facts which, I have thought, might furnish a basis for profitable discourse; hence the presentation of so trite a subject as acute otitis media.

I. PRIMARY OTITIC INFECTION

The general belief in regard to otitis media, taught in text-books and unquestionably largely correct, is that the ear becomes involved as a sequel to infection elsewhere. Among these infections is that great waste-basket, grip. After a few days of fever, malaise, with no definite symptoms of anything, the patient, if a little child, puts the hand to the ear, thus calling attention to it, and examination reveals otitis media. Again, there is complaint of pain, followed in a few hours by discharge; or otorrhea is the first observed ear symptom. Diagnosis of grip, with secondary otitis media, is satisfactory to the physician, and, maybe, to the aurist, too. It was to me until the care of some medical friends in diagnosis taught me otherwise.

To justify the diagnosis of primary otitic infection we would have to find: first, systemic evidence of infection; second, objective evidence of ear disease; third, absence of all local or general disturbances capable of producing ear complications; fourth, relief of constitutional symptoms and restoration to health by treatment confined to ear drainage. Pain is such an ever-shadowing symptom of otitis as to be practically the only one of which the physician takes cognizance. But pain in a child, too young to tell about it, is easily overlooked. Another still more significant thing is that pain is by no means invariably present in otitis media. Hence, if primary otitic infection is a reality, if it is capable of producing systemic infection, it is our duty to urge on the internist the necessity of including the ear in a routine examination for the cause of such symptoms.

---

* Read before the American Otological Society at its Forty-third Annual Meeting, Washington, D. C., May 3 and 4, 1910.

The manner in which the infection reaches the ear without manifesting its presence elsewhere is interesting, and, possibly, not difficult of explanation. It is well known that infectious organisms of various kinds, virulent and innocent, stay in the nose and nasopharynx for a long time, producing no results. They could easily reach the tympanum and manifest themselves there. Again, it is conceivable that they could come through the circulation. The important clinical feature, however, is that this otitic infection does not always show itself in the orthodox order of exciting cause, pain, and other subjective symptoms before the discharge makes diagnosis certain. Without them, nothing but routine examination of the ear by a physician who has qualified himself to make it, can demonstrate the cause of general illness. If he appreciates the meaning of injection of malleus-handle vessels, redness of Shrapnell's membrane, or even knows that the ear can be primarily infected, and calls in a consultant, the diagnosis is easy. In a number of cases with such symptoms and objective evidence of otitis media, I have found slight impairment of hearing, lateralization by Weber's test, and have seen recovery follow incision of the membrane. In one case last year, that of a boy of 10, without pain, temperature of 104 F., and slight redness and bulging of the superoposterior angle of the membrane, a single drop of streptococcus pus was evacuated, followed after a day by discharge. Symptoms were dispelled by the incision.

II. DELAYED APPEARANCE OF OTITIS

Akin to primary otitic infection are the delayed ear complications of various diseases. I allude to otitis media, sequel of infectious diseases, but removed from the causative disease long enough to throw doubt on causative relation. Either there is latent tympanic infection after the acute disease, or a new ear infection. For instance, a child has measles and passes through the attack without ear symptoms. Two or three weeks later, without other symptoms, and when recovery is seemingly complete, otitis media develops. Such cases, I believe, are not particularly uncommon, after measles and grip. In a few which I have seen there was the typical order of pain, fever and otorrhea, unless the case was seen before perforation. In others, sudden return of fever was the only symptom, and otitis was found because the physician looked for it or had it looked for.

Latent infection of the middle ear shows itself, too, in another way: apparent recovery of acute otitis media, with later mastoid symptoms. I brought this subject before the Section on Laryngology and Otology of the American Medical Association, in 1901, and have seen several cases since. One will suffice. A man of 18, after exposure in riding on the front seat of an electric car, developed pain in the right ear, with temperature of 102. He was seen by his physician, who found nothing but fever and ear pain. The drumhead presented all the indications for incision, but operation was refused. Two days later the physician reported that otorrhea had appeared, with relief of pain and fall of temperature. Soon I learned that hearing for the watch was normal and the patient entirely recovered. He went along with his business for seven weeks, when he was seized while at his office, with severe earache. Mastoid symptoms developed rapidly, and on operation after twenty-four hours the antrum and cells were found necrotic and full of pus. The easiest explanation seems to be that infection went to the mastoid at the first illness; but why it was so long in causing symptoms, or why the patient was apparently well for seven weeks, with disease progressing in the mastoid, is not so easy to explain.

Such cases have one important bearing on every-day otology. I believe that we all see cases of deafness following infectious diseases, without history or gross evidence of inflammatory otitis. There is nothing in the patient's condition to account for it. Fork tests show that it is due to middle ear disease. Inference seems justifiable that the acute disease left otitic infection not sufficiently virulent to cause immediate symptoms, but capable of doing one of two things: slowly breaking down tissue through spread of infection, or keeping up a constant hyperemia, leading to exudate, and so bringing about sclerotic changes in the tympanum. Among the facts we should try to impress on general practitioners are the following: that these latent ear infections are frequent; that their ultimate results are uncertain; that the tympanum is in the natural path of danger, just as the lungs are; and that the patient should not be dismissed as well until adequate ear-examinations have been made. In a few cases brought me by physicians after measles, scarlet fever, grip and the like, I have found interference with Eustachian function, and definite fork evidence of middle-ear deafness. Men should know from us that this is the time to save hearing.

III. PROLONGED REMITTING FEVER: DIAGNOSIS

A feature which often puzzles not only the physician but his consultant, is the meaning of prolonged fever in a seemingly light case of otitis media. During or after an infectious disease, otitis media develops. Maybe the membrane is incised; again it is allowed to ulcerate. The patient recovers from the original trouble, and to all appearances, from the ear complication. Pain disappears, the discharge lessens or ceases, hearing improves. Yet fever continues. If it is due to the ear it is our duty to get complete drainage; if not, the physician wants to know. It is a question of diagnosis which may, on the one hand, involve mastoid operation, not for mastoiditis but for tympanic drainage, and at the same time we must be careful not to operate on a patient for ear sepsis when he has something else.

Brief notes of three cases are appended.

Case 1.—A man of 35 developed acute otitis media after rhinitis. Pus was found after membrane incision. Two days later, mastoid tenderness developed. Temperature for the first week is given in Figure 1. On the fourth day the patient was sent to the hospital, as mastoid operation was thought probable. Local symptoms were less pronounced the day after, and almost disappeared in another twenty-four hours. For the next three days the patient had a steady fever, without remissions. His physician, Dr. Charles W. Mitchell, was unable to determine its cause, if the ear and mastoid were excluded. Three factors in the case led me to exclude them: (1) steady improvement in local symptoms, and their total disappearance after a week; (2) character of the fever line; and (3) a leucocytosis of 4,000. Typhoid fever was thought of; but it was the sixteenth day before rose spots were found, and positive Widal was obtained only toward the close of the fourth week.

Case 2.—This shows how easily a specialist can overlook a concurrent lesion. A healthy, athletic man of 29, without previous illness, was attacked early Saturday morning with a chill and right earache. He fought it out alone all day, but on Sunday called in an aurist, who found a temperature of 104 F., with objective evidence of acute suppurative otitis media. For reasons I did not discover, he postponed incision until Monday afternoon when it was done at a hospital under chloroform. To Wednesday night temperature ranged about 102 without remission. Further operative procedures were then considered; but a consultation was asked by the family. I saw the case Thursday afternoon. That morning, six days after the initial chill, temperature had dropped to 97.5. I found the ear dry, and no evidence of mastoiditis. The outcome of the case was that the man was allowed to continue an uninterrupted recovery from an unrecognized, limited, right pneumonia.

Case 3.—Temperature chart of a third case (Fig. 2) is given by way of comparison. The patient was a girl, aged 12, who developed left acute otitis media after apparent recovery from uncomplicated measles. She had been kept in the house and for the most part in bed for the eight days before ear trouble was found. Her physician, Dr. Mitchell, found it in routine examination for relapse of fever. She had nothing directing special attention to the ear. When called in, I found definite left suppurative otitis, without perforation, while the drumhead of the right was congested. Leucocytosis was 16,060. After left myringotomy, which I did at once, temperature fell from 104 to 101.6, and stayed there two days. Then the right drumhead was incised, though there was no pain. For the next five days there was remitting fever. On the fifth the left mastoid was tender to pressure, but no pain otherwise. I asked Dr. Harry Friedenwald to see the case with me, and we decided that symptoms were not sufficiently urgent for mastoidectomy, and that the left drumhead, the one first incised, which had healed, should be incised a second time. After this, mastoid tenderness disappeared, and recovery, though slow, was uninterrupted.

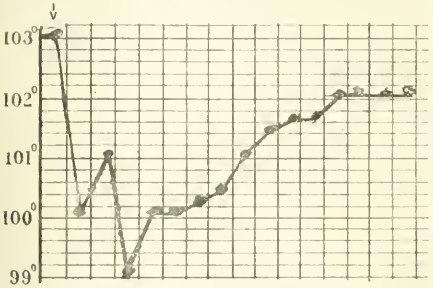


Fig. 1.—Temperature in otitis media with typhoid fever (Case 1) in first week. Arrow point indicates incision of drumhead.

The case illustrates (1) the delay which may ensue after disappearance of the causative disease before ear complications develop; (2) what I believe to be the characteristic of otitic temperature—in all essentials, that of a mild sepsis; and (3) the value of leucocyte count. When able, I have this count made in acute otitis media, and it rarely is below 15,000. Considerable observation of cases like these has led me to think that in the temperature line and leucocyte count we have pretty reliable guides regarding an otitic cause of systemic disturbances as distinguished from essential fevers. There is always the possibility of another lesion with the ear trouble.

There is another side to this matter. Sometimes we are compelled to do a mastoidectomy for drainage, though there are no symptoms of mastoiditis. Even when the process is painful on pressure, tympanic drainage is often enough. In deciding if mastoid drainage is needed I believe that the amount of the otorrhea is an important guide. There is nothing new about this, yet it is a guide often neglected. It is unnecessary to relate cases in which, without definite mastoid symptoms, operation has been done because of persistent fever, of septic type, and profuse purulency. Chills, sweating, extreme variations in temperature (105 and upward, to subnormal), profound exhaustion—the things which lead us to uncover the sinus—are absent. The cases drag themselves along for weeks, with about such a temperature line as given in Case 3, without pain, and copious with purulent discharge. When they come to operation, extensive disease is found in the mastoid walls. A question I should like to hear discussed is: What is the line of demarcation between the safety of tympanic, and necessity for mastoid, drainage? Is there anything, outside of time and profuse discharge to guide us?

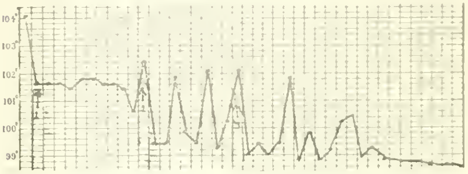


Fig. 2.—Temperature in double acute otitis media (Case 3) eight days after measles. First arrow point indicates incision of left membrane; second arrow point, incision of right membrane; third arrow point, second incision of left membrane.

IV. CONVULSIONS

I want, finally, to call attention to three cases of acute otitis media, which were new observations to me.

Case 4.—The first case is that of an infant, 5 months old, whom I saw in consultation with Dr. Thomas R. Brown. At the age of 3 months the baby had measles, which left in its wake enlarged cervical glands. The week before I saw her, she had a transient, general vesicular eruption which Dr. Brown diagnosed as chicken pox. Three days after the disappearance of the eruption, there was a convulsion, followed by stupor, lasting an hour or so. Rectal temperature was 103. Dr. Brown found a leucocytosis of 18,000 at his first visit. While he was in the house the child had a convulsion, with dilated pupils, rigidity and unconsciousness. Dr. Brown examined the ear, and found, he thought, redness and bulging of the supero-posterior angle of the membrane. I was called in at night. Temperature then was barely 100; the child was free from pain, took its bottle eagerly, and did not look sick. The right drumhead presented evidences of otitis media; but there was no bulging, and in view of the generally improved condition, I decided to do nothing till the next morning. At 8:15 a. m. I received a telephone message that the child was worse, had had two convulsions, and rectal temperature was 103. As soon as possible Dr. Brown and I reached the country home

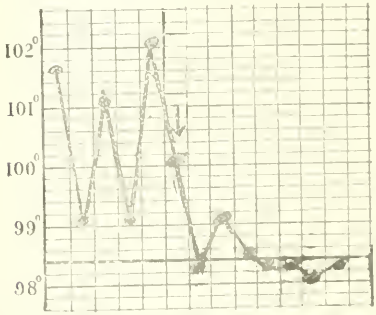


Fig. 3.—Temperature in otitis media with convulsions (Case 4). Arrow point indicates myringotomy [illegible].

of the patient's parents. The drumhead was now bulging in the supero-posterior angle, and leucocyte count was 24,000. Without anesthetic I incised the drumhead, continuing the incision into the canal wall. A very little pus was evacuated, and recovery was uneventful. At no time was there evidence of pain.

While this is my one observation of ear convulsions, I have known, as have all of us, of babies dying of supposed meningitis, with otorrhea toward the close. I can count a half dozen such cases in the families of friends, and learned of in conversation with physicians. The intimate connection between the tympanic and cranial cavities in infancy, through the squamo-petrosal suture, is probably sufficient explanation. The interesting fact, however, is that physicians are appreciating such possibilities.

V. REFERRED PAIN

The other two cases I have classified as "referred pain."

Case 5.—The patient was a nurse, aged 24, at the Union Protestant Infirmary, who came to me on January 25 last for diagnosis. Two nights before I saw her she was awakened by severe pain along the anterior border of the sternocleidomastoid muscle, at least two inches below the tip. The slightest pressure here over an area of an inch in circumference was painful. Temperature was normal and no hearing defect could be found. The drumhead presented a normal appearance. Leucocyte count was 8,000. The patient was put to bed and given first salicylate of sodium, and later acetylsalicylic acid (aspirin), with little effect. Morphin was needed to secure relief from the strictly localized pain. The only pain in the ear proper was produced by brushing the posterior wall of the canal with a cotton pencil or touching it with a probe. Hearing for the watch gradually diminished, and in four days was only on contact. A loud whisper could then be heard at two or three feet, and fork test, Weber's, was lateralized to the bad ear. I could find nothing by inspection, save, possibly, increased blanching of the drumhead. Temperature during these five days did not go above 99.5. On January 31, on account of the falling off in hearing, I determined to incise the drumhead, which was done under nitrous oxid. The membrane cut like stiff parchment. Through the lips of the incision there escaped a few thin flakes looking like very thin bits of paper. They were lost in a drop of clear fluid which followed them and the little blood from the upper edge of the incision. The next day the patient heard the watch at 6 inches, and in a short time had normal hearing. Twice after incision, on February 1 and 2, temperature reached 101. This followed an attempt to syringe the little clot from the canal. The pain in the muscle was relieved at once by the incision of the membrane.

Case 6.—Dr. Brown asked me to see with him Mr. W., a lawyer, aged 49, who had been first seen by Dr. Brown on the morning of March 21 for a slight right tonsillitis. It subsided after two days. Dr. Brown was summoned again early in the morning of the 24th for severe pain in the right parieto-occipital region. As seen by the chart (Fig. 3), there was a temperature of 101.6. I saw Mr. W. on the morning of the 25th. A mustard plaster had been applied, before Dr. Brown's visit, and the scalp was reddened. Pain came in paroxysms, the slightest movement producing it. It was confined to a limited area at least 2 inches behind the meatus, the intervening space over the mastoid being free from tenderness or congestion. The drumhead presented the appearance of a mild catarrhal otitis. Hearing was normal for watch and speech. In view of the remoteness of pain from the ear, and normal hearing, I hesitated to connect the ear with the occipital pain. The patient was given an atropin and cocain solution to use during the day, but reported in the evening that he had had no relief. His temperature was 102, while the drumhead presented the same appearance as in the morning. Weber's fork test was lateralized on the affected side. In spite of morphin the patient had a wretched night, every movement of the head causing paroxysmal pains limited to this one spot in the scalp. I saw him again at 8 a. m. on the 26th. He was prostrated by two sleepless nights, and accepted what I told him was a purely experimental incision of the reddened supero-posterior angle of the drumhead. His hearing was absolutely unaffected save for Weber's lateralization. Fair anesthesia was obtained by an alcoholic and oily solution of cocain (20 per cent.). Relief from pain was almost magical. As in the case of the nurse, the drumhead cut "stiff." There was some little hemorrhage, but no pus, so far as we could see. Recovery was prompt without impairment of hearing.

I presume that these referred pains were due to an unusual connection between the tympanic nerve and other branches of the glossopharyngeal through the petrosal ganglion.

I have thought these observations in acute otitis media of sufficient interest to put on record. Behind them, however, is the fact that but for the thoroughness of diagnosis on part of the internist, the cause of the fever, convulsions, pain would not have been determined. Improved attitude toward ear troubles on part of our medical associates has brought about a definite change in our practices; at least, in mine. In private work chronic suppurative otitis media, of which years ago I saw so much, is rare. Even acute otitis media, allowed to go on to ulceration of the membrane is not very frequent. But constitutional symptoms due to ear disease, without gross evidences of the latter, are more common. The moral of it all is that aurists must be good enough physicians to make differential diagnoses.

842 Park Avenue.

THE CLOSE RELATION OF THE DENTIST TO THE PHYSICIAN *

B. E. BUSH, M.D.
CHICAGO

More intimate cooperation between dentist and physician would be beneficial alike to the patient and to the profession. Dentistry is a specialty of medicine; the stomatologist, with a broad knowledge of general medicine and a particular training in his own field, is exactly on a par with the oculist, the laryngologist or the obstetrician. Thorough knowledge of the principles of medicine must underlie all successful treatment of disease, and the patient must be regarded as an individual, not a collection of separate organs, each to be treated alone. Since one region of the body cannot be isolated from the entire organism or separated in its development, nutrition, function or diseases, neither can its treatment be a separate matter. The person attempting to treat one part of the system must understand the whole, at least broadly, in order to apply general pathology and therapeutics to his particular part. With this intelligent survey of the whole field, the dentist can be a most efficient factor in the prevention of disease and in its successful treatment. A fuller appreciation of their mutual interests would bring the family physician and dentist more often together in their work.

Many cases of general asthenia, malnutrition and anemia under medical treatment are primarily due to oral causes, and not all the tonics in the Pharmacopeia will suffice to cure the patient who cannot chew his food, or who is constantly swallowing bacteria and their products from conditions of oral sepsis, such as dental caries and pyorrhea. In daily practice these unfortunate patients are a trial to their physician, who seldom

---

* Read in the Section on Stomatology of the American Medical Association at the Sixty-first Annual Session, at St. Louis, June, 1910.

accomplishes much toward permanently relieving their state of health until he examines the source and not the sequel of the symptoms, and insists on proper treatment of the mouth and teeth. The careless doctor, who hastily writes a prescription for pepsin for the dyspepsia, cascara for the constipation, or iron for the evident anemia in such a case, will be disappointed in the results of his treatment unless he goes much farther and seeks and removes the cause of the trouble. Consultation with an able dentist will often save the patient great expense and much depreciation in health, and prove the real way to recovery; whereas months of desultory medical treatment alone would bring only trifling and temporary improvement of symptoms—to the disgust alike of the patient and physician, who often part company at this stage with a feeling of mutual relief. The busy physician dismisses the matter from his mind with the thought that "there's no satisfaction in treating these chronic cases that are all run down," while the patient either plods along on a lower level of efficiency than he should be occupying, or suffers still further from the natural development of his morbid state. After a time secondary conditions arise. Chronic nervous and mental disturbances may appear, neuralgia, insomnia and the various fatigue neuroses, leading, in neglected cases, even to a complete physical and mental breakdown.

A fair review of these cases shows that the terminal symptom-complex was rendered possible by the low vitality of the patients, that is, by anemia and malnutrition, due to a chronic indigestion caused by imperfect mastication due to faulty teeth. Therefore, the logical early treatment was dental rather than medical; and the family physician should have pointed this out. Among his many mistakes, the sins of omission are not the least important.

Still more is this true in the case of children, in whom neglect of proper dental treatment leads often to defects of growth that become irremediable. Living proofs of this are to be seen on every hand, but even yet are not receiving the attention they merit. Take for example, the numerous cases of nasal obstruction, with adenoids, enlarged tonsils, and often recurring catarrhal inflammation with or without extension to the frontal and maxillary sinuses, or the Eustachian canal and middle ear or mastoid cells. How many physicians or general surgeons realize the advantage of cooperation with the dental surgeon in the treatment of these children? It is not enough to tell the parent to have the child's teeth attended to and his tonsils and adenoids removed. In too many instances this does not end the trouble. The narrow arch and nostrils and high palatal vault with deflected septum will maintain the habit of mouth-breathing; the pharynx and mouth will be dry and irritated; the larynx, trachea and bronchial tubes will be injured by the rapid inhalation of unwarmed, unfiltered air, and danger to the lungs may ensue. As the child attempts to overcome his mouth-breathing habit, he is obliged to breath more slowly and less deeply than normally through his nose, and suffers from the diminished supply of oxygen. His impeded respiration requires an increased action of the voluntary respiratory muscles and leads to faulty growth of the chest wall resulting in protuding sternum and scapulæ, high shoulders and spinal distortion, while his whole respiratory condition impairs his vitality and favors the onset of disease, colds, catarrhs, deafness, mastoid disease, quinsy, tonsillitis, rheumatism, diphtheria, scarlet fever and tuberculosis. And this is not all. The child of this type has a narrow arch, too small to accommodate his permanent teeth. As these are erupted, the crowded teeth may give rise to much prolonged pain and nervous disturbance which the undervitalized child is ill able to bear. With his irregular teeth he cannot masticate his food properly, and again his nutrition suffers. Deprived of abundant oxygen and digestible food-supply, he becomes the easy prey of the diseases of adolescence. The remedy is plain, namely, proper combined dental, surgical and medical treatment early in the case, and continued long enough to correct the deformity.

The surgeon and the dentist may well work together in the treatment of fractures of the jaws, in which the dentist can make a splint for retaining the fragments in position until bony union occurs, much more satisfactory than the one the surgeon is likely to buy or devise for himself. Even in the surgery of the cranial vault, a closer association of surgeon and dentist would benefit the patient, the dentist's familiarity with the dental engine enabling him to cut with delicacy and precision in places where the ordinary trephine or chisel would be most unsatisfactory and hazardous. So also with the drilling of holes for nailing or wiring bony fragments in fractures of the long bones, the drill operated by the dental engine being far superior to any hand drill or to the hammer and nail which too often splinter the bone. In some orthopedic work, the dentist, with his greater knowledge of mechanics and skill in the use of metals, could often help much in the adjustment of splints and appliances.

In various suppurations about the head and neck, the surgeon is often at a disadvantage without consultation with his dental confrere. Antral disease of nasal or dental origin, parotid or submaxillary abscesses, swollen or suppurating cervical lymph glands, periostitis or necrosis of the maxillæ may be due, more or less directly, to faulty dental conditions—a fact which the surgeon is apt to overlook, but which is readily apparent to the dentist. The more obscure cases of neuralgia (so called) will sometimes require the united efforts of dentist and physician to illuminate their etiology and direct their successful treatment.

Another line in which the physician and the dentist may help each other is the giving of anesthetics. Few general surgeons are fully acquainted with the many advantages of nitrous oxid and not only omit to use it when operating themselves, but advise patients not to take it, even for dental operations. Such advice must result from a meager knowledge of its effects, and cannot be other than detrimental to the patient's interests in many operations in which anesthesia is required for but a short time. For prolonged operative work the combined use of nitrous oxid and oxygen gives a satisfactory anesthesia in most patients, especially in those with chronic bronchitis, valvular heart disease or some other contraindications for either chloroform or ether. The ease and rapidity with which the patient is put to sleep, the safety with which that sleep may be prolonged by giving oxygen with the nitrous oxid and the quick awakening to consciousness, usually without nausea, render this method of anesthesia an ideal one for many dental and surgical operations, although there are certain drawbacks to its use. It is more expensive than chloroform or ether, less readily obtained away from large cities, less easily kept on hand for emergencies and less easily carried and handled outside of the office or hospital. On account of his better training and wider experience with this anesthetic, the dentist may properly be called on to administer it for surgical operations, just as the physician is asked to give ether or chloroform for dental operations. In any operation requiring a general anesthetic, neither surgeon nor dentist should be willing to operate without the assistance of a competent anesthetizer who can take full responsibility for the patient's condition.

In conclusion, the interests of the patient would be furthered by consultation between the physician and the dentist, not only in occasional operations and in special cases of injury and deformity, but in many conditions of acute and chronic disease. An intelligent acquaintance with each other's work and a friendly understanding of mutual respect between the members of the profession is greatly to be desired.

1644 Morse Avenue.

ABSTRACT OF DISCUSSION

Dr. Lee Wallace Dean, Iowa City, Iowa: No physician should ever remove in a child nasal or postnasal obstructions without sending that child to the dentist; if he does so he does an injury to his patient. The teeth I know but little about, but I do know that they may look all right to the physician when they may be too close, or there may be other conditions which will cause that child trouble in years to come. I do know that practically every child that has adenoids or postnasal obstruction removed has some irregularity or disturbance of the teeth. In my clinic I find there are few cases of postnasal obstruction in which there is not some disturbance that the students can detect. Every one of these children coming into my hands is sent to the dentist. I regret to say that the great majority of them do not get to the dentist: I have done my duty. No rhinologist is ever justified in removing turbinate tissue from a nose to secure breathing-space, so long as there is a chance for that breathing-space to be secured by the dentist.

It seems to me that the dentist should refer cases to the rhinologist. All patients with irregularities of the teeth should be examined for nasal and postnasal obstruction. Many cases of caries of the teeth might be influenced by mouth-breathing at night, and the dentist might be wise if he would send these patients to the rhinologist to see if there was a condition that might result in mouth-breathing at night.

THE SYMPTOMATOLOGY AND DIAGNOSIS OF MENINGITIS OF OTITIC ORIGIN*

EDWARD BRADFORD DENCH, M.D.
NEW YORK

This subject has been so thoroughly discussed during the past few years that it would seem presumptuous for me to attempt to add any new facts. I can only hope, therefore, to present the matter in the manner in which it has been brought to my attention from the observation of a rather large number of cases.

We may classify meningitis of otitic origin as (1) circumscribed meningitis or epidural abscess, (2) serous meningitis, and, (3) purulent meningitis.

Of the symptomatology of circumscribed meningitis, very little need be said. In most cases, the diagnosis of this condition is made on the operating table. A circumscribed pachymeningitis is an effort on the part of nature to prevent general infection of the subdural lymph space, in other words, to prevent a diffuse, purulent meningitis. The only symptoms which these patients present are localized headache in the region of the purulent collection, and a slight elevation of temperature. These symptoms, occurring in the course of an acute otitis media, whether or not they be complicated by evidences of mastoid involvement, are sufficient to warrant the surgeon in suspecting incipient meningeal involvement. In quite a large proportion of my own cases, I have been able, from these symptoms alone, to make a diagnosis of a localized pachymeningitis. As before stated, however, a localized collection of pus, lying between the dura and the bone, is frequently found at the time of operation on the mastoid, without any suspicion of its existence, on the part of the surgeon prior to the time of operation. While these cases are frequently not considered under the head of "otitic meningitis," on account of the extremely indefinite symptoms which are presented, it seems to me that they deserve more than passing attention. Given a case of acute inflammation of the middle ear or of a chronic inflammation of the middle ear, with an acute exacerbation, in which the patient complains of localized headache, rather than of severe pain in the ear or pain in the mastoid, and localized tenderness either in the post-mastoid region or just above the zygoma, we are, I believe, warranted in suspecting that the inflammatory process has extended beyond the limits of the mastoid, and that it has already involved either the cerebellar fossa or the middle cranial fossa.

Aside from these symptoms of moderate temperature elevation and localized headache, together with local tenderness, I know of no means of making a diagnosis of this condition. But, given these symptoms, I believe that it is always wise for the operator in exploring the mastoid, to consider seriously the exposure of the dura in the middle cranial or cerebellar fossæ, as a final step of the operation.

THE SEROUS AND PURULENT FORMS

The second and third division of the subject are of much greater interest—that is, cases of serous meningitis or diffuse purulent meningitis, following inflammations of the middle ear. Whether the inflammation of the cerebral membranes is serous or purulent depends very largely on the virulence of the infecting organism. It is probable that a serous meningitis is invariably present in the early stages of a purulent meningitis. If the resistance of the patient is sufficient to combat successfully the constitutional infection, the subdural effusion remains serous. If, on the other hand, the infection is severe, the subdural space is invaded by the microorganism and a purulent meningitis is the result.

We know from post-mortem examinations that the most frequent avenue for the transmission of infectious material from the middle ear to the meninges is through the labyrinth, either directly through the internal auditory meatus, or through the aqueductus vestibuli or aqueductus cochleæ.

Lermoyez,[1] in his admirable article, says that in 65 per cent. of all cases of otitic meningitis, the invasion takes place through the internal ear. In the remaining cases, the infection of the cerebral membranes takes place by continuity of structure, either in the middle cranial fossa, or in the cerebellar fossa, either directly or through the lateral sinus.

DIAGNOSIS

In cases of suspected meningitis of otitic origin, therefore, an early investigation should always be made for evidences of labyrinthine involvement. The patient should be carefully examined for any disturbance of equilibrium, such as a staggering gait when walking with the eyes closed. This examination can be made only in the very early stages of the disease. The eyes should also be examined for nystagmus. In the early stages of a labyrinthine involvement, this nystagmus may occur either toward the affected side or toward the healthy side. As the labyrinthine lesion progresses, however, the nystagmus toward the affected side disappears and the nystagmus toward the healthy side becomes marked, this symptom being an evidence that the affected labyrinth is paralyzed. An investigation of the labyrinth should, when possible, be made, both by the turning test and by the caloric test, in order to determine the exact condition of the labyrinth, and to discover the true significance of the nystagmus. It should also be remembered, in cases of meningitis involving the vestibular nerve, that a nystagmus toward the sound side, indicating a paralysis of the affected labyrinth, may later disappear and a nystagmus toward the affected side make its appearance. This is positive evidence of a retrolabyrinthine lesion—that is, of a lesion either in the cerebellar substance or in the meninges in the immediate vicinity of the vestibular nerve.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Tr. Eighth Internat. Otol. Cong., Budapest, p. 1.

In cases of otitic meningitis, in adults, an examination of the hearing is of considerable importance. It is hardly possible to have the vestibule involved, to any extent, without having considerable involvement of the cochlea. For this reason, the appearance of sudden and profound deafness in a case of middle-ear suppuration, particularly if associated with vestibular symptoms—should always lead the surgeon to suspect a beginning meningitis.

Involvement of the cochlea ordinarily manifests itself: first, by profound deafness, second, by loss of bone conduction, and third, in the failure of perception of the high notes of the musical scale. As invasion of the cochlea in these cases ordinarily occurs directly from the middle ear, it is easily understood why this perception of the highest tones of the musical scale should be lost, since that portion of the cochlea nearest the tympanum is concerned in the perception of these high notes.

Many authors speak of the occurrence of facial paralysis as a symptom of considerable importance, and one which should lead the observer to fear a beginning meningitis. While at first this seems plausible, it has not been borne out in my clinical experience. For instance, I have seen a large number of cases of facial paralysis occurring in the course of middle-ear suppuration, in which the patient never exhibited the slightest evidence of meningitis. Many of these cases have been followed for a long period of time, so that, had any meningeal symptoms developed, they would certainly have been recognized. Naturally, I am here referring to the cases of facial paralysis occurring in the course of the suppuration, and not to those dependent on traumatism at the time of operation.

It is probable that a serous meningitis is almost never fatal. In my experience, I can remember but one case in which, though the cerebrospinal fluid remained sterile, a fatal outcome followed. It is likely that in the first stage of every meningeal inflammation, we have a serous effusion in the subdural space, and, in some cases, into the lateral ventricles as well. If these spaces become invaded by the specific microorganisms, then a purulent meningitis follows. If, however, such infection does not take place, the serous effusion is gradually absorbed and recovery occurs.

Certain surgical and therapeutic measures are unquestionably of value in this serous stage, and these will receive proper attention at the hands of my distinguished colleague, Dr. Mygind, who is to speak on the treatment of otitic meningitis. As the symptoms of the serous form of meningitis pass, with almost imperceptible gradations, into those of the purulent form, I shall not attempt to make any distinction in the symptomatology.

COURSE

The course which a purulent meningitis may run, may be divided into two types:

1. The rapid or fulminating type.
2. The slow or progressive type.

In the fulminating type of meningitis we have very few symptoms. The disease runs its course with great rapidity, and may cause death within a few hours.

Case.—In a case observed some time ago, the patient, a child of about 4 years, had suffered from a double acute otitis media for about ten days before I saw it. At the time the patient was first seen, both ears were discharging slightly, a myringotomy having been previously performed on both sides. Both drum membranes were at once freely incised, this procedure being followed by a fall in temperature and a more profuse discharge. The patient up to this time had exhibited no cerebral symptoms, although there had been an elevation of temperature from 102 to 104. Three days after I first saw the patient the temperature suddenly rose to 105.5, and both mastoids were opened. A considerable amount of softened bone was found on each side. Owing to the sudden, abrupt rise in temperature, both lateral sinuses were exposed, as it was thought possible that there might be a thrombosis of the lateral sinuses. Both sinuses were found normal, and consequently, were not opened. The child rallied immediately after the operation, but twelve hours later the temperature began to rise slowly, the pulse became poor and rapid, the child gradually sank into unconsciousness, and died in about thirty-six hours after the operation. The infection, in this case, was a pneumococcus, and, although no autopsy was permitted, the diagnosis of a pneumococcus meningitis was made.

I have seen cases of this kind occasionally, and they certainly present a distinct type of the disease.

SYMPTOMS AND DIAGNOSIS OF PROGRESSIVE MENINGITIS

When we come to the consideration of the slow or progressive type of meningitis, we have certain symptoms which aid us in our diagnosis. In adults, in the severe cases, headache is a prominent symptom. This is usually severe in character, and is general rather than localized. Vomiting also occurs in a large proportion of cases, and this vomiting is ordinarily preceded by constipation. The temperature is a valuable indication. In the severe cases the temperature is ordinarily considerably elevated, rising quickly to 104 or 105, and seldom dropping more than a degree or a degree and a half below this level. In the milder cases of meningitis—that is, probably, during the serous stage of the inflammation—the temperature may not be so much elevated. I have seen a number of cases in infants run their entire course and terminate fatally without the rectal temperature rising above 103 until just before death. It has been my experience that the cases in adults run a very much higher temperature than do the cases in infants, this being exactly the reverse of what would be expected. It has also been my experience that vomiting is a rather more common symptom in adults than in infants.

NEUROMUSCULAR SYMPTOMS

Localized neuromuscular symptoms may appear early in the course of the disease, and this applies both to the serous and purulent varieties. These neuromuscular symptoms affect usually the ocular muscles. In the early stage of the disease, we ordinarily have a contraction of the pupil on the affected side, and not infrequently have a paralysis of the sixth nerve on the corresponding side, leading to an internal strabismus. As the disease progresses, the contraction of the pupil disappears, and, owing to a partial paralysis of the third nerve the pupil becomes gradually dilated. While the paralysis of the sixth nerve is ordinarily confined to the side of the affected ear, I have seen an abducens paralysis of the opposite side. This, of course, is easily explained from the fact that the apices of the petrous pyramids lie in close proximity, and a meningeal inflammation may easily extend across the median line, and involve the abducens of the opposite side, although the abducens of the affected side may escape.

Stiffness of the neck is one of the earliest neuromuscular symptoms met. This ordinarily occurs both in children and in adults, in the very early stages of the disease. In infants, I look on rigidity of the neck as one of the earliest symptoms of a meningitis, especially if this sign is associated with an elevation of temperature.

REFLEXES

The patellar reflexes are usually increased, the exaggeration being more marked usually on the affected side, in the early stages. The Kernig sign is usually present, and in a number of cases I have been able to elicit the Babinski sign early in the course of the disease.

MENTAL CONDITION

In adults, the mental condition of the patient is of considerable significance. In the early stages, there is frequently a mild delirium, this condition passing into coma as the disease advances. In children, instead of delirium, we may have general convulsions, although, in my experience the occurrence of convulsive seizures is rather rare in an otitic meningitis.

THE BLOOD

The examination of the blood is sometimes of value. In cases in which a differential blood-count has been made, I have usually found a high leucocytosis, and a decided increase in the polymorphonuclear percentage. In most of the cases the polymorphonuclear proportion has been between 85 per cent. and 90 per cent. Whenever, as the result of therapeutic or operative measures, a temporary improvement has taken place, this has always been followed by a fall in the polymorphonuclear percentage. It seems, therefore, that the differential blood-count, in these cases, is a valuable aid in diagnosis.

THE CEREBROSPINAL FLUID

The most certain and convincing evidence which we have of the presence of a meningeal inflammation is the information derived from a lumbar puncture. This puncture should always be made early in doubtful cases, and may be repeated as frequently as is necessary. In most instances, the cerebrospinal fluid will be found to be under considerable tension. In cases in which there is a great increase in the amount of the cerebrospinal fluid, on lumbar puncture it will be forcibly expelled from the exploring needle. I have seen the jet rise several inches above the opening in the needle, with the patient in the prone position. The physical character of the cerebrospinal fluid is naturally an aid to diagnosis. If there is a clear fluid which, on microscopic examination shows no micro-organisms and few or no leucocytes, we have to deal with a serous meningitis. If, however, the fluid is cloudy or turbid, and contains a large number of broken-down leucocytes, particularly of the polymorphonuclear variety, and also contains micro-organisms, we have to deal with a purulent meningitis. It should be remembered that an increased amount of serous fluid in the spinal canal may not, of necessity, mean an inflammation of the cerebral membranes. Such an increase in the cerebrospinal fluid is found in cases of neoplasm within the cranial cavity, and in cases in which the cerebrospinal fluid is germ-free, and contains no pus-cells, the possibility of an intracranial neoplasm should always be borne in mind.

The character, then of the cerebrospinal fluid is, perhaps, the most important element in diagnosis. If we have to deal with a fluid free from germs and containing no pus, we know that we are dealing with a meningitis in its early stages. It is probable that in cases of this character simple relief of pressure and a thorough eradication of the focus of infection will be sufficient to effect a cure. In cases in which the cerebrospinal fluid contains one of the various micro-organisms so frequently found, such as a pneumococcus, streptococcus or meningococcus (*diplococcus intracellularis*), very radical surgical measures must be taken in order to give any hope of relief.

OCULAR SYMPTOMS

An examination of the fundus oculi will, in many cases, show the presence either of beginning or of well-marked choked disc. These changes in the optic nerve are common to all cerebral lesions, accompanied by an increased intracranial pressure. While, therefore, the swelling of the optic papilla with dilatation and tortuosity of the veins cannot be regarded as in evidence of meningitis, but simply as a sign of some intracranial complication, the occurrence of this symptom, in connection with the other symptoms already mentioned, will, of course, be a valuable aid in confirming the diagnosis. The ocular changes may occur on either side, but are most commonly found on the side corresponding to the ear involved.

CONCLUSION

I regret that I have been able to add so little to the knowledge of the subject at hand. I have simply stated the results of clinical experience. It has appeared to me in the course of my observation of cases of meningitis, that the earlier we can make the diagnosis, the better will be the prognosis. In other words, if the symptoms of meningitis are recognized early, the surgeon by prompt interference may be able to prevent the disease from passing beyond the serous stage, and, in some cases, in which an actual infection of the subdural space has occurred, may be able promptly to remove the source of infection and to effect a cure. The longer the duration of the case, however, the more grave the prognosis. Therefore, as stated above, my own observations have led me to believe that the cure of an otitic meningitis depends on its early recognition.

15 East Fifty-third Street.

"Piano-Key" Dislocation of the Outer End of the Clavicle.—An illustrated study of this condition is published by F. Dominguez in the *Revista de Med. y Cirugia*, 1910, xv, 333. It is based on three cases from his personal experience, the only ones of the kind he has ever encountered and all within three months. A wire suture is required to hold the end of the clavicle permanently in place.

THE INDICATIONS FOR SURGICAL INTERFERENCE FOR THE RELIEF OF OTITIC MENINGITIS *

S. MacCUEN SMITH, M.D.
PHILADELPHIA

On account of the apparently increasing prevalence of otitic meningitis, especially in children, due, no doubt to our greater ability to recognize the disease, the subject is of the utmost importance, not only to the aurist, but more especially to the physician of general practice, since he is usually the first to be consulted in the initial illness. The questions pre-eminent, therefore, for our consideration are (1) the establishment of a prompt diagnosis of otitic meningitis, still replete with difficulties; and (2) the adoption of immediate measures for its relief, an accomplishment even more perplexing than the first.

As all scientific attainment, however, is developed by slowly progressive steps, judging from the progress of the recent past, we have every reason to feel encouraged in the belief that, in the very near future, we shall have reached the goal whereby our ability to diagnose this disease promptly will be unfailing, and furthermore, the technic of surgical intervention will have become so thoroughly mastered that a favorable prognosis may be the rule, instead of the exception, as to-day. The optimistic picture here drawn for the future seems almost heresy in contrast to the pessimism manifested by the profession in the past, or even at the present time, and yet I must be insistent in asserting the belief that this outlook is only as bright as the expectant and progressive future has every right to expect, especially if the original work of Jansen, Neumann and others is to be emulated by our colleagues.

Please note the emphasis and importance I wish to place on the words "prompt" and "immediate" in their connection with the diagnosis and treatment of otitic meningitis, for, without proper appreciation of their application in this disease, the ravages of the past on human life must be perpetuated indefinitely. In consequence of the present demand, we now yield to the collective opinion that our only means of successful intervention lies in operative interference, and I will endeavor to mention the various surgical procedures incident thereto, in compliance with my obligation to this part of the symposium assigned me.

On account of the symptom-complex which so frequently confronts us, and our consequent inability to differentiate between meningitis and encephalitis, I must agree with Körner (and this is confirmed by my limited post-mortem opportunities) that the actual condition is best characterized by the term "meningo-encephalitis" instead of the word "meningitis;" and surely this does not overstate its gravity in the more severe type of this disease.

If we accept the theory that serous meningitis, as demonstrated by Quincke's lumbar puncture, is simply an increase in the amount of cerebrospinal fluid, we have a plausible explanation of the fact that in so many cases of this particular type the patients recover, when the condition is properly diagnosed and the fluid drained surgically. Furthermore, if we agree that serous meningitis is the first stage of the suppurative form, it being most difficult to determine where one ends and the other begins, we have additional reason for an early lumbar puncture, which must be followed promptly by more thorough drainage, if the symptoms are not relieved by the former.

Some serous cases presenting typical meningeal symptoms with a normal fluid under high pressure have also a circumscribed purulent leptomeningitis, the toxins giving rise to an increased cerebrospinal pressure, but not altering the fluid's physiologic consistency; here the indications for thorough drainage by operative measures are manifest. In our eagerness to relieve serous meningitis by surgical intervention we must not lose sight of the well-recognized fact that many patients will recover by lumbar puncture and removal of the focus of an aural suppuration and exposure of the dura. Exploratory operations on the brain, therefore, should be deferred until the results of the former are observed.

Much divergence of opinion exists as to the curability of a general suppurative meningitis; the subject, however, is governed largely by the individual conception of the terms "general" or "diffuse." On this subject Heine[1] says:

> I agree with Lexer that the words "circumscribed" and "diffuse" have been differently understood by different authors. In discussing inflammation in serous membranes Lexer distinguishes three forms, the encapsulated, the acutely progressive and the general. In the encapsulated form the opposing serous surfaces are firmly bound together around the area of inflammation by fibrinous exudate and granulations. In the progressive form either the tissues fail to effect this shutting off of the focus of inflammation or the infection, at first confined, breaks through the protecting wall and spreads rapidly. Finally, the general form, in which the whole serous lining of the cavity is involved, is a further development of the progressive variety. These different forms are best seen in suppurative peritonitis, of which the acute progressive stage may be checked sometimes by operation, but the generalized form is always fatal.

Heine is of the opinion that "the circumscribed and progressive forms of suppurative meningitis are curable, but the prognosis in the generalized form is absolutely unfavorable."

Judging from the above classification it may be that some of us have accepted as identical the diffuse and progressive forms of suppurative meningitis, in which event we can readily account for the reported recoveries. I am of the opinion that generalized suppurative meningitis is incurable by any therapeutic measure at our present command; this, however, should not deter us from adopting prompt surgical intervention, from the fact that we are not yet competent to determine unqualifiedly the exact stage to which an advanced case has progressed. In other words, in a given case the meningitis may not be so generalized as the severe symptoms seem to indicate, and, in consequence, a prompt operation may relieve the patient. In any event, we are developing the subject in the right direction, and, while diversity of opinion exists as to the curability of certain forms of this disease, the conviction is unanimous that otitic suppurative meningitis can be cured only by the institution of immediate operative intervention. Briefly, then, otitic meningitis is strictly a surgical disease, just as suppurative peritonitis has long since been so recognized; and, in consequence of the growing demand for this interpretation, the profession will, sooner or later, be brought to a realization of this fact.

In the treatment of otitic meningitis, then, two objects are paramount: the first, the complete removal of

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Heine: Operations on the Ear, 1908.

the primary source of infection; and the second, the complete evacuation of the intradural exudate. From the fact that the usual route of infection is through the labyrinth and internal auditory meatus, our efforts obviously must be directed toward the establishment of drainage in all cases of this nature. When prompt surgical measures are adopted many patients with "meningitis serosa," even though diffuse, will recover, but from the fact that death is caused from paralysis of the respiratory center, due to pressure, an early operation is imperative. Drainage, once established, must be maintained by the adoption of every means to this end at our command, and, even then, little hope can at present be entertained for the recovery of a patient with diffuse suppurative meningitis, when the symptoms are mainly toxic.

Whenever we have confined pus or other inflammatory exudate our first object in the line of treatment is its immediate evacuation by the establishment of efficient drainage. In otitic basal meningitis this is best accomplished by either the translabyrinthine operation, in which a coincident vestibulotomy is an essential part, or by the postlabyrinthine operation, and, in certain selected cases, it may be necessary to perform both of these operations. On this subject West and Scott[2] remark:

> It is yet too early to speak with certainty on the prospect which this operation (translabyrinthine) holds out of saving the less virulent cases of meningitis. We can say only that we have, by its use, combined with lumbar drainage, succeeded where previous experience with cases of similar type led us to expect a fatal result, and that we regard it as a method of great promise. It has two obvious advantages over postlabyrinthine drainage, namely, that the route of infection is strictly followed and that the internal meatus affords a natural drainage-tube, which is infallibly rightly placed, and leads directly to the part of the subarachnoid space which it is desired to reach. In addition there is the great gain that the primary source of meningeal infection is removed.

In localized meningitis, complicating acute aural disease, we must first perform the simple mastoid operation, taking care to remove every trace of necrotic bone, while the radical operation is necessary in cases resulting from a chronic purulent otorrhea. Great care must be taken not to disturb the barrier hastily established by Nature to inhibit further ingress or dissemination of infectious micro-organisms, and yet every vestige of bone must be removed down to the area of adhesion between the dura and bone, but not beyond these limitations.

In a former communication on this subject I pointed out the importance of always carefully opening the external labyrinthine wall for a fistulous opening, as an essential part of the mastoid operation. In severe meningitis, of whatever type, this opening must be enlarged and the semicircular canal, vestibule and cochlea opened to provide efficient drainage from the labyrinth.

Meningitis occurring by way of the labyrinthine route is always secondary to a necrotic disease of the middle ear and accessory cavities. The mode of infection, therefore, is usually through the fenestra rotunda, the fenestra ovalis, the promontory, or the horizontal semicircular canals. This invasion may also occur by way of the aqueductus vestibuli, the aqueductus cochlea, or the posterior or superior canal.

In all cases of diffuse otitic meningitis, serous or septic, the radical mastoid operation should be performed immediately. This will frequently expose the focus of bacterial invasion, manifested by eroded bone or exposed dura, through which a free incision should be made to provide for evacuation of the intradural exudate. Although a diffuse suppurative meningitis will most likely prove fatal, our only hope of relief lies in the prompt adoption of the surgical measures above enumerated, and, in addition thereto, drainage of the lateral ventricle. The form of septic meningitis which is most likely to recover is that caused by the staphylococcus.

Infections of the meninges with the *Micrococcus pneumoniæ*, in my judgment, are always fatal, and especially is this true when such infections complicate a pneumococcic otitis media, which is much more prevalent than the literature of the subject would seem to indicate. Indeed, my experience in the past few years has forced me to the conclusion that a pneumococcal aural infection is not only one of the most destructive in its ravages on the soft and osseous structures, but probably more prone to the development of secondary otitic meningitis than any other form of germ infection. In fact, the ear is so often involved during a pneumococcic, as well as a typhoid infection, and the complications incident thereto so frequently occur, that the profession should always be mindful of their intimate association. This seems especially true when we are reminded of the large number of such aural complications that are never suspected until a suddenly discharging ear reveals to the attending physician a condition replete with danger.

Then again, the ultimate recognition of these complications very frequently clears up a doubtful diagnosis in a given case, and in another forcibly demonstrates that, after all, the patient was not suffering from a so-called relapse. This pointedly illustrates the importance of a bacterial invasion of the organ of hearing in its relation to many general diseases, either as a complication or as the chief underlying, unrecognized, etiologic factor.

As in other forms of illness, we must use every means at our command to establish a precise diagnosis, not only as to the presence of meningitis, but, if possible, the exact form and extent of this disease, as successful intervention can only be accomplished by the adoption of prompt surgical interference. Our treatment and prognosis, therefore, will be governed entirely by our ability to establish a prompt diagnosis. Lumbar puncture is probably our best means of accomplishing this end, which also has the advantage of exerting a favorable influence on the cerebrospinal pressure, as in the presence of acute serous exudates this procedure (repeated if necessary) is of distinct therapeutic value.

Normal cerebrospinal fluid is absolutely clear and entirely free from all foreign matter. If, therefore, we are in doubt as to the necessity for operative interference, and lumbar puncture reveals a cloudy fluid containing cellular elements and fibrin, we are assured, in the first place, of the presence of a meningeal inflammatory exudate, and, in the second place, of a very doubtful prognosis in the absence of prompt surgical intervention.

Serous meningitis need not necessarily be caused by the various forms of bacteria, as demonstrated by lumbar puncture; or, when present, these may be very few in number, or their virulence greatly reduced, and the case may not, therefore, call for operative interference.

If the symptoms of intracranial pressure are grave a decompression operation should be performed over the cerebellar or temporal regions, following which it may be necessary to incise the dura. In addition to this, drainage of the lateral ventricle should be resorted to. This latter procedure is often used only as a last resort, but it would probably be of greater service if used at the onset of pressure symptoms that cannot be relieved by lumbar puncture.

---

[2] West and Scott: The Operations of Aural Surgery, P. Blakiston's Son & Co., Philadelphia, 1909.

1429 Spruce Street.

THE OPERATIVE TREATMENT OF OTITIC MENINGITIS *

HOLGER MYGIND, M.D.
COPENHAGEN, DENMARK

My topic is the operative treatment of otitic meningitis. By meninigitis I mean here diffuse purulent leptomeningitis, that is, an acute inflammation of the soft membranes of the brain which has produced a cerebrospinal fluid varying from being slightly turbid to mere pus, and containing an excess of polynuclear cells. The so-called serous meningitis and the different forms of local meningitis are, therefore, excluded in this paper.

The operative treatment of otitic meningitis, in contradistinction to operations for other ototic intracranial complications, has made its way very slowly. It was, as you know, initiated about eleven years ago by Macewen of Glasgow, who, in his excellent work on pyogenic diseases of the brain and the spinal cord, published a report of two cases of otitic meningitis in which operation was successfully performed. I do not think, however, that these were genuine cases of diffuse purulent meningitis. Since then, several surgeons have tried surgical interference in otitic meningitis, and a small number of successful cases have been reported. But even now, one of the leading otologists in Germany, Herman Schwartze of Halle, still abstains from operation in cases of otitic meningitis, as can be seen from the last report from his clinic published a few months ago.

There are, I think, several reasons for the fact that this operation makes its way so slowly. First, surgeons often get these cases under treatment when the meningitis is far advanced and the whole state of the patient is such that one involuntary thinks of Dante's words, "Leave hope behind, all ye who enter here." Second, I think that other surgeons may, like me, have operated on a number of consecutive cases of even short duration without being able to avert a fatal issue. I myself operated on my first ten patients without success. After such an experience, it is very natural for a surgeon to abandon the operation, especially as the operative treatment of other otitic intracranial complications has yielded such unexpectedly good results.

Third—and this is perhaps the principal cause—aural surgeons, even with an extensive practice, do not see many cases of otitic meningitis. For example, an experienced aural surgeon, Dr. Dench, who read a most interesting paper on the operative treatment of otitic meningitis at the International Medical Congress last year, up to that time operated on only eleven cases of otitic diffuse purulent meningitis. In my department of the large municipal hospital of Copenhagen, a city of over one-half million of inhabitants, an average of only seven patients suffering from otitic meningitis are admitted in the course of a year, although a considerable number of real or supposed cases of otitic intracranial complications are sent to the hospital, which is open to every one, rich and poor.

The material on which this paper is based is, therefore, small, for, during the last four and one-half years during which I have operated for otitic meningitis, only thirty-three cases of this disease have come under my observation. In twenty-six of these operation was performed. I have operated on several patients who I believed, at the time of operation, had otitic meningitis, but in whom the post-mortem revealed tuberculous meningitis or edema of the meninges. I believe, however, that my material on this topic is the largest of which a report has as yet been published.

Before entering on the principles and the description of the operation of otitic meningitis I would strongly urge the importance of performing, if possible, before operation two forms of examination, lumbar puncture and examination of the acoustic and static functions of the labyrinth. Both forms of examination are not only valuable for the diagnosis, the prognosis and the etiology, but also for the treatment of this disease.

It is well known that the diagnosis of otitic meningitis is extremely difficult in many cases, and if it were not for lumbar puncture many more diagnostic failures would be made than at present. Like most other diagnostic methods, it is not infallible, but the exceptions are very rare. Its principal drawback is that cerebrospinal fluid is not always evacuated, or is united with blood, which renders the examination worthless. I have made use of lumbar puncture over 200 times and consider it, if all proper septic precautions are taken, a safe procedure; only once or twice was it followed by unpleasant consequences in the form of pains in the back and in the legs, which pains, however, were only of short duration. The more I use the lumbar puncture the more I rely on it as a diagnostic method.

My experience in the use of lumbar puncture shows that in all cases of otitic meningitis the cerebrospinal fluid is turbid twenty-four to thirty-six hours after the onset of the meningitis, but rarely earlier than twenty-four hours after the onset; it contains cells of which the majority are polynuclear. Bacteria are generally present; when they are absent the prognosis is favorable. The more turbid the fluid the worse the prognosis. On the other hand, the clearing of the fluid during treatment is a sure sign of the retrogression of the meningitis, and in several of my cases it showed itself before the brain symptoms began to clear up.

I often perform a lumbar puncture without any general anesthetic, but in cases in which I am convinced that the patient has intracranial disease I often postpone this procedure until the patient is under the anesthetic for the operation. If the microscopic appearance of the fluid leaves any doubt a microscopic examination is performed by an assistant during the first stage of the operation.

I have tried repeated lumbar punctures in a few cases, as a therapeutic agent in otitic meningitis, but have not observed any beneficial result.

The examination of the acoustic and static function of the labyrinth is also valuable, both in diagnosis and in deciding on the nature of the operation to be performed. Total deafness and the absence of nystagmus when the diseased ear is syringed with cold water, after Barany's method, point strongly to meningitis in doubtful cases, and demand the opening of the labyrinth during the operation.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

I shall now proceed to the question whether or not operation shall be performed in all cases of otitic meningitis. My answer must be that only in a few exceptional cases, namely, those in the advanced stages of the disease, should I feel justified in advising against operation. And even then, in children and young persons suffering from otitic meningitis, a comatose state may be the result of an abscess in the brain rather than of the meningitis it has caused, for brain abscess is by no means a rare cause of meningitis, and its symptoms are often entirely concealed by the symptoms of the meningitis. Furthermore, in my experience, in fatal cases the patient seldom grows worse immediately after the operation; more frequently the brain symptoms become less pronounced, but in most cases the state remains unchanged. Thus nothing is lost by operation and the patient is given a chance of recovery.

Operation for otitic meningitis ought to be performed without loss of time. Each hour that passes before operation may be fatal. My impression is, that in a certain number of cases of meningitis, the inflammation of the membranes of the brain does not set in, as in the majority of the cases, with a sudden explosion like that of a gunpowder barrel into which a spark has fallen, but resembles rather a smoldering fire, spreading for a short time to all sides and bursting at last into an all-destroying conflagration. In such cases, if the primary disease is eliminated early, the fire dies out for want of fuel.

The elimination of the primary focus in the ear is beyond doubt the salient point in the surgical treatment of otitic meningitis, and this should be done as thoroughly as possible. This involves the opening of the labyrinth in all cases in which either the functional examination before the operation shows that it is destroyed or the examination during the operation shows that it is diseased, the most frequent sign being the existence of a labyrinth fistula. In order to get the external wall of the labyrinth well exposed for inspection it is necessary to perform a radical operation also in cases of acute osteitis of the mastoid process. It is, besides, easier to perform craniotomy over the tympanic cavity after radical operation.

After having performed a radical operation and eliminated all diseased tissue in the temporal bone, where there generally is an acute osteitis even in chronic cases, the disease being very seldom limited to the antrum mastoideum alone, there is another frequent inflammatory focus to be looked for carefully, namely, thrombosis of the sigmoid sinus. My experience proves that it is a frequent complication of middle-ear disease in these cases, the sinus being found diseased in eight out of my thirty-three cases. I think that, in a certain number of cases, it is probably the medium through which the inflammation spreads to the membranes of the brain. The presence of this intracranial complication does not, according to my experience, make this prognosis more grave. On the other hand, I believe that there are also cases in which the inflammation from the middle ear spreads explosively to all sides, reaching simultaneously the membranes of the brain and also, sometimes, the brain itself, where it forms an abscess or an acute encephalitis.

In all cases of otitic meningitis, therefore, I expose to view the whole perpendicular part of the sigmoid sinus and examine it for the possible existence of a thrombosis. It is, however, by no means an easy matter to diagnose the existence of a thrombosis by ocular examination or by palpation of the sinus. Neither does the history of a case often give any hint of the presence of thrombophlebitis. For these reasons I generally make a puncture of the sinus with a Pravaz syringe. If this reveals fluid blood in two different places a little apart from each other it is highly probable that there is no thrombus present. If the syringe remains empty or if pus is extracted I do not open the sinus and expose the lateral wall during this stage of the operation, but I wait to do it at the end of the operation, when craniotomy is performed, in order to avoid infection of the soft membranes of the brain from the diseased sinus, in case it should be found necessary to open the subdural space. In these cases, as a rule, I do not ligate the jugular vein, partly because I have not faith enough in the beneficial effect of this operation in the majority of cases of thrombophlebitis and partly because I fear that ligature of the internal jugular veins produces an unfavorable circulation in the diseased brains. Furthermore, the ligature prolongs the narcosis, which is often very long, especially if the labyrinth is opened.

I now perform craniotomy by enlarging upward the bony cavity produced by the radical operation, using as much as possible a strong cutting forceps and making an opening extending 2½ inches horizontally and about 1½ inches vertically. The opening should be so situated as to expose freely for examination the following parts of the dura: first, the part corresponding to the mastoid antrum; second, that part corresponding to the attic, for the inflammation of the soft membrane of the brain occasionally starts here as a local pachymeningitis; and, third, the part of the dura which covers the posterior surface of the petrous bone, for there are found now and then small, deep-seated epidural abscesses which otherwise are easily overlooked. When loking for this form of abscess the free exposure of the sigmoid sinus, performed in the former state of the operation, is of great assistance, as the inner edge of the perpendicular section of the sinus represents a line beyond which one must not go.

The question now arises, should the subdural cavity be opened in all cases of otitic meningitis? I must at once declare that I am not able to give a decided opinion on this point at the present state of our knowledge of the subject. I think it is still a matter *subjudice*. That it should be done in a certain class of cases is beyond all doubt. These cases are the following: (1) when a fistula is found in the dura, for then there is sure to be either a pure subdural abscess or a subdural abscess complicated with a superficial abscess of the brain (what Macewen calls an ulceration of the brain); (2) when there are signs of gangrene of the dura, which shows itself by a part of the cranial surface of the dura being discolored, soft and uneven on the surface, and in which case it is highly probable that there is a suppurative pachymeningitis interna with or without superficial abscess of the brain; (3) when the subjective or objective symptoms point toward the existence of a brain abscess; this must be suspected especially when brain symptoms have existed previously to the development of meningitis, when there is slow cerebration and when there are local symptoms. It is, however, an established fact that meningitis may be accompanied by local symptoms without an abscess of the brain being present.

When the dura presents a normal appearance or is covered with superficially healthy granulations or other products of a pachymeningitis externa which do not point toward the existence of a deeper lesion of the membrane (for instance, fibrous filaments), the question whether an incision of the dura should be made or not is, in my opinion, very difficult to decide. The incision of the dura has, of course, its great advantages and I myself have performed it in most of my cases, but experience has shown me that it also has serious drawbacks. The advantage which at once presents itself as important is the possibilty which the opening of the subdural cavity gives for this drainage and the subarachnoidal spaces, and many surgeons attach much importance to this procedure, believing it to be a most important factor in the treatment of otitic meningitis. My personal experience does not, I must confess, corroborate this view. I have in several cases drained the subdural cavity by means of iodoform gauze and found that the drainage was often imperfect, presumably because the hyperemia of the brain or the superficial encephalitis,[1] so often present in meningitis, makes the brain swell so much that it is pressed hard against the inner surface of the skull round the craniotomy opening, a phenomenon one often can observe directly after craniotomy is performed. In other cases the secretion is enormous and can be tolerated by the patient only if he is able to assimilate a corresponding quantity of fluid through his intestinal tract. Besides, while in some patients the substance of the brain is very tolerant of meningitis, in others the slightest touch produces bleeding and contusion. I am, therefore, not convinced of the advantage of draining the subdural cavity in ordinary cases of otitic meningitis.

But the incision of the dura as a routine treatment has one great advantage: it insures the operator against overlooking a subdural or a cerebral abscess, which complications now and then do occur in cases of otitic meningitis. For instance, among my operations, which number twenty-six, two were in cases of subdural and three were in cases of cerebral abscess; and in two of these the dura showed no sign of disease on its cranial side, nor did the patient in these cases exhibit any symptoms of these complications. Therefore, when the dura has not been opened the surgeon remains in uncertainty as to the existence or non-existence of a subdural and a cerebral abscess in cases in which the brain symptoms do not decrease after operation, and he must now and then be obliged, as I once have been, to open the subdural space a day or two later. This operation is, of course, very easy and of short duration where craniotomy once has been performed, but it may be performed too late to check the development of the meningitis.

It will be seen that several circumstances speak greatly in favor of the opening of the subdural cavity in all cases of otitic meningitis. But it has two serious drawbacks should no subdural or cerebral abscess be found, namely, the risk of infecting a healthy brain and of producing a prolapse of the brain. Prolapse of the brain is in aural cases, according to my experience, often a very difficult complication to deal with during the after-treatment. It easily obstructs the cavity produced by the operation, making the dressing of it difficult, and the brain substance in some cases becomes infected from the suppurating cavity of the temporal bone.

Having given my opinion on the principles of the operative treatment of otitic meningitis, I shall conclude by stating the results I have obtained.

Of the thirty-three patients with otitic meningitis who form the basis of this paper, exact diagnosis in all cases being insured either by lumbar puncture or by post-mortem examination or by the fatal termination of the disease, seven were not operated on, most of them because the patient or their relatives refused operation. They all died. Of the remaining twenty-six, the operation performed was without any result whatever in seventeen cases. In one case, that of a girl aged 7, the patient woke up at once from a comatose state and seemed on the way to perfect recovery, when suddenly, nine days after operation, cerebral hemorrhage occurred and the patient died. In two cases all signs of the meningitis disappeared entirely, but an abscess of the brain developed later and the patients died, respectively, one month and about one-half year after the operation. In the remaining six cases there was complete recovery, one patient, however, having still a prolapse of the brain covered with epidermis one year after operation. To illustrate the benefits of the operation I will give a short history of one of these cases.

A woman, aged 28, was sent to my department last year after having suffered for a few days from headache and drowsiness, accompanied by fever. She lay in a deep sleep, from which she could be roused only with difficulty, showing signs of slow cerebration, with a pulse of 50. There was complete paralysis of the right oculomotorius and a slight central paresis of the left facial nerve. There was a chronic suppuration of the right middle ear with no mastoid infiltration or tenderness. Neither rigidity of the neck nor the sign of Kernig was found on admission, but both appeared two days later. The lumbar puncture yielded a very turbid cerebrospinal fluid, which contained numerous polynuclear cells, but no bacteria. Radical operation of the middle ear was performed at once with craniotomy incision of the dura and incisions of the brain in different directions, an abscess being suspected, but not found. The next day this markedly slow cerebration changed to excitation, which lasted for some time. Four days later the cerebrospinal fluid was almost clear and the patient was ultimately perfectly cured, a cerebral prolapse which developed after the operation disappearing again entirely.

Such a case is a good illustration of the beneficial effect of the operative treatment of otitic meningitis in some cases. This young woman was the eldest of my patients who recovered, the others being mostly young persons about the age of puberty. In several cases the symptoms indicated a very serious disease of the brain and the turbidity of the cerebrospinal fluid was in most cases very pronounced, but in all the cases the meningitis had been of only a few days' duration.

I must finish this paper, which I have endeavored to make as short as possible, by urgently recommending that you never consider a case of otitic meningitis as a *noli me tangere*, but that you operate without loss of one of those precious moments on which may hang the life of a human being.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DENCH, SMITH AND MYGIND

Dr. Norval H. Pierce, Chicago: Our distinguished guest has handled the subject much more simply than we in America are accustomed to regard it. I listened attentively and endeavored to understand on just what symptoms he bases the diagnosis of a general purulent meningitis. I believe it is very important to maintain a difference in our minds between serous meningitis and purulent meningitis. On this point depends what Professor Mygind said regarding the incision of the dura. My opinion is, or rather I accept the opinion, that a serous meningitis is nothing more nor less than a collateral edema due to the action of toxins on the fluid and tissues constituting the sub-dural space, resulting in an increase of the cerebrospinal fluid. A purulent meningitis, on the other hand, is an entirely different thing; a purulent meningitis has to do with the action of living micro-organisms on the blood vessels and the perilymphatic spaces accompanying these vessels of the meninges especially of the pia, which provides vessels and perivascular lymph spaces which penetrate the brain substance—so that in all cases of purulent leptomeningitis we have an encephalitis as well. It is impossible to differentiate clinically between certain forms of serous meningitis and purulent meningitis. Fever, pulse, stiff neck, general condition, slow cerebration, delirium, are to be found in both classes; nor can we place absolute dependence for our differentiation on lumbar puncture. You may get a cloudy fluid very rich in leukocytes on lumbar puncture and yet have a serous meningitis that is due to a localized purulent focus within the epidural space which has been walled off. The corpuscular elements sink to the bottom of the cerebrospinal sac as they would in a test tube. That we may have a cloudy fluid on lumbar puncture in cases of serous meningitis is abundantly proved by the observations of Koerner, Alexander, Voss and others.

---

[1] In some cases I excised a piece of the brain and had it microscopically examined, with the result that there was found no evidence of encephalitis.

Our visitor has said that he is careful to examine the static functions in order to ascertain whether the labyrinth is involved in the purulent process. Undoubtedly this is very important, but we must also remember that if he uses this in support of his position that he has to deal with a general purulent meningitis, his deductions may be erroneous. The cases in which the meninges are invaded by way of the labyrinth have no tendency *per se* to become diffuse purulent meningitis; their tendency rather is to become localized and encapsulated.

Now regarding treatment, a serous meningitis may be due to suppuration outside the cranial cavity, as in acute otitis media in children; it may be due to a localized purulent focus inside the cranial cavity but outside the dura, as in extradural abscess; or, it may be due to a purulent focus inside the dura which has become walled off. When we can remove the irritative focus we cure the collateral edema. Now, are we not in great danger in such cases following immediately the operation on the mastoid of incising these dura, in an area that is already highly septic (because most operators recommend puncture of the dural sac from the mastoid wound), of changing a simple serous meningitis into a diffuse purulent meningitis by introducing micro-organisms within the subdural space? At least this is one of the dangers of which we must beware.

Dr. J. A. Stucky, Lexington, Ky.: Notwithstanding the eminence of the essayists and their great experience, their care and judgment and scientific ability, the subject under consideration still remains one of the unsolved problems, but undoubtedly we are progressing, and are saving more meningitis patients to-day than we did five or ten years ago. I see a great many cases of meningeal irritation of otitic origin, the result of long neglected ear troubles. A few years ago I spent some time with Ballance at London and came home enthusiastic for his teaching. out of 17 carefully observed and recorded cases I have seen 3 or 4 recoveries. As Dr Pierce has said, in the question of diagnosis of cerebral edema (and I may say that I believe in a serous meningitis; that the serous form is simply a prepurulent stage), we may have more than one cause of infection No one has mentioned the danger of confusing what our presiding officer called a meningismus with a meningitis. We may have a toxemia that produces all the symptoms of the serous form, or a diffuse meningeal irritation, or a meningitis; I have seen that from intestinal toxemia. We know that there is no disease that locks up the secretory and excretory functions of the body like a disease of the ear, and in our efforts to diagnose these cases by exclusion we must not forget the possibility of intestinal toxemia producing a meningeal irritation. Neither of the essayists, nor Dr. Pierce, has mentioned the possible good results that may come from the administration of large doses of hexamethylenamin in these cases of suspected meningeal irritation. I think it is well to consider that in the treatment I endorse with emphasis what our distinguished guest has said, give your patient a chance, no case is hopeless, operate early and give drainage.

Dr. C. M. Brown, Buffalo: It seems to me that Dr. Dench struck the keynote when he said that the important thing was early diagnosis. I would call attention to one symptom that has not been referred to, that is restlessness or twitching of the muscles of the face. Alexander claims that this is more important than stiffness of the neck. I would like to ask Dr. Dench if he has observed this?

Dr. R. P. Scholz, St. Louis: I believe that all authorities agree that in cases of suppurative meningitis of otitic origin, operation is indicated, and that patients with serous meningitis, or as one of the speakers has called it, collateral edema, may recover without surgical interference. In rare cases Nature often brings about restitution where there has been suppuration of the labyrinth with more or less meningeal involvement. I believe the post-mortem room furnishes the best opportunity for study of this class of cases, for here we see not only the cases resulting in death from meningitis, but occasionally find a case in which there is evidence of an old healed meningitis. I have observed that in cases of meningitis, exudate is frequently found about the lamina tectoria cerebella and believe that this and congestion occludes the foramen of Magendie, thus giving rise to increased ventricular pressure. I would like to ask Prof. Mygind if he too believes that all such cases in which there are inflammatory changes (exudate, etc.) about the foramen of Magendie, are not necessarily fatal.

Dr. Otto Glogau, New York: A patient came into the office with the statement that he had been in a hospital, had had a mastoid operation, had been neglected and there was development of granulation tissue about the wound. I called in consultation another otologist, who decided that it was exuberant granulations, while I had suspicion of a malign growth ,and removed a piece for microscopic examination. Dr. Neuman of Vienna saw the case, and without looking at the mastoid wound decided that an operation should be done, the patient having all the symptoms of otitic meningitis; but the next day when I took off the dressing he decided that it was an inoperable sarcoma of the mastoid and it turned out to be a spindle-celled one. I asked Dr. Coley for some fluid and learned that he had seen the case before, a fact which the patient had not told us. The patient had, a few months before, a slightly swollen gland underneath the mastoid, attended with pain, which was mistaken for mastoiditis and operated on. He developed a sarcoma which had encroached on the dura and from this growth was produced an attack of otitic meningitis.

Dr. Cullen F. Welty, San Francisco: It has been demonstrated that in 65 or 75 per cent. of all cases of meningitis infection comes by way of the labyrinth. This is really startling; but there are tests which, if made in detail, will tell the exact condition of the individual labyrinth. Should this examination be put off the patient may be so ill that a satisfactory examination cannot be made later.

The examination chart of the Vienna school of otology is as follows:

A	B.	R.		L.	A.	B.
.	.		Convers.		.	.
.	.		Whisp.		.	.
.	.		Acumeter		.	.
.	.		Weber			.
.	.		Rinne			.
.	.		Schwabach		.	.
.	.		C_1			.
.	.		a_1			–
.	.		c_4			
.	.		Galton			
.	.		Stenger			
.	.		Watch on bone			
.			Acumeter on bone			
			Vertigo			
			Tinnitus		/	
			Spont. Nystag.			
			Galvan. Nystag.			
			Caloric Nystag.			
			Nystag. after turn			
			Equil. Dist.			
			Lucae Dennert			
			Hearing tube			
			Fistula Symptom			

If from examination a latent labyrinthitis is diagnosed and a meningitis develops, it is clear that the complete destruction of the internal ear is essential; in other words, the Neumann operation. However, if a meningitis develops and the labyrinth is intact, one knows that a different operation should be done. The possibilities in such cases are much lessened—one has much more definite information and can proceed accordingly.

The Vienna school of otology has certainly reduced the mortality of meningitis in this very way. They further teach and show conclusively that one is not qualified to do the radical ear operation unless he is prepared to do the complete exenteration of the labyrinth, and that a patient with a labyrinth suppuration should not be operated on at all unless the labyrinth is destroyed at the time the mastoid operation is done.

A few of these points are very well illustrated in a recent case to which I was called in consultation. The patient had a marked nystagmus to the opposite side; Weber to the good ear, and as I supposed, some hearing. Fistula test was negative. By the syringing with cold water, I concluded that the nystagmus was increased; this, however, was questionable; at all events my confréres agreed that such was the case. A diagnosis of circumscribed labyrinthitis was made and the radical operation done; at operation a fistula of the horizontal canal was found, the facial uncovered by caries, all of which was in perfect accord with the diagnosis. Three days later the patient was comatose, with stiff neck and painful spine. The labyrinth examination was made again and more accurately. There was no hearing and no increase of nystagmus from cold water, Weber to good ear. At this time the family would not allow further operative procedure. The patient recovered, she had a serous meningitis and it was induced by the operative procedure. The labyrinth should have been removed at the time of the first operation. So it is plain how important an accurate examination would have been in this particular case.

Dr. E. B. Dench, New York: With reference to Dr. Brown's question, I have not observed the restlessness and twitching of the facial muscles spoken of. I have seen beneficial effects follow repeated lumb r puncture. In reference to the exenteration of labyrinth in case of fistula, I presume Dr. Mygind means only where there are meningeal symptoms.

Puncture of the lateral sinus as a diagnostic measure has not proved satisfactory in my experience; one may go through a parietal clot and get fluid; I would rather open it than make a puncture in it. I agree with him as to the danger of ligating the internal jugular vein. In one case I think I got a death in this way.

Whether or not the dura shall be incised depends on the severity of the symptoms; if mild let the dura alone, but if severe, with high temperature, and pressure symptoms, you must incise the dura and pack it off.

In reference to Dr. Pierce's remarks as to the danger of the decompression operation on account of infecting previously healthy brain tissue, it seems to me that if it is done far forward, through the thinnest part of the squama, you can keep well away from the infected area and I do not think there is very much danger if you are careful to keep the wound in the mastoid thoroughly packed.

Dr. S. MacCuen Smith, Philadelphia: I shall occupy only a few minutes to somewhat justify my digression from the subject of this symposium to state that I feel it is of the greatest importance for the general physician to keep the following cases in mind.

About three weeks ago, within a period of thirty-six hours, I was called to see three cases of otitic meningitis in adults, all of which proved fatal. One of these patients died before my arrival; two died within half an hour of my seeing them. In none of the cases was the ear recognized as the underlying etiologic factor sufficiently early to warrant operative intervention.

In one case I freely incised the membrana tympani and evacuated a quantity of pus which escaped under considerable pressure. This I did with a view of clearing up the diagnosis, about which there was still much difference of opinion. None of these cases complained directly of pain in the ear, but they did complain of considerable head pain on the corresponding side, mostly over the temporal region, which was looked on as neuralgia. In only one of the cases did a discharge appear from the ear before death, through a spontaneous rupture of the membrana tympani.

Dr. Holger Mygind, Copenhagen, Denmark: There is not a single symptom, subjective or objective, which is pathognomonic of meningitis. I have seen fatal cases where, until death, there was no rigidity of the neck and no Kernig sign although the sign of Kernig is almost the most certain that we have, but I have seen two cases in which the sign was absent until death, and on the other hand I have seen cases of hyperemia of the brain in which it was present, though only very slightly. So, I think there is not a single certain subjective or objective sign. There is only one certain method of diagnosis, and that is by means of lumbar puncture.

Another question is, What is serous meningitis and what is purulent meningitis? Well, I think we shall not waste much time discussing that, because it is merely a matter of words. Let us first agree on what is a serous meningitis. If you go to three different competent men you will hear three different opinions as to what serous meningitis is. If you want my opinion I will say this: It is an acute disease of the brain with symptoms, subjective and objective, of meningitis, where the spinal fluid is clear but containing polynuclear cells when examined under the microscope. That is my definition. To call a case serous meningitis when there is no serous appearance of the fluid is confusing; so I think this definition I have given may help. I will not say it is the right one, because I might come to the next meeting with a different opinion; it is *sub judice*. We are in the first stage of our knowledge and are experimenting. If the fluid is turbid and contains an excess of polynuclear cells we have evidence of an inflammation of the meninges. Dr. Pierce may say that it is localized. Well, I have seen several cases of localized meningitis and in not a single one was there any alteration of the cerebrospinal fluid. I will not say that such cases do not occur. As I said in my paper, the puncture is not invariable, but the exceptions are rare. So I think we are justified in calling such cases as I speak of serous meningitis. This is a matter of opinion, which is, of course, not of so much practical importance, but the question of how to treat the case is of great importance.

I have been much interested in hearing the experience of Dr. Dench and the other gentlemen on this matter, and I am prepared to alter my opinion. If Dr. Dench can show me a proceeding by which I can prevent the production of a prolapse, then I shall not be so afraid of opening the subdural space as I have been lately. But, as I told you, I operated in nearly all my cases in that way in the beginning, though my experience has told me that the proceeding is not without danger.

A POSSIBLE DIFFERENTIAL SIGN BETWEEN CARDIAC DILATATION AND PERICARDITIS WITH EFFUSION *

W. J. CALVERT, M.D.

Professor of Medicine, Baylor University School of Medicine

DALLAS, TEXAS

In attempting to develop a differential sign I wish to acknowledge the dangers of generalizing from my limited material and of interpreting post-mortem findings as clinical signs.

While studying the details of the mechanics of the support of the normal and pathologic heart, some relations between the heart, right lung and liver turned my attention to the changes in the position of the liver due to dilatation of the right heart and to pericarditis with effusion. On analysis these changes seemed to be due to certain physical forces producing strains on given anatomic structures. As the nature and direction of these stresses are constant, varying only in degree, their effect should also be constant, varying only in degree. In the two lesions the physical forces present differ in that the support rendered the liver by the inferior cava through its connection with the heart and the connective tissue structures extending from the heart to the neck, is applied farther to the right in dilatation than in pericarditis. This difference in support of the liver may, when pressure is applied from above, cause a displacement of the liver to a degree possibly sufficient for a differential sign. The differential sign in cardiac dilatation is a high liver with a narrowed area of lung-liver relative dulness, and in pericardial effusion, a low liver

---

* Read in the Section on Practice of Medicine of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

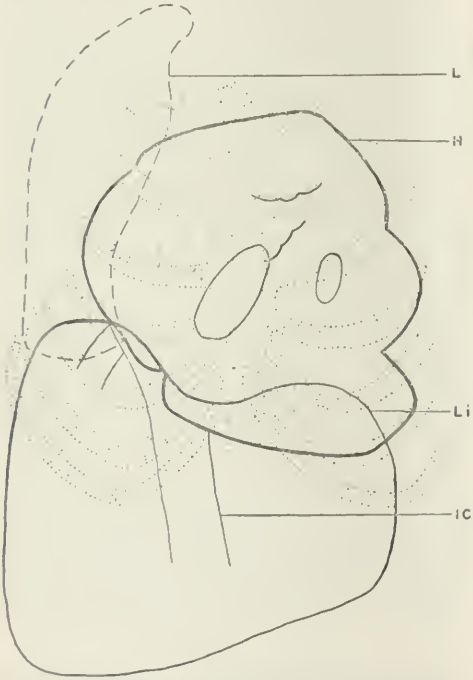


Fig. 1.—Mitral stenosis (Case 1); dilatation of left auricle, right ventricle and auricle; position of heart (H) above reaching first rib, below tip of ensiform cartilage, to left 9.5 cm., to right 8 cm.; right lung (L) 6 cm. to right of midsternal line, lower border in 1 cm. in fourth interspace; liver (Li) enlarged, right lobe high, at [illegible] hepatic veins open into right auricle at highest portion of right lobe, left lobe depressed; inferior cava, (IC) displaced to right with convexity to right.

with a narrowed area of lung-liver relative dulness. This possible differential sign pertains only to large cardiac dilatation involving the right heart, from which a differential diagnosis of pericarditis with effusion is often most uncertain.

Full details leading to the essential physical and anatomic reasons for this difference in the position of the liver are too numerous to be given in a paper of this nature. Consequently the main facts will be stated, leaving details for future publications.

The material was fixed in formaldehyd solution, sectioned, measured, and each organ projected in a front and side view. In this way the position of each organ and its relation to neighboring organs can be quite accurately studied. The strain on certain parts of organs can also be determined by considering the direction of parts in the light of the forces at work.

Examples of extreme development of given conditions often call attention to principles which might otherwise be overlooked. Consequently two case will be described: first, a case of extreme dilatation of the right heart due to mitral stenosis; second, a case of extreme collapse of the heart due to pericarditis with effusion.

DESCRIPTION OF CASES

Points of Interest in Case 1

Sternum and ribs markedly depressed.

Heart as a whole displaced slightly into left thorax.

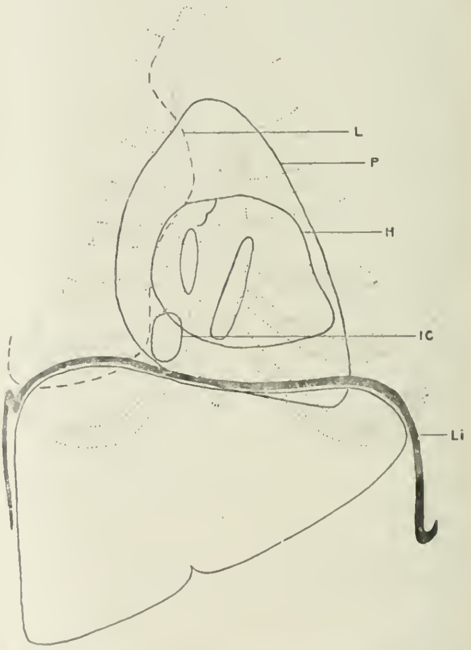


Fig. 2.—Pericarditis with effusion (Case 2); pericardial sac, P (dilatation not shown); heart, H (collapse cannot be shown; right lung (L) slightly displaced to right, pleural adhesions which have been pulled downward by pericardial pressure; liver (Li) displaced downward, upper surface of right and left lobes in almost same plane, inferior cava, (IC) not shown, but runs in almost a straight line.

Valvular openings actually lower than normal but when located in terms of ribs they are only slightly displaced, especially when the size of the heart is considered.

Left ventricle about normal size.

Left auricle greatly dilated. Greater portion of right wall in front of the root of right lung.

Right ventricle greatly dilated. Has pushed left lobe of liver downward.

Right auricle greatly dilated.

That portion of inferior cava above diaphragm dilated to form part of the right auricle.

Auriculoventricular wall runs in almost a straight line from diaphragm to root of left lung; this includes a portion of the wall of the left auricle.

Hepatic veins run in almost a perpendicular direction and open at the highest portion of the cupola of the right diaphragm into the right auricle.

Inferior cava dilated, displaced to right with convexity to right.

Liver (enlarged) has been pushed to right by the dilating right auricle and inferior cava. The right lobe has been held by the walls of the right auricle and inferior cava. This is shown by direction of walls and the course of the hepatic veins. Right lobe much higher than left—cupolated effect. Right lung pushed by left and right auricle upward, outward and backward.

Points of Interest in Case 2

Sternum and ribs only slightly depressed.

Heart swings near median line.

Valvular openings only slightly displaced.

All heart chambers collapsed.

Inferior cava above diaphragm stretched and that portion within the pericardium collapsed; near median line; congested but not greatly dilated.

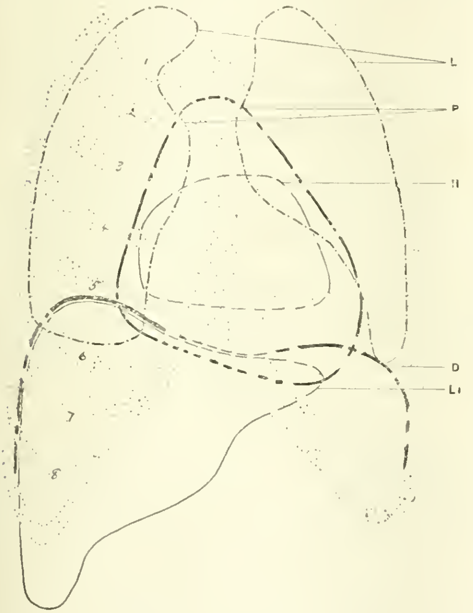


Fig. 3.—Pericarditis with effusion and dilatation of right heart (H); outline of pericardium (P) shown; liver (Li) at fifth rib, right lobe slightly higher than left; D, diaphragm; L, lung.

Auriculoventricular wall almost a straight line.

Liver displaced downward; right lobe not held up as in Case 1; right and left lobe in almost the same plane.

Right lung pushed outward and backward by the pericardial sac; pleural adhesions prevent easy displacement of lung; these adhesions show signs of downward drag.

COMMENT

These findings lead one to believe that the attachment of the pulmonary veins to the connective tissues and other structures about the root of the lungs and the auriculoventricular wall attached to the large vessels and through the left auricle to the root of the lungs play an important rôle in the support of the heart. When the right heart is markedly dilated the auriculoventricular wall runs in almost a straight line from the diaphragm to the root of the left lung, thus indicating the support of hydraulic pressure and stress transmitted from diaphragm to the root of the left lung. The right wall of the right auricle and to some extent the right wall of the pericardium transmit to the root of the right lung a portion of the stress from the diaphragm. Fibrosis incidental to cardiac lesions increases the strength of the auriculoventricular wall.

As the heart dilates the central tendon of the diaphragm is lowered; the weight of the liver and the resistance offered the dilating heart are referred to the walls of the right auricle and the auriculoventricular wall, thence to the root of the lungs and to the neck. Doubtless the column of blood materially supports the vascular and cardiac walls. The support thus rendered the liver is applied in Case 1 at the openings of the hepatic veins in the inferior cava. The support thus given the liver prevents the actual depression of the right lobe to the same degree as that of the left. Consequently the right lobe is pulled up, producing the high cupolated effect. As the inferior cava dilates, the openings of the hepatic veins are pushed to the right and finally occupy the highest portion of the liver, which in Case 1 is the cupola of the right diaphragm.

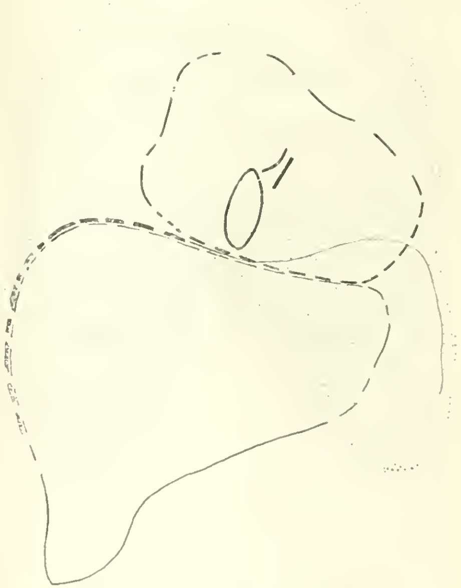


Fig. 4.—Aortic stenosis; right heart slightly dilated, liver very large and high.

Movements due to the dilatation of the heart, including the right heart in Case 1, are:

1. Descent of the sternum and ribs.
2. Descent of the heart and liver.
3. Apparent elevation of the right lobe of liver.
4. Displacement of the inferior cava to the right with convexity to the right.

In the fetus the following relationships are found:

1. Sternum high, ribs horizontal.
2. Right heart small.

3. Liver bilobed, two lobes of equal height.
4. Inferior cava near the median line with convexity to the left.

As development of the fetus to maturity advances the following changes are noted:

1. Descent of sternum, ribs in oblique position. The acquired descent of the ribs doubtless accounts in part for the apparent higher position (in terms of ribs) of the liver in adults as compared to the foetal position.
2. Descent of heart and liver.
3. Right heart enlarges.
4. Left lobe of liver atrophies and occupies a lower position, right lobe occupies a higher position.
5. Inferior cava moves to the right, becomes straight or slightly curved with convexity to right.

The movements described in pathologic dilatations of the right heart are similar in nature to the normal movements noted during development of the fetus to maturity. In fact, they seem to be a continuation of the same movement. Consequently it seems reasonable to state that as the right heart dilates the following changes occur:

1. The heart and liver are displaced downward.
2. The right lobe of the liver is elevated with respect to the left lobe, the ribs, and the right heart.
3. The inferior cava moves to the right, and its convexity to the right is increased.
4. The sternum and ribs are depressed. This depression of the ribs causes an apparent elevation of the right lobe of the liver, as high as fourth rib. This apparent elevation does not depend on the size of the liver.

In dilatation of the right heart the liver is actually depressed as measured by vertebrae, but apparently elevated as measured by ribs. As this changed relationship of the liver apparently depends on the same principles as the normal relationship of the liver, it is reasonable to assume that the apparent elevation (with respect to ribs) of the liver in dilatation of the right heart is constant; or a provisional general statement may be made, as follows: Dilatation of the right heart actually depresses the liver; the left lobe of the liver is depressed more than the right, producing a high cupolated right lobe; right lobe of liver due to depression of the ribs is higher than normal, apparent elevation; the degree of change in the form and position of the liver depends on the degree of dilatation of the right heart. Or the movement of the liver in markedly pathologic enlargement of the right heart seems to be a continuation of the normal movement occurring in the development of the fetus to maturity.

In pericarditis with effusion different physical forces are at work. Here the heart and venae cavae are compressed by the pericardial pressure and cannot dilate to the same degree as they do in the absence of pericardial pressure. The dilatation of the heart in pericarditis with effusion is most probably in many cases a postmortem phenomenon, developing as the autopsy progresses, and due to the congestion of blood in the large veins and lungs flowing into the heart as the pericardial pressure is removed. To be sure, the myocarditis present in pericarditis favors dilatation, especially if the pericardial pressure is low owing to weak pericardial walls. Again, the heart may be dilated before the effusion developed. In general, the physical forces in pericarditis tend to keep the heart at the same size as it was when the effusion began to develop, or at a diminished size. The inferior cava remains in its normal position or may be pushed to the left by the descent of the liver. The dilating pericardium extends to the right over the diaphragm a distance depending on the degree of dilatation and the intrapericardial pressure tends to push the liver down. The degree of displacement of the liver depends, of course, on the degree of pericardial pressure. Here the liver has only its normal support.

The inferior cava remains near the median line in a posterior position. Consequently the right lobe of the liver is deprived of the support rendered in Case 1. In pericarditis with effusion the right lobe of the liver is displaced downward approximately the same distance as the left lobe (without the apparent elevation as in cardiac dilatation). The right and left lobes of the liver are more nearly on a level or tend to assume the position found during fetal life. The sternum and ribs descend relatively the same distance as the liver. Here the liver is actually lower without the apparent elevation. A provisional general statement may be made as follows: Pericarditis with effusion tends to produce (or actually does produce) the following conditions: diminution in the size of the right heart; actual depression of the liver without apparent elevation of the right lobe so that the right and left lobes are more nearly in the same plane; displacement of the inferior cava to the left with its convexity to the left. Or, in pericarditis with effusion, the relationship of the right heart and liver tends to revert to that found in fetal life.

It is thus seen that in the two conditions diametrically opposite physical forces are at work, the cardiac dilatation tending to produce a relatively high position, the pericardial effusion, a low position of the right lobe of the liver. A difference of as much as two or more interspaces in the position of the right lobe of the liver may occur.

Naturally the variation in the position of the normal liver is of importance. In the literature reviewed it seems that much of the material on which present statistics of the normal position of the liver is based is pathologic, and that the subject needs reworking with the pathologic positions of the liver and the type of thorax constantly in mind.

In cardiac dilatation the root of the right lung remains at about its normal level as compared to the vertebral column, and in Case 1 was on the upper, posterior portion of the left auricular wall. When the right auricle dilated the lower anterior portion of the right lung was lifted upward, outward and backward. The downward displacement of the ribs without a corresponding downward displacement of the right lung gives an apparent elevation to the right lung. There is, then, an actual and an apparent elevation of the lower, anterior portion of the right lung.

In pericarditis with effusion, owing to the small left auricle, the root of the right lung is not displaced to a degree corresponding to that in dilatation. The lower, anterior portion of the right lung is not lifted as in dilatation, but pushed by the pericardial sac outward and backward. The downward displacement of the ribs gives an apparent elevation (if pleurae are adherent the lung follows the ribs).

In cardiac dilatation the real elevation of the lower anterior portion of the lung border serves to diminish the area of lung-liver relative dulness. The degree of narrowing of this area varies from what might be called a diminished area to almost complete absence of relative dulness. The relative elevation of the liver places this area of dulness high, fourth rib.

In pericardial effusion the liver is pushed down proportionately more than the lower border of the lung is elevated, so that the area of lung-liver relative dulness is narrowed or obliterated and occupies a lower position than it does in cardiac dilatation. If the pericardial pressure is sufficient to push the sternum and ribs down the liver is also pushed further down, and consequently does not alter the relationship as described. Or, the differential sign should be, in cardiac dilatation, a high liver with a diminished area of lung-liver relative dulness, fourth rib; in pericardial effusion, a low liver with a diminished area of lung-liver relative dulness, sixth rib.

The differential sign is composed of two factors, the position of the liver and the presence and position of a diminished area of lung-liver relative dulness. Of these the position of the liver is most important, for the reason that it is more easily detected in corpulent patients in whom the lung-liver relative dulness may be too narrow for detection. The position of the lung-liver relative dulness is more important than the fact that it is narrow. As the position of the relative dulness depends on the same forces which displace the liver the absence of or failure to find the relative dulness should not materially detract from the value of the sign. Owing to the physical forces causing the change in the lung-liver relative dulness this area must vary from a diminished area to an area of dulness too narrow for detection.

In cases of moderate cardiac dilatation and pericarditis with effusion the changes in the position of the liver and the lung-liver relative dulness cannot be developed to a degree sufficient for a clinical sign. But as the physical forces at play are essentially different in kind and effect these forces should develop in advanced cases a displacement of the liver sufficiently well marked to constitute a differential sign. As this sign becomes more and more marked as the lesions develop, it reaches its greatest development at a time when differential diagnosis is most difficult.

ABSTRACT OF DISCUSSION

Dr. Haven Emerson, New York: I believe that it is impossible to get the sign referred to with the patient in the dorsal position, or with the patient on his back on a table. In the dorsal position it is not possible to verify experimentally dilatation of the heart; but in the horizontal it is possible to verify by experimentation this condition in animals, the lower animals. What Dr. Calvert has presented to us should prove a very valuable diagnostic point if it could be verified by observation.

Dr. W. J. Calvert, Dallas, Texas: In the matter of experimental proof there are a number of difficulties to be considered. There is only one animal, so far as I know, having the same anatomic arrangement of the pericardium, namely, the monkey. Cardiac dilatation which causes a change in this relationship, it seems to me, must be slowly produced. There can be no question as to the sign that was produced; it was shown by cross section work on the cadaver, the section being treated with formol and reproduced. I have not had the opportunity to examine clinically many of these cases. I do not see how the position of such patients can materially influence the findings.

Leprosy in Colombia. An article by Dr. F. Arteaga in the *Repertorio de Med. y Cir.* of Bogota states that out of the 3,031 lepers in institutions in the state of Colombia, 142 are between 3 and 9 years old; 1,265 other lepers live at home. The total for the country is thus 4,296 to a population of 4,303,000. He comments on the fact that cretins seem to escape leprosy, and suggests that possibly their serum might be utilized in serotherapy of leprosy.

NEURALGIAS AND FUNCTIONAL DISTURBANCES ARISING FROM INFECTIONS IN AND ABOUT THE TONSIL *

FRANK C. TODD, M.D.
Professor and Chief of Department of Diseases of Eye, Ear, Nose and Throat, University of Minnesota
MINNEAPOLIS

Disturbances now commonly attributed to infected tonsils may be grouped under three heads, as follows:

1. Acute and chronic tonsillitis (symptoms in the tonsils themselves).

2. Diseases of the contiguous mucous membrane, that is, pharynx, larynx, trachea, bronchi, Eustachian tube and middle ear, arising from the pouring out of infected secretion from the tonsillar crypts.

3. Remote secondary infections such as rheumatic arthritis, pericarditis, etc.

To these three groups there should be added a fourth, not commonly attributed to infected tonsils, but which, it is hoped, this paper will demonstrate should be so ascribed, namely:

4. Local infections involving structures in the neck contiguous to the tonsil, giving rise to symptoms in this region, presumably, through involvement of nerves, often, by direct irritation or inflammation, but, sometimes, through reflex involvement, resulting in neuralgias and functional disturbances.

1. The first group was, until a comparatively recent period, the only one recognized.

2. The part played by the tonsil, when diseased, in the production of inflammations in the contiguous mucous membrane of the pharynx, Eustachian tube and middle ear has for some years, however, been realized and, when these structures are found diseased, aurists and laryngologists carefully investigate the tonsil to determine its condition, commonly finding it at fault. Furthermore, the complete removal of such diseased tumors has resulted in the relief of many aural, pharyngeal, laryngeal and bronchial disturbances from the fact that these septic soaked sponges have ceased to create and supply the mucous membrane with their products.

3. That tonsils which have become diseased serve as portals of entry for infections which may be later carried to remote regions of the body, resulting in other foci of infection such as rheumatic arthritis, pericarditis, pulmonary tuberculosis, uveitis and various infectious diseases formerly not attributed to that long-misunderstood and supposedly useful organ, is now well proved and generally appreciated by the profession.

4. In addition to the second and third groups of diseases mentioned, both of which are secondary diseases, that is, those which might be called metastatic or general infections and those resulting from the actual pouring out of infections from the crypts on the surrounding mucous membrane, there is another group of cases (secondary infections also) attributable to tonsillar origin but not usually ascribed to this cause, or if so, only rarely or indefinitely so assigned. It is to this class of cases that I wish to call attention. Although the symptoms may vary widely and may apparently have no relation to one another, yet they should be grouped together, for they are but different symptoms of the same affection.

I refer to the structures contiguous to the tonsil which have become inflamed or infected or involved through pressure arising from the chronically diseased tonsil in the substance of the neck (not to mucous membrane infections which have occurred from the pouring out of the infected material from the crypts, mentioned above) giving rise to certain definite local symptoms which may vary from an uncomfortable feeling or slight soreness felt by the patient below the ear and at the angle of the jaw, to a severe and recurrent neuralgia in the same region or running up to the ear or back of the ear, sometimes causing so much pain as to prevent sleep, or to loss of voice through involvement of or pressure on the superior laryngeal nerve which passes through this region external to the tonsil, or through involvement of the recurrent laryngeal, a branch of the vagus, which latter nerve also traverses this locality.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

These symptoms may be attributable to the inflammation of the deep portions of the tonsil or to the structures contiguous to it or to a secondary infection of the lymphatic glands (so abundant in this region) into which the tonsillar glands drain. Many of these neuralgias occur as the result of pressure on or inflammation of the nerves passing through this locality, in which latter case the inflammation may become chronic, a true neuritis developing. Such would, likewise, be the case when attacks of hoarseness or loss of voice take place, despite the fact that no inflammation of the larynx is present, the function being disturbed because of involvement of the superior or recurrent laryngeal nerve.

It is obvious that the treatment of these chronic and recurrent attacks of neuralgias, etc., consists in the complete removal of these diseased tonsils even though there may be no history of acute tonsillitis or no apparent enlargement of the tonsils. Such treatment will usually reward the surgeon with prompt relief. It is equally obvious that in certain cases the symptoms may persist, owing to the continuance of the secondary inflammations either in the lymphatic glands or in the nerve. Even in such cases a gradual subsidence of the symptoms may be anticipated.

In the inspection of such tonsils it does not suffice to glance at them. The anterior pillar must be pushed back and the tonsil lifted from its bed by means of a blunt tonsil-hook, when it may be better examined. The exertion of traction on such tonsils with a hook, while causing no soreness or pain in the case of a healthy tonsil, will cause pain and flinching when it is diseased, or when the deeper structures are inflamed, and manifest soreness is a valuable guide in determining the cause of such symptoms. Frequently or usually, I have found in such cases, if the affection was one-sided, that such traction on the affected side would produce flinching, while on the unaffected side the patient would not complain.

The point about such symptom-complexes is that the patient and his physician do not attribute his trouble to his tonsil, even if the patient has been subject to acute tonsillitis. Usually, however, he is not so subject or has not been for some time, though in reality he may have a chronic low-grade of tonsillar inflammation present or only a chronic secondary inflammation in the contiguous glands or other structures of the neck.

In many of these cases the tonsil has been entirely overlooked because of the fact that the patient complains of little or no pain in the tonsil and, on simple inspection, there is nothing in the appearance of the tonsil to lead the examiner to suspect that here is the cause of the trouble. A study of the normal and pathologic tonsil with particular reference to the anatomy of the contiguous nervous and lymphatic system is necessary to the proper understanding of these reflex phenomena which owe their existence to a diseased condition of the faucial tonsil.

Normally between the pillars of the fauces on either side there are from ten to eighteen compound follicular glands arranged in folds, leading into small recesses or crypts, or as many puncture-like orifices. Such normal tonsils are not in view unless the anterior faucial pillar is drawn away, and, even then, the space exposed shows no tumor or swelling, but only slight folds of mucous membrane, nor is there to be found any detritus, pus, or decaying particles of food in the retention pockets. When a tumor exists which may be firm and fibrous, or soft and made up partially of granulation tissue, or when this tonsil contains crypts filled with detritus, pus, cheesy particles, or decaying food, there is present a diseased tonsil. Such a diseased tonsil is what some laymen call "a tonsil;" when the normal condition exists, they say that there is no tonsil present. Many physicians have likewise fallen into the habit of designating loosely as "a tonsil" an abnormal or diseased structure.

The nerve-supply of the tonsil is derived from the glossopharyngeal and branches from Meckel's ganglion. The glossopharyngeal leaves the cranial cavity by way of the middle compartment of the jugular foramen, lying in advance of and a little internal to the pneumogastric and spinal accessory nerves. On the trunk of the nerve in the jugular foramen are two ganglia, an upper, the jugular, and a lower, the petrous. The former is inconstant and both are considered analogous to the ganglia on the posterior roots of the spinal nerves. At the petrous ganglion the glossopharyngeal nerve is connected with the pneumogastric and sympathetic nerves by communicating branches. The branches of the glossopharyngeal nerve, other than the terminal lingual, and communicating, are the meningeal, tympanic, carotid, pharyngeal, muscular and tonsillar. The tympanic branch arises from the petrous ganglion and passes to the inner wall of the tympanum. It ramifies on the promotory of the typmanum, forming the tympanic plexus which supplies branches to the round and oval windows and to the Eustachian tube and communicates with the carotid plexus and with the great and small superficial petrosal nerves. The pharyngeal branches join branches from the pneumogastric, superior laryngeal and sympathetic nerves and from the pharyngeal plexus which supplies the pharynx. The communicating branches arise from the petrous ganglion and run to the superior cervical ganglion, to the auricular branch of the pneumogastric, forming a loop; and one from the nerve just below the ganglion joins the lingual branch of the facial nerve. The tonsillar branches arise from under the hyoglossus muscle and are distributed to and around the tonsils, forming a plexus from which branches to the fauces and sofe palate are derived.

Meckel's or the sphenopalatine ganglion is situated in the sphenomaxillary fossa below the superior maxillary nerve. Its sensory root is derived from the superior maxillary through the nomaxillary nerve. Its motor root is derived from the facial through the great superficial petrosal nerve which assists the great deep petrosal in forming the Vidian nerve. Its sympathetic root, the deep great petrosal nerve just mentioned, is derived from the carotid plexus. The motor and sympathetic roots enter the sphenomaxillary fossa as the Vidian nerve. Its branches are classified as the ascending, descending, internal and posterior.

The ascending or orbital branches pass through the sphenomaxillary fissure and pierce the inner wall of the orbit to supply the sphenoid sinus and posterior ethmoid cells. The descending of palatine branches are derived mainly from the sphenopalatine branches of the superior maxillary nerve. They are divided into anterior, external, and posterior palatine nerves. The anterior or large nerve passes down in the posterior palatine canal together with the posterior palatine artery and appears on the hard palate at the posterior palatine foramen. It runs forward in a groove on the under surface of the hard palate and joins the terminal portion of the nasopalatine nerve. It supplies the gums and the mucoperiosteum of the hard palate. While in the posterior palatine canal, it gives off two branches (inferior nasal nerves) which pierce the vertical plate of the palate bone to supply the mucous membrane of the back part of the middle and inferior meatuses and the inferior turbinated bone. The external or middle palatine nerve descends in the external palatine canal to supply the tonsil and adjacent mucous membrane. The posterior palatine nerve descends in the accessory palatine canal to supply the tonsil, adjacent mucous membrane, levator palati and azygos uvulæ muscles. With the external palatine nerve it joins a branch from the glossopharyngeal nerve to form the circulus tonsillaris, a plexus around the tonsil. The internal or nasal branches supply the mucous membrane of the septum and the posterior part of the middle and superior turbinated bones and of the posterior ethmoid cells and the antrum of Highmore. The posterior branch or pharyngeal nerve runs backward through the pterygopalatine canal and supplies the upper part of the pharynx and the eustachian tube.

The lymphatics of the tonsil, which are numerous, empty into the lymphatic glands near the angle of the lower jaw and into the deep cervical lymphatic glands. The glands near the angle of the jaw are part of the chain of superficial glands of the neck which lie beneath the superficial layer of the deep cervical fascia in the posterior triangle. The efferent vessels of these glands empty into the inferior deep cervical glands. The deep lymphatic glands of the neck number from twenty to thirty and are situated along the internal jugular and subclavian veins. They are divided into a superior and inferior set. The superior set is situated along the internal jugular vein between the base of the skull and the bifurcation of the common carotid artery. These glands receive the efferent vessels from the internal maxillary lymphatic glands and some from the submaxillary lymphatic glands, the lymphatic vessels from the cranial cavity, the deep muscles of the upper part of the neck, the posterior part of the tongue, the middle portion of the pharynx, the upper part of the larynx, and the upper part of the thyroid body. Their efferent vessels empty into the glands of the inferior set. The inferior set is situated along the internal jugular vein below the bifurcation of the common carotid artery and extends outward into the subclavian triangle along the subclavian vein. These glands receive the efferent vessels from the superior deep cervical and the superficial cervical glands; the lymphatic vessels from the lower part of the thyroid body, lower part of the larynx, lower part of the pharynx, upper part of the trachea and esophagus, and lower part of the neck, and some of the lymphatic vessels from the axillary and infraclavicular glands. Their efferent vessels unite to form the jugular lymphatic trunk, which empties into the right lymphatic duct on the right side and into the thoracic duct on the left side. The right lymphatic duct is a short trunk which empties into the subclavian vein or the internal jugular veins at the junction of these veins. Its orifice is guarded by a double valve. The thoracic duct receives the lymphatic vessels from about three fourths of the body and empties into the left subclavian vein or the left internal jugular vein near the junction of these veins.[1]

Having now briefly considered the tonsillar nerve-supply and communications and its lymphatic connections, what part should we expect the tonsil to play in producing functional disturbances and neuralgias in structures, the nerves of which become involved by inflammation or pressure?

Direct and reflex pain may arise from an infected tonsil. This pain may be referred to the side of the face and ear, the patient complaining of soreness and discomfort in this region. This can be explained by the patient's reference of irritation to the superior maxillary and auricular branch of the pneumogastric which supply the face and external portions of the ear. Deep-seated pain in the ear may be caused by irritation of the tympanic branch of the glossopharyngeal.

Through the tonsillar lymphatic system, inflammation of glands or other structures in the neighborhood of the tonsil may likewise give rise to pain, direct or reflex, and soreness through involvement of nerves contiguous to these secondary glands, and pain may occur in the nose, teeth, gums, hard palate, or antrum of Highmore, sphenoid, ethmoid orbit, pharynx, larynx or trachea.

A peculiar hacking cough (which may be called a reflex tonsil cough) without expectoration is also a symptom of irritation of the superior laryngeal nerve because of an enlargement of lymphatic glands of the neck brought about in the same manner as it is evinced by an enlarged thyroid gland or aneurysm of the internal or external carotid artery.

Pressure on the superior laryngeal nerve by the tonsil or by secondary swelling of glands or other structures in this locality may cause, not alone cough, but recurrent momentary attacks of cessation of respiration and also expulsion of food. As the internal branch supplies the cricothyroid muscle, the contraction of which stretches the cords, paralysis of this nerve causes hoarseness or partial loss of voice.

The inferior deep cervical glands drain the superficial cervical glands into which the tonsil feeds. An infection of one of these deep lymphatic glands may involve the recurrent laryngeal, the motor nerve that supplies all the intrinsic muscles of the larynx except the cricothyroid. Moderate pressure on this nerve causes spasm of the muscles of the same side of the larynx, resulting in dyspnea and change of voice; greater pressure causes paralysis and alteration of the voice. Other disturbances which may result are defects of hearing, tinnitus aurium, and anesthesia of the pharynx and larynx, resulting in an entrance of food into the trachea with consequent choking or difficult swallowing.

The presumption is reasonable that involvement of the pneumogastric nerve by pressure or otherwise may give rise to disturbed digestion, and the relief which follows the removal of diseased or enlarged tonsils is more likely due to this fact than because of ingestion of septic material from the tonsils, the stomach readily disposing of such material without detriment to its function. Likewise, cardiac action may be disturbed, palpitation resulting.

The report of cases which are examples of the various phenomena here suggested could be appended, but would only serve to reiterate what has already been said. The careful observer who analyses the nervous anatomy in the region of the tonsil and the lymphatic glands draining the tonsil will be able to judge as to what he may attribute to the tonsil the various diseases, functional disturbances and neuralgias, which may arise from tonsillar infection.

CONCLUSION

In conclusion I wish to emphasize the following points:

1. Pain and soreness in the neck in the region of the tonsils usually arise from diseased tonsils.

2. Neuralgias in the region of the tonsil, ear, side of head, neck, nose, teeth, gums, or antrum of Highmore, may be and frequently are caused by diseased tonsils.

3. Disturbances of function through pressure on or inflammation of nerves may manifest itself in hoarseness, in loss of voice, cough, difficult deglutition, or entrance of food into trachea, with regurgitation, or in defects in hearing, dyspepsia and disturbed heart action.

4. Such diseased tonsils may not be and usually are not large or acutely inflamed. They must be carefully

---

[1] Deaver: Surgical Anatomy of the Head and Neck, 1907.

examined by the surgeon who should pull them into view with a dull hook, determine whether the crypts contain detritus, whether the tonsils are sore to such manipulation, bleed easily, or otherwise give evidence of being diseased.

5. Such tonsils should be carefully and completely removed.

6. Relief of secondary infections usually follows immediately on removal, but, sometimes, only slowly, if neuritis or secondary glandular involvement is present.

7. In certain cases paralysis may be permanent.

506 Donaldson Building.

ABSTRACT OF DISCUSSION

Dr. Lafayette Page, Indianapolis: Many minor disturbances not generally recognized are due to diseased tonsils. These nervous disturbances about the throat and base of the skull, such as mastoid and occipital neuralgias, functional disturbances of the facial and other nerves emerging from the base of the skull, are often cured by removing the tonsils. A neurologist referred a case to me a year ago in which he thought there might be something in the condition of the tonsils producing functional paralysis of the facial nerve. There was nothing in the superficial appearance of the tonsil to indicate disease except slight enlargement. The tonsils were removed and I found deep down in the structure of the right tonsil a large cystic abscess. The nerve soon regained its function and there was no after occurrence of the paralysis. Whether this was due to pressure from enlarged glands or septic absorption it is difficult to say. Dr. Todd mentioned spasm of the glottis as not an uncommon reflex disturbance resulting from diseased tonsils, and I can recall a number of most persistent cases of this affection and among them two very distressing cases which were relieved by removal of diseased tonsils. In one of the patients the spasms came on at 2 or 3 o'clock in the morning, after a few hours' sleep, and often persisted until the patient became unconscious from suffocation. I am convinced that the tonsillar tissues are the most frequent cause of reflex spasms of the larynx. Many of the minor disturbances of the throat like laryngeal cough, constant desire to clear the throat, pharyngeal irritation, submaxillary pains and general discomfort of the throat are of tonsilar origin and are apt to be overlooked when the tonsils present no superficial evidence of disease. These are the patients who consume large quantities of throat lozenges and are liberal patrons of "patent medicines." As a prophylactic measure I think we make no mistake in removing the tonsils in our efforts to relieve this class of minor ailments.

Dr. F. E. Auten, Belleville, Ill.: I had two cases of facial neuralgia that cleared up after removal of the tonsils which I believe were due to septic absorption. There is an individual in Belleville today that has had neuralgia for four years and the tonsils are very sensitive, but who refuses to have them taken out because her physician has told her that they were put there by God and should not be removed. I am satisfied that there is a most urgent need for investigation along this line and that it will pay us to give a good deal of attention to these neuralgias of the face and head.

Dr. John D. MacLaren, Norman, Okla.: What was the condition of the sinuses of the cranial and facial bones in these cases? Dr. Killian has shown that sinusitis may produce the same symptoms as the ones of which the essayist speaks. Have there been any investigations which show that the faucial tonsil does drain into any other part of the lymphatic system? The peritonsillar tissue is thus drained.

Dr. C. F. Welty, San Francisco: I have had several of these cases of pain about the ear and in one case that I know of a mastoid operation was done though the pain was afterward relieved by enucleation of the tonsils. I want to make a suggestion in relation to this hoarseness. I would offer another solution of that: we know that in diseased tonsils there is a certain amount of mucus and mucopus, dropping into the pharynx and larynx all the time (another indication for the tonsil operation) particularly in singers, who are not able to hold notes; this is because of the deposit of a particle of mucus on the cords, in other words they have unreliable voices.

Dr. H. B. Lemere, Omaha: A method of examination and treatment of these tonsils that has proved good in my experience, is the use of the Bier cups. The ordinary bulb provided with the instrument is not strong enough to draw out the concretions from the tonsils and I have used the suction produced by air pressure and the large bulb provided by the manufacturers. One treatment will not always relieve the condition. It is often necessary to use massage, which is very well borne by these patients. In many instances I have examined the tonsils without discovering anything at all and then with the suction apparatus I have drawn out large concretions. The method is efficient with highly nervous patients who will not submit to operation, though the treatment may have to be continued for some length of time. In some of these cases, after using suction, there is spasmodic contraction of the glottis, so that this condition should not always be ascribed to reflex action. In many of these patients the teeth and gums are at fault rather than the tonsils, and the tonsils may be infected from this source. The headaches, I think, are more apt to be due to disease of the nasal accessory cavities, therefore I do not think we should cut out the tonsils in every instance, but we should try to discover the primary infection which is not always in these organs.

Dr. George F. Cott, Buffalo: In nine out of ten of these cases when there is pain in the head and face there is disease in the nasal accessory sinuses. If it is not found there it will probably be found in the tonsils.

Dr. Frank C. Todd, Minneapolis. The sinuses are of course responsible for many similar conditions. I did not mean to be understood as saying that all such symptoms are due to the tonsils but that the tonsils would produce such symptoms, and that we less frequently ascribe them to the tonsils than we should. For instance, for many years we have known that facial paralysis and other involvement of the nerves are due to enlarged thyroid gland, we have not ascribed them so much to enlarged tonsils.

POISONING FROM BITES OF COPPERHEAD SNAKES (*ANCISTRODON CONTORTRIX*)

PRENTISS WILLSON, M.D.
WASHINGTON, D. C.

Recently, through the courtesy of Dr. George Tully Vaughan, I saw in a ward of the Georgetown University Hospital the following case of poisoning from the bite of a copperhead:

The patient, a boy aged 13, had been playing under a bridge, and on reaching up to one of the timber supports felt a sharp stinging pain in the index finger of his left hand. No snake was seen. The hand began to swell rapidly and the boy hastened home and was then taken to see a physician, who diagnosed the case as one of snake-bite, placed a ligature around the forearm and finger, and advised that the boy be hurried to a hospital in Washington. This was done and the boy reached Washington from an adjoining state late in the afternoon of the day on which the injury was received. At this time the child was in a condition of considerable shock, in the causation of which the pain of the ligatures and fright probably played a considerable part. The pulse was slow and of low tension. The hand and arm were much swollen and somewhat discolored. The interns who received the patient very promptly instituted the accepted treatment for such cases, namely, a free incision reaching to the bone the whole length of the finger, the application of potassium permanganate crystals to the wound so made, and liberal stimulation with strychnin by hypodermic—everything, of course, under the usual aseptic precautions. The incision disclosed a certain amount of effused blood in the bitten finger and there were a few ecchymotic discolorations of the hand. A urinalysis made the day following the injury showed nothing abnormal—no albumin, blood, or blood pigment present. The swelling rapidly began to disappear and the patient left the hospital in a few days with the wound in the finger healthy and healing by granulation. There can be no doubt that this was a case of snake-poisoning and due to the bite of a copperhead, since this is the only venomous species found in the District of Columbia or its immediate vicinity.

I have recently reported[1] another case of snake-bite due to the copperhead. This accident also occurred under a bridge. The reptile, a small copperhead, being mistaken for the common milk snake, *Ophibolus doliatus*, was carelessly picked up and inflicted a bite on the index finger. The patient was a man. There was no constitutional disturbance in this case and locally only swelling as far as the elbow with slight pain and a slight ecchymotic discoloration of the bitten finger. The day following, almost twenty-four hours after the injury and before being seen by me, the finger was incised and potassium permanganate applied. The wound so made suppurated and healed slowly by granulation.

Some few years ago I saw a patient who had been bitten on a finger by a copperhead while lifting a stone under which the reptile was concealed. Before coming under my observation the wound had been incised and treated by constant applications of a strong phenol solution. When first seen the man was in imminent danger of phenol gangrene of the bitten finger. As far as the effects of the venom were concerned, the arm was considerably swollen and mottled with ecchymotic discolorations extending to the shoulder. In this case also the constitutional disturbance had been of the most trivial character.

In a recent article[2] I have collected a series of 740 cases of poisoning from the bites of snakes indigenous to the United States. Of 566 cases in this series, in which the species of the snake causing the injury was definitely known, 97 cases, or 17 per cent., were due to the copperhead. The third of the cases mentioned above is included in these statistics, but the other two cases are not, making a total of 99 cases to be considered here. In these 99 cases there were 5 fatalities, a mortality rate of about 5 per cent.

Two fatal cases were reported by Kunkler.[3, 4] Of these the first[3] was in a boy aged 9, who received no treatment. This case is reported so very briefly that it is of little value. The second[4] was in a boy of 6, bitten on the little toe. Death ensued on the fourth day. The local symptoms in the case were: On the first day, rapid swelling. On the second day the entire limb was swollen, the foot a shapeless mass, large vesicles over entire limb, and the course of lymphatics indicated by red lines. On the third day there was gangrene of the entire foot, extending rapidly, inflammation extending over groin and scrotum. The constitutional symptoms were, on the first day, nausea, cold skin, rigors, feeble pulse; second day, high fever, rigors, constant delirium, tongue dry and red, diarrhea; third day, condition worse, delirium continued; fourth day, convulsions and death. The treatment in this case consisted in free incision, labial suction, injections of a solution of iodin and potassium iodid locally, with ammonia and opium by mouth. It is perfectly obvious that death in this case was not due at all to the primary effects of the venom, but to an engrafted septic process of severe grade. The etiologic significance of incision and labial suction on this septic process is, of course, problematic.

The three remaining fatalities in the series of 99 cases were reported to me in personal communications from Crum of Brunswick, Md., and Turner of Bluemont, Va. These physicians had not treated the cases, but knew of them and believed them to be authentic. They also expressed the opinion that the fatal result was due largely to the large amount of bad whisky consumed, and in one case, at least, to a marked condition of chronic alcoholism.

In regard to the absolute frequency of poisoning from the bite of the copperhead little that is definite can be said. Certainly the fact that I, with no special effort on my part and practicing in a large city, have seen three cases and know of two others having occurred recently in the immediate vicinity, would indicate that the condition cannot be so very rare. This reptile is widely distributed east of the Mississippi as far north as Massachusetts and possibly even Vermont. According to Stejneger,[5] Kansas, Oklahoma and Texas seem to mark the western extent of its range, and it seems to be absent from the peninsular portion of Florida. In many localities where the rattlesnakes have been completely exterminated the copperhead is still found in considerable numbers. In regard to the relative frequency of bites by this species, there can be no doubt that, as stated in my first paper,[2] for reasons there presented, the figure of 17.1 per cent. as representing the proportion of cases due to the copperhead in 566 American cases (including the rattlesnakes, the copperhead, the water moccasin and coral snakes) is entirely too low.

The attitude of the profession regarding the danger from all cases of snake poisoning in this country is sadly in need of revision. The bites of the larger species of rattlesnakes and of the water moccasin are very dangerous, but fortunately they are comparatively rare. The danger from bites by the smaller rattlers and the copperhead is certainly slight. This being true, it is very important to see that the treatment is not only necessary but that it is not positively harmful. In the 99 cases considered only one of the 5 fatalities can be properly attributed to the direct activity of the venom. One of the other fatal cases was undoubtedly due to a septic infection to which the treatment of the injury predisposed. In the remaining three cases the alcoholic intoxication, added to the venom intoxication, undoubtedly contributed to the result. Thus a corrected mortality in these cases would be about 1 per cent., certainly small enough to indicate the slight danger to life from the venom itself. As far as the harmfulness of the accepted treatment is concerned, the three cases mentioned at the beginning of this paper may well be considered in evidence. In the first case the parents were forced to take the child on an expensive and entirely unnecessary journey. The finger was then unnecessarily opened. Such incisions are not without danger of subsequent deformity. In the second case again the finger was incised without reason, with a resulting infection which might have been serious. In the third case another finger was unnecessarily opened and nearly lost as a result of phenol gangrene. My conclusion from all this is that in poisoning from the bites of copperheads we have a condition of no great rarity in the eastern states, the danger from which is greatly overestimated by both laity and profession; that the local treatment is unnecessarily severe and dangerous, in that it opens up, often without due regard to asepsis, tissues which are predisposed to septic infection and tends toward producing subsequent deformity. In other words, in these cases, as usually treated, we have a condition the treatment of which is worse than the disease.

---

[1] Willson: Washington Med. Ann., 1910, viii, 409.
[2] Willson: Arch. Int. Med., Chicago, 1908, i, 516.
[3] Kunkler: Med. Counselor, Columbus, 1855, i, 481.
[4] Kunkler: Cincinnati Lancet and Observer, 1859, new series, ii, 662.
[5] Stejneger: The Poisonous Snakes of the United States, Report of U. S. Nat. Museum, 1893, Washington, 1895, p. 337

Locally the ideal treatment consists in the application of a series of ligatures between the wound and the heart, tied tightly enough to impede the return flow of blood and lymph but not to cut off the circulation and obliterate the pulse. This procedure makes the absorption of venom slower and therefore less likely to overpower the resistance of the body to the poisoning. When first seen in many cases the extremity will be ligated tightly enough to cut off the circulation completely. These ligatures should be promptly relaxed, as gangrene has occurred under these circumstances. I am fully convinced that the best interest of the patients in the majority of these cases of copperhead poisoning will be best conserved by no interference with the wound beyond the application of an antiseptic occlusive dressing. In cases in which a young child has been bitten by a large snake and comes under treatment at once, dissection of the wound and the use of crystals of potassium permanganate under every aseptic precaution would, of course, be indicated. When the case is seen after the lapse of some time, with the venom in all probability well diffused through the tissues, I doubt if this treatment does any good even in such cases, and certainly not enough to compensate for the increased danger of ordinary septic infection.

The general treatment is simple but important. The copperhead venom produces a very marked fall in blood-pressure and exerts a selective depressing effect on the respiratory center. The low blood-pressure should be treated by the administration of adrenalin by intravenous injection, if the condition promises to be at all serious. Of course, in such cases as the second and third reported above such a procedure would be highly unnecessary. Strychnin is probably as likely to be useful as any other stimulant, especially in those cases where there is a tendency toward respiratory depression. Caffein and camphorated oil would seem to be indicated on theoretical grounds, in bad cases, as in young children. The recumbent posture with the head low and external heat should be used. Bandaging the extremities, abdominal compression by a tight binder, and artificial respiration may be tried in very serious cases, but such cases will be very rare except in young children.

In conclusion I should like to urge on the members of the profession who have the opportunity of seeing these cases of copperhead bite, that they should be reported. Most of them seem like very trivial affairs, but it is for this very reason, in order to impress this fact on the profession, that they should be reported to the journals.

The Spinal Sign of Serofibrinous Pleurisy.—E. Ramond found the iliocostal and longissimus dorsi muscles constantly enlarged on the side corresponding to the pleural lesion in 76 cases of primary pleurisy and in 18 out of 21 secondary cases. The muscles below the twelfth rib can be felt much larger and more elastic on this side than on the other as the patient bends forward or to the side and the groove at the side of the spine is palpated. His communication on the subject was published in the *Bull. de la Soc. méd. des hôp.*, 1910, xxvii, 747.

ENDONASAL METHOD OF REMOVAL OF HYPOPHYSEAL TUMORS

WITH REPORT OF TWO SUCCESSFUL CASES

DR. OSKAR HIRSCH
VIENNA

In his article on the surgery of the hypophysis from the standpoint of the rhinologist, Dr. J. M. West[1] mentioned the fact that "heretofore rhinologists have been interested in the hypophysis only in a general way." Later on in his article he describes a method by which he resects the septum endonasally, thereby reaching the sphenoid, which he opens widely, and through this opening reaches the hypophysis.

Although Dr. West searched the German literature with great care concerning the operative treatment of hypophysis tumors, he neglected those publications which described the endonasal method, which was the most important to him.

In March, 1909, I published a new method[2] of endonasal operation for the removal of hypophyseal tumors. This method is based on Hajek's[3] radical operation on the sphenoid sinus and is done in several sittings. It is performed in the following way:

Operation.—Under cocain anesthesia the middle turbinate is removed at the first sitting. After a few days, again under cocain anesthesia the anterior and posterior ethmoidal cells are removed, by which operative procedure the entire anterior wall of the sphenoidal cavity is exposed. After another interval of several days, again under cocain anesthesia, the anterior wall of the sphenoid is removed *in toto*. Here one may again wait several days before beginning the last step of the operation, or as desired, may continue with the opening of the hypophyseal prominence and partially remove the hypophysis.

This is the method I demonstrated on the cadaver at the meeting of the Gesellschaft der Aerzte in Wien in March, 1909.[4]

In my first publication, and also in my demonstration, I gave reasons why my method, done under local anesthesia, should supersede the method of Schloffer.[5] My arguments in short are the following:

1. By the method of Schloffer it was impossible up to that time to remove the tumor of the hypophysis completely.

2. The removal of small portions of the tumor has been enough to influence the course of the disease favorably.

3. By my method it is possible to remove the tumor partially and so to get equally as good a result as one gets by the major surgical procedure of Schloffer.

My suggestion was taken skeptically. In the following year I had no opportunity of demonstrating the feasibility of my method on the living. But through the courtesy of Hofrat v. Wagner it was first possible for me to operate by my method on a patient suffering from tumor of the hypophysis and thus give my proposal a practical value.

History.—The patient was a woman aged 35, from Hofrat v. Wagner's clinic, who for seven years had epileptoid attacks, and for one year suffered from unbearable headaches and disturbances of sight. The Roentgen examination, made by Docent Dr. Schüller, showed an enlargement of the sella turcica and an erosion of the clinoid processes, which confirmed the diagnosis of a hypophysis tumor. Inasmuch as, through the pressure of the tumor on the optic nerve, the left eye was blind and the right eye was in imminent danger of becoming so, the proposal to remove the tumor was made and accepted by the patient.

---

[1] West, J. M.: Arch. f. Laryngol. u. Rhinol., xxiii, 288; The Surgery of the Hypophysis from the Standpoint of the Rhinologist, The Journal A. M. A., April 2, 1910, p. 1132.

[2] Wien. med. Wchnschr., 1909, No. 12, p. 630.

[3] Hajek: Arch. f. Laryngol., xvi, 105.

[4] Wien. klin. Wchnschr., April 1, 1909, p. 473.

[5] Schloffer, H.: Wien. klin. Wchnschr., 1907, pp. 621, 1075.

Operation.—With permission of Hofrat v. Wagner I used in this case the method of operation published by me in 1909.[2] The operation was done under cocain anesthesia endonasally and in several sittings. The course of the operation in this patient was as follows: In the first sitting I removed, under cocain anesthesia, the middle turbinate of the left side, which is an insignificant procedure. After several days in a second sitting I removed the ethmoid cells. This operation was also done under cocain anesthesia without any hemorrhage worthy of mention. After a several days' pause I resected in a third sitting the anterior wall of the sphenoidal cavity, again under a local anesthetic without pain or hemorrhage. After this operation the hypophyseal prominence, reaching deep into the sphenoidal cavity, was visible. The previously described procedures are commonly used by rhinologists in the treatment of chronic empyema of the sphenoidal sinus. The new feature in my method is the opening of the hypophyseal prominence with a chisel and the exposure of the tumor. For this operation I also chose local anesthesia. After cocainizing the nose and sphenoidal sinus with a 20 per cent. cocain solution I placed on the hypophyseal prominence a small chisel and by careful hammering made a transverse fissure in the bony envelope of the hypophysis tumor. Into this fissure I placed an elevator that is made in the form of a right angle and broke away the bony covering of the hypophyseal prominence in a rather large area. Through this opening in the bone the bluish dura became visible. Although this operation was done without hemorrhage or pain, I did not continue, as I wanted to see if this opening would not suffice to relieve the disturbances caused by the pressure of the tumor. This expectation was not realized and after several days it became necessary to lay bare the tumor itself.

I again cocainized the nose and the sphenoidal cavity with a 20 per cent. cocain solution and epinephrin and soon found the opening I had made in the hypophyseal prominence and with a knife opened the dura along the sphenoidal septum and pulled it away laterally as a flap. Immediately the gray hypophysis tumor arched through the opening into the sphenoidal cavity. I cut into the tumor with a knife and immediately a blood-tinged fluid ran from the nose and mouth. As I again examined the tumor it was smaller and pulsated at the wound margins, between which, on probing, I came into a cavity. I removed a small piece of the cyst wall and did not tampon, but merely placed a small ball of cotton in the anterior nares of the operated side of the nose.

Subsequent Course.—Immediately following the operation the patient's head felt much relieved. She was so slightly disturbed by the operation that she was able to walk with a nurse from the operating room to her ward. Her condition following the operation of March 8, 1910, remained good. She enjoys the best of health, is entirely free from headache and her temperature was always normal. The vision of the right eye improved in two days following the operation from 1/30 to 4/30, and two weeks later was 9/60; at the time of writing this paper her vision was 6/10. The field of vision also has improved greatly; the left eye remains amaurotic.

Examination of Specimen.—The microscopic examination of the excised cyst wall (Dr. Erdheim) showed hypophysis tissue; of tumor tissue there was nothing to be seen. The examination of the cyst contents showed phagocytic elements and blood pigment, a sign of an old hemorrhage.

The treatment of the above-mentioned case took more than five weeks. If one subtracts a longer pause, which was made in order to have some new instruments constructed, and if in the future one does several stages of the operations in one sitting, there will still remain two to three weeks as the necessary time to complete the treatment of a case.

As it may be possible that the progressive symptoms of a case, especially the optic atrophy, will not allow so long a period of treatment, I searched for a method in which the operation of hypophysis tumor could be performed at one sitting.

Influenced by Koenig's operation I made experiments on the cadaver to show that one could open systematically both sphenoidal cavities and the hypophyseal prominence under local anesthesia in one sitting and reduce the danger of infection to a minimum.

This method which I will describe here is a continuation of Killian's submucous window-resection of the nasal septum, for it includes the resection of the rostrum sphenoidale; also the anterior wall of both sphenoidal cavities and of the sphenoidal septum, by which the hypophyseal prominence is exposed in a satisfactory manner. The technic of this method in practice would be the following:

The mucous membrane of both sides of the nasal septum is cocainized with a 20 per cent. cocain solution and infiltrated in its entire extent with Schleich solution. An incision is now made along the anterior edge of the quadrangular cartilage, through the mucous membrane of one side, down to the cartilage, and the mucous membrane is raised by means of a raspatorium, together with perichondrium and periosteum from the cartilage and bone. The cartilage is now incised ½ cm. from the original incision and a raspatorium slipped between the perichondrium and the cartilage and carried to the posterior border of the septum; the mucous membrane, together with perichondrium and periosteum, are now raised from cartilage and bone on this side. The membranes are now held apart by a nasal speculum and in this way a medial nasal cavity formed in which one sees the bare cartilage. This is removed with one sweep of the cartilage knife and the vomer and the perpendicular plate of the ethmoid are resected with the aid of a bone forceps. Up to the present this operation is identical with Killian's submucous septum-resection.

To bare the anterior wall of the sphenoidal cavity it is necessary that the mucous membrane of the vomer where it joins the sphenoid be also separated from the bone. This is very easily done, after which the mucous membrane is separated from the anterior surface of the sphenoid on both sides as far as the ostium sphenoidale, so that the raspatorium falls into the sphenoidal cavity. Now, through this sack of mucous membrane one removes posterior part of the vomer and the rostrum sphenoidale with the bone forceps, and with several strokes of a chisel one breaks through the anterior wall of the sphenoid cavity and after removing the sphenoidal septum one sees the hypophyseal prominence in its entirety.

After opening the sella turcica and the dura of the hypophysis, respectively, the hypophyseal tumor lies free in the sphenoidal cavity.

By using this method I have opened the sella turcica on a cadaver whose skull had not been previously opened. Dr. Erdheim, an assistant at the Vienna Pathologic-Anatomic Institute, was kind enough to dissect the skull and found that by using the above-mentioned method I had made a large opening in the floor of the sella turcica without having injured any of the important neighboring organs (optic nerve, cavernous sinus, etc.)

Should the middle turbinate extend too far into the nose so that the mucous membrane of the septum cannot be separated from it far enough, they must be removed several days before beginning the real hypophysis operation.

Some time ago I operated on a case of hypophyseal tumor by the last-mentioned method (submucous resection of the septum of the nose and of the sphenoidal cavities). Up to the present time the patient's general condition is good and she is without fever.

The report of this case together with a more minute description of the operation will be published as soon as enough time has elapsed so that one can consider the effect of the operation.

NOTE.—Between the operation and the reading of proof on this paper six weeks have elapsed. The patient continues well. Vision, which before the operation was 6/6 in the right eye and 6/10 in the left, has increased to 6/5 in the right and 6/18 in the left. On June 17, 1910, I presented the patient before the Gesellschaft der Aerzte at Vienna. (*Wien. klin. Wchnschr.*, 1910, xxiii, 955.)

IX 3, Währingerstrasse 3.

CARCINOMA OF THE SPLEEN AND STOMACH, WITH UNUSUAL BLOOD PICTURE [*]

A. M. SHOEMAKER, M.D.
WHITE HAVEN, PA.

M. K., male, aged 38, single, came under my care Nov. 12, 1909.

Previous History.—Patient had typhoid fever 20 years ago, pleurisy 6 weeks previously, a slight cough for thirteen years, and a history of catching cold very easily. Previously to the pleurisy, he had apparently been in good health.

Family History.—Father, mother, six brothers and one sister all living and well.

Subjective Symptoms.—Slight cough, watery expectoration, poor appetite and poor digestion, with symptoms of fermentation, alternate constipation and diarrhea, slight and intermittent pain in the left upper quadrant of the abdomen.

Physical Examination.—Patient was emaciated (height 5 feet 4 inches, present weight 108½ pounds, highest previous weight 130 pounds, and average weight 120 pounds), extremely anemic, skin of a sallow pasty white, tongue red at the tip, beefy in appearance and coated posteriorly.

Impairment of each apex, more marked on the right side, with increased vocal resonance at both apices, bronchial breathing at the right apex and bronchial-vesicular at the left apex. At the left base there was movable dulness extending up to an inch above the angle of the scapula and to a corresponding level in front. Liver dulness began at the fifth interspace and extended in the mid-clavicular line to 2½ inches below the costal margin. Stomach tympany began at the seventh rib and extended to the costal margin. Abdomen was somewhat distended. Spleen and kidneys were not palpable. Heart dulness apparently did not extend to the right. There were no murmurs and the pulse was 120, small in volume and regular. Temperature 100.4 F.; urine red, sp. gr. 1.023, acid, no albumin or sugar; microscopic examination showed a few red blood cells, very few hyaline casts and oxalate calcium crystals. Repeated sputum examination negative for tubercle bacilli.

The evening of the day I examined him he vomited a lot of dark, foul-smelling blood. November 19, blood examination showed red blood cells, 1,960,000, hemoglobin 28 per cent., white blood cells 125,000. My first impression was that it was a medullary leukemia until it was shown that there were no myelocytes present. November 21, after a course of treatment with Fowler's solution the white blood cells were reduced to 81,000. At this time the spleen was easily palpated below and underneath the costal margin and the stomach tympany pushed upward. At times his bowel movements were almost black. Ordinary microscopic examination showed unmistakable red blood cells.

November 28, white blood cells 32,000, hemoglobin 36 per cent. I tapped him posteriorly at the eighth interspace at the point of most intense dulness and drew 7 ounces bloody serum. On the same day he was vaccinated with Koch's O. T. after method of von Pirquet. No reaction resulted.

November 30 patient complained of marked pain in the left upper quadrant of the abdomen and in the left lumbar region. Left lumbar region was tender and dull on percussion.

December 5, blood count showed red blood cells, 2,300,000, white blood cells, 54,000; hemoglobin, 28 per cent. Differential count, polymorphonuclear, 80.8 per cent.; lymphocytes, 10 per cent.; large mononuclears, 6.8 per cent.; eosinophiles, 2.4 per cent.

December 7 I aspirated and withdrew 52 ounces bloody serum from the pleura. He developed a general edema, even to the bulbar conjunctiva.

December 18 patient had a severe chill, with prostration, but recovered in a short time, and the next day felt as well as formerly.

December 20 patient died suddenly, apparently of shock. During the whole course of his illness he had but little fever, it averaging, the first three weeks, 97 F. a. m. to 101 F. p. m., being very irregular, and the second three weeks 97 F. a. m. to 99 F. p. m.

Clinical Diagnosis.—The diagnosis was not made before death. Tuberculosis of the lungs, while possible, was doubted, and if present of not enough moment to cause his symptoms. Malignancy or perinephritic abscess was suspected. The pleural effusion, because of the presence of blood, pointed either to an active tuberculosis of the pleura or malignancy. In view of the other symptoms it was thought the condition was probably malignant, possibly sarcoma.

Autopsy.—On opening the abdomen very little adipose tissue was present and there was a small amount of fluid in the peritoneal cavity. The liver extended downward about 3 inches below the costal margin; left lobe was adherent to the diaphragm and the stomach. The omentum was adherent to the organs of the left upper quadrant; spleen enlarged, extending below the costal margin about an inch and was adherent to the parietal peritoneum.

In separating the adhesions the spleen was ruptured posteriorly and found to be necrosed in its upper third. Behind it there was a large clot, its equal in size, and a large amount of necrosed tissue. On removal in the center of the necrosed area was found a growth the size of a large walnut which was harder than the surrounding tissue. On splitting, this growth was found to be a pinkish white and extended into the spleen tissue in finger-like shoots. Stomach and intestines were distended and a small growth found at the cardiac end of the stomach adjacent to the spleen. The pancreas was apparently normal. The under surface of the diaphragm adjacent to the spleen had the same growth. The left lung was absolutely collapsed. The left pleura over the diaphragm and the mediastinum was thickened, roughened and had several areas of congestion. There were a few recent cobweb adhesions from the lung to the pleura. The left pleural cavity was filled with serous fluid. The right lung showed marked anthracosis, some compensatory emphysema and thickening at the right apex, with some pleural adhesions at this point. Kidneys showed chronic parenchymatous nephritis.

From the extent and nature of the growth in the spleen, the smallness of the nodule in the stomach and the condition of it, and also from the history of the case and the course of the symptoms, it is to be presumed that the growth was primary in the spleen.

Histologic examination was made by Dr. W. T. Cummins, Philadelphia.

Anatomic Diagnosis.—Acute fibrinous pleuritis; emphysema and fibroid pneumonia; no tuberculosis; cloudy swelling of the liver; chronic parenchymatous nephritis; necrosis (post mortem) of pancreas; carcinoma simplex of stomach and spleen.

The diagnosis being rather a rare condition, I will quote in detail part of Dr. Cummins' report, which is as follows:

Section through diaphragm and spleen: On that portion of the section which seems to be the pleural surface of the diaphragm there is a fibrinocellular exudate, beneath which and extending to the muscular tissue there is a round-cell infiltrate. The remainder of the section closely resembles the description of spleen as noted below.

Spleen: Capsule moderately thickened, with fibrous tissue. That part of the spleen lying immediately beneath this appears quite loose and alveolated in character. A few Malpighian corpuscles are to be seen. Another section shows the entire specimen to be alveolated. The normal splenic cells are seen in each section, but in addition many polynuclear neutrophils and eosinophils and cells with large round and elliptical vesicular nuclei resembling epithelial cells.

---

[*] Read before the Luzerne County, Pa., Medical Society, June 8, 1910.

Stomach: Three sections all from cardia. These resemble each other rather closely, and in two of them the mucosa is well outlined and in places the basement membrane appears lost. Throughout the submucosa and muscularis the tissue is densely packed with cells of irregular character, all of which, however, have vesicular nuclei. There is almost no fibrous tissue and blood vessels are but few in number. In portions of the sections polynuclear neutrophils, eosinophils and plasma cells are present. These are seen prominently near the mucous surface. On account of the evident proliferation of the glandular epithelium, penetration of the basement membrane and the vesicular and epithelial character of the cells making up the major part of the tissue, a diagnosis of carcinoma is made.

THE RÔLE OF SURGERY IN PREVENTIVE MEDICINE[*]

MILES F. PORTER, A.M., M.D.
Surgeon to Hope Hospital, Professor of Surgery in the Indiana University School of Medicine
FORT WAYNE, IND.

By the removal of infection atria surgery may do much to prevent disease. That adenoids and diseased tonsils and gums are the port of entry for many serious infections, among which may be mentioned tuberculosis,[2] typhoid, and diphtheria is well recognized, but it may be well to mention here the etiologic relationship these conditions seem to bear to more rare but yet important infections such as noma and acute poliomyelitis. The evidence is well-nigh conclusive that in the Scandinavian epidemic of poliomyelitis the contagion entered by way of the nasopharynx, and in a personal letter H. W. Hill, of the State Board of Health of Minnesota, says he strongly suspects that the same is true of the late epidemic in his state.

After considerable study of the subject and a limited personal experience I am convinced that the important practical fact concerning noma is that it is above all else an expression of a lowered vitality, consequent on antecedent disease. In Neuhof's[3] recent report of eight cases there is not to be found one primary case. Measles preceded the noma in all cases and both measles and ulcerative stomatitis in six cases. Perhaps in the majority of cases this antecedent disease is medical rather than surgical, but in not a few cases it is surgical, and timely, intelligent, surgical treatment might avert the catastrophe. I have in mind especially diseases of the mouth, teeth and nasopharynx.

Such deformities as club-foot, hernia, etc., prevent their possessors from living correct lives and thus lower resistance to disease. Not only does removal of these disabilities conduce to greater physical strength, but I am constrained to believe that the psychic improvement is quite as important. Compare, for instance, pictures of club-foot patients taken before and after cure, and you will, in the older patients, quite often see almost as much improvement in the facial expression as in the form of the feet. I can not but feel that this improvement in expression marks a change for the better in the patients's attitude toward life, which is a health asset of real value. If this change for the better is brought about by relief in the older patients, it is a fair presumption that the deterioration might be prevented by early operation.

Not only should local tuberculous lesions be cured in the interest of the patients themselves, but when these lesions are discharging, the interest of the community quite as forcibly demands that they be cured.

The only reason why patients with tuberculosis of the urinary tract or patients with anal fistulae are not so great a menace to the public as are those with pulmonary tuberculosis is that the bacilli from the former are usually dropped into the closet. Too little attention is paid by surgeons generally to minimizing the dissemination of pus-producing bacteria by patients, especially those patients with comparatively trivial troubles, who are going about, and perhaps dressing their lesions themselves. Suppurating lesions should be treated with the welfare of the public in view as well as that of the patient. Ordinarily the surgeon is content if he treats his patient properly and does not himself carry the infection. Is it not his duty also, through proper instruction to these patients, to prevent them from spreading the infection? Does it require a great stretch of the imagination to suppose, for instance, that a child with a discharging ear is in a certain degree a menace to others, and especially to the mother who happens to be confined during her ministrations to the child?

Notwithstanding the activity of the otologists, deaths from brain abscess, meningitis and thrombophlebitis resulting from neglected middle-ear disease are all too common. Like laceration of the cervix, phimosis has been blamed as causing almost everything in the way of illness from pain to paresis, and it is quite probable that circumcision, like cervical repair work, was for a time overdone; but to-day the pendulum has swung too far in the other direction. From an experience by no means small I have come to regard phimosis as one of the most productive causes of hernia in children; as a frequent cause of cancer of the foreskin; and a frequent cause of serious nervous manifestations. Moreover, a tight foreskin is neither comfortable nor cleanly; and it not only makes its possessor an easy prey to venereal infection, but what is of greater importance, enhances his ability as a carrier of infection.

The importance of long continued irritation as an etiologic factor in cancer grows as our knowledge increases. Many cancers of the stomach might be prevented by early surgical intervention in gastric ulcer. Stone as a cause of cancer of the kidney has long been recognized. In the Mayo clinic two cases of stone associated with cancer of the kidney were met in a total of sixty cases. In an experience covering twenty cases, or less, I have met two cases.[4] In three cases of large polycystic kidney I found carcinoma twice. Both were in male patients over 40. In one there was also a pelvic stone, but in the other nothing but the polycystic condition with cancerous degeneration.

I have seen sarcoma engrafted on a fatty tumor of the elbow in an elderly woman. The tumor was situated on the flexor side of the joint where it was many times daily subjected to pressure. What surgeon of experience but has seen many cases of carcinoma or sarcoma commence in warts, moles, eczematous patches and fissures? It is my firm conviction that by timely surgery cancer could be prevented in a large percentage of cases. Most of the cases of cancer cured by surgery are those which are cured before they come, plus those which are cured before the diagnosis can be made save by the microscope; and herein lies the cause of cancer quacks' continued popularity: "Didn't he cure Belinda Brown of a cancer which commenced just like that one which killed Sarah Smith?" The point I wish to make is this: that by removing causes of irritation in the shape of gastric ulcers, lacerated cervices, phimoses, gall-stones, kidney-stones, warts, moles and other non-malignant tumors and causes of irritation, surgery can prevent more deaths from cancer than it can by the removal of cancerous conditions after such a diagnosis is possible. I venture to suggest here an addition to our cancer vocabulary, viz., potential cancer. Through a personal communication from Dr. H. K. Mouser[5] I learned that of the epileptics in the Indiana School for Feeble-Minded Youth 17.64 per cent. have a history of difficult labor, and that of all the inmates the percentage of difficult labor in 727 cases in which the birth history is given is 11.69. Practically all children who suffer from cerebral hemorrhage produced by birth injuries are permanently disabled, and 30 per cent. of those who recover develop epilepsy.[6] Ten per cent. of the cases of infantile convulsions and practically all cases of congenital palsy are due to abnormal labor.

---

[*] Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[*] Some introductory remarks concerning the Section are omitted from THE JOURNAL but appear in the Transactions.

2. According to Chiari (Berl. klin. Wchnschr., 1899, Nos. 45 and 47) adenoids are the primary seat of tuberculous infection in 5 per cent. of all cases. Recent observations of Murphy especially, seem to show that the majority of joint infections are due to bacteria which enter the blood via the nose or throat.

3. Am. Jour. Med. Sc., May, 1910, p. 705.

4. My second case of cancer with stone occurred after my paper on nephrolithiasis, read before the Section on Surgery at this Session, was written. Hence in that paper only one case is reported.

What does "abnormal" and "difficult" labor mean in these instances? It means version, high forceps, and labor terminated by the unaided forces of Nature after an unconscionable lapse of time and expenditure of maternal energy. In these so-called abnormal labors the maternal mortality is 1.11 per cent., the maternal morbidity is 42 per cent.; over 20 per cent. of the children die,[7] and 10 per cent. of those that live are seriously injured as a result of birth injuries.[8] Couple these facts with those just given concerning fetal morbidity in this class of labors, and see if you do not agree with me in the assertion that timely, courageous and intelligent obstetric surgery can prevent much of this morbidity and mortality. Some experience and a careful study of the subject forces me to the conclusion that Cesarean section in competent hands could prevent much of this loss of life and usefulness.

In the preparation of a paper on Cesarean section for the Southern Surgical and Gynecological Association[8] I gathered through correspondence the opinions of a number of men of experience on this subject. Permit me to quote four, which fairly represent the concensus of opinion of the whole.

Newell of Boston says:

> In the first place the elective operation done before labor, in the absence of complicating disease, with the patient in good condition, is, in competent hands, a safe surgical procedure, and I believe the morbidity in these cases is very slight and certainly very much less than could be claimed for the ordinary obstetrical operation in the same class.

De Lee thinks that "Cesarean section ought to have a wider field and should replace many of the brutal forceps and version operations." Davis says:

> Elective Cesarean section by competent operators, on uninjured and uninfected patients in good condition, gives at the present time the best chance of life and health to the mother and child in cases where mechanical disproportion or physiologic incompetence to endure labor are markedly present.

Hirst (who has done 80 Cesarean sections, with 5 deaths) says:

> My recent experience convinces me that Cesarean sections may be done with impunity after hours of labor, if the woman is not infected and the technic of the operation is as good as it ought to be; the mortality even in infected cases need not necessarily be excessively high.

That prompt surgical treatment in birth injuries will prevent many deaths, and much invalidism, most of which is worse than death, no one who has studied the subject will deny.

As intimated in the beginning, this paper can be little more than suggestive, but if it is instrumental in arousing an interest in the subject commensurate with its importance, then my object has been accomplished.

West Wayne Street.

---

[5] Internat. Jour. Surg., September, 1909, p. 269.
[6] Progressive Med., March, 1907.
[7] Progressive Med., March, 1908.
[8] Porter, M. F.: Elective Cesarean Section, THE JOURNAL A. M. A., March 20, 1909, p. 927.

A CUTANEOUS ANAPHYLACTIC REACTION AS A CONTRA-INDICATION TO THE ADMINISTRATION OF ANTITOXIN *

W. L. MOSS, M.D.
Associate in Medicine, Johns Hopkins University
BALTIMORE

Almost every physician who frequently has occasion to administer antitoxic serum has seen more or less serious symptoms follow the injection in individuals who months or even years previously have received serum. These symptoms usually develop within twenty-four hours, often in less time, and may be slight, consisting of one or several of the following: erythema, urticaria, swelling of lymph-glands, joint pains, fever, or they may be very grave, consisting of the above in an exaggerated form with profound collapse, albuminuria and bloody stools.

It seems very desirable to be able to determine in advance those cases in which a second administration of serum will precipitate dangerous anaphylactic manifestations. In a recent paper Knox, Moss and Brown[1] described a local cutaneous anaphylactic reaction which indicates hypersensitiveness in rabbits to horse serum. Thinking that this test might give the desired information in the case of patients requiring a second injection of antitoxin after a lapse of sufficient time for the development of hypersensitiveness, I have applied it in thirty cases.

Before discussing the results, the test, which is extremely simple and easy to perform, may be described as follows: The skin of the non-hairy, inner side of the upper arm is cleansed with alcohol, dried with a sterile sponge and 0.01 c.c. normal horse-serum, preserved with a few drops of chloroform, is injected intradermally. A fine needle and a hypodermic syringe divided into hundredths of a cubic centimeter is convenient for this purpose, and undiluted serum should be used. A positive reaction consists usually of an area of inflammation

---

* From the Research Laboratory, Phipps Dispensary, Johns Hopkins Hospital.

[1] Knox, J. H. M., Moss, W. L., and Brown, G. L.: Subcutaneous Reaction of Rabbits to Horse Serum, Jour. Exper. Med., 1910, xii, 562.

1 to 2 cm. in diameter, which comes on within twenty-four hours and disappears in two or three days. It sometimes happens that the entire reaction is over in twenty-four hours, so that an observation should be made at the end of about ten hours after the injection. The reaction is purely local at the site of injection and in no case have any constitutional symptoms or discomfort resulted. With a negative reaction nothing is to be observed except perhaps the needle-prick, and if care be taken to introduce the needle sufficiently superficially even this may not be found.

Of the thirty individuals tested nine had never received any form of antitoxin and all nine gave a negative reaction. The remaining twenty-one individuals had received antitoxin from four months to ten years previously. Ten of these gave positive reactions and eleven negative. The result does not seem to depend on the length of time which has elapsed since the injection of antitoxin, as the positive and negative reactions were about equally distributed as regards the time interval since injection. It is hardly to be expected that all ten of the patients giving a positive skin reaction would develop serious anaphylactic symptoms should they receive another therapeutic or prophylactic dose of antitoxin, but of the ten positive reactions especial attention must be called to three which differed markedly from the remainder. These set in with explosive suddenness, one at the end of about six hours, another after about eight hours and the third after about twenty-four hours. Immediately surrounding the site of injection there suddenly appeared an urticarial wheal about 1.5 cm. in diameter and surrounding this an areola of inflammation about 5 to 6 cm. in diameter. The appearance of the reaction was accompanied by marked itching, but no other manifestation. These three reactions subsided as the others did, except, perhaps, in less time. It would seem that reactions of the nature just described might indicate danger from any further injection of antitoxic serum.

The value of this test can be determined only by injecting therapeutic or prophylactic doses of antitoxin in individuals who give a positive skin reaction. Since the value is undetermined, patients who give a positive skin reaction must present themselves in whom the indication for the administration of antitoxin is sufficiently urgent to overbalance any possible fears we may have of serious anaphylactic manifestations resulting.

I have presented this reaction before having tested it out fully, because of the length of time which would be required to do it in this hospital, owing to the fact that at present we have no ward for contagious diseases such as diphtheria. I would suggest that wherever a delay of twenty-four hours is permissible before the injection of antitoxin, this test be performed; if the patient gives the ordinary positive reaction and the indication for antitoxin is very slight it might be safer to withhold the antitoxin, but if the indication is fairly strong the patient should receive the injection. In the presence of a positive reaction, such as described in the three cases above, I should hesitate to give antitoxin except on very urgent indications; however, the value of the test must be finally determined by just such cases, and it is to be hoped that any who carry out the test will report the results in order that we may determine if the reaction gives us a means of knowing in advance those cases in which second injections of antitoxin are contraindicated and thereby prevent the lamentable accidents which sometimes now occur.

In conclusion I would say that, so far as I am aware, no such test as I have proposed has been recorded, although I make no claims to having gone through the enormous literature which has appeared in the last few years on the subject of anaphylaxis.

LARGE ACCIDENTAL VULVAR HEMATOMA AT TERM

COLIN G. ROBERTSON, M.D.
SANDUSKY, MICH.

Accident. On July 4, Mrs. A. R., aged 39, quintipara, pregnant at term, while milking, was knocked down by a cow, and struck the vulva on a corner of a box. Immediately a vulvar tumor appeared, with lancinating pain, faintness and shock; the swelling increased until she was carried to the house and placed prone. Patient was seen in half an hour; pulse was 110, respiration 30, temperature 98.

Examination. There was found a tense globular tumor at vulva, as large as the head of a 9-pound child, elastic in consistency, purple in color, painful to the touch, and located in the right labium major. The vulvar orifice was displaced to the left, barely admitting a finger, which outlined the tumor for 3½ inches, along the bulging right vaginal wall. No varices were apparent.

Treatment. Under chloroform anesthesia, administered by Dr. George S. Tweedie, and with aseptic precautions, the tumor was incised, for one inch and a half, at the junction of the labial skin and vaginal membrane, where rupture appeared imminent, and over two pints of clotted blood were evacuated by the finger, with free continued hemorrhage. The cavity was irrigated and packed with sterile gauze, and a snug pudendal pad applied. The usual restorative measures were employed. The packing was partially removed next day with irrigation. On the day following, at 9:30 a. m., the remainder was removed and the cavity irrigated and dressed.

Labor. At 2 p. m., July 6, labor commenced and a robust male child was born at 2:20. On my arrival at 2:30, examination showed that an irregular portion of right vaginal wall, about 2 inches by 1 inch, had been torn off by the descent of the head. Placenta was expelled by Credé's method. Free hemorrhage was controlled by ergot, fundal kneading, and hot irrigation.

The puerperium was normal, without a rise of temperature. The vaginal tear was irrigated and dressed daily.

This case is considered worthy of reporting for these reasons: a large, accidental, labial hematoma near term, not inducing labor, which came on naturally, yet precipitately, two days later; the partial destruction of the right vaginal wall by the descent of the head; the normal convalescence under adverse conditions.

Treatment of Angina Pectoris.—F. G. Thomson, in the *Medical Press and Circular*, states that the treatment of an actual attack of angina pectoris demands three considerations: (1) Rest, to promote restoration of heart power; (2) vasodilators, to diminish cardiac strain; and (3) morphin, to relieve the pain when this is not achieved by rest and amyl nitrite or nitroglycerin. In cases of severe spasmodic pain in middle-aged people, amyl nitrite, by lowering arterial tension, may provide instant relief, but in those cases of advanced fibroid degeneration in old people in which severe, prolonged frequently occurring attacks of cardiac pain render life a burden, the only drug which seems to give relief is morphin, or failing that, the administration of chloroform. In either case the relief is only temporary, and the repeated administration of one or other of these drugs may be necessary to render bearable the closing stages of a distressing and painful condition.

Therapeutics

INTESTINAL INDIGESTION

Whether there is more or less continued diarrhea or whether diarrhea is intermittent, or whether there is intestinal putrefaction, especially colon putrefaction, or simply intestinal fermentation with a large production of intestinal gas, in any of these conditions, radical changes in diet have long been found of value. As such a condition cannot long persist without causing various disturbances, such as coated tongue, bad taste in the mouth, bad breath, headache, sleepiness in the daytime and restless sleep at night, abnormal perspiration, often irritation of the kidney and even of the bladder, intestinal indigestion should be radically treated in its incipiency.

It has long been shown that certain bacteria are normal in the intestine, and certain bacteria normally there cause more or less serious symptoms of toxemia if they become enormously multiplied, or under favorable conditions in the intestines for their growth, produce sufficient toxins to cause the symptoms just enumerated. Also, there may develop in the intestines bacteria which are absolutely foreign to the intestines, i. e., which are distinctly pathologic. It has also been shown that certain bacteria thrive best on protein digestive products, or rather on products of protein indigestion, and if this pabulum is removed the germs die a natural death. This same is true of certain germs that grow best in the carbohydrate by-products or digestive products, and, here again, if this pabulum is changed the germs die. The cause of putrefaction in the intestines in adults is more likely to be the results of protein decomposition. This knowledge is not frequently enough utilized in the treatment of these intestinal indigestions.

Lately C. A. Herter *(Internationale Beiträge zur Path. und Therap. der Ernährungs-Störungen*, 1910, I, No. 3, p. 275) has carefully noted the results of rapid changes in the diets of men, monkeys and cats, and finds that changes from a dominant protein diet to one in which carbohydrates preponderate were followed by definite and consistent changes in physiologic conditions in three distinct directions, viz.: a. in the nature of the intestinal bacterial flora; b, in the putrefactive products of the feces and the urine; c, in the clinical conditions.

A. Nature of Intestinal Bacterial Flora.—The chief characteristic of the dominantly protein diet is the development of a strongly proteolytic type of bacterial organisms. The mixed fecal flora in such a diet contains a high proportion of bacteria capable of peptonizing casein actively, and of liquefying gelatin. A large proportion of the organisms may be classed in the *B. subtilis* group. In the experiments on men and cats *B. aerogenes capsulatus* also appeared. The organisms on the protein diet also possessed the power of forming an abundance of gas in dextrose bouillon. After fermentation for twenty-four hours, the gas in the fermentation tube amounted to from 60 to 90 per cent.

On changing from the protein to the carbohydrate diet, the flora undergoes a rapid change with substitution of an acidophilic, feebly proteolyzing type. Cultural investigations have shown that these organisms are allied to those characteristic of normal nurslings. The mixed fecal flora from the carbohydrate diet produces very little gas in sugar bouillon fermentation tubes.

B. Putrefactive Products of the Feces and the Urine.—A well marked feature of the protein diet is the occurrence of neutral or alkaline stools containing products of putrefaction, such as indol, skatol, phenol, aromatic oxyacids, indolacetic acid and hydrogen sulphid. On the carbohydrate diet all of these substances are greatly reduced in amount, or are entirely absent. wholly in accord with these results is the fact that the indican and the aromatic oxyacids of the urine are markedly diminished during the carbohydrate diet, and may become undetectable.

C. Clinical Conditions.—The clinical conditions were most significant in experiments on monkeys, where Herter was able to feed exclusively on hard boiled eggs for considerable periods of time. In these animals, as the proteolytic bacteria became dominant in the alimentary canal, a state of drowsiness developed. The animal remained on its perch, holding its head in its hands. It grew stupid, responded poorly to outside stimuli, and in general showed but little interest in its surroundings. As carbohydrate was added to the diet, both the psychical and physical attitude of the animal underwent a marked change. The posture became erect and the usual brightness and alertness returned. Herter believes the symptoms observed on the protein diet were signs of intoxication brought about through the excessive use of protein.

The bacterial changes in the intestine, the products of putrefaction and the clinical conditions may thus be varied at will by changing the amounts of protein and carbohydrate in the diet. It seems probable that in conditions of disease of the intestinal tract where certain undesirable bacteria abound that frequent alterations in the chemical nature of the diet may become beneficial by interfering with the establishment of any one type of bacteria in the intestine. This view harmonizes with the clinical results often obtained from variations in the diet in infancy and in adult life.

INTESTINAL INDIGESTION IN CHILDREN

Drs. John L. Morse and Fritz E. Talbot (*American Journal of the Medical Sciences*, June, 1910) have made a study of the stools of children who have had intestinal indigestion or who did not get the value of the food which they ingested. They have studied the proposition from the standpoint of actual nutrition values of the various foods and what the child needs in calories, and they find that an ordinary child four years of age needs 1,200 calories; eight years old, 1,400 calories; and twelve years old 1,600 every twenty-four hours. They believe that a child four years old needs 55 grams of protein; a child eight years old, 60 grams, and a child twelve years old, 75 grams every twenty four hours; 5 grams may be added to the above average for boys and perhaps 5 grams deducted from the above average for girls. These are the average protein needs, and not the minimum protein need, which is roughly about two-thirds of the average amount.

These investigators find that fats may be entirely replaced by carbohydrates for a considerable period without doing harm, but there is a certain amount of risk in replacing carbohydrates entirely by fats because of the danger of causing acid intoxication or acidosis. They present a very graphic table of food values, to which the reader is referred. Suffice it to state here that a quart of ordinary milk represents 670 calories; a tablespoonful of cooked oatmeal and most other cereals, 25 calories; a tablespoonful of cooked rice, 15 calories; a potato the size of a large egg, 100 calories; an ounce of meat, 60 calories; an ounce of beef juice, 10 calories; an ounce of butter, 225 calories; a full teaspoon of cane sugar, 25 calories; a slice of bread, 75 calories, etc.

A normal child's stool should be "homogeneous in consistency; a lumpy or mushy condition is pathologic." When lumps are present in the stools there is an excess of milk, meat or eggs in the diet, or the reverse, the child is under-fed. The child may have these lumpy stools when he is apparently getting enough in bulk to eat with a large indigestible residue but really not enough of actual nutriment. Improper chewing of food may give indigestible masses. A normal child's stool reacts to litmus paper weakly alkaline, weakly amphoteric (weakly alkaline and weakly acid), or neutral. "A very strong alkaline reaction, especially if accompanied by a putrefactive odor, suggests protein putrefaction. A strong acid reaction associated with a rancid odor suggests disturbances in the digestion of fat; if associated with the odor of lactic or acetic acid, suggests disturbance in the digestion of carbohydrates. In the latter case there is likely to be bubbles or a frothy condition."

For classification Morse and Talbot suggest dividing the stools into fatty stools, carbohydrate stools and catarrhal stools. "The fatty stools are greenish or white in color, dry or of clay-like or creamy consistency, acid in reaction, and of a rancid odor. The carbohydrate stools are brown or golden yellow in color, salve-like in consistency, acid in reaction, and acid or sour in odor. The catarrhal stools show a basis of mucus and often have a foul odor indicating protein putrefaction." The authors describe the microscopic appearance and chemical staining of the stools, but it is not the object of this abstract to discuss this detail, but to present a ready method of ascertaining, approximately at least, the character of the child's digestion. Test meals or test daily diets are not essential. It is essential, however, to know what food the child has eaten for twenty-four, or better, forty-eight hours, preceding the macroscopic and reaction study of the stool.

Morse and Talbot found in their investigations that many times the difficulties in digestion were due more to an excess in the quantity of food than in errors in quality. Brief abstracts of two of the cases that they present are of therapeutic value.

A boy $4\frac{1}{2}$ years old had five or six loose movements of the bowels a day and was losing weight. Investigation showed that he was over-fed, that the calorie value of his food was nearly twice what was needed. This was corrected, the caloric value of his food being reduced to what was the normal average, and the movements immediately dropped to two a day and the child began to increase in weight.

A boy 2 years of age had been losing color and weight for about three months, and an estimtae of the food taken showed he was getting 1,200 calories per day, where approximately his needs were for only 1,000 per day. At a given date his diet for twenty-four hours consisted of 34 ounces of milk, 4 tablespoonfuls of cereal, 2 tablespoonfuls of beef juice, 3 slices of bread and a baked potato. This gave him about 1,150 calories furnished by 40 grams of fat, 130 grams of carbohydrates and 50 grams of protein. Examination of his stools, two a day, showed them to be yellow, semisolid, of foul odor, of alkaline reaction and to contain a small amount of mucus. The microscope showed that starch was not well digested, while fat was. The starch part of the food was then cut down and meat added to his diet, and one week after the above diet it was changed to 33 ounces of milk, 2 tablespoonfuls of cereal, 2 slices of bread, a baked potato and 2 small slices of chicken. This represented about 1,050 calories furnished by about 40 grams of fat, 105 grams of carbohydrates and 50 grams of protein. His movements then became brown, soft, of uniform consistency, alkaline in reaction and contained but a small amount of mucus. The microscope showed a slight excess of neutral fat and fatty acids but no excess of meat fibers, and there was no undigested starch. The amount of milk was then cut down and the starch slightly increased, and from this time on the child has continued a steady improvement in every way.

Several instances are cited where too much fat and too much milk were given to children. Examination of the stools, with the child's diet being known, suggested proper correction. Improvement followed as proof of the needed change in diet.

The object of this article is to urge that a little more time be given by the physician in inquiring into the exact diet of a child with intestinal indigestion, or a child that is losing weight; that he personally examine one or two of the stools; that he have on hand, readily accessible, a table of the protein and caloric value of foods and a table of estimation of the average needs of a child of various ages; that he more carefully suggest or arrange the diet that is probably correct for the child, and then, week by week, modify that diet to the child's individuality. If this amount of care is taken less medicine, less tonics, less astringents, less bismuth, less lime and less change of climate will be needed to rescue the young child from more serious conditions than that we are discussing.

CHRONIC COLITIS

Any treatment that has proved of value in chronic inflammation of the large intestines should be noted. Ludwig von Aldor (*Therapeutische Monatshefte*, 1910, xxiv, No. 4, p. 171), after several years of investigation, has come to the conclusion that flesh food should be largely or entirely removed from the diet during chronic colitis. He also has found benefit from the local application of hot gelatin solutions. For this purpose the patient receives a rinsing enema of a pint of water at a temperature of 77 to 83 F. (25 to 28 C.) one hour before the gelatin injection. He is then made to rest in bed for at least half an hour. From 40 to 80 c.c. ($1\frac{1}{3}$-$2\frac{2}{3}$ fluid ounces) of a 10 per cent. gelatin at a temperature of 113 to 125 F. (45 to 52 C.) are then injected, with the patient lying in bed on his left side. The abdomen is covered with a hot compress and the patient is kept perfectly quiet for two hours. In many cases the gelatin is completely retained by this procedure. Von Aldor puts much emphasis on the high temperature of the gelatin solution. A temperature of 113 to 122 F. (45 to 50 C.) is very easily borne by the large intestine.

Usually the patient passes a well-formed stool several hours after the injection. The injections are given every day until complete recovery occurs, which is in from three to fourteen days. The treatment is absolutely harmless and has proved effective in all cases in which the author has tried it. He believes that the therapeutic value is due:

1. To the high temperature.
2. To the use of non-fermenting substance for injection.
3. To the absorption and mechanical removal of the bacteria and intestinal excretions by the gelatin.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[For other information see second page following reading matter

SATURDAY, AUGUST 27, 1910

WATER FILTRATION AND TYPHOID FEVER

The significance of the continued high rate of typhoid fever in Washington, D. C., after the installation of a supposedly model filtration plant, is again brought up for discussion, this time by H. W. Hill.[1] The facts of the situation are sufficiently remarkable to bear repetition. Here was a well-sewered city with a relatively high typhoid rate: the apparently excessive prevalence of the disease extended over many years and was attributed by those who studied the situation to a contaminated drinking-water. No dissenting voice was raised against this conclusion. In the instructive controversy over the relative merits of slow sand filters and mechanical filters which preceded the construction of the Washington filter-bed no one seems to have questioned that the supply of water from the Potomac river was highly polluted. The numerous committee reports and discussions of ten years ago abound in statements like the following: "Filtration of the Potomac water on a large scale is imperatively called for in order to diminish the excessive typhoid fever death-rate in the national capital." As the outcome of years of persistent agitation the construction of a filter-bed on the principle of slow sand filtration was finally authorized, and since October, 1905, the City of Washington has had an uninterrupted supply of filtered water.

Now, the surprising sequel is that the presumptive improvement in the character of the Washington water-supply due to the construction of the filter did not lead at once to a noteworthy reduction of the typhoid death-rate. Contrary to the experience of Lawrence, Albany and other American cities which have installed slow sand filters, the typhoid rate in Washington showed no immediate decline, but was even somewhat higher the year following the use of the filter than in the three years immediately preceding! This unexpected outcome sowed seeds of dissension in the councils of sanitarians. Some were at once for throwing over slow sand filtration as a method of water purification; others maintained that water could never have been an important factor in the causation of typhoid fever in Washington, and still others attributed the continued prevalence of the disease to defective operation of the filters.

It is fortunate indeed that the study of the situation thus outlined has fallen into competent hands. Under the auspices of the Public Health and Marine-Hospital Service three reports on typhoid fever for the years 1906, 1907 and 1908 have been issued, and a fourth report for 1909 is in preparation. These reports are models of careful observation and accurate gathering of statistics, but they have not given satisfaction to some sanitarians because they did not arrive at "definite conclusions." Others, while not objecting to the indefiniteness of these reports, have criticized their hints at mysterious causes and unknown factors. Others again, among whom Hill is one, frankly disagree with the conclusion of these reports that the filtered water-supply of Washington has played a relatively minor part, if any, in the causation of typhoid fever.

This well-known sanitarian, in the article just cited, avows his belief that "the vast majority of the native primary cases of typhoid fever in Washington otherwise unaccounted for are due to infection conveyed to them by the Washington water." It may be so. Every one knows how difficult it is to prove the negative of such a proposition. At the same time, if analogy and experience count for anything, the evidence, in order to be conclusive, not only must demonstrate the continued possibility of infection from the improved water-supply, but must practically exclude the possibility of infection through other channels. On the one hand, as we have mentioned before,[2] there is a possibility that carriers, infected by a previous polluted water-supply, may hand on the infection after the water has been purified and made safe. On the other, no one has yet brought forward any evidence to show that the Washington filters are more poorly constructed or more carelessly operated than the similar filters in Lawrence, Albany, Hamburg or London. It will be hard to convince sanitary authorities generally that a filtered water, in which only one out of seventy 10 c.c. samples contained the colon bacillus, is not a fairly safe water as filtered waters go. Evidence rather than assertion is needed. Hill suggests that a few months' sterilization of the water with hypochlorites would eliminate all doubt concerning water infection. Some such procedure as this would seem well worth while, since competent judges of the situation are so completely at variance.

Whatever be the explanation of the Washington situation, there is no need for discouragement on the part of the advocates of filtration. The reports coming in every day from various other cities that have adopted this method of water purification are uniformly favorable. Typhoid mortality in Philadelphia has fallen from 74.8 in 1906 to 21.2 in 1909, the mortality in the latter year being the lowest in the history of the city. Within three months Philadelphia has seen two entire weeks pass without a single death from typhoid fever. Columbus, Ohio, reports only 209 cases of typhoid and 20 deaths the first year of the filtration plant (1909), as against 1,565 cases and 170 deaths in the year preceding. The use of a settling basin in Richmond, Va., has been followed by a reduction in typhoid mortality, there being only fifteen cases reported in July of this year, as contrasted with eighty-eight in July, 1909. There is still ground for believing that storage and filtration are effective agencies of water purification.

---

[1] Hill, H. W., Am. Jour. Pub. Hyg., 1910, vi, p. 430.

[2] The Importance of the Typhoid Carrier, The Journal A. M. A., Aug. 13, 1910, p. 600.

PHARMACOLOGY AND THE CLINIC

Now that clinicians are using drugs more and more on the basis of experimental observation, both clinical and laboratory, it is of interest to read what Professor O. Loewi has to say on the subject in his inaugural address as professor of experimental pharmacology at Graz.[1] Loewi is a pharmacologist of the Schmiedeberg school, which has to its credit on the one hand the clearing up of the tremendous amount of rubbish which had accumulated in the Pharmacopeia, and on the other hand a wise moderation in refusing to follow blindly the bold flights of modern immunology. As he points out, it is in the study of fundamental cell problems, such as the physical properties of the colloids and the chemistry of the cell, by the methods peculiar to itself, that the future of pharmacology as a fundamental science must depend. The subject cannot be of real practical use until it has first established itself on such a basis.

To mention a few brief examples which Loewi uses to illustrate how cooperation between pharmacologist and clinician can lead to practical results: The fact that clinicians sometimes fail to obtain at the bedside results which laboratory observations might lead them to expect has been attributed to the difference in the behavior of drugs in the normal and diseased organism. Both pathology and pharmacology teach that in many instances this difference in reaction of a given organism, when not associated with actual destructive changes, is a mere matter of variation in irritability. The problem of treatment then becomes a matter of dosage. In case of intestinal colic, in which the clinician was inclined to condemn the use of the usual one-milligram (1/60 gr.) dose of atropin on account of the development of toxic symptoms, the dose was reduced to the unusually small amount of one-twentieth of a milligram (1/1200 gr.). Not only were the toxic symptoms eliminated but the desired therapeutic result was obtained. Just as in lead-poisoning the presence of the lead renders the intestine so much more irritable that a dose of atropin, which would have very little demonstrable effect on the normal intestine, can relieve the symptoms, so here, by a pathologic condition the intestine had been rendered so irritable as to react to a minute dose.

The opposite condition, or decreased irritability, also sometimes has to be met. To treat this condition by an increase in dosage is not always wise, unless the clinician has a very definite knowledge of the complications to be expected, a point about which the pharmacologist should be able to give him information. Another means of meeting the difficulty of lack of irritability has lately been receiving more nearly the attention that its importance deserves, namely, the combination of two drugs. To illustrate: The loss of tone of the musculature of the intestine after surgical operations often fails to be relieved by pilocarpin. By the use of physostigmin, which increases the irritability, in combination with pilocarpin, which then stimulates, the desired result can often be obtained.

The treatment of a condition by the careful physiologic analysis of the functional disturbances involved, combined with the application of the drug based on a knowledge of its action, is shown in the following: A case of angina pectoris vasomotoria: heart symptoms, pressure in the chest, a feeling of intense fear appearing on exposure to cold. The physiologic analysis makes the following chain of events likely: Cold causes peripheral vasoconstriction; this leads to increased blood-pressure which exerts a stimulus on the depressor nerve, which in turn stimulates the vagus center and thus leads to the heart symptoms. The whole or part of this chain is probably in a condition of increased irritability, as normally such a result would not be observed. Instead of decreasing the irritability of the factor involved, however, it is necessary only to interrupt the chain by the administration of atropin, which paralyzes the vagus endings in the heart. The patient can now dip his hands into ice-water without any feeling of distress, which, however, comes on again when the effect of the atropin wears off.

The close affiliation of the clinician and the pharmacologist here outlined, besides being of practical use to the former, must of necessity be a great stimulus to the latter, provided he does not permit the urgency of the immediate solution of clinical problems on the basis of insufficient knowledge to influence unduly the direction of his investigations.

FERRO-SILICON POISONING

Improved manufacturing methods involving chemical processes, while they are intended to cheapen output or improve quality, often have effects inimical to health or may even menace life. This fact is illustrated in the case of ferro-silicon. The sudden deaths that have occurred among the crews of vessels laden with this product and illness among workmen in steel works from its fumes have led to an official investigation[1] of the cause. McWilliam[2] recently has given an account of accidents of this character occurring on vessels, and

---

[1] Loewi, O.: Wien. klin. Wchnschr., 1910, xxiii, 274.

[1] Supp. to An. Rep. Local Government Board (British), 1909.
[2] McWilliam, A.: Nature, July 14, 1910.

Hake[3] has made a careful study of the chemistry of the process of manufacture with a view to determining the exact causation of the lethal effects.

The earliest recorded accident from this source was in 1904, when a drum of this substance exploded while being unloaded from a vessel. Following this warning was given as to the handling and storing of the product. A little later, however, on the steamer Vaderland, fifty steerage passengers over a hold containing this material were made ill and eleven of them died. A number of other similar instances followed. In one instance all the immigrant passengers of the steamer Ashton, five in number, died on a voyage of only twenty-four hours' duration. This gave rise to a scare of cholera, but bacteriologic examination showed the cause to be the ferro-silicon in the hold. Some of these events were reported and discussed in THE JOURNAL by our London correspondent[4] a few years ago.

Ferro-silicon consists essentially of a mixture of compounds of iron and silicon, and the product averaging thirty per cent. of silicon has long been used in steel and iron works to remove gas bubbles from the molten mass, thus rendering it more compact. Within the last few years much richer ferro-silicons have been employed in making special steel products. The higher grade is made by heating in an electric furnace to a temperature of 2,000 C. a mixture of iron, sand or quartz and coke or coal. In the process calcium phosphate, which is harmless in itself, and arsenic, present as impurities in the coal or quartz, are reduced in the electric furnace in the presence of carbon to calcium phosphid and calcium arsenid, and remain in the ferro-silicon.

In the presence of water or moist air, as on vessels, or in the process of the manufacture of steel, these substances are decomposed with the production of phosphoretted and arseniureted hydrogen, two gases which are deadly poisons. Recent experiments have proved that phosphoretted hydrogen, when present in the air in the proportion of 0.25 per cent., is fatal to animals, and arseniureted hydrogen is equally toxic, although found in much smaller quantity in the ferro-silicon. Both produce by their inhalation severe abdominal pains, nausea, vomiting, great weakness, prostration, gradual loss of consciousness and death frequently within twenty-four hours. It is found that low-grade ferro-silicon containing not more than thirty per cent. of silicon may be safely stored and handled, but that the high-grade product containing between thirty-five and sixty per cent. of silicon is more liable than even the still higher grades to spontaneous disintegration with the production of the poisonous gases. To avoid this danger, it should be stored in freely ventilated places at a distance from offices and work rooms, and when transported on vessels it should be placed in open spaces.

A MODERN ABERNETHY

While the passing away of a rugged personality, distinguished by sterling worth, is always a matter of regretful interest, it is doubly so when the vanished personality seems to represent a past or passing age. Such interest attaches to the death, in his ninety-fifth year, of Dr. John Burns of Glasgow. A tailor in his youth, he became a schoolmaster, and finally entered the medical profession, which he followed until within two years of his death. A shrewd and energetic practitioner and an able therapist, with the robust faith in remedies of the old school, he attained an extensive practice and great success, due mainly to that most important quality in the general practitioner—strong individuality. Many stories are told of him. While busily engaged in his consulting rooms which were frequented by great crowds he was, like the famous Abernethy, impatient of garrulousness. One day a woman entered his office and without saying a word removed a cloth from a scalded hand and held it out to the doctor. He examined it, cleaned it, snipped the blisters, and dressed it without a word being spoken on either side. As he was fixing the end of the bandage with a needle and thread (he always secured his bandages in this way, never with a pin), she said: "How much, sir?" "Nothing," he replied. "You are the most sensible woman I ever met. Come back to-morrow at the same time."

Dr. Burns was also impatient of hypochondriacs. One of this tribe waylaid him in the street and began to enter into details of his latest ailment. The doctor said sharply, "Put out your tongue, James, and shut your eyes." James did as he was told and the doctor slipped away, leaving the patient standing in the street, where he remained for a considerable time.

Long before Metchnikoff discovered the value of lactic acid bacilli, Dr. Burns recommended sour milk. One day he ordered some for a woman whose visage betokened chronic discontent. She said, peevishly, "Where can I get sour milk?" The doctor looked at her severely and said: "You will have no difficulty, ma'am: if you put some sweet milk in a bowl and look earnestly at it for ten minutes, it will be as sour as your face."

In the treatment of real illness, however, Dr. Burns never spared himself; his patient's welfare was his first consideration. Visiting a patient one day, he was met at the door by a priest, who said, "I have administered the last rites to your patient and she must not be disturbed." Dr. Burns pushed the priest aside, but the latter showed fight, and without further words the doctor forced the cleric down-stairs. Dr. Burns was charged with assault and had to pay a fine of five dollars. He told the magistrate that he would gladly pay the same fine again under similar circumstances, for his patient had surmounted the crisis of her illness and recovered.

Men like Dr. Burns, whose superficial idiosyncrasies serve but to bring out in stronger relief their substantial qualities, seem to be growing fewer—and perhaps they never were as numerous as we think. In any case, it is well for us occasionally to take time to hold up for honor and emulate the fearless honesty and the devoted unselfishness which distinguished the most worthy representatives of the old school.

---

[3] Lancet, London, July 23, 1910, p. 220

[4] And, by a coincidence, he takes the subject up again in his letter printed in this issue of THE JOURNAL.

Current Comment

COMMON SENSE TREATMENT OF DISTURBANCES OF THE BOWELS

In the Therapeutic Department of this issue is brought out an important matter: the necessity of regulation of the diet to correct disturbances of the bowels. It would be absurd to suggest that physicians are not mindful of this necessity, but it is certainly true that quite often not so much study of individual cases is made as the condition deserves. It is well to remember that a little change in diet may be far more effective than the small doses which it is possible to give of antiseptics, digestants, or correctives. This point was emphasized last week in the Pharmacology Department, in the comment on the futility of giving minute amounts of digestants. It should ever be kept in mind that food may be either a most potent agency for repair or a tremendous handicap.

WHITE PHOSPHORUS IN MATCHES

The United States is practically the only important civilized country which has taken no steps to prevent the use of white phosphorus in the manufacture of matches. That phosphorus poisoning occurs in this industry in the most serious form has long been known; but the fact is again confirmed by a recent investigation of American match factories by the Bureau of Commerce and Labor. The Journal news correspondence from European cities has frequently called attention to the fact that Europe has long been taking steps to safeguard workmen; there the use of white phosphorus is being restricted so that eventually it will not be used. This country would have been the first to take action on this matter had it involved a commercial proposition; but, since it is a matter that merely affects the health of the workers, it is different.

HEALTH OF WHITE MEN IN THE CANAL ZONE

The construction of the Panama canal is a problem in sanitation first and an engineering problem only secondarily. This The Journal has repeatedly asserted, as also that the sanitary difficulties have been met in a remarkably successful manner. The engineering work seems to be progressing toward an equally happy conclusion. The success of the canal itself seems, therefore, assured. But there is another fact connected with the building of the canal which is worth calling attention to. Colonel Gorgas in his address before the American Society of Tropical Medicine[1] expressed it as his conviction that the greatest good the canal had done is that it has given another demonstration of the fact that the white man can live and do the same work in the tropics as he can in the temperate zone. It is shown that health conditions in the Canal Zone among the unacclimated men, women and children from the United States are as good as in any healthy part of the United States; also that the sanitary surroundings of the native and the negro have been so changed that they enjoy the same degree of health as the ordinary inhabitant of the United States. Colonel Gorgas also believes that the criticism that the expense of sanitation in the Isthmus has been excessive is unwarranted. He points out that the work of the Sanitary Department of the Isthmus has been much broader than the ordinary work of a health department, and that it performs the same functions as the whole city government of New York City with the exception of the accounting system, the judiciary and the police. As a matter of fact the medical and hospital care of the employees and their families has cost two and one-half cents per diem per capita, and their sanitation nine mills per day, which he believes to be well within the financial ability of any tropical community. Aside from the great object-lesson presented by the sanitation of the Canal Zone, Colonel Gorgas calls attention to the fact that history shows that great local populations and great wealth have grown up where routes of commerce converge between great divisions of the world. In the case of Panama more routes of travel converge, a greater area of territory is affected, and the concentration of routes is brought into narrower limits than has ever occurred before. He expects in the course of years to see a large and wealthy population grow up in the neighborhood of the canal.

VEGETABLE ACTINOMYCOSIS

Under the title *Die pflanzlichen Actinomycosen*, Peklo[1] has published the results of a comprehensive study of the organisms found in the root tubercles of the alder and sweet gale (*Myrica gale*). As indicated by the heading given to his communication, he has arrived at the conclusion that these micro-organisms are to be considered as belonging to the group actinomyces. "Clubs" and other characteristic actinomycotic growths were found to be produced by the "bacteroids" under appropriate cultural conditions; and certain chemical substances such as phosphates and potassium and calcium salts appear to favor especially the growth of the root tubercle organisms. Peklo has utilized his observations on the physiology and morphology of these forms as a basis for a fresh study of the human tubercle bacillus. By the use of analogous culture media he succeeded in producing in cultures of the tubercle bacillus structures showing a remarkable morphologic similarity to the growths from the alder nodules. In fact he concludes definitely that the tubercle bacillus is an actinomyces. Interesting and perhaps fundamental analogies in the chemical relations and pathologic activities of these organisms are pointed out. Such observations are well worth attention, although they are perhaps more suggestive than conclusive.

---

[1] Gorgas, W. C.: The Expenses Necessary for Sanitation in the Tropics, Gulf States Jour. Med. and Surg., July, 1910.

[1] Centralbl. f. Bakteriol., ii, 27, 1910, pp. 451-579.

PRESS CENSORSHIP IN AMERICA

Under this heading, the *Christian Advocate* of New York comments on the way in which the brewing interests keep watch of the attitude taken by newspapers and other periodicals. This relationship is so similar to that existing between the patent and proprietary medicine business and lay and medical periodicals, that its comments are easily made to apply to the latter by changing a few of the words. After remarking that a part of the financial embarrassment of the Boston *Herald* is due to the withdrawal of brewers' advertising, because that paper vigorously supported a bill which was antagonistic to the saloon interests and, further, that the Chicago *Tribune* recently lost a large amount of beer advertisements because an editorial on hot weather hygiene recommended abstinence from beer, the *Christian Advocate* continues: "It is loudly denied that there is any concerted action among the brewers ['patent medicine' manufacturers] to control the utterances of the press by dispensing advertising patronage, but it is easy to see how self-interest might prompt such action as that by which the *Herald* and the *Tribune* have been the sufferers. We regret that a newspaper should lose money by standing for a principle, but we cannot but believe that the public is the gainer by the transaction, and that if all the liquor and beer and tobacco advertising [fraudulent patent medicine and quack advertising] were withdrawn, both the newspaper publishers and their subscribers would be the better off, for if money were not wasted on beverages and tobacco [nostrums] it would be available for the purchase of other commodities which in turn would be an advantage to manufacturers, dealers and advertising mediums. . . Any one who takes the trouble to compare the editorial and news policy of many periodicals with the advertising columns will find grounds for belief that the liquor [proprietary medicine] advertisements strongly influence, if they do not control, the editorial policy."

Medical News

CONNECTICUT

Personal.—Dr. William F. Verdi, surgeon in charge of the St. Raphael Hospital, New Haven, has resigned. Dr. Verdi had the title of chevalier conferred on him by the king of Italy.

Tuberculosis Homes.—The State Home for Tuberculosis Patients at Meriden and the home in Fairfield County at Shelton were opened August 1. The home at Cedar Mountain is also practically ready for opening.

Epileptic Colony.—The commission appointed by Governor Weeks, under the act of the last general assembly, has purchased the Rock Spring Farm at Mansfield as a site for a state epileptic colony. Dr. Max Mailhouse, New Haven, was a member of the commission.

Show No Mortality. According to the monthly bulletin of the Connecticut State Board of Health for July, twenty five towns of the state report having no deaths during the month. The death rate for the state shows 19.3 per 1,000. Infantile paralysis was reported from five towns, there being 18 cases during the month.

Appropriation Asked.—The board of health of New Haven has asked the board of finance for an appropriation of $400,000 for health purposes for 1911, $100,000 of which is for collection and reduction of garbage, $220,000 for a garbage incinerator, and $75,000 for a contagious disease hospital. Last year only $33,000 was appropriated for the work of the department.

GEORGIA

Uniformed Inspectors.—Inspectors of the board of health of Augusta are to be fully uniformed in a manner similar to the police.

Personal.—Dr. Howard J. Williams has resigned from the medical board of Macon Hospital, to take effect October 1. ——Dr. Bernard Wolff has resigned from the board of health of Atlanta, and has been succeeded by Dr. Rufus T. Dorsey. ——Dr. T. Neal Kitchen, formerly of Columbus, has resigned as president of the Muskogee County Medical Society and has moved to Warm Springs. Dr. Dexter becomes president of the county society.

To Complete Sanatorium.—The state legislature has made an appropriation of $50,000, $30,000 for completing the buildings and equipping the new state sanatorium for tuberculosis, and $20,000 for maintenance during 1911, as provided for in the bill introduced by Dr. Hardman of Jackson County, and Dr. Brown of Fulton County.——Fulton County Commissioners have appropriated $10,000 of the county funds to aid in the erection of a tuberculosis sanatorium at Atlanta.

Uncinariasis Common.—According to the newspapers, Drs. S. H. Jacobs and C. H. Dobbs, field inspectors for the Georgia State Board of Health, who have been making a tour of inspection of the state since early in May, found that over 75 per cent. of the people of Georgia who live in the country districts have or have had uncinariasis. To August 1, out of 1,055 persons examined, 672 showed the disease. In Emanuel County, 42 out of 43 inspected had the disease. Many school children have been examined and in every instance ground-itch has been found.

ILLINOIS

Anthrax Among Cattle.—It is said that anthrax has made its appearance among cattle on a farm at Barrington and 16 have died from the disease. It is so far confined to one farm.

Medical Inspection at Macomb.—Drs. Arthur R. Adams, John W. Hermetet, S. Frank Russell and Arthur K. Drake have been appointed by the Board of Education of Macomb to institute medical inspection of the school children. On account of the financial condition of the city, the work will be done by these physicians gratuitously.

Personal.—Dr. Harry W. Ackermann, Rockford, has been appointed first lieutenant of the Third Regiment of the National Guard.——Drs. Malford Hamm, Lay G. Burroughs, and Edgar A. Cook have been appointed township physicians at Edwardsville.——Dr. Julius H. Hess, Chicago, has returned from four months spent among the pediatric clinics of Europe.

Homes for Convalescent Insane.—The Society of Mental Hygiene, recently organized in Chicago, as part of its method of looking after patients who have been in insane hospitals, will endeavor to place patients either recovered or on the way to recovery in homes on farms and elsewhere. This plan has been tried in other states and to some extent in Illinois. The crowded condition of the hospitals for the insane has made this almost a step of necessity. Dr. Vaclav H. Podstata, formerly superintendent of the Elgin State Hospital, has been given charge of this work, and Miss Elnora Thompson, until recently head nurse at the state hospital but now of Hull House, is assisting. The after-care committee will endeavor to extend the work and put it on a more responsible basis.

Chicago

Birth Returns.—The Chicago Woman's Club has called attention to laxity in enforcing the ordinance requiring the reporting of births within thirty days by physicians and midwives, and suggests that the health department should enforce the law in this respect. One of the daily papers commenting on this action says that only vigorous enforcement of the ordinance and application of penalties for neglect to comply, without discrimination, will bring about a needed improvement in Chicago's vital statistics.

An Appreciation of Dr. Ricketts.— The *University of Chicago Magazine* for July contains an obituary of Dr. Howard T. Ricketts and an article in appreciation by Dr. Ludvig Hektoen. Dr. Hektoen says that important results in the battle against infectious diseases will follow the work of Dr. Ricketts, who died of typhus fever in Mexico in May, and he believes that the publication of the typhus researches of

Dr. Ricketts and Mr. Wilder in their final form will settle the moot questions regarding the disease.

Health in Chicago.—The mortality statement for the week shows an improvement over the corresponding period of last year, especially in respect to infant mortality. There were 42 fewer deaths under one year of age and 22 fewer under five years of age. Deaths from diarrheal diseases among children were 53 fewer than during the corresponding week of last year. Ice cream is still being given attention by the health department and the study of typhoid fever under Dr. Lumsden still goes on. During the week ended August 19, 78 cases of typhoid fever were reported as against 40 for the corresponding week of 1909.

Examination of Carbonated Waters.—The *Bulletin of the Chicago Health Department* for the past week gives the results of the examination of 66 samples of carbonated water in the form of seltzer, ginger ale, pop, or sodas of various colors. It was found that 18 of them contained lead; in 3 samples ¼ grain per gallon; in 3 samples, 1/10 grain per gallon; in 8 samples, 1/20 grain per gallon; and in 4 samples, 1/40 grain per gallon. Eight factories were found marketing the waters containing lead; six were closed, and the other two ordered to improve their equipment or methods. The pops sold in bottles stoppered with metal stoppers were the objectionable ones. It was found that the stoppers contained from 50 to 90 per cent. of lead. Investigation was undertaken at the suggestion of one of the physicians of the city who, in an investigation, found that numerous cases of illness among children were caused by these carbonated waters.

INDIANA

Hospital at Frankfort.—The new tuberculosis hospital at Frankfort was opened August 9. The hospital consists of an administration building and six cottages for patients, located on a tract of five acres of beautifully wooded land.

Library Destroyed.—The office of Dr. James A. Stafford, Millville, was destroyed by fire recently, burning up his library and complete record of cases of fifty years of practice, which Dr. Stafford had ready for publication in book form.

Deaths and Births in Goshen.—Dr. Albert C. Yoder, secretary of the city board of health, Goshen, reports 8 deaths and 21 births for the month of July. This means an annual death rate of 10.66 to the 1,000 and an annual birth rate of 28 to the 1,000.

Tuberculosis Farm.—Tent houses have been erected on the tuberculosis farm at Evansville, known as the Boehne Farm, in honor of Congressman John W. Boehne, who gave $10,000 to the farm during the last year. A brick hospital building is being erected.

Advocates State Pasteur Institute.—Dr. William G. Wegner, county health commissioner at South Bend, advocates the establishment of a state Pasteur institute for the prevention of rabies. He favors the addition of 25 cents to the dog tax to create a fund for this institute.

IOWA

Homeopathic Graduates.—Dr. George Royal, dean of the homeopathic department of the State University of Iowa, calls attention to an error in the total number of graduates given for that school in THE JOURNAL, Aug. 20, 1910, the Educational Number. The number of graduates reported was eleven instead of seven. This correction increases the number of homeopathic graduates for the entire country to 183 instead of 179.

KENTUCKY

Personal.—Dr. Henry McKenna has been appointed intern in St. Joseph's Hospital, Louisville.——Dr. William V. Neel, health officer at Henderson, has undergone an operation for appendicitis.——Dr. James C. Mitchell, Louisville, has been appointed a member of the State Board of Health.

Tuberculosis Dispensary.—The dispensary organized by the Louisville Antituberculosis Association as the first dispensary of its kind in the city has shown great growth since its organization. There are now 287 persons under its care. During the past month 1,051 visits have been made to patients by Dr. A. M. Forster, who is in charge of the dispensary, and by the staff of four visiting nurses who give all their time to the work.

Enforcing Health Ordinances.—It is reported that Health Officer Edward Grant of Louisville is endeavoring vigorously to enforce the ordinance in regard to reporting notifiable diseases. He recently swore out warrants for five physicians for failure to report cases of typhoid fever under their care. It is said that many cases of typhoid and other contagious diseases have not been reported as required. Dr. Grant has also had the school buildings of the city inspected during the vacation season and many sanitary improvements have been recommended.

State Health Board Appointments.—At the annual meeting of the State Board of Health at Louisville, August 11, the following heads of new offices in the health department, created by the last general assembly, were appointed: Dr. W. Lucien Heizer, New Haven, superintendent of vital statistics; Dr. Lillian H. South, Bowling Green, state bacteriologist; Prof. Frederick Mutcher of Western State Normal School, assistant state chemist; Dr. Paul Hansen, formerly of the Ohio State Board of Health, was elected state sanitary engineer. Dr. Joseph N. McCormack, Bowling Green, secretary of the board, made his annual report in which he stated that there were 129,717 cases of illness in the state during the past year, 6,500 of which were due to tuberculosis. He estimated that the cases of sickness cost an average of $91 for medical care, drugs and loss of time, placing a total annual tax on the people of the state of over $12,000,000, nearly double the total annual revenue of the state. The report goes on to say that in order to prevent at least a large portion of this loss, "so far as this generation goes, an appeal to the common sense of the business world gives greatest promise of success. The facts and the losses need to be verified and iterated and reiterated for their significance to be recognized. The employing classes want to live, and in a way want their employees to live. If shown that it would be cheaper to improve sanitary conditions and keep their employees well than to bring in immigrants to die of the same neglect, and that they and their families are likely to sicken and die prematurely from the same causes, it would impress them."

LOUISIANA

Screens in Public Markets.—Dr. William H. Block, acting secretary of the New Orleans Medical Society, has presented to the mayor of New Orleans copies of resolutions adopted by the society, advocating the screening of public and private markets in the city where food is exposed for sale. Dr. William T. O'Reilly of the city board of health, has also reported that he would introduce an ordinance in the council for the same purpose.

The Uncinariasis Commission.—The State Board of Health has authorized the appointment of a medical inspector to be placed at the head of the new department of the State Board of Health for the eradication of the hook-worm. The inspector will receive a salary of $3,000 a year, of which sum the Rockefeller Hook Worm Commission, through Mr. Wickliffe Rose, has guaranteed $2,500 and the traveling expenses of the inspector, as well as the salaries of other assistants.

Antituberculosis Camp.—The Louisiana Antituberculosis League has established a camp at Todd for the treatment of incipient cases of tuberculosis. The second and third stage patients will be cared for by the Charity Hospital with the aid of the legislature, which during the last session appropriated $10,000 a year for their care at that institution. The camp consists of a hotel which cost $6,000, and eight cottages each costing $400. An artesian well has been bored and the water is reported to be of good quality. The camp is said to have an ideal site for the purpose.

Personal.—Dr. D. Harvey Dillon, president of the State Board of Health, and Dr. Edward S. Kelly, secretary, have resigned.——Dr. Edward L. McGehee has been made president of the reorganized State Board of Medical Examiners, Dr. John G. Martin, vice-president, and Dr. Albert B. Brown, secretary-treasurer.——Dr. John B. Elliott, Jr., New Orleans has been promoted to the chair of theory and practice of medicine to fill the place made vacant by Dr George Dock.——Dr. C. W. Groetsch, New Orleans, is spending the summer in Canada, where he is making a study of Canadian hospitals.

MARYLAND

Quarantine Established.—Quarantine has been declared at Fort Washington on the Potomac below Washington, on account of the breaking out of scarlet fever in Company 44 of the Coast Artillery there.

Meat Condemned.—Dr. J. McPherson Scott, mayor of Hagerstown, has started a crusade against the selling of unwholesome meat there. One-half of ten carcasses exposed for sale were condemned as unfit for food by the state live stock inspector.

For a Hospital.—The Board of Trade of Havre-de-Grace has taken up the project of a hospital in that town, and has appointed a committee to investigate hospitals in similar towns. A temporary hospital of 25 beds will meanwhile be provided and subscriptions will be raised and the legislature will be asked for an appropriation; $3,000 annually is required.

Endowment for University.—A strong appeal is being made for contributions to the endowment fund of the University of Maryland. The institution is now in its one hundred and third year and it is claimed that it is a civic duty of the people of Maryland to give it financial aid. It has not shared in the benefactions of this community as it should and as other similar institutions here have, and such an appeal should meet with generous response from our public-spirited citizens. A considerable sum is already in hand and invested in safe securities. The charter makes the principal inviolable. A large part of this fund belongs to the medical department, including endowments of three scholarships and one chair (physiology). A vigorous campaign will be made on this behalf this fall.

Baltimore

Personal.—Dr. J. M. T. Finney has returned from Europe and is at Chester, Nova Scotia.——Dr. Thomas Shearer is at Ontario, Canada.——Dr. Howard A. Kelly is visiting London and Paris clinics.——Dr. Donna Waldran is in Edinburgh.

Typhoid Fever.—For the week ending August 20, there were 121 cases of typhoid fever reported, with 11 deaths. Eight cases have been reported in Troop A, which camped at Gettysburg in July, and the governor has called on the State Board of Health to make an investigation.

New State Laboratory.—The new laboratory at the State Health Department for the examination of water, milk and ice cream under the pure food law, was ready for work August 22, and the inspectors have entered on their work under Dr. Charles Caspari, Jr., state pure food commissioner.

Medical College News.—The Maryland Medical College announces that the day courses for first and second year students will be continued as usual, in addition to the evening courses recently announced for the same.——The College of Physicians and Surgeons announces that for the next session not more than 75 students will be admitted to either the freshmen or sophomore classes. The addition to Mercy Hospital connected with this college has reached the second floor. It will more than double the size of the hospital.

Discoverer of Saccharin Dies.—The death of Dr. Charles Fahlberg is announced at Bad Nassau, Germany, August 16. It was he who, working here with Remsen and under Remsen's direction and in Remsen's laboratory in 1879, made the discovery of saccharin. Shortly after, he left here and went to Germany, where he patented the product and amassed a fortune out of it. For this discovery Remsen was awarded a medal at the St Louis Exposition in 1904 by the Society of Chemical Industry of England. Saccharin is a coal tar product, and when pure possesses about 500 times the sweetening power of cane sugar. It is extensively used in the manufacture of canned goods when pure food laws do not prohibit it.

NEW YORK

Personal.—Drs. Roswell Park and Charles Cary, Buffalo, and A. J Bedell, Albany, have returned from Europe.——Dr. Harry Weed, Buffalo, and Dr. E. C. Taylor, Dr. and Mrs. W. M Butler and Dr Alfred C. DuPont, New York City, have sailed for Europe.

Scarlet Fever and Diphtheria.—The mortality from scarlet fever is becoming alarmingly large. In July, 1909, there were 140 cases of scarlet fever reported, with 9 deaths, or 6.4 per cent., while in 1910 there were 156 cases of scarlet fever reported with 15 deaths, or a mortality of 9.6 per cent., an increase in mortality of nearly 3.2 per cent, over the same period of last year. It can safely be predicted that with this showing for the summer months with the opening of schools in the fall scarlet fever will continue epidemic, and that the mortality will increase. In July, 1909, there were 24 cases of diphtheria reported, with 1 death, a mortality of 4.1 per cent.; in July 1910, there were 60 cases of diphtheria reported, with 13 deaths, a mortality of 21.6 per cent.

Buffalo

Tuberculosis Hospital.—Bids were opened August 13 for the building of the county tuberculosis hospital at Brighton, near Rochester, the lowest being a little more than $60,000. The work includes an administration building, nurses' home, a number of cottages and a sewage disposal plant.

Preventing Pertussis.—To stamp out the present epidemic of pertussis before the schools open, the Health Department has adopted a method similar to that used in Seattle and Chicago for other diseases, namely, to display between regular pictures at the moving-picture theaters slides prepared by the health department relating to the dangers of pertussis and the means which should be adopted to prevent its spread. Acting Health Commissioner Seahaefer has already placed the moving-picture houses and pleasure steamers under surveillance, so that persons suffering from the disease may be apprehended. Pertussis caused 782 deaths in the State of New York last year.

New York City

A Roof Garden for Babies.—What is believed to be the first regular roof garden for ailing babies has just been opened at the Flower Hospital. This garden has been constructed along the accepted styles for roof gardens even to the music and entertainments. In clear weather the roof garden does duty for the entire twenty-four hours, being used as a dormitory at night. Large returns in the way of improved health among the babies is expected from this innovation.

The Sale of Morphin.—A drug clerk was recently arrested for selling morphin; the purchaser was also arrested. The assistant district attorney refused to have the complaint pressed. The clerk had registered the sale and the note "she has the habit." It seemed, therefore, that there had been no violation of the law. The sale of morphin is legal, it seems, providing it is properly labeled. The Board of Health has power to amend the sanitary code and place the sale of morphin on the same basis as that of cocain.

A Large Foundation.—Mr. John Masterson Burke of New York announced some eight years ago that he would make a foundation in order to endow a home in or near New York for convalescents. At the time of Mr. Burke's death last December, this foundation amounted to $5,000,000, and personal property has been added to the amount of $2,000,000. The will was contested by relatives, but the court has decided that it is valid. There is, therefore, about $7,000,000 with which to begin building, but fear of further litigation will make it advisable to postpone active work for some time.

OHIO

For Cleaner Food.—The City Board of Health of Washington has passed resolutions making stringent regulations for dealers in all classes of food supplies in regard to keeping food clean, and also for the disposal of garbage and taking care of slaughter houses.

Visiting Nurse Provided.—The physicians of Springfield having in charge the free milk dispensary have hired a nurse to visit the families where babies are being treated at the dispensary to see that the suggestions of the physicians are carried out regarding the care of the children and to locate other children requiring dispensary care.

Personal.—Dr. Jane W. Carroll has been elected supreme medical examiner of the Ladies' Catholic Benevolent Association at Cleveland.——Dr. Otis L. Cameron, Cincinnati, has resigned as a member of the board of health. Dr. John D. Miller has been appointed to fill the unexpired term.——Dr. A. Garner, Hillsboro, president of the city council, has become mayor through the resignation of Mayor Puckett.——Dr. Oscar H Sellenings, a member of the Columbus City Board of Health, has been elected to the chair of children's diseases in the Starling Ohio Medical College.

Tuberculosis.—Toledo has established its first outdoor camp for patients with tuberculosis on a tract of ground comprising several acres, the use of which was given by Judge John F. Kumler. There are about twenty patients in the camp, housed in tents. The work will be extended throughout the winter.——City Health Officer Clemmer of Columbus has asked the local board of education to provide for the building of open air rooms for tuberculous pupils in all new school buildings to be erected by the board.——The first city tuberculosis dispensary in Cleveland will be located in the Eighth Precinct police station, where four rooms will be fitted up for the purpose. Two of the six city nurses will make the rooms their headquarters and a ward physician will have daily office hours there.

School Inspection.—Dr. Louis F. Bucher, Dayton, who has been appointed by the board of education to begin medical inspection of school children, has just returned from a six weeks' eastern tour, where he has studied the system employed in various cities, and will inaugurate a systematic plan of keeping records of the inspection of the school children in Dayton.——Medical inspection of the school children will be inaugurated this year at Youngstown, and four nurses have been employed, whose duty it will be to visit the schools daily and inspect sanitary conditions and look after suspicious cases of skin troubles, infectious diseases, etc., among the children. At the beginning of the term, the work will be started by four physicians, who will make a thorough examination of all pupils.

PENNSYLVANIA

Smallpox in State.—Fifteen cases of smallpox have been reported from Honesdale, Herrick Center and Tanners Falls. Men from the state health department have been detailed to look after these cases.

Typhoid at Wilkes-Barre.—The typhoid epidemic at Wilkes-Barre has become so serious that action has been taken against the company supplying water to the city for noncompliance with the ordinance requiring filtered water. The water company, it is understood, does not regard the ordinance as valid.

Cresson Sanatorium.—Bids for four of the buildings for the tuberculosis sanatorium to be erected at Cresson Springs on the ground given by Andrew Carnegie were opened at the state health department August 9. The buildings will be of stone procured on the ground. The sanatorium will cost $250,000, exclusive of equipment.

Bad Conditions Exist at Dixmont.- Dr. Frank Woodbury and Francis J. Torrance, secretary and president, respectively, of the State Board of Charities, denounce the conditions existing at the Dixmont Asylum for the Insane. They found 997 patients in the institution, while the building was erected to accommodate 500. Steps are to be taken to distribute patients to other institutions.

Report of Pure Food Crusade.—During Governor Stuart's administration, from January, 1907, to Aug. 1, 1910, according to the report of the State Dairy and Food Commissioner, 2,093 prosecutions for food adulteration have been brought, of which 861 were under the oleomargin act. The fines collected from these cases totaled $105,964.84, and 11 men were committed to jail for terms of from 20 days to 6 months each.

Philadelphia

Arrests Reveal Renewed Cocain Traffic.—The cocain traffic, practically wiped out by the recent crusade of the State Pharmaceutical Board, has again been resumed. Two men charged with the illegal sale of the drug in large quantities were arrested, August 19, by an agent of the board and held in $1,500 bail each for court.

Children's Pavilion for Jewish Sanatorium.—The Philadelphia Jewish Sanatorium for Consumptives has completed plans for a children's pavilion at the farm at Eagleville. In this pavilion children less than 12 years old will be treated free. Of the $5,000 necessary for the erection of this pavilion, $1,250 has been donated by a friend of the institution.

Tuberculosis Traced to Cheap Ice Cream.—A dozen cases of dangerous infection have been traced to the confection which is sold by the push cart vendors. Follicular tuberculosis has been traced to this ice cream. An investigation has been started by the State Dairy and Food Commission, and prosecutions will follow as soon as the samples have been analyzed.

Egg Dealer Held for Court.—At a hearing, August 16, of a man charged with selling eggs unfit for food, testimony was given that the defendant had sold eggs which, when fed to guinea pigs, had killed them. These eggs were examined by Professor LaWall, chemist for the State Dairy and Food Commission, and Dr. Randall C. Rosenberger, of the Jefferson Medical College, and were found to contain 10,000,000 bacteria to the c.c.

Personal.—Dr. James Hendrie Lloyd has been elected visiting neurologist to the Methodist Hospital.——Dr. Herbert Fox, chief of the State Department of Health laboratories at the University of Pennsylvania, was in Lancaster August 18, investigating infantile paralysis.——Dr. Charles Lester Leonard has gone to the International Congress on Radiology and Electricity in Brussels.——Dr. Edward F. Malone, of the Wistar Institute of Anatomy, has been appointed assistant professor of anatomy in the medical department of the University of Cincinnati, of which Prof. H. M. Knower was recently appointed head.

Bottlers Arraigned.—As a result of the crusade of the State Dairy and Food Commission, a large number of bottlers charged with adulterating soda-water were arraigned August 16. Most of the bottlers entered bail for their appearance in court, which action has led to the belief that saccharin dealers are backing the bottlers and are prepared to finance the fight against the state's charges. The results of the hearings of August 16 were that four men paid fines amounting to $200 and costs, and nine dealers were held under bail for court. At the hearings August 17, one dealer paid a fine of $25 and costs and six entered bail for their appearance in court.

City's Milk Supply Inquiry.—Because the large milk dealers have raised the price of milk and insisted that such advance is necessary to insure pure milk, the Bureau of Municipal Research will conduct a thorough investigation of the city's milk supply. This investigation will begin at the source of the supply—the farm—and continue through the handling by shipper and the dealer and its delivery to the consumer. The first bulletin in the inquiry was issued August 18 in the form of a list of fifteen questions to dairymen relating to the conduct of dairy farms and the milking and handling of the product, covering all essential points in the production of clean and sanitary milk.

WEST VIRGINIA

Personal.—Dr. Hugh H. Carr, Fairmont, accompanied by his father, Dr. Lloyd L. Carr, of New York, has just returned from six months' study in the hospitals of Vienna and Berlin.—Dr. Leech K. Cracraft has resigned as city health officer of Elm Grove, and Dr. R. M. Peddicord has been named in his place.

Tuberculosis Sanatorium.—The county commissioners of Ohio County will erect a tuberculosis sanatorium at a cost of $2,500.—The dispensary of the Antituberculosis League of Wheeling has been opened at 1113 Chapline Street. One of the leading physicians of the city will be in attendance each day. The dispensary now occupies three rooms.

WISCONSIN

Sanitary Drinking Fountains.—The city of Green Bay will abolish the public drinking cup September 1. Sanitary drinking fountains have been erected in the streets and parks of the city.

Personal.—Dr. C. A. Harper, secretary of the State Board of Health and Vital Statistics, is a candidate for the general assembly.——Dr. Frank E. Darling, registrar of vital statistics of the Milwaukee Health Department, has resigned, but has been asked to reconsider his resignation.

Change in Health Department.—The city of Superior, which now employs three physicians to look after the work of the health board, has in view the employment of one man at a sufficient salary to devote his whole time to the work. It is believed that under this plan more efficient work will be done.

Sanitary Homes.—The influence of the crusade of the Antituberculosis Association in this state is seen in the construction of homes. Hundreds of homes built in Wisconsin this year make ample provision for open-air sleeping. Architects and builders have recognized this demand for pure air and plenty of sunlight and have begun designing buildings with this idea in view.

Enlisting the Children in Sanitation.—Health Commissioner William C. Rucker of Milwaukee has introduced the plan of organizing companies of boys and girls of the city to be called the Health Guard, who will be enlisted in the work of keeping the city clean. They will see that back yards and alleys are kept clean and sanitary. The organization will be on a military basis, and daily reports will be made to headquarters, which are to be established in the hall of Lapham Park. Dr. Rucker is to be commander-in-chief of the organization. He will give frequent lectures to the children, instructing them in their work and show disease in its various forms. This follows the plan inaugurated in New York City by Colonel Waring some years ago.

GENERAL NEWS

Intern Wanted for Government Insane Hospital.—The Civil Service Commission will hold examinations October 5, at the usual cities throughout the country, for a medical intern in the Government Hospital for the Insane at Washington, D. C., and for other similar vacancies as they may occur. Positions are held for one year and pay $50 a month and maintenance. Advancement is possible, with increased pay. This hospital has over 3,000 patients and employees. For several years it has been difficult to secure enough persons to fill these positions, so those who are qualified have a good chance to be successful. Further information may be had from the commission at Washington.

Antirabic Treatment.—Public Health Report of the Hygienic Laboratory of the U. S. P. H. and M.-H. Service for August shows that for the year ended June 30, 1910, 60 patients were treated at the laboratory with antirabic inoculations. Of these, 57 completed the treatment. No deaths were known to have occurred among these patients. Of the 60 patients, 47 were actually bitten or scratched by the teeth of the animal; 10 had scratches or wounds exposed to the saliva, or were exposed during laboratory manipulations. Fifty five persons were bitten by dogs, 3 were bitten by cats, 1 by a cow, and 1 by a mule. Examinations show that 54 of the exposures were to actual rabies as shown by the laboratory examination. In addition to the inoculations at the laboratory, antirablie treatments were sent out to state boards of health in the form of dried cords preserved in glycerin. This method of transporting the virus a long distance without appreciable loss of potency has been found successful. Nine hundred and fifty-one treatments were thus sent out to state boards in ten different states.

International Medical Association.—The volume of transactions of the fifth annual session of the International Medical Association, Mexico, whose membership is made up, with a few exceptions, of physicians from the United States practicing in Mexico, shows that an interesting meeting was held at Aguas Calientes, January 25 to 27, 1910. About thirty of the seventy-five members of the association were present. Dr. S. H. Hodgson, Tampico, president of the association, presided. Among the foreign physicians present were: Dr. Howard A. Kelly, Baltimore, who read a paper on "Fibroid Tumors," and Dr. John M. T. Finney, also of Baltimore, who took part in the discussions. Dr. Carlos E. Husk, Santa Barbara, was elected president: Dr. R. H. L. Bibb president-elect for 1911: Dr. F. W. Taube, vice-president; and Dr. J. S. Steele was reelected secretary-treasurer. The transactions contain, in addition to the minutes, papers and discussions, a half-tone picture of the members present at the meeting, some editorial notes, and some poetry. The work of the meeting shows that the Mexican physicians are up to the hour in medical subjects.

Meetings to Be Held in September.—A number of national and state societies are to hold annual meetings next month. Among them are the following:

Amer. Acad. of Ophthalm. and Oto-Laryn., Cincinnati, Sept. 19-21.
Amer. Assn. of Obstetricians and Gynecol., Syracuse, Sept. 20-22.
American Public Health Association, Milwaukee, September 5-9.
Amer. Roentgen Ray Association, Detroit, September 28—October 1.
Kentucky State Medical Association, Lexington, September 28-29.
Medical Society of Missouri Valley, Council Bluffs, Iowa, Sept. 1-2.
Michigan State Medical Society, Bay City, September 28-29.
Mississippi Valley Medical Association, Detroit, September 13-15.
Oregon State Medical Association, Portland, September 7-9.
Wyoming State Medical Society, Casper, September 27.

The fifth annual meeting of the Medical Association of the Southwest will be held at Wichita, Kansas, Oct. 11 and 12. The past meetings of this society have had programs of a high order and as the society has almost nothing of a business nature to come before it the whole session is practically devoted to the consideration of scientific matters. The central location of Wichita, coupled with the fact that the committee promise an unusually good program, should call forth a large attendance of the best men in the district, which comprises Texas, Arkansas, Missouri, Kansas and Oklahoma

The twenty third annual meeting of the Medical Society of the Missouri Valley will be held in Council Bluffs, Iowa, September 1 and 2, under the presidency of Dr. A. B. Somers, Omaha. The officers feel that the date is a good one, with prospect of good weather.

FOREIGN

Pellagra in Austria.—The Austrian government has constructed in southern Tyrol six modern steam rye bakeries, which are under the direct supervision of the governor of the province, in order to stop the popular use of infected corn meal, which is held to be responsible for the pellagra existing in that country. In order to make the rye bread popular with the masses, the authorities have fixed the price at which it shall be sold. The Hungarian government has adopted strict regulations against the sale of corn meal under any other than its own name.

Cholera.—The epidemic of cholera that has prevailed throughout a large portion of Russia seems to be extending in other parts of Europe. A considerable number of cases have been reported from southern Italy, and King Emanuel and Queen Helena are taking a deep interest in the situation. The authorities in Austria and Germany are taking measures to prevent the spread of the disease in their countries, and measures to prevent the introduction of the disease into England have also been the subject of consideration by the British government. The United States government has also given instructions to consular officers at European ports as to the prevention of the embarkation of infected immigrants to this country. During the week ended August 6, 20,468 cases were reported throughout Russia with 8,679 deaths.

LONDON LETTER

(From Our Regular Correspondent)

London, Aug. 13, 1910

The Increase of Lunacy

As shown in previous letters to The Journal, the number of insane persons in Great Britain, both absolutely and in proportion to the population, has considerably and steadily increased in recent years—a fact which has given much concern to those interested in public health and has been taken by some to be one of the indications of race degeneracy of which much is now written and so little is proved. There is little reliable foundation for these gloomy forebodings. The greater strain on the nervous system produced by civilized life certainly seems to have produced some increase in insanity. What the real increase amounts to is difficult to say, however, for the alarming statistics which are given have to be discounted by this consideration: The number of insane given is based entirely on the number who have been certified and sent to asylums. With the great modern improvement in asylums people are not so loath to send in their friends as in former times. Therefore many are now admitted who would not have figured in the statistics in former times. The sixty-fourth report of the Commissioners in Lunacy, which has just been issued, shows that the number of certified insane under care in England and Wales on Jan. 1, 1910 was 130,553 or 17,-666 more than a year previously. This increase may be contrasted with that of 2,703 for 1908, of 2,096 for 1907, and 2,009 for 1906. The average annual increase for the 10 years ending 1909 was 2,394. Thus the increase for the last year was 628 below the average. A better index of the increase of insanity is obtained by comparing the figures with those of the general population. In the past 50 years the number of certified insane has increased by 255 per cent. while the population has increased by only 83.7 per cent. The proportional figures for more recent years are more satisfactory. The estimated population in 1910 is 12.2 per cent. above that of 1900 and the number of insane 22 per cent. In 1909 there was a marked approximation between the two series, the increase of population being calculated to be 1.16 per cent. and the increase of the insane 1.37. Thus, there is a tendency for the two series to meet and the increase of insanity to cease. A cleaner estimate of the growth of insanity is obtained by taking the ratios which the number of insane bear to the total population. On Jan. 1, 1910 the total number of notified insane was 36.1 per 10,000 of the general population. Ten years earlier the figure was 33.06, so that an increase of 9.2 per cent. had taken place in the 10 years. In the last of these years, however, the increase had fallen to 0.22 per cent. Statistics dealing with the causes of insanity are given in tabular form. Of 50 suggested causes, 12 were considered the principal cause in two thirds of the cases. In their order of comparative frequency they were as follows: (1) the puerperal state; (2) epilepsy; (3) sudden mental distress; (4) alcoholism (the yearly average of admissions in 1907-08 in which alcoholism was the principal cause, was males, 1,589; females, 709); (5) influenza; (6) prolonged mental distress; (7) senility, which often stands alone as the determining condition of dementia; (8) the climacteric in women; (9) congenital mental defect; (10) insane heredity; (11) injuries; (12) syphilis. These 12 causes are therefore regarded as exercising the greatest influence in the production of insanity but in many cases the causation was complex, several causes combining.

The Revision of the Pharmacopeia

The second report of the Committee of Reference in Pharmacy appointed by the General Medical Council contains several important alterations. The names of three preparations have been altered, namely, liquor iodi fortis, liquor magnesii carbonatis, and hydrargyri oleas, respectively to pigmentum iodid, liquor magnesii bicarbonatis, and hydrargyrum oleinatum. For the preparation of linimentum hydrargyri the following formula has been substituted as giving a more permanent preparation than the official one: mercury ointment, 5; ammonia solution, 4; camphor liniment, 8. The two last are to be shaken together in a bottle and the ointment then triturated with them. To avoid the well-known and dangerous incompatibility of liquor arsenicalis with solutions of alkaloid salts, especially strychnin, with which it is often prescribed, sometimes with fatal results from precipitation of the strychnin and ingestion of the total quantity in one dose, a new formula has been substituted in which the solution is acid. Extractum nucis vomicæ is still to be standardized to contain 5 per cent. of strychnin, in spite of the Brussels International agreement by which it should contain 16 per cent. of total alkaloids. The specific gravity of ether is to be 0.720 instead of 0.735. On account of being easier to make and, being free from objectionable color, a plaster made with atropin sulphate is to be substituted for emplastrum belladonnæ. Extractum hydrastis liquidum is to be standardized.

Fatal Poisoning From the Use of Phenol as a Dressing

Though phenol (carbolic acid) is extensively used in surgery the cases in which poisoning has resulted from its external use are few. An inquest has been held on a girl aged 2 years who was run over by a van and taken to St. Thomas's Hospital with a wound of the leg. The mother was given a lotion of 1 to 20 phenol and was directed to add an equal part of water to it and use the product as a dressing. When she applied the lotion the child screamed. Two days later the child was admitted with symptoms of phenol poisoning from which she died. At the inquest evidence was given that the child was a subject of the status lymphaticus which caused idiosyncrasy to the carbolic acid. The lymphatic glands were four times the normal size and the spleen twice the normal size. The jury returned a verdict of accidental death and did not blame any one.

Decline in the Sale of Nostrums

It is satisfactory to be able to report a slight decline in the sale of nostrums in spite of the tremendous efforts made by their exploiters to push their sale, by lavish expenditure in advertising. Probably an important cause of the decline is their exposure in the book entitled "Secret Remedies" published by the British Medical Association. As nostrums are subject to a duty by the government their sale can be exactly gaged from year to year. The revenue from the stamp duty on them during the year ending Mar. 31, 1910 was $12,500 less than in the preceding year and $110,000 less than in the year before that. Their sale, however, is still enormous, as is shown by the fact that the revenue derived from them in that last financial year amounted to $1,550,000. As the duty on each article of the value of one shilling (about 25c) or under is three half pence (3 cents) it follows that the total number of articles sold must have been about 50,000,000. Taking into account the fact that a considerable proportion cost much more than a shilling, few less, the annual revenue income derived by their exploiters must amount to over $12,500,000.

The Dangers of Flannelette

The shocking tragedies by which children are fatally injured due to the inflammable nature of flannelette have from time to time been reported in previous letters to THE JOURNAL. A light comes in contact with a child's flannelette shirt or gown and in an instant the child is enveloped in flame and burned to a horrible and usually fatal extent. By impregnating flannelette with certain salts it can be rendered non-inflammable, but the increased cost resulting prevents the poor from buying this article. An important series of tests on the inflammability of certain textiles has been carried out by the British fire prevention committee, which has also made suggestions for legislation on the subject. The test proposed is that a square yard of the material shall be ten times washed with soap and water and ironed. Being then dry, it is suspended vertically from one edge and a standard flame is applied to the bottom edge for from 15 to 30 seconds. If then not more than one-twentieth of the whole area of the fabric is burnt within 60 seconds the material shall be classed as non-flaming. The committee suggests that material which cannot be so classed shall have woven or printed on every yard of the selvage the words "burns rapidly," or, if sold in the form of garments, the words shall appear twice on the principal band or inner hem; that material or garments sold as non-flaming shall be similarly marked with the words "non-flaming;" that any firm selling "union" (a mixture of wool and cotton) or flannelette contrary to these regulations, or selling as non-flaming material which does not comply with the test, shall be liable to prosecution; that parents and guardians shall be specifically responsible for death or injury by fire to children wearing flannelette or union marked "burns rapidly;" and that local authorities shall issue warnings on the subject. The committee found that ordinary flannelette burned with such rapidity that it was often consumed in 60 seconds and was more inflammable after washing than before. Union also proved very inflammable, especially when washed. Flannel and "non-flam" were alike in that they did not carry flame and only the portion within the power of the flame was affected.

Ferro-Silicon*

Ferro-silicon is an alloy made by heating in an electric furnace steel turnings, quartz and coal. The coal reduces the quartz to silicon which then forms an alloy with the iron. Ferro-silicon is used in the manufacture of a certain kind of steel to which it imparts a high tensile strength when present to the extent of rather less than 1 per cent. Owing to ingredients in the substance used in its manufacture the ferro-silicon of commerce gives out highly poisonous gases. Calcium phosphate, which is present in the coal and quartz is reduced to calcium phosphid; arsenic, which is present in both the coal and iron, appears as calcium arsenid. In contact with water or moist air the former gives off phosphuretted and the latter arseniureted hydrogen, both intensely poisonous gases. Phosphuretted hydrogen is fatal if present in so small quantity as 2.5 volumes per 10,000 of air and arseniureted hydrogen is scarcely less dangerous. It is, therefore, not surprising that under certain conditions, as when carried in the cabins of ships, deaths have resulted. But it is only after repeated sacrifice of life that the fact has attracted attention. Some 40,000 tons are annually imported into England from France. The earliest recorded case of poisoning is that of an explosion of iron drums containing ferro-silicon which were brought to Liverpool. A porter was seriously injured, and investigations led to the conclusion that the explosion was due to phosphuretted hydrogen. In January, 1905, during a voyage from Antwerp to New York 50 steerage passengers who lodged over a hold in which ferro-silicon was stored became seriously ill and 11 died. The deaths were certified as due to pneumonia. An official inquiry attributed them to unknown causes, but later a further inquiry revealed the true cause. Many other fatalities have subsequently been recorded on steamers and on canal boats. An exhaustive investigation into the whole subject has been made by Dr. S. M. Copeman under the direction of the British government. He has made the following recommendations which have been adopted by the local government board: 1. Ferro-silicon should not be sent out from the works immediately after manufacture but after being broken up into pieces, as usually sold, should be stored under cover but exposed to air as freely as possible for at least a month. 2. Manufacturers should be required to mark in bold letters each barrel or other parcel with the name and percentage grade, the name of the works, the date of manufacture and the date of despatch. 3. The carriage of ferro-silicon on vessels carrying passengers should be prohibited. When carried on cargo boats it should, if possible, be carried on deck. If it is stored elsewhere the place should be adequately ventilated and cut off by airtight bulkheads from the crew's quarters. 4. Storage places at docks or works should have provision for free access of and be at a distance from workrooms.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 12, 1910.

First Meeting of the French Pediatric Association

At the suggestion of Dr. Hutinel, clinical professor of children's disease at the Paris college of medicine, the Société de pédiatrie of Paris some months ago took steps toward the organization of a French and an international pediatric association. The international committee in charge of the organization of the latter met in Paris July 28. The Association française de pédiatrie has just held its first meeting in Paris, July 29 and 30, under the presidency of Professor

---

* See Editorial in this issue.

Hutinel. Two questions of great importance at present were taken up: (1) the thymus, and (2) cerebrospinal meningitis.

PHYSIOLOGY, PATHOLOGY AND SURGERY OF THE THYMUS

The thymus was the subject of three papers, dealing respectively, with the physiologic functions, the pathology and the surgery of the thymus. Dr. E. Weill, clinical professor of children's diseases at the Lyons college of medicine, who presented the first phase of the subject, concludes that; during extra-uterine life at least, the thymus is not comparable to the glands of ordinary secretion such as the thyroid and the adrenals. There is no evidence that there can be hyperthymic syndromes. All that we know concerning the structure and the functions of the thymus indicates that it is comparable to the lymphatic ganglions. Like the latter (and even more actively) it reacts toward infections and intoxications, and, again like the lymphatic ganglions, it is subject to regressive involution with the progress of age; and the precocity of this regression seems to bear a relation to its great sensitiveness. Dr. Marfan, professor of therapeutics at the Paris college of medicine, considered especially the hypertrophy of this gland among quite young infants and the symptoms on which the diagnosis may be based and those which call for thymectomy. When the diagnosis of hypertrophy of the thymus has been established, mercurial treatment should always be tried. If it fails, the treatment employed in all lymphatic hyperplasias (saline baths, arsenic, iodin, calcium) should be used. The administration of epinephrin by mouth (two to four drops a day) may also be tried. When there are serious complications due to compression, it is necessary to use treatment with more rapid action. If the symptoms do not appear too threatening, one may try to diminish the volume of the thymus by radiotherapy; otherwise thymectomy is the treatment of choice. When the dyspnea and cyanosis are so serious as to forbid recourse to this operation, intubation with as long a tube as possible may be tried; but tracheotomy or a short tube should never be used. If the symptoms are thus improved, one may profit by the amelioration to employ thymectomy.

Dr. René Cruchet, *agrégé* professor at the Bordeaux college of medicine, drew deductions from studies of 77 cases with autopsies. He believes that in acute thymic conditions cases of compression of the trachea by hypertrophy of the thymus are exceptional, and that the volume and the weight of the gland play only a contingent rôle, since glands weighing 2 to 3 gm. may provoke attacks while glands weighing 200 gm. may not. Dr. Cruchet believes that compression of nerves is the most probable cause of thymic disturbances. He remarks that often the thymus is hypertrophied only after respiratory troubles such as croup, pulmonary tuberculosis, pneumonia and bronchopneumonia.

The surgery of the thymus was the subject of a paper by Dr. Victor Veau, surgeon of the Paris hospitals, who believes that the functional results of operation are always encouraging. In the crises of suffocation occurring with a large thymus operation is urgent and may prevent sudden death. In cases of permanent dyspnea without crises of suffocation, removal of the thymus, while less imperative, is still the therapeutic means of choice. In spasm of the glottis, the propriety of operation is more debatable. It may be considered if the physical signs of hypertrophy of the thymus coexist with the spasm. In a case of this kind, observed by Dr. Veau with Professor Hutinel, the result was decidedly favorable. The effects of thymectomy on thymus stridor have not been so encouraging; often the harsh breathing has persisted after the removal of the thymus. Dr. Veau therefore believes that it is not necessary to remove the thymus when strident breathing exists, but the child should be closely watched. If other symptoms of hypertrophy of the thymus, such as crises of suffocation and permanent dyspnea, appear thymectomy should be performed immediately. One may promise the parents that the removal of the gland will modify the symptoms but they should be warned that probably the strident breathing will persist.

CEREBROSPINAL MENINGITIS

In a paper on the bacteriology and epidemiology of cerebrospinal meningitis, Dr. Richardière, physician of the Paris hospitals and Dr. J. Lemaire, former intern of the Paris hospitals emphasize the dangers from bacillus carriers, particularly persons with more or less accentuated but sometimes latent contagious specific rhinopharyngitis due to the diplococcus of Weichselbaum.

Dr. [illegible], clinical professor of children's diseases at the Bordeaux college of medicine, and Dr. Rocaz of Bordeaux have studied the clinical manifestations of cerebrospinal meningitis of children and the means of diagnosis. The most important elements of the diagnosis are furnished by the examination of the cerebrospinal fluid, withdrawn by lumbar puncture, by the precipito-reaction of Vincent-Bellot and by the fixation reaction of Bordet and Gengou.

Dr. Netter, *agrégé* professor at the Paris college of medicine, emphasizes the efficiency of antimeningococcus serum, which, injected intraspinally, acts as a true specific. As a rule, Dr. Netter injects 30 c.c. of the Flexner serum in very young children. In serious or very obstinate cases, he goes as high as 45 or even 60 c.c. In order to obtain good results, it is necessary to renew the injections during the first three or four days of the treatment. It is best, moreover, to continue them as long as the cerebrospinal fluid contains meningococci. The greatest number of cures, and the most rapid, are obtained when the treatment is begun early. It is therefore better, if there is the least doubt, to inject the serum after the first puncture without awaiting the results of the bacteriologic examination, which, however, ought to be a guide for further injections. Along with the essential therapeutic agent, the serum, other therapeutic means should not be neglected. Netter particularly advises giving warm baths for forty-five minutes at 39 to 40 C. (102 to 104 F.) three times a day. They have a very appreciable action on the stiffening, the pain, and even on the temperature. Repeated lumbar punctures are very useful, for they ameliorate the painful symptoms by diminishing the tension and removing a certain quantity of pathologic agents and other products of disintegration.

Drs. Broca and Debré of Paris emphasized the surgical aspects of cerebrospinal meningitis, especially the severe pains at the beginning which, in the abdomen, simulate appendicitis and, in the limbs, simulate osteomyelitis.

The Next International Congress of Educational Hygiene

The next International Congress of Educational Hygiene will be held in 1913 in Buffalo, N. Y.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Aug. 4, 1910.

Personal

July 30 Professors Senator and Olshausen, who are resigning on account of advanced age, delivered their farewell lectures. Both addresses were transformed into ovations for the retiring scientists. Especially at the lecture of Senator, Prof. Kraus took the opportunity to emphasize the great importance of the investigator. There is no question that the fame of the Berlin university will be lessened by the departure of these two learned men, for their successors cannot fill their places and give no promise of ever equalling their predecessors. Prof. Franz has been called to succeed Olshausen; he is a former assistant of Bumm.

Professor Rubner has been chosen as rector of the Berlin university for the next student year. This is the seventeenth time that a medical man has been accorded this especially honorable position and among the present force belonging to the university a worthier representative could scarcely have been chosen, for Professor Rubner may well be considered as at present the most important member of the university faculty.

Professor Stock of Freiburg has been appointed director of the eye clinic at Jena in place of Professor Wagenmann.

Professor Payr has been nominated as successor to Professor Krönlein, the well-known director of the surgical clinic in Zurich.

Professor v. Eicken, formerly for many years assistant of Professor Killian, now assistant of Professor Siebenmann in Basel, has been called to succeed Professor Leutert as director of the ear clinic at Giessen.

No Trade Tax on Physicians and Lawyers

In Prussia and in most of the other German states, physicians and lawyers are exempt from tax for carrying on their business on the ground of the provision of the law that professions which are not followed merely for commercial purposes but from ideal interests shall be exempt. In the effort at tax reform which is being made in the deeply involved duchy of Hesse-Nassau the effort is being made by some parties in opposition to the program of the government to remove this special privilege of physicians and attorneys. Fortunately it has been possible for the threatened professions to avert the blow. The Hessian legislature (*Landtag*) has recently decided that physicians shall be exempt from the trade tax as formerly.

Tuberculin Treatment in Rudolf Virchow Hospital

A separate ward in the Rudolf Virchow hospital has been set apart, the same as last year, by order of the city government, for tuberculin treatment, to be conducted by the institute for infectious diseases under the leadership of its director, Dr. Gaffky. Robert Koch had charge of this work formerly.

Communication of Infection by Eggs

Interesting experiments have been made by the imperial health office to determine the ways in which disease may be conveyed by eggs. The infection of hen's eggs with germs may occur by the contamination of the ready formed egg by germs which are either on the outside of the shell or in some cases may penetrate the shell into the egg itself. Micrococci and non-motile organisms appear not to possess this property of penetrating the shell under ordinary circumstances so long as the egg is kept dry. The principal source of the germs in normal eggs is an infection during their formation; 54 per cent. of the eggs investigated contained germs. The communication of disease by eggs may occur either from the germs on the shell or from those contained in the egg itself. In the transmission of disease by germs, the ability of the germ to resist external influences, such as drying, is of great importance. This method of dissemination of chicken cholera is of minor importance. Paratyphoid bacilli remain viable on egg-shells for 10 days and longer and they may also penetrate the shell into the egg itself. For this reason it is not impossible that, exceptionally, hen's eggs may be the source of a paratyphoid infection of man.

Separation of the Medical Bureau from the Department of Education

The much-discussed question of separating the medical bureau from the department of education on account of the overloading of the latter is finally settled. Next April the bureau will be transferred to the department of the interior. As some important branches of the public-health service are now placed in this department (especially the offices of the sanitary police), it is to be hoped that by the consolidation of the entire medical administration in the department of the interior an effective organization of Prussian sanitation will be secured. The conduct of medical instruction naturally remains with the department of education. The minister of education has also the right to confer the title of professor on practicing physicians on account of scientific attainments, although the medical press has repeatedly and justly protested against this practice.

Operation to Prevent Gangrene of Extremities

Some years ago Professor Wieting of the Gülhane Hospital in Constantinople reported two cases in the *Deutsche medizinische Wochenschrift* in which he had succeeded in preventing a threatened gangrene of the extremities in consequence of arteriosclerosis by transplanting the femoral artery into the femoral vein. Professor Bier recently reported a similar success at a meeting of the Freie Vereinigung der Chirurgen Berlins. In a man of 38, with gangrenous ulcers on one foot, due to arteriosclerosis from tobacco, Bier performed Wieting's operation in place of the amputation which the patient desired. The immediate success of the operation was very remarkable. The intense pains disappeared and the limb, which had been in some places pale, in others blue and cold, became red and warm and the ulcers dried up. As the report was made only twelve days after the operation, the permanent results are doubtful. However, according to Bier's opinion it may be hoped that, even if amputation should become necessary, the improved nutrition of the leg would permit a lower amputation. Professor Payr reported a similar case in the Greifswald Medical Society. After transplanting the deep femoral artery into the femoral vein in a man of 70 with arteriosclerotic gangrene of the great toe and heel of one leg, the leg remained better nourished for eleven days, but after that the circulation failed and the patient died from heart failure after a few days. This case was unfavorable on account of the severe infection already present. In discussing the prognosis of such operations in threatened arteriosclerotic gangrene and in general in threatened obstruction to the arterial circulation, Payr recommended to choose the deep femoral, as at its point of origin its lumen is nearly the same as that of the femoral artery, and this leaves the arterial circulation in the femoral intact, while in case the femoral artery is used, thrombosis occurring at the point of suture cuts off at one stroke the blood supply to the entire limb. Severe infection is a contraindication. Venous thrombi present in the inflamed territory would lodge in the peripheral vessels and cause a complete obstruction of the already imperfect circulation. The return of the arterial blood may be successfully carried on through anastomoses of the deep with the subcutaneous veins. According to anatomical and experimental investigation so far made the valves form no objection to the operation.

New Electric Aid to Hearing

At one of the last sessions of the Berlin Otologic Society Dr. Flatau reported investigations which he had made at the Charité ear clinic with apparatus in which the microtelephonic system is applied. In a certain number of cases, in which all other aids to hearing were unsuccessful, success could still be obtained with this system. But in other cases even this apparatus failed because of the inconstancy of its action and of faulty selection. Flatau therefore had new models constructed in which the tuning of the microphone has been tested for a year and the microphone is installed in a specially arranged and peculiarly constructed sound receiver which possesses various arrangements for regulation. Five types are constructed which differ in the arrangement and size of the acoustic aids in the microphone. In the following discussion it was asserted by all that they had had no favorable results from the microphone apparatus so far in use. Although, as is well known, many people who are hard of hearing can hear well through the telephone, the electric hearing apparatus generally gives no better results than an ear tube. It is generally agreed that a functional examination of the patient must be made before the use of such an apparatus. Further trials of Flatau's instrument will show whether it is more effective than the electric apparatus heretofore in use.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 8, 1910.

Glanders in the Austrian Army

The Austrian army was expected to hold its annual maneuvers as usual in the month of August, but for some time rumors have been afloat that, owing to some disease in the stables, the actual time of the maneuvers was rather uncertain. Meanwhile a serious outbreak of glanders was conceded by the authorities, and although all the extensive preparations pertaining to the housing and boarding of over 130,000 men and 10,000 horses for three weeks were finished, at the very last moment the maneuvers had to be postponed indefinitely; they will not take place this year. This is due to the action of military medical men, whose influence and opinion in these matters had enough weight to overthrow the optimistic view of purely military persons. The disease had been imported, as could be ascertained by the very close investigation, only seven weeks before, and had at first appeared very insidiously, not having been recognized at once. Only after a few soldiers too had become affected was suspicion aroused, and soon bacteriologic evidence was present.

The course of the disease was mild at first but later all the horses attacked succumbed to the disease, and later on all the affected horses were killed. No less than thirteen regiments are suffering from it, and although official data are not given—all things pertaining to military service are guarded here with secrecy—yet the fact that the maneuvers had to be abandoned, although the emperor himself was to have viewed them, allows one to judge the extent of the epidemic. Up till now, with very few exceptions, no human cases in the present outbreak have been dealt with in the experiment laboratories. Every precaution has been taken to prevent the spread of the epidemic to rural households and farms, and to date no cases have been reported from non-military sources.

Ehrlich's Preparation in Austrian Hospitals

Professor Ehrlich's much spoken of preparation "606" is now in use all over the continent and much comment and perhaps too optimistic expectations are attached to it. The lay press in this country has made very commendable efforts to warn the public of the necessity of waiting further effects of the famous remedy. Just in time a report from the dermatologic clinic in Prague was published, in which it was stated that very unpleasant symptoms (blindness, loss of patellar reflexes, severe pain, etc.), similar to those from acute poisoning with methyl alcohol, have been observed after the injection; though the report was somewhat modified afterward, still it had the beneficial effect of restraining somewhat the enthusiastic expectation of the multitude of syphilitics. On the other hand many favorable reports have been already published by competent observers in the clinics in Vienna, Budapest, Innsbruck and Graz. As is only natural, all their reports emphasize the necessity of watching the patients thus treated for a prolonged period. But the tendency in this country is in favor of this new remedy. It is estimated that the yearly expenditure of the state for the consequences of syphilis in this country, treatment of acute manifestations in the hospitals, as well as of recurrences, housing of the tabetic, the insane and their offspring is at least $6,000,000, without counting the loss of national property due to the same source. The interest with which further developments are awaited can thus be readily understood.

Decrease of Meat Consumption

The report of the superintendent of the general market, who has control also over all the other markets in this country, shows, that in 1909 a marked decrease of the consumption of meat was the leading feature of the meat markets. Thus the average meat consumption per year at Vienna has grown from 64 kilos (130 pounds) for each adult in 1898 to 74 kilos (152 pounds) in 1908; in 1909 the figure was 72 kilos, a decrease of 4 pounds. The growth of meat consumption had been very steady and constant. The sudden drop is explained by the difficulty in obtaining the necessary quantity in the face of the increased expenditure for the other absolutely necessary articles of food, which have become so much dearer. In fact, living having become dearer in this country by 40 per cent., especially since 1908, the effects on public health of the existing conditions have been a matter of serious consideration of the responsible government. The deterioration of the quality and quantity of food consumed by the majority of the population has as yet no marked effect on the vital statistics, but unless it is speedily remedied, serious consequences are sure to follow, for the vegetarian diet is also too dear for the laborer, and abstinence from meat alone is not possible or satisfactory.

Marriages

Norris S. McDowell, M.D., to Miss Mathilde J. McCrystal, both of Philadelphia, August 6.

Martin P. Summers, M.D., to Miss Elizabeth Humphreys, both of Cushing, Iowa, July 29.

S. J. Newton Magwood, M.D., to Miss Maude McLain, both of Toronto, Ont., July 23.

Homer G. Rosenberger, M.D., Whittier, Cal., to Miss Fay West of Oskaloosa, Iowa, July 14.

William Cantine Gilley, M.D., to Miss Marg[illegible] Jenkins, both of New York City, August 11.

Deaths

Walter Keeler Scofield, M.D. College of Physicians and Surgeons, New York City, 1868; a member of the American Medical Association, and Association of Military surgeons of the United States, of Stamford, Conn.; medical director with rank of rear admiral, U. S. Navy, retired April 28, 1901 after thirteen years sea service and eighteen years and eleven months shore or other duty, who entered the naval service in July, 1861, as assistant surgeon; was commissioned surgeon, June 19, 1866, was commissioned medical director in 1889, and was retired on October 8, 1901; died at his home in Stamford, August 5, aged 71.

Benjamin Horning Detwiler, M.D. University of Pennsylvania, Department of Medicine, 1855; a member of the American Medical Association, one of the founders of the Williamsport, Pa., Hospital, and a member of the medical and surgical staff from its foundation; a trustee of the Danville State Hospital, and at one time president of the board; died at his home in Williamsport, August 9, from paralysis, aged 78.

Frank Stillman Raymond, M.D. Louisville, (Ky.) Medical College, 1870; a member of the American Medical Association; formerly president of the Shelby County (Tenn.) Board of Health and president of the Memphis Board of Health; member of the State Board of Medical Examiners; died at his home in Memphis Tenn., August 16, from Hodgkin's disease, aged 57.

Robert A. Jamieson, M.D. University of Pennsylvania, Department of Medicine, 1866; a member of the American Medical Association; emeritus professor of materia medica and clinical medicine in the Detroit College of Medicine; a member of the medical staff of Harper's, St. Mary's and St. Luke's Hospitals, Detroit; died in that city, August 9, aged 66.

Eric A. Davidson, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1898; Rush Medical College, Chicago, 1901; a member of the Illinois State Medical Society; professor of medicine in Bennett College of Eclectic Medicine and Surgery, Chicago; died at the home of his brother in Berkeley, Cal., July 30, aged 51.

Alexander Thompson Bull, M.D. New York University Medical College, New York City, 1848; a member of the Medical Society of the State of New York; died at his home in Buffalo, August 15, from the effects of injuries received by a fall a few weeks before, aged 83.

Wiley W. Tarter, M.D. College of Physicians and Surgeons, Baltimore, 1908; of Mellen, Wis.; died at St. Joseph's Hospital, Ashland, Wis., August 11, from injuries received by the explosion of a barrel of alcohol at Mellen the day before, aged 27.

Mann Page, M.D. University of Virginia, Department of Medicine, 1897; house surgeon and physician to Orange Memorial Hospital, Orange, N. J., died suddenly at his home in Keswick, near Cobham, Va., July 29, from dysentery, aged 40.

Eugene T. Wilhelm, M.D. Jefferson Medical College, Philadelphia, 1878; a member of the Medical Society of the State of Pennsylvania; and Lehigh Valley Medical Association; died at South Bethlehem, June 24, from diabetes, aged 61.

David William Rees, M.D. California Eclectic Medical College, Los Angeles, 1890; for many years a druggist and physician of Needles, Cal.; died at the California Hospital in Los Angeles, July 31, from septicemia, aged 41.

Seymour J. Holley, M.D. College of Physicians and Surgeons, New York City, 1857; a veteran of the Civil war; for twelve years an inspector on the Brooklyn Board of Health; died at the Brooklyn Hospital, August 7, aged 73.

James W. Nance, M.D. Baltimore University School of Medicine, 1894; a member of the Medical Association of the State of Alabama; died suddenly at his home in Russellville, August 5, from heart disease, aged about 55.

George Charles McIntyre, M.D. University of Toronto, Faculty of Medicine, Toronto, Ont., 1906; of St. Mary's, Ont.; died at the Royal Victoria Hospital, Montreal, Que., March 6, from tuberculous spondylitis, aged 28.

William J. Foley, M.D. Louisville (Ky.) Medical College, 1897; a member of the Kentucky State Medical Association; health officer of Fayette county; died at Lexington, August 7, from paralysis, aged 36.

William Henry Hull, M.D. Harvard Medical School, Boston, 1865; a member of the Massachusetts Medical Society; a veteran of the Civil War; of Holbrook, Mass.; died at Essex, Mass., August 8, aged 78.

Edmund Livingstone Moodie, M.D. Hahnemann Medical College, 1903; a member of the American Medical Association; of Chatham, Ohio, died at Harper Hospital, Detroit, July 8, from sepsis, aged 35.

Oliver J. Mayne, M.D. Denver (Colo.) College of Medicine, 1890; a member of the American Medical Association; formerly mayor of Como, Colo.; died at St. Luke's Hospital, Denver, August 9, aged 47.

Francis Emory Ross, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the Missouri State Medical Association; died at his home in Springfield, August 8, aged 72.

George Herbert Huntington Redding, M.D. Bellevue Hospital Medical College, New York City, 1887; died at his home in San Francisco, Cal., August 8, from cirrhosis of the liver, aged 52.

Samuel B. Bailey, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1859; a retired practitioner of Higganum, Conn., died at his home in that place, August 11, aged 84.

Samuel H. Griffin, M.D. Missouri Medical College, St. Louis, 1880, a member of the American Medical Association; died at Humansville, Mo., April 7, from pneumonia, aged 61.

William Francis Lynch, M.D. Cooper Medical College, San Francisco, 1882; a member of the Medical Society of the State of California; died at Hayward, Cal., July 1, aged 55.

Samuel B. Littlepage, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1885; a retired practitioner of California; died at a hospital in Oakland, August 11, aged 72.

Levi Spencer Wilcox, M.D. Long Island College Hospital, Brooklyn, N. Y., 1873; twice mayor of Champaign, Ill.; died at the California Hospital, Los Angeles, August 5, aged 63.

James Robert Crockett, M.D. University of Maryland, School of Medicine, 1891; of Burkes Garden, Va.; died at the University Hospital, Baltimore, August 2, aged 54.

John Wesley Klein, M.D. Hahnemann Medical College, Philadelphia, 1871; died suddenly at his home in Louisville, Ky., August 13, from cerebral hemorrhage, aged 59.

Martin Luther Fittro, M.D. University of Maryland, School of Medicinee, 1896; died at his home in New Martinsville, W. Va., August 12, from uremia, aged 45.

James H. Scarborough, M.D. Medical Department of the University of Nashville, Tenn., 1872; died at his home in Tharpe, Tenn., August 9, aged 72.

Thomas R. Young, M.D. Jefferson Medical College, Philadelphia, 1859; died at his home in Ashland, Ky., August 2, from senile debility, aged 77.

William C. Baylor, M.D. Washington University School of Medicine, Baltimore, 1869; died at Willow, Cal., June 27, from cerebral hemorrhage, aged 67.

Mark C. Ott, M.D. University of Alabama Medical Department, 1900; died at his home in Greensboro, Ala., July 2, from tuberculosis, aged 34.

Alexander G. Carroll, M.D. Georgia College of Eclectic Medicine and Surgery, 1894; died at his home in Atlanta, Ga., August 7, aged 53.

Randolph S. Steensen, M.D. University of the South, Medical Department, Sewanee, Tenn., 1900; died at Harrisburg, S. D., August 9, aged 38.

William Ross, M.D. Eclectic Medical Institute, Cincinnati, Ohio, 1845; died at Wilton Junction, Iowa, August 1, from heart disease, aged 82.

Charles E. Fay, M.D. Detroit Medical College, 1877; died at his home in Kalamazoo, Mich., August 3, from disease of the liver, aged 56.

Henry T. McNatt, (license, Ark., 1903); formerly of Buena Vista, Ark.; died at his home in Stephens, Ark., August 9, aged 37.

George Alfred Rogers, M.D. St. Louis Medical College —; died at White Lake, S. D., April 18, from nephritis, aged 60.

Henry G. Groff, M.D. Philadelphia Medical College, 1853; died at Harleysville, Pa., July 28, from uremia, aged 80.

J. N. Houston, (License, Tenn., 1889); died at his home near Parsons, Tenn., August 6, aged 84.

Good Pamphlets on Tuberculosis.—Public Health Bulletins 35 and 36 are authoritative monographs on the subject of the nature, prevention and climatic treatment of tuberculosis, which will be serviceable for the information of the physician himself or to place in the hands of patients. They are written by Passed Assistant Surgeon F. C. Smith, of the U. S. Public Health and Marine-Hospital Service. Bulletin 35 gives in plain language the ascertained facts regarding the nature, contagious character, mode of spread and practicable means of prevention of the disease. Useful hints and advice to patients are appended. The information in this pamphlet will not be new to physicians but is given in an excellent form for the instruction of the general public. The second pamphlet is more especially designed for the guidance of the physician in selecting a suitable climate and in deciding whether climatic change is desirable. The opinion of a number of experts is quoted and the different circumstances affecting the decision of the medical adviser are carefully pointed out, it being especially emphasized that the decision must be made with reference to the special circumstance of the individual case. A list is given of the most healthful and suitable places in the different states as shown by the location of state sanatoria, also a list of places characterized by high altitude and dryness and a list of places at more moderate or low altitudes which are suitable for climatic treatment.

Correspondence

Patenting Instruments and Apparatus

To the Editor: A word by way of protest against the patenting of newly devised surgical instruments and apparatus by physicians. It has long been held that any improvement in the armamentarium of the physician should be given to the profession for the benefit of the sick and afflicted. For a physician to patent a method of laboratory technic or apparatus whose purpose is to aid in the diagnosis or prevention of disease is no worse from an ethical standpoint than the patenting of a surgical instrument.

The argument that the physician should profit in this way from his ingenuity and knowledge is fallacious. Otherwise the most laudable efforts of present-day medicine, the prevention of disease, should have no legitimate place in the physician's work.

A most glaring example of this evil has been the recent exploitation of a set of instruments for perforating the skull, which have been patented. They have been widely advertised under the name of the inventor, a doctor, both by the medical press and by circular letter. The claim made for them that it is impossible to injure the underlying dura or brain is not true, as I have demonstrated to my satisfaction. The price, $50, is four or five times their intrinsic value. For $2.40 I have obtained a set of perforating instruments at a local hardware store which answer every purpose—and they are just as safe.

John D. Singley, Pittsburg, Pa.

Registration of Foreign Physicians

To the Editor: Having read the letters of Drs. Hoenes and McReynolds in The Journal on this subject, I beg leave to make a few remarks. By way of criticism I will add that there was an air of sentiment about them that interested me. If candidates for license to practice medicine in Canada will comply with the various provincial laws, they will have no difficulty. Of course, if one has, up to a few years ago, carried the hod and later, by way of recreation, obtained a degree or license to practice medicine either by serving apprenticeship for a year as office boy to some poorly trained practitioner, or attending one, two, or even three, five or six-month courses at some diploma mill, one will be blocked at the start. I am surrounded by physicians who have spent, at most, two six-month terms at college, hardly enough time to digest a part of one of the primary subjects of medicine. Did these latter, in the obscurity of the barnyard, obtain a knowledge of anatomy (comparative or human) or did they get their knowledge by inspiration? I have met them at different state board examinations, and later heard of their having passed succesfully; all I can say is that they would not have been qualified to take a professional examination in Canada. In conclusion, permit me to say that if a physician has the qualifications which are exacted of all nationalities in Canada, he can obtain the license to practice there.

D. Nathan, Norristown, Pa.

Doctors of Public Health

To the Editor:—Apropos of the editorial in The Journal, August 20 on this subject, may I not ask your attention to the course which since 1906 has been offered by the University of Pennsylvania, and which is outlined in the special advertisement of this school in the same number of The Journal? Dr. Harold Wood, who graduated this spring in this course, has very recently been placed in charge of the Mississippi State Laboratory by the Board of Health of Mississippi.

Allen J. Smith, Dean.

Miscellany

The Mesocelic Recess in Man and its Relation to Reissner's Fiber. Reissner's fiber, a small bundle commencing in numerous fibrils from the ependymal groove of the lower vertebrates and passing downward or backward through the iter, the fourth ventricle and the central canal of the cord to its posterior extremity, has been traced as a constant structure in the vertebrates from the lamprey up to the monkey. Its function has been supposed to be nervous, but this has not been demonstrated; and Horsley has found that it does not degenerate like a nerve with electrolytic lesions. Dendy has recently (*Nature*, Dec. 23, 1909) suggested that it has a mechanical function in regulating flexure of the body. It seems to be highly elastic and normally under considerable tension during life, as it is found retracted and twisted up after section of the cord. In a recent communication to the Royal Society (June 2, reported in *Nature*, June 9), Professor Dendy and G. E. Nichols report the finding of a rudimentary structure in the human brain corresponding to the ependymal groove, or as they prefer to call it, the subcommissural organ, from which this fiber starts. In the human fetus it consists of two bands of highly columnar epithelium with deeply situated nuclei, invaginated posteriorly into the roof of the iter to form a "mesocelic recess" as in certain lower vertebrates. In the adult brain this is represented by a small cavity lined with characteristic columnar epithelium imbedded in the roof of the iter at the back of the posterior commissure, and in close relation to another cavity, apparently representing a communication with the lumen of the iter. In the fetus this communication is widely open. It is not probable, they say, that any trace of Reissner's fiber will be found in the human adult, as with the loss of the tail and assumption of the erect position, the function it is assumed by them it would have, of automatic regulation of the flexure of the body, is no longer needed, and is represented only by the vestigial remnant of the subcommissural organ.

Paraffinomas.—This term has been coined by Delangre to describe the inflammatory lesions and tumefaction liable to develop around a deposit of paraffin injected into the subcutaneous cellular tissue. The "beauty specialists" have taken up this method of improving the appearance of their customers and serious results have sometimes followed. In one such case presented at a recent meeting of the Paris Dermatologic Society, Thibierge presented a young woman who had been given by a local beauty specialist a number of injections of hard paraffin to remedy a very slight depression in the nose. The immediate results were so satisfactory that she had her face all gone over in this way, 80 injections being made in the course of 21 months. A year later the various deposits became the seat of disfiguring swelling, the aspect suggesting pronounced leontiasis. There is no pain except from the stretching of the skin. Operative removal of the paraffin seems to be the only resource in this case, electrolysis, heat and massage offering little prospect of success with the hard paraffin. Gaucher reported a case in which the paraffinomas had developed in the breast of a young woman and they were followed by cancer. Pautrier also reported 4 cases of paraffinomas in the face, the work of a "beauty specialist:" in one case the lesions ulcerated. He found that each deposit of paraffin was walled in with connective tissue. Balzer called attention to the frequent development of subcutaneous fibromas in the tuberculous after injection of paraffin with a low melting point. Injection of paraffin into a cavity, to replace a testicle, for instance, seems harmless, but the anatomic conditions in the subcutaneous tissue are very different and the results are liable to be deplorable.

Concussion of the Brain.—E. Schwarz discusses a number of cases of trauma causing concussion of the brain, his article appearing in the *St. Petersburg med. Wchnschr.*, 1910, xxxv, 267. His experience shows that an apparently slight accident may induce a focal injury of the brain which yet causes no symptoms and the patient feels no ill effects. The focal lesion may be revealed, however, by blood in the cerebrospinal fluid or a serous effusion may follow if the focus does not heal soon, the cerebrospinal fluid then showing increased pressure or other changes. Lymphocytosis may reveal the changes resulting from the focal lesion. With rest, healing is soon complete, but the necessity for rest from the first should be emphasized even though the patient may feel entirely well. Without rest the pathologic condition may persist and the clinical picture of meningitis be presented in time. The euphoria may be pronounced after lumbar puncture; the latter is especially valuable in these cases. The euphoria is in marked contrast to the condition in cases of traumatic neuroses.

Idiosyncrasies.—R. M. Beauchant concludes an article on this subject in the *Progrès Médical*, April 16, 1910, with the statement that the different idiosyncrasies should be considered as having a common etiology and clinical kinship. Certain families are especially subject to them, although they may appear in various forms in the same person and in the same family. They are generally associated with symptoms which should be regarded as of the same pathogenic importance; these include urticaria, acute edema of the skin or mucosa, asthma, all of which generally accompany the idiosyncrasies; with, more rarely, stenosis, migraine, eczema, pruritus, dysmenorrhea and certain forms of chronic rheumatism and, invariably, with an extreme tendency to nervousness. He thinks that a common soil is evident in all these manifestations, a tendency to instability on the part of the vasomotor apparatus, an angioneurotic diathesis, and that certain features indicate a thyroid origin for the various disturbances noticed with this diathesis.

Congenital Scoliosis.—A case of congenital scoliosis is reported by Frederick Langmead (*Proc. Roy Med. Soc.*, May, 1910), in an infant aged 10 months, who was brought to the hospital for "projection of the back." There was a pronounced spinal curvature with the convexity to the left, most severe in the dorsolumbar region. In the upper dorsal and lower cervical region was a compensating curve in the opposite direction. The curvature was irreducible. Rickets could be excluded. A skiagram revealed an extra bone between the last dorsal and first lumbar vertebra, wedge-shaped, with the base of the wedge to the left. The bone bore two transverse processes at its base and one at its apex, and thus apparently represented a vertebra and a half. That the twelfth dorsal vertebra was not included in this bone is shown by the fact that twelve ribs could be counted on each side, the lowest of which joined the vertebra above. There were five lumbar vertebræ plainly visible below.

The Diagnosis of Cholera in the Philippines.—Erroneous diagnoses have been responsible for the failure to destroy foci of cholera infection in the city of Manila, according to Victor G. Heiser, Director of Health (*Quarterly Report of the Bureau of Health, Fourth Quarter*, 1909). In the last quarter of 1908, 129 cases of meningitis were reported to the health authorities. In order to verify the diagnosis in a number of these cases autopsies were made, and these showed that the cause of death was cholera and not meningitis. In view of this, it was decided to hold autopsies in all cases reported as meningitis. This had the effect of increasing the diagnostic acumen of those signing death certificates and in the subsequent quarter only 31 cases of meningitis were reported. Twenty-eight of these were autopsied, and only 2 proved to be meningitis; 17 were cholera; 4 were beri beri; 1 was empyema and 4 were undetermined. In the last quarter of 1909 there were 151 deaths from cholera in Manila. The total death rate in Manila for 1909 was 35.50 per 1,000, as against 47.62 per 1,000 in 1908.

Carcinoma in Early Life.—Howard T. Karsner (*Proc. Path. Soc., Philadelphia*, February, 1910) reports a series of ten cases of carcinoma, seven occurring, respectively, at the ages of 7, 10, 11, 14, 19, 21 and 22, and three at the age of 23. Five were in males and five in females. The duration of all the cases had been short, confirming the opinion of other observers that cancer runs a much more rapid course in childhood and early life than in adult life. From Karsner's experience and from a study of the literature in early life the sexes seem to show equal predisposition to cancer, the intestine and skin being especially subject to cancer in boys, and the ovaries in girls.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RESTRICTION OF USE OF RED CROSS—SUBSTITUTES THEREFOR

To the Editor:—Can you give me information about the restriction of the use of the red cross? Would the green cross be a proper insignium to be put on physician's automobiles in order to secure from the police exemption from the speed ordinance in emergency cases? LOUIS F. ROSS, Richmond, Ind.

ANSWER:—The Geneva Convention in 1864, and later in 1906, adopted an international agreement providing that the "emblem of a red cross on a white ground and the words 'Red Cross,' or 'Geneva Cross' should be adopted by all nations participating in the convention as a special designation in times of peace or war to protect or to designate sanitary formations and establishments, the personnel and material protected by the convention." The American National Red Cross, which comes under the regulations of the International Geneva Treaty, was granted a charter by Congress, Jan. 5, 1905, authorizing it to act in behalf of the United States in matters of relief under the treaty. The executive committee of the American National Red Cross then requested all hospitals, health departments and like institutions to refrain from the use of the red cross in order to avoid confusion and suggested as a substitute some other insignia such as a green St. Andrew's cross on a white ground. Congress at its last session restricted the use of the red cross to the American National Red Cross. This law, of course, only prohibited organizations from adopting this emblem after the passage of the law. Although the American Medical Association has used this badge for many years and does not come under the provisions of the law, it was felt by many that the use of the Geneva red cross should be restricted to the American National Red Cross. Consequently, at the Atlantic City Session in 1909 a committee was appointed to submit designs for new insignia. The report of this committee was presented at St. Louis (See THE JOURNAL, June 18, 1910, pages 2068 and 2081). The green St. Andrew's cross on a white ground would be a proper badge for physicians' automobiles, hospital ambulances, etc., and could be adopted by agreement with authorities.

The Public Service

Medical Department, U. S. Army

Changes for the week ended August 20, 1910.

Casaday, George H., dent. surg., August 9, granted leave of absence for twenty days, to take effect about August 10, 1910.

Cole, Clarence L., capt., August 8, designated for duty with troops from Whipple Barracks, Arizona, Camp Atascadero, California.

Rutherford, H. H., major, August 13, ordered to Fort Totten, N. Y., for duty.

Ford, Joseph H.; Van Dusen, James W., majors, August 13, report en route to Camp of Instruction at Fort Riley, Kansas.

Fletcher, John P., lieut., August 13, left Fort D. A. Russell, Wyoming, for duty at Camp E. S. Otis, Wyoming.

Holmberg, Carl E., lieut.; Kremers, Edward D., lieut.; Hathaway, Levy M., capt.; King, Charles T., lieut., August 10, ordered to Camp of Instruction at Atascadero, California, for duty.

Nelson, Kent, capt., Aug. 15, 1910, on arrival at San Francisco will proceed to Whipple Barracks, Arizona, for duty.

Carpenter, Alden, dent. surg., August 15, returned to West Point, N. Y., from leave of absence.

Farrow, Edgar J., M. R. C., August 15, now at Vancouver Barracks, Washington, having completed the duty assigned him, will proceed to Fort Morgan, Alabama, for duty at that post.

Leslie, Samuel H., dent. surg., August 15, ordered to proceed from his home, Monticello, Kansas, to Fort Leavenworth, Kansas, for duty at that post.

Yemans, Herbert W., M. R. C., August 15, having reported in this city in compliance with orders heretofore issued, is designated as the representative of the War Department at the International Esperanto Congress.

Shaw, Henry A., major, August 15, relieved from duty at Fort Slocum, N. Y., September 1, and will proceed to Boston, for duty as attending surgeon. Major Shaw is relieved from duty at Boston, and will proceed at the proper time to San Francisco, and take transport to sail from that place about Dec. 5, 1910, for duty in the Philippines Division.

Jenkins, F. E., M. R. C., and Fuller, Major Leigh A., August 13, report arrival at Camp of Instruction, Fort Riley, Kansas.

Keller, William L., capt., August 14, left West Point, N. Y., on detached service, accompanying the First Class, Corps of Cadets, to Fort Hancock, N. Y.

Bell, Leonard P., M. R. C., August 16, reports for duty at Camp of Instruction, Fort Riley, Kansas.

Cullem, Charles W., M. R. C., August 16, granted leave of absence for two months, to take effect upon his arrival in the United States.

Brechemin, Louis, col., August 16, granted leave of absence for four months, with permission to go beyond the sea.

Church, James R., major, August 16, granted leave of absence for one month, to take effect upon his relief from duty at Fort Robinson, Nebraska.

Nichols, Henry J., capt., August 16, on arrival at New York City, will proceed to Peoria, Illinois, for the purpose of studying pellagra in connection with the commission organized by the governor of Illinois.

Brechemin, Louis, Jr., capt., August 16, leave of absence extended one month.

Le Wald, Leon T., capt., August 17, leave of absence extended one month.

Medical Corps, U. S. Navy

Changes for the week ended Aug. 13, 1910.

Lumsden, G. P., medical inspector, detached from the recruiting station, Chattanooga, Tenn., and directed to wait orders.

Tolfree, H. M., passed asst. surgeon, detached from the naval recruiting station, Cleveland, Ohio, and ordered to the naval recruiting station, Chattanooga, Tenn.

Orders issued by Commander-in-Chief of Asiatic Fleet:

Ames, M. H., passed asst.-surgeon, ordered to duty at the naval hospital, Olongapo, P. I.

Higgins, S. L., passed asst.-surgeon, detached from *Mohican* and ordered to the *New York*.

Dollard, H. L., asst. surgeon, detached from the *Relief* and ordered to the *Charleston*.

Guest, M. S., surgeon, ordered to the navy yard, Pensacola, Fla., when discharged from treatment at the naval hospital, Las Animas, Colo.

Fitts, H. B., medical inspector, detached from the navy yard, Pensacola, Fla., and ordered to Washington, D. C., for examination for retirement.

Tolfree, H. M., surgeon, commissioned surgeon from March 24, 1910.

Allen, A. H., passed asst.-surgeon, detached from duty with the naval rifle team of 1910 and ordered to duty at the naval hospital, navy yard, New York, N. Y.

Higgins, S. L., passed asst.-surgeon, commissioned passed assistant surgeon from November 12, 1909.

State Boards of Registration

COMING EXAMINATIONS

IOWA: Capitol Building, Des Moines, September 12-14. Sec., Dr. Guilford H. Sumner, State House.

MASSACHUSETTS: State House, Boston, September 13-15. Sec., Dr. Edwin B. Harvey.

MISSOURI: Capitol Building, Jefferson City, September 20-22. Sec., Dr. Frank B. Hiller.

NEW YORK: Albany, September 27-30. Chief of Examinations Division, Dr. Charles F. Wheelock.

Arkansas Homeopathic May Report

Dr. P. C. Williams, secretary of the Arkansas Homeopathic Board of Examiners, reports the written examination held at Texarkana, May 18, 1910. The number of subjects examined in was 12; total number of questions asked, 120; percentage required to pass, 75. The 8 candidates all passed.

PASSED

College	Year Grad.	Per Cent.
Kansas City Hahnemann Medical College	(1910)	77.5, 79, 79, 80, 80.5, 81, 83, 83

Arizona July Report

Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, July 5-6, 1910. The number of subjects examined in was 9; total number of question asked, 90; percentage required to pass, 75. The total number of candidates examined was 11 of whom 6 passed and 5 failed. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED		
University of Alabama	(1910)	78.3
University of Southern California	(1910)	80.5
Georgetown University	(1906)	78.4
Northwestern University Medical School	(1907)	81.1
St. Louis University	(1909)	87.5
Memphis Hospital Medical College	(1901)	79.2
FAILED		
College of Physicians and Surgeons, Chicago	(1904)	70.3
Hospital College of Medicine, Louisville	(1897)	66.5, 70.9
Medical College of South Carolina	(1910)	67.8, 67.9

Colorado July Report

Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 5, 1910. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. Twenty-five candidates were examined, of whom 21 passed and 4 failed. Twenty-seven candidates were registered on presentation of satisfactory credentials, including state licenses. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Denver and Gross College of Medicine	(1906) 77.7; (1910) 79.7, 80.5, 81.3, 83, 83.3, 84.7	88.7
University of Colorado	(1909) 81.5, 81.7; (1910) 79.6, 83.4, 83.4, 83.6	83.8
Bennett Medical College, Chicago	(1910)	82.4
Rush Medical College	(1898) 79.4; (1909)	76.7
Hering Medical College, Chicago	(1910)	77.9
Harvard Medical School	(1910)	86.2, [illegible]

FAILED		
University of Louisville	(1905)	68
St. Louis College of Physicians and Surgeons	(1906)	63.2
Ensworth Medical College	(1908)	53.7
Barnes Medical College	(1906)	65

REGISTERED ON CREDENTIALS

College.	Year Grad.	State Licenses.
Georgetown University	(1908)	Pennsylvania
Bennett Medical College	(1898)	Texas
American Medical Missionary College	(1909)	Michigan
College of Physicians and Surgeons, Chicago	(1899)	Illinois
Jenner Medical College	(1901)	Iowa
Rush Medical College	(1888)	Iowa
University of Iowa, College of Medicine	(1907)	Nebraska
University of Iowa, Homeopathic College	(1896)	Iowa
University of Kansas	(1906)	Kansas
Maryland Medical College	(1905)	West Virginia
St. Louis Medical College	(1867)	Missouri
Washington University, St. Louis	(1904)	Illinois
Northwestern Medical College, St. Joseph	(1892)	Missouri
St. Louis University	(1908)	Missouri
University of Buffalo	(1898) (1907)	New York
Columbia University, College of Physicians and Surgeons	(1895)	New York
New York University Medical College	(18[illegible]7)	Pennsylvania
Eclectic Medical Institute, Cincinnati	(1873)	Pennsylvania
University of Pennsylvania	(1892)	Pennsylvania
Western Pennsylvania Medical College	(1888) (1896) (1901)	Pennsylvania
Medico-Chirurgical College, Philadelphia	(1892)	Pennsylvania
University of Toronto, Ontario	(18[illegible]2)	California
Queen's University, Canada	(1898)	Minnesota
University of Vienna, Austria	(1894)	Montana

Connecticut July Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 12-13, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 35, of whom 27 passed and 8 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Yale Medical School	(1908) 84.7; (1910)	80, 81.1, 82.4, 84.3
Georgetown University	(1908)	[illegible]
Baltimore Medical College	(1910)	76, 79.4, 81.2, 81.4
College of Physicians and Surgeons, Baltimore	(1910)	[illegible], 81.2
Johns Hopkins University	(1910)	76.9, 78.7
Tufts College Medical School	(1908)	83.9
Harvard Medical School	(1909) 80.1; (1910)	81.7
College of Physicians and Surgeons, Boston	(1910)	78.6
Columbia University, College of Physicians and Surgeons	(1905) 83; (1910)	78.2
University and Bellevue Hospital Medical College	(1909)	[illegible]
Long Island College Hospital	(1908)	77.8
University of North Carolina	(1908)	79.4
Jefferson Medical College	(1908) 83.1; (1910)	82
University of Vermont	(1897) 75.7; (1910)	81.2

FAILED		
College of Physicians and Surgeons, [illegible]	([illegible])	68.7
College of Physicians and Surgeons, Baltimore	(1905)	64.7
College of Physicians and Surgeons, Boston	(1910)	69.1
Maryland Medical College	(1910)	68.8, 71
[illegible] Medical College	(1909)	71.6, 71.2
University of Vermont	([illegible])	57.7

Connecticut Homeopathic July Report

Dr. Edwin C. M. Hall, secretary of the Connecticut Homeopathic Medical Examining Board, reports the written examination held at New Haven, July 12-13, 1910. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 5, of whom 3 passed and 2 were conditioned. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Atlantic Medical College, Baltimore	(1909)	78.5
Hahnemann Medical College and Hospital, Philadelphia	(1910)	80.8, 94.1

FAILED		
Boston University	(1905)	*78
Hahnemann Medical College and Hospital, Philadelphia	(1910)	*76

* Conditioned in one or two branches.

Book Notices

Introduction to the Analysis of Drugs and Medicines. An Elementary Handbook for the Beginner. By Burt E. Nelson, Chemist to the New York State Hospitals. First Edition. Cloth. Price, $3 net. Pp. 384, with 31 illustrations. New York: John Wiley & Sons, 1910.

In view of the extremely diversified nature of the substances entering into the composition of medicines, the separation and determination of the several ingredients of a medicinal preparation is often a matter of great difficulty and is occasionally impossible. Since a glimpse into nearly every phase of chemical activity is necessary in order to cope successfully with all of the problems met with in drug analysis, a comprehensive work devoted to the subject is a much-sought desideratum. Because of the magnitude of the task no one has hitherto attempted the preparation of such a treatise, but the "Introduction to the Analysis of Drugs and Medicines" apparently is a step in this direction, although this work, as the title implies, is little more than an outline of the subject. At the outset of the book the term "drug" is limited by definition to "a dried plant part in the crude state." In the early chapters attention is called to the apparatus and operations used in the ultimate analysis of inorganic and organic substances and the outlines of the principal methods used in elementary qualitative and quantitative analysis are given. A chapter is devoted to the determination of molecular weights, common radicles and chemical formulae. The general principles of drug analysis, by means of which the proximate principles of drugs may be separated and identified, are given in some detail. While not so comprehensive as the section devoted to microscopic drug analysis (in which field the author is more at home) this is in some respects the most valuable portion of the book.

The analytical scheme outlined is an eclectic adaptation of the earlier schemes described by Dragendorff, Parsons and other writers. While it is clear, concise and usable, its chief value is in calling the attention of the beginner to the principal factors to be kept in mind and the results to be expected in drug analysis, leaving the details to be obtained from the teacher or from specialized works of reference. Brief sections are devoted to the assays of chemicals, crude drugs and pharmaceutic preparations and a short chapter is alloted to pharmacologic methods. Many valuable tables are given in the appendix. As no diagnostic methods are given, the book can have no place in the curriculum of the medical school nor in the working library of the physician. It should prove useful in those schools giving elementary courses in drug analysis, and particularly in those in which but little time can be given to foundation courses in analytic chemistry.

The Production and Handling of Clean Milk. Including Practical Milk Inspection. By Kenelm Winslow, M.D., M.D.V., B.A.S. (Harv.), Chairman of the Committee on Milk of the Washington State Medical Association. And Essentials of Milk Bacteriology by H. W. Hill, M.D., [illegible] State Board of Health Laboratories. Cloth. Price, [illegible]. Pp. 367, with 101 Illustrations. New York: W. R. Jenkins Co., 1910.

An attempt is made in this book to treat the bacteriology, chemistry, physiology of milk, also the practical points of caring for cows, construction of stables, handling of milk, milk transportation, and the inspection of milk and dairies. In addition the bacteriologic examination is discussed, with a chapter devoted to the identification of bacteria usually found in milk and the preparation for culture media. Finally a series of laboratory experiments is outlined for the practice of students, by Prof. H. W. Conn. All these subjects cover a rather large field and could be treated more successfully in single books each devoted to one subject specially. If the author had confined himself to the practical parts of milk production and the handling of milk the value of the book would have been enhanced.

The first chapter deals with germs in their general relation to milk. Aside from the fact that many misstatements, contradictions, inaccuracies and some typographic errors have crept in, it must be confessed that the composition is not always clear and leaves doubt in the mind of the reader of the position actually taken by the author. For instance, after discussion of pasteurization, parts of which are useless repetitions, it remains problematic whether the author is in favor of pasteurization or not. To mention some of the inaccuracies: It is stated that bacteria multiply by spores. This is difficult to conceive in view of the fact that a bacterium, as far as we know, never produces more than one spore. The discussion on the germicidal action of fresh milk is premature, since investigators are by no means agreed on the subject. The same comment applies also to the presence of "natural ferments" in milk.

Chapters 2 to 8 are devoted to practical questions of the production, handling and transportation of milk; also the care of cows, the food and the construction of stables. These chapters are of great merit, although occasionally not quite clear and consistent, and they might have constituted the most profitable nucleus for a book of this nature. The chapter on the housing and care of cows is perhaps the most valuable in the book. Milk inspection is discussed in Chapter 9. The presentation of this subject is fair and complete on the whole.

Chapters 10 and 13, on the bacteriology of milk, are written by Dr. H. W. Hill. Justice to this large subject cannot be expected in a limited space, but the information given is fair and clear, although somewhat from a onesided point of view. Chapter 14 contains instructions for laboratory work. As stated before, this belongs properly in a special work and really has no place in this book.

In the appendix we find illustrations of modern sanitary cow-stables. Unfortunately, the most approved modern swinging stanchion is omitted, and the statements in regard to milking machines are rather premature.

Entéro-Côlite: Estomac et Système Nerveux. Par le docteur L. Pron, Membre adhérent de la Société de médecine de Paris. Paper. Price, 2 francs. Pp. 132. Paris: Jules Rousset, 1, Rue Casimir-Delavigne, 1910.

The author sustains the proposition that the condition commonly known as membranous colitis or colitis mucosa is closely connected with nervous dyspepsia and with enteroptosis. He regards the intestinal condition as directly dependent on the failure of the stomach to perform its functions, and therefore directs his therapeutic measures to the cure of the fundamental affection. He attributes the influence of the stomach in producing the pathologic condition of the intestine to the irritation of the solar plexus which is set up by abnormal gastric conditions, is transmitted to the intestinal plexus, and thus causes the intestinal symptoms. The chapter on therapeutics includes a consideration of the dietetic and physical measures suitable to the cure of the dyspepsia as well as to the medicinal treatment. The importance of psychotherapy is recognized. The treatment appears to be in accordance with the methods usually followed in the treatment of these affections. The emphasis which the author puts on the connection of intestinal symptoms with a gastric disorder which is sometimes unrecognized is suggestive and gives to the book its *raison d'être*.

Arbeiten aus dem Pharmazeutischen Institut der Universitat Berlin. Von H. Thoms, M.D., Professor und Direktor des Pharmazeutischen Institutes der Universität Berlin. Volume VII. Comprising work of 1909. Paper. Price, 7 marks. Pp. 312, with illustrations. Vienna: Urban & Schwarzenberg, 1910.

The present volume follows much the same lines as the previous ones. We note with regret the statement in the preface that Dr. Zernik has left the service of the institute. He is succeeded in these investigations by Dr. E. Richter. Much of the report is taken up with the investigation of some comparatively rare plants, especially some of the essential oils. A large section is given to the investigation of foodstuffs from the German colonies. Notwithstanding the great importance of the investigations reported, it is to be regretted that so much of the material is of no immediate practical value to the physician.

Die Praxis der Hydrotherapie und verwandter Heilmethoden. Ein Lehrbuch fur Aerzte und Studierende. Von Dr. A. Laqueur, leitendem Arzt der hydrotherapeutischen Anstalt und des mediko-mechanischen Institutes am stadtischen Rudolf Virchow-Krankenhause zu Berlin. Price, 8 marks. Paper. Pp. 288, with 57 illustrations. Berlin: Julius Springer, 1910.

This book reflects the present teaching of hydrotherapy in Germany and Austria, where the practice of this important branch of therapeutics has reached a high degree. The first chapter takes up the physiologic action of hydrotherapy and thermotherapy and includes a good description of the "reaction." Other chapters deal with the influence on the blood, the secretions, the nervous system and the musculature. This is followed by section on the general technic and the application of hydrotherapeutic measures in various diseases. Electric baths, including the "four-cell bath" and electric light treatment, are well illustrated.

Medicolegal

Skill and Care Required of Specialists, Particularly Hernia Specialists—Liability for Bad Results—New and Unaccepted Methods of Treatment—Paraffin Treatment of Hernia

The St. Louis Court of Appeals says, in the malpractice case of McClarin vs. Grenzfelder (126 S. W. R., 817), that, as treatment for hernia, the defendant, on January 6, injected into the plaintiff's right groin over the hernia some aseptic paraffin. The theory of the practice was that this paraffin, after it was injected into the middle of the muscle outside the abdominal cavity and the peritoneum, would form into a compact mass over the hernia, and close, and hold closed, the orifice in the peritoneum so the bowel could no longer protrude, or possibly hold the bowel in place until the orifice had contracted enough to prevent protrusion. But, notwithstanding the plaintiff was pronounced cured, he said that he suffered pain from that time until May 7, when he was taken to a hospital, found to be suffering from peritonitis, and was immediately operated on therefor.

Taken in its entirety, the testimony of the one expert introduced by the plaintiff pointed rather weakly to the conclusion that the paraffin in the abdominal cavity caused the peritonitis. Doubt, however, was cast on this theory by the paraffin not being in contact with the peritoneum, and the complete cure of the peritonitis before the paraffin was removed. Moreover, the injection of it, if a regular and approved method of treating the ailment, would not necessarily lay the defendant liable, even if it induced the peritonitis, for untoward results sometimes follow the most scientific surgery. On the whole, more evidence on the main issues of fact was desirable; but, as there was proof that the peritonitis might have been caused by the wax, and some evidence tending to prove the injection of it was not a right way to treat hernia, the court indorses the submission of the case to the jury, which returned a verdict in the plaintiff's favor for $2,000 damages. At the same time, the judgment is reversed, and the cause remanded for another trial, on account of erroneous instructions given the jury.

The theory carried through the instructions was that the defendant was only required to possess and exercise the skill and care exercised by physicians of ordinary skill and ability in localities like St. Louis, whereas this court thinks he was bound to exercise the care of a specialist, and that the propriety of his treatment was to be determined with reference to the practice and approval of specialists. It might be that the system was recognized, approved, and used by physicians who had kept pace with scientific progress in relieving hernia, but "was a method or manner of treatment not used by physicians and surgeons of ordinary care and skill," as the instruction read.

Because the defendant held himself out as an expert in the treatment of hernia, the law required him to treat the plaintiff with the skill and care commonly shown by physicians and surgeons in St. Louis and cities in advance or abreast of it in the practice of medicine and surgery, who devote special study to the treatment of the disease; that is to say, the proficiency and skill of hernia specialists, not meaning by this designation only physicians who treat that disease exclusively, but also those who by special study and experience probably have acquired more accurate knowledge of the right methods of treatment than is possessed by general practitioners of medicine. And in ascertaining whether the requisite skill and care were employed in a given case, contemporary knowledge of the ailment and how to relieve it are considered.

If expert practitioners of the defendant's school concurred in opinion about the right method of treating hernia, and the defendant adopted a method not recognized as sound, then, according to courts which have passed on the question, his conduct should be regarded as an experiment which rendered him liable if it injured the plaintiff in the way alleged; that is, caused peritonitis. But if the defendant's system of treatment was recognized as proper, then, though there were other systems recognized as proper, he could not be convicted of negligence if he made use of the one he deemed most suitable for the plaintiff's case. In such a condition of medical science the question of the defendant's responsibility would turn on whether he administered the remedy preferred by him with the degree of care and skill required of a person holding himself out as an expert.

What the court is dubious about is whether the evidence for the defendant conduced to prove the treatment he used was recognized by experts of his school (the allopathic or regular school) as proper for the relief of hernia. That it was of comparatively recent origin ought not, by that fact alone, to put it in the class of innovating experiments, so as to lay the defendant liable for a bad result, even though he displayed reasonable skill and care in the manner of applying it. This is true because some of the most approved systems of treatment, like antitoxin for diphtheria, met with general acceptance by the medical profession a few years after their discovery.

Importance to Public Health of Pure Milk and Validity of Law Fixing Standard

The Supreme Judicial Court of Massachusetts says, in Commonwealth vs. Wheeler (91 N. E. R., 415), that milk is a very important article of food, which enters largely into the sustenance and development of children. It is the natural food of infants for a considerable time after their birth, and the milk of the cow is often used to supply the deficiency of milk from the mother. Probably there is no other article of diet the purity and good quality of which are so important to the life and health of the people, and especially to the life and health of the young children, as are the purity and good quality of milk. It is also very easy to adulterate it, and it may be adulterated, especially by the addition of water, in such a way that nothing but a chemical analysis will detect the adulteration.

The legislature, in the interest of public health, has enacted laws intended to enable the people to obtain milk of good quality, that is, free from adulteration. No one can question the propriety of legislation on this subject. If statutes are directed to this end, the methods adopted for accomplishing the object desired, so long as they have some manifest relation to the object, must be left to legislative determination. Not only in Massachusetts, but in several other states, the establishment of a standard founded on the quantity of milk solids and of fat contained in the milk has been adopted as the best way of preventing adulteration, and of securing for purchasers milk whose quality can be relied on. It is a familiar exercise of the police power for the prevention of fraud and promotion of the public health.

That the defendants did not know that the milk they had for sale contained less than the prescribed quantity of milk solids, or but 11.65 per cent. when 12.15 per cent. of milk solids were required by the statute, was immaterial. It has often been decided that, in the public interest, the burden of ascertaining at his peril, whether an article that he sells is within the prohibition of a criminal statute, may be put on the seller.

The defendants offered evidence that the milk in their possession was not deleterious or injurious to health, but was nutritious and beneficial as an article of food. This, if proved, would not have shown that the law requiring milk sold or for sale to contain at least 12.15 per cent. of milk solids and not less than 3.35 per cent. of fat was invalid. The fact that a certain kind of milk is not injurious to health, and that it is somewhat nutritious and beneficial, as an article of food, if used discreetly, with full knowledge of its qualities and deficiencies, is not enough to deprive the legislature of its power to forbid the sale of it, if it would be likely to be used to commit frauds on purchasers who might buy and use it, relying on its supposed possession of a larger proportion of nutritious qualities, and if such use of it would be likely greatly to injure the public health, and particularly the health of young children. The legislature might believe that the authorized sale of such milk would open so wide a door to the commission of frauds on the community, and would be so injurious in its consequences, that such sales should be prohibited.

The offer to prove that the milk was without adulteration, and just as it came from properly fed cows in sound health, was governed by the same considerations.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

August 4

1 Laboratory Work of the Danvers State Hospital, Hathorne, Mass., with Special Reference to the Policy Formulated by Dr. Charles Page, Superintendent, 1888-1898, 1903-1910. E. E. Southard, Boston.
2 *Margin of Error in the Diagnosis of Mental Disease. E. E. Southard, Boston.
3 *The Dementia Praecox Group in the Light of Certain Cases Showing Anomalies or Scleroses in Particular Brain Region. E. E. Southard, Boston.
4 *Ten Obscure Cases of Mental Disease. L. T. Alford, Hathorne, Mass.
5 Study of the Senile Spinal Cord. A. S. Hamilton, Minneapolis.
6 *Histologic Study of the Thyroid Gland in Mental Disease: Especially Chronic Thyroiditis. A. H. Peabody, Hathorne, Mass.
7 *Incidence of Heart Diseases in Acute Psychoses. A. A. Horner, Hathorne.
8 *Bacterial Invasion of the Blood and the Cerebrospinal Fluid by Way of the Mesenteric Lymph Nodes. E. E. Southard and M. M. Canavan, Hathorne, Mass.
9 Bacillary Dysentery at the Danvers State Hospital. M. M. Canavan, Hathorne.
10 Persistence of Agglutinins of *B. Dysenteriæ*. M. M. Canavan, Hathorne.
11 Organisms Recovered from Dysentery Cases. M. M. Canavan, Hathorne, Mass.
12 Mannite and Non-Mannite Fermenting Organisms in Dysentery, Complicated by Hemorrhagic Endometritis. M. M. Canavan, Hathorne.
13 Primary Adrenal Tuberculosis in Juvenile General Paresis with Meningeal Infection (*B. Coli Communis*). E. T. F. Richards, Hathorne.
14 *Autochthonous Sinus Thrombosis. F. B. Sims, Hathorne, Mass.
15 *Diagnosis of Fractured Skull Aided by the Finding of Brain Tissue in the Vomitus. G. T. Brown, Hathorne, Mass.
16 Brain and Other Visceral Weights in 66 Subjects Showing Carcinoma and Sarcoma. N. B. Burns, Hathorne, Mass.
17 Effects of Over-Feeding with Fats in Certain Cases of Insanity. H. M. Adler, Hathorne, Mass.

August 11

18 Clinical Aspects of Arteriosclerosis. H. Jackson, Boston.
19 Diagnosis of Invisible Paralysis in the Prodromal and Early Acute Stage as Found in the Experimental Study of Acute Poliomyelitis in Monkeys. E. P. Lucas, Boston.
20 Milk Pasteurization in Boston. M. J. Rosenau, Boston.
21 The Condition Denominated External and Internal Atony: Its Association with Tuberculosis. A. M. Forbes, Montreal.

2. **Mental Disease.**—The majority of the real diagnostic difficulties uncovered by Southard's analysis would appear

to require more intensive work in the field of clinical pathology. For such work in psychopathic hospitals this paper is an appeal.

3. **Dementia Præcox.**—The topographic study of dementia præcox brains, both gross and microscopic, is commended as likely to shed new light on the pathogenesis of certain symptoms, notably paranoidal and katatonic symptoms.

4. **Mental Disease.**—In these 10 cases the diagnoses made from the morphologic findings were changed in 2 cases after comparison with the clinical histories. One was due to the fact that the psychosis, a delirium, resulted from a functional stomach disorder that could not be recognized post-mortem; the other was a case in which the brain of a patient with dementia præcox had undergone certain senile changes. Of the clinical diagnoses, on comparing with the morphologic, one was corrected, and 2 left unclassified were in a measure cleared up. Counting the unclassified as errors, there were 3 errors in the clinical diagnoses of these 10 cases. Of these, one was due to the poor histories and inability to communicate with the patient; one was probably due to the fact that the patient died the same day that he was admitted; and one error was made because enough importance was not assigned to the disturbance of bodily functions as a causative factor in mental disease. Errors are liable to occur, then, in both the morphologic and clinical diagnoses of a case, but when the 2 are compared it is believed that fairly accurate conclusions may be reached.

6. **Thyroid Gland in Mental Disease.**—Fifty patients were examined. Excluding a case of exophthalmic goiter and one of acromegaly, about 77 per cent. of the Danvers' series show changes. A possible relation between the thyroid gland and the process of emaciation is seen in the fact that 64 per cent. of the subjects with "normal" thyroids (11) had become emaciated under hospital or other conditions, whereas none of the individuals with chronic thyroiditis (12) showed emaciation. Again, only 13 per cent. of the subjects showing follicular or interstitial excess of colloid had become emaciated, so that the question arises whether such histologic "excess" means excess or means defect in thyroid constituents in the body at large.

Though the pulse had not been intensively studied clinically in these cases, certain data are available. None of the "normal" thyroids had been associated with pulse-rates over 100 (75 per cent. under 90). Only 1 of 7 cases of marked chronic thyroiditis yielded a pulse over 90 (but that one over 120). The exophthalmic goiter patient naturally had a high pulse; the acromegaly patient a low one. The hyperplastic and excess-colloid cases, as well as those of slight chronic thyroiditis, are variously distributed with respect to pulse. Five descriptions of thyroid glands in dementia præcox are added; 3 of these yielded both microscopic and macroscopic alterations (one enlarged, 2 small), which may or may not signify important alterations in the amount of thyroid products reaching the circulation. Two cases of briefer duration showed neither microscopic nor macroscopic alterations.

7. **Heart Disease in Acute Psychosis.**—This study of the incidence of heart lesions in acute psychoses is based on the protocols of cases autopsied over a period of 30 years. The protocols are unselected, and are those of such autopsied cases as possessed clinical histories permitting the diagnosis of manic-depressive insanity or dementia præcox. This study showed that the percentage of hearts probably normal functionally is higher in manic-depressive insanity than in dementia præcox; dilatation of heart occurs more frequently in manic-depressive insanity than in dementia præcox. Leaving out dilatation of the heart, the incidence of every cardiac lesion in dementia præcox is greater than the incidence of the corresponding lesion in manic-depressive insanity. The incidence of individual heart lesions is relatively greater in the acute psychoses than in all psychoses combined, except that the relative frequency of hypertrophied hearts in manic-depressive insanity is below the average. This study suggests the desirability of a close clinical study of hearts, pulse and blood tension in the group of acute psychoses.

8. **Bacterial Invasion of Blood and Cerebrospinal Fluid.**—The material was unselected, save (1) that cases without readily palpable nodes were not examined; and (2) that 30 of the 50 cases gave macroscopic signs of intestinal disease of greater or less severity (15 from an epidemic of bacillary dysentery). There were no detectable differences in the proportion of bacteria growth at different intervals post-mortem. Positive cultivations were obtained in (a) cerebrospinal fluid, 85 per cent.; (b) blood, 80 per cent., and (c) node, 78 per cent. Growths from all 3 regions were obtained in 55 per cent. Growths from 2 out of 3 regions were most frequently obtained in cerebrospinal fluid and lymph node (17 per cent.). The incidence of various organisms was as follows: Cocci in the blood, 20 cases; in the cerebrospinal fluid, 22; and in the lymph node, 16; *staphylococcus aureus* in these sources, 5, 6 and 3 cases, respectively; streptococci, 2, 1 and 0 cases; bacilli in 1, 8 and 10 cases in the respective sources. The findings seem consistent with the hypothesis that in the terminal exhaustions of the insane bacterial invasions are almost the rule.

14. **Autochthonous Sinus Thrombosis.**—Sims presents a study of a case of extensive sinus thrombosis of the cerebral sinuses. It is of interest because of the extent of the thrombus and the slowness of its development; also because of the probable origin in a focus of sclerotic vessels in one of the lateral sinuses. A rugged, healthy man of 49, with a history of frequent severe headaches for a year, had an attack of sudden onset with violent headache and vomiting lasting over 12 hours. Periods of somnolence, aphasia and increasing weakness of the right side followed, with temperature chiefly subnormal. Later hallucinations, delirium, hemiplegia, deepening stupor and coma appeared, with death at the end of 6 weeks. The case was clinically doubtful. The most likely diagnoses made in life were brain tumor, apoplexy and meningitis. The true diagnosis of sinus thrombosis was not seriously thought of by any of the physicians dealing with the case in life. The symptom most characteristic of sinus thrombosis was missing, i. e., congestion of the veins of the cranium and face.

15. **Fractured Skull.**—This case illustrates a curiosity in the diagnosis of skull fracture, based on the finding of brain material in the gastric contents. A car conductor sustained a fracture of the skull from collision with a telegraph post while on the running board of his car. Two hours after the accident, the patient showed an obvious depressed fracture of the right frontal bone, and while on the accident table began to vomit bloody fluid. The vomiting was extensive (1 to 6 oz.) and lasted 8 hours. At the third or fourth attack of vomiting, a bit of material was observed on the blanket which macroscopically suggested fresh brain tissue. This suggestion was later microscopically confirmed. The patient died 65 hours after the accident. He spoke no words while in the hospital, but was restless, spontaneously arising from bed, was without paralysis and would resist attempts at examination (such as gagging of mouth or lifting of eyelids) by incoordinate movements of arms and legs. On gagging he uttered long, loud, ah sounds. Later he groaned, habitually breathed through the mouth and a few hours before death became cyanotic. There was no systematic examination of reflexes. The knee jerks were neither markedly decreased nor increased. The pupils were moderately and equally dilated.

Medical Record, New York

August 13

22 *The Value of Surgical Procedures in the Solution of the Problem of Race Betterment. J. F. Mears, Philadelphia.
23 Tetanus and Its Treatment. C. D. Fox, Philadelphia.
24 Electric Sleep in Paths of Displacement Currents. New Findings. L. G. Robinovitch, New York.
25 Important Events in the Development of Gastroenterology. J. Friedenwald, Baltimore.
26 Why the Exceptional Child is Entitled to Receive Training Suited to Its Needs at Public Expense. M. Neustaedter, New York.
27 Alcoholic Gastritis and Its Relation to Experimental Gastritis in Animals. N. B. Foster, New York.
28 Primary Streptococcus Diphtheria. D. H. Orgel, New York.
29 *Aerotherapy. J. G. Sauer, New York.

22. **The Problem of Race Betterment.**—Mears believes that we should endeavor to secure, not only sterilization, but also removal of the sexual desire. He advocates for this purpose

the operation of ligation of the spermatic cord, which sterilizes and removes sexual power and desire after a period of a few months. The operation of resection of the vas deferens sterilizes, but leaves sexual desire, and this both injures the defective individual and causes him to continue in his bad practices.

29. **Aerotherapy.**—Sauer proposes that we shall sleep in beds that are so arranged that the head projects out of the window in all weathers. This induces good sleep and good health. To secure this he removes the legs of the head of the bed to the middle of the side frames, so that the head may be pushed out of the window, and the window shut on to the lower portion of the body, the upper part projecting out of the window; it should be well protected by a hood and warm bedding in winter.

New York Medical Journal

August 13

30 Resection of the Elbow in Children. C. G. Cumston, Boston.
31 Visual Fields in Accessory Sinus Disease. S. M. MacWhinnie, Seattle, Wash.
32 *Uterine Fibromyoma Complicating Pregnancy. R. S. Hill, Montgomery, Ala.
33 Acute Inversion of the Uterus. J. A. McGlinn, Philadelphia.
34 *Singultis Gastricus Nervosus. A. Bassler, New York.
35 Clinical Significance of Depression. G. E. Price, Philadelphia.
36 Tropical Diseases Observed in the Region of San Francisco Bay. C. Wellman, Oakland, Cal.
37 *Innocently Acquired Syphilis. W. B. Brouner, New York.

32. Abstracted in The Journal, May 28, 1910, p. 1817.

34. **Singultis Gastricus Nervosus.**—As a condition, Bassler says, this is rarely encountered (seen by him in only two cases of several thousand neurotic stomach conditions), and most probably usually in well-nourished young adults and most often in the female. The close study of these two cases in the way of heredity, past history, cause, imitation, syphilis, hemorrhages, infectious diseases, chemical toxic causes (lead, alcohol, tobacco), and the usual symptoms of hysteria were not present, and both of them had a *bona fide* gastric hyperesthesia accompanying them. The most careful examination in both failed to elicit any skin anesthesia, hyperesthesia, or paresthesia, had pain, emotional crises, were mentally excitable or depressed or had loss of emotional control, were impulsive, had spinal or vertical pains, globus hystericus, vasomotor disturbances, disturbed sleep, somnambulism, or cerebral automatism, paralysis, contractures, tremor, ataxic or choreic movements, absence of skin reflexes, complete loss of concentric limitation of the visual field or disturbance of color sense, manifested the presence of hysterogenic zones, pseudoangina, amyosthenia, constipation, and other of the less common clinical symptoms observed in the more or less irregular course of hysteria. Both the patients were exhaustively examined by competent specialists, among whom were neurologists, ophthalmologists, gynecologists, and others, and both were considered as normal in all other respects, and Bassler therefore believes that such a neurotic condition of the stomach does occur, the cause of which is primarily situated in that organ, and that this gives rise to involuntary contractions of the diaphragm as a reflex manifestation.

37. **Syphilis of the Innocent.**—A number of cases are cited by Brouner in support of his contention that syphilis, one of the most contagious infections afflicting mankind, is undoubtedly on the increase as judged by hospital and private practice, and that many estimable, respectable people acquire the disease innocently, and for a long time are unaware of the real nature of their illness. These innocent victims innocently infect others, and the most frequent source of infection is by using public drinking cups, public towels in bathrooms and improperly washed cooking utensils, etc. Brouner would prohibit the practice of passing around drinking water in public places of amusement because of the danger of infection that lurks in them. Hospitals, dispensaries and public buildings in general should not be provided with public drinking cups, but with individual paper cups. The public should also be instructed as to what to demand from their dentists in the way of aseptic instruments. It is too common a practice for dentists not to pay any attention to the advances made in methods of asepsis.

Northwestern Lancet, Minneapolis

August 1

38 *Diagnosis and Treatment of Epidemic Cerebrospinal Meningitis with Flexner's Antimeningitis Serum. S. M. White, Minneapolis.
39 Abdominal Pain: Its Clinical Significance. G. Eusterman, Rochester, Minn.

38. **Flexner's Antimeningitis Serum.**—From a limited experience with the use of Flexner's serum, White concludes that it may be difficult or impossible to find Gram-negative intracellular cocci in the exudate in certain cases of infection with *Diplococcus intracellularis meningitidis*. This is especially true in a severe, almost fulminant, type, and this experience has been reported by other observers. In the presence of positive symptoms of meningitis and with the absence of an etiologic factor, such as pneumonia, endocarditis, or injury, and when the fluid removed is cloudy, giving positive evidence that a meningitis exists, White says the serum should be used as though the presence of *Diplococcus intracellularis meningitidis* was proved, until such time as cultures or other evidence reveals the nature of the infection. It is advisable to adopt this attitude only when one has had experience with meningitis, sufficient to make him sure of his ground, and it is only the occasional case in which one will need to wait for the results of culture before making a positive diagnosis. Additional encouragement to the use of the serum in a case where one must wait for the results of culture before making certain diagnosis is afforded by marked improvement in the condition of the cerebrospinal fluid.

Virginia Medical Semi-Monthly, Richmond

July 22

40 Rectal Carcinoma—Digital Examination. G. B. Justice, Marion, N. C.
41 Practical Eye and Ear Points of Interest to the Practitioner. C. P. Jones, Newport News, Va.
42 Crotalin Injections Through the Thoracic Walls as a Means of Treating Pulmonary Cavities. T. J. Mays, Philadelphia.
43 Cretinism, Juvenile and Adult Myxedema; Exophthalmic and Simple Goiter. H. E. Jones, Roanoke, Va.
44 Treatment of Enlarged Senile Prostate and Specific Prostatitis and Arteriosclerosis by Electricity. J. C. Walton, Richmond.
45 The Medical Inspection of Schools. J. G. B. Bulloch, Washington, D. C.
46 Refraction by the General Practitioner. M. L. Dalton, Floyd, Va.

Pennsylvania Medical Journal, Athens

July

47 *Restoration of the Upper Eyelid. E. H. Heckel, Pittsburg.
48 *Achondroplasia. M. H. Fussell and H. K. Pancoast, Philadelphia.
49 *Early Diagnosis of Pulmonary Tuberculosis. C. H. Miner, Wilkes Barre.
50 *Roentgen-Ray Diagnosis of Pulmonary Tuberculosis. C. L. Leonard, Philadelphia.
51 *Tuberculosis of the Lungs without Cough or Expectoration. J. Walsh, Philadelphia.
52 *The General Practitioner and the Incipient Case of Pulmonary Tuberculosis. A. A. Watkins, St. Benedict.
53 *Prognosis in Advanced Tuberculosis. W. B. Stanton, Philadelphia.
54 Treatment of Tuberculosis. A. P. Francine, Philadelphia.
55 *How May Inflammations of the Accessory Sinuses of the Nose Occasion Inflammation of the Orbit and Eyeball. H. F. Hansell, Philadelphia.
56 *The Sphenoid and Ethmoid Sinuses in Their Relation to Eye Disease. D. B. Kyle, Philadelphia.
57 *Ocular Symptoms Caused by Intranasal Diseases. J. F. Culp, Harrisburg.
58 Differential Diagnosis of Orbital Conditions Caused by Sinusitis, Including Thrombosis of the Cavernous Sinus. W. Reber, Philadelphia.
59 Diagnosis and Treatment of Pleurisy with Effusion. D. Riesman, Philadelphia.
60 Opium Poisoning. J. V. Shoemaker, Philadelphia.

47. **Restoration of the Upper Eyelid.**—Heckel's case was that of a negro who was so burned in a mine explosion in January, 1908, as to destroy completely both upper eyelids. Thiersch or epithelial grafts were used. The right eye was operated on in July, 1908; the left in the following September. The graft for the right eye was taken from the right arm and for the left eye from the left arm. The final results were excellent.

48. A paper on the same subject by Pancoast was abstracted in The Journal, Oct. 16, 1909, p. 1321.

49 to 53. Abstracted in The Journal, Oct. 30, 1910, p. 1508

55, 56, 57. Abstracted in The Journal, Nov. 6, pp. 1588, 1589.

Southern Medical Journal, Nashville

July

61 Surgical Aspect of Stone in the Kidney. J. A Crisler, Memphis.
62 Tumors of the Bladder E. M. Sanders, Nashville.
63 Zoologic Aspect of Uncinariasis W. S. Leathers, University, Miss.
64 Extrauterine Pregnancy. J H. McNeill, Olive Branch, Miss.
65 Treatment of Retrodisplacements of the Uterus. L. E. Burch, Nashville.
66 Convulsions in an Adult from Copremia. P. Norris, Rutherfordton, N. C.
67 The Toxemias of Pregnancy. G C. Trawick, Nashville.
68 Sprained Ankle. D. Eve, Nashville.
69 Cure of Tuberculosis by the General Practitioner. D. L. Wilder, Knoxville, Tenn.

Military Surgeon, Washington, D. C.

August

70 The Army Medical Service. V. C. Vaughan, Washington, D. C.
71 Venereal Diseases in the United States Army: Prevention and Treatment. L. M. Maus, U. S Army.
72 Work of the Board for the Study of Tropical Disease in the Philippines. W. P. Chamberlain, H. D. Bloombergh and E. D. Kilbourne, U S. Army.
73 Blastomycetic Dermatitis. T. W. Jackson, U. S. Army.
74 Pupil Conditions in Aliens, Their Significance, and Suggestions. E. H. Maullan, U. S. P. H. and M. H.S.
75 The Farmer Recruit and the Medical Officer of the National Guard—What They Mean to Our Commonwealth. J. C. Minor, U. S. Army.
76 Wassermann Reaction in the Military Service. M A. Reasoner, U. S Army.
77 Hysterical Amnesia. H. Butts, U. S. Navy.
78 Creeping Eruption. H. I. Raymond, U. S. Army.
79 Idem. H. R. Gosman, U. S. Army.

Surgery, Gynecology and Obstetrics, Chicago

August

80 *The Question of Metastasis of Carcinoma in the Ovaries and Douglas' Cul-de-Sac. J. Rosenstirn, San Francisco.
81 *The Influence of Trauma in the Production of Diseases of the Pelvic Organs in Women. M L. Harris, Chicago.
82 Diagnosis of Hyperthyroidism or Exophthalmic Goiter. C. H. Mayo, Rochester, Minn.
83 Non Parasitic Multilocular Cysts of the Spleen. R. H. Fowler, Brooklyn.
84 *Vaccine Therapy as an Adjunct to Surgery. J. B. Deaver, J. C. DaCosta, D. B. Pfeiffer, Philadelphia.
85 *Further Experimental Data on the Vasomotor Relations of Shock. M. G. Seelig and E P Lyon, St Louis, Mo.
86 Pathology of the Thyroid and Hematology in 100 Goitrous Chicago Dogs. A. Werelius, Chicago.
87 *The Cammidge Reaction. B. C. Willis, B. F. McGrath, J. T. Pilcher and D. C. Balfour, Philadelphia.
88 *Treatment of Traumatic Injuries of the Lungs and Pleura. G. M. Dorrance, Philadelphia.
89 *Liver Abscess. F. W. Dudley, Manila, P. I.
90 Bone Grafting and Osteoplasty. E P Magruder, Washington, D. C.
91 *A Deceptive Form of Appendicitis in Women. H. A. Crossen, St. Louis.
92 *Closing Incisions in the Renal Pelvis. H. A. Kelly, Baltimore.
93 *Operation for Cystocele. W. P. Graves, Boston
94 Rectal Anesthesia. J. F. Churchill, Chicago.
95 Treatment of Eclampsia by Dilatation or Incision of the Cervix. R. Peterson, Ann Arbor.
96 Use of Oxygen in Treatment of Asphyxia Neonatorum. F. C. Holden, Brooklyn.
97 *A New Uterine Forceps. A. J. Schoenberg, Chicago.

80. **Metastasis of Carcinoma in the Ovaries.**—An examination of 15 cadavers by Rosenstirn showed that carcinoma in the abdominal cavity may cause an implantation metastasis in the cul-de-sac of Douglas. It occurs earlier than that of the ovaries. It is influenced in its origin by the law of gravity and therefore affects first the deepest part of the pouch. It is not necessary in these cases that the primary carcinoma has perforated into the free abdominal cavity—a sarcoma still entirely covered by serosa can cause implantation by metastasis in the cul-de-sac of Douglas. Rosenstirn emphasizes that it should be recommended in radical operation of carcinoma of the organs in the abdominal cavity to remove the deepest situated part of the Douglas cul-de-sac, i. e., the pouch.

81. **Trauma in Production of Pelvic Diseases.**—Among the last 1,000 cases of railway accidents that have come under Harris' personal supervision 412 were women, and of this number 77, or 18.7 per cent., claimed injury to the pelvic organs as a direct result of the accident. In 24 patients a miscarriage resulted. The youngest woman was 20 years old, and had already had two children. The oldest was 49 and had also had two children. It is interesting to note that in all but one of the patients, the miscarriage occurred before the fifth month. It is perfectly plain, says Harris, that many of the conditions found, namely, old lacerations, rectoceles, cystoceles, prolapses, old displacements, intraligamentous cysts, pelvic tumor, etc., bore no causal relation to the accidents; on the other hand, it is equally plain that a ruptured extrauterine pregnancy, an acute volvulus, a twisted pedicle of the ovarian tumor, a pelvic hematoma, the miscarriages, etc., were the direct result of the accidents. The chief question is whether intrapelvic diseases such as salpingitis, metritis in its various forms, displacements of the ovaries and uterus, etc., can be caused or initiated by such accidents as have been described above.

Of much interest and importance in this connection is the married or single state of the women. Of the 412 women injured, 331 were married and 81 single. Of the 76 women claiming some form of injury to the pelvic organs (eliminating the one who merely injured the vulva by sitting down on her heel) 72 were married and 4 were single, but of these 4, 3 were single in name only, as one was pregnant at the time, two showed unmistakable signs of marital relations, and one of these had an old infection. One only was actually a miss and the only pelvic disturbance she had was a slight irregularity of menstruation for 2 or 3 months. Of the married women 22 per cent. claimed injury to the pelvic organs while of the actually single only 1 per cent. had a temporary disturbance of menstruation. The inferences to be drawn from these facts are, that women with normal, healthy pelvic organs very rarely, indeed, have these organs injured by such accidents as described, while those whose organs have been damaged by the violence of parturition or from the effects of previous infections, may have former symptoms temporarily aggravated or acute exacerbations of an old infection.

84. Abstracted in The Journal, July 9, 1910, p. 160.

85. **Vasomotor Relations of Shock.** Seelig and Lyon's work points, in every instance, against the correctness of the theory that shock is a symptom complex due primarily to vasomotor exhaustion.

87. Abstracted in The Journal, June 4, 1910, p. 1891.

88. **Traumatic Injuries of the Lungs and Pleura.** This is an exhaustive experimental study which cannot be presented in abstract in the limited space at our disposal.

89. **Liver Abscess.**—Dudley has treated several hundred cases of amebic dysentery since 1899, by both the colonic irrigation treatment and the ipecac method, and has found the latter treatment to be more prompt and sure in its effects. The ipecac treatment he found prompt and efficient. If instituted at an early stage, the patient does not have to be confined to home or hospital for more than 5 or 6 days and the treatment seldom needs to be repeated unless there has been a reinfection. The method of administration of ipecacuanha, with some important modifications, is that described by Manson. A preliminary dose of castor oil and laudanum is given and the patient put on a milk diet. After abstaining for 4 hours from both food and water, 2 grams of ipecac are given, in 6 pills, with just as little water as possible. The patient must lie on the back in bed, in a dark room, and should not be allowed to talk or be in any way molested. No food or liquid should be taken for 8 hours after taking the medicine. After the 8 hours are up the patient may take milk and water liberally until 4 hours before the time for the next dose. Dudley usually has the patient fast from 4 p. m. and gives the pills at 8 p. m. In this way food may be taken during a good part of the day. If the pills are so made that they will pass out of the stomach without dissolving, the preliminary dose of tincture of opium and the mustard plaster to the stomach may be dispensed with without fear of nausea. If at any time nausea should occur, an ice bag about the throat gives most relief. Grams 1.650 are given on the second day; 1.325 on the third; 1.0 on the fourth; 0.650 on the fifth, and 0.325 on the sixth day. The patient is now put on light diet and a 0.325 gm. pill is given for 6 days longer when the cure is usually complete, although in some cases it may be necessary to continue for 12 days.

In this method of administration the making of the pills is a very important matter, Dudley says. The pill mass is best made with the extract of glycyrrhiza. The pills are then coated heavily with salol or enclosed in kreatinized capsules. If kreatinized capsules be not at hand the pill mass may be put in the ordinary gelatin capsules and the space between cover and body of the capsule sealed with a little liquid gelatin. The capsules are then placed in a Petri dish and a few drops of formalin are put in a dish so as not to touch the capsules. The cover is then placed on and allowed to remain for about 8 hours. The capsules should be exposed to the air for 6 or 8 hours before use as otherwise they will prove irritating to the stomach. This method of treatment has proved of value in the catarrhal, bacillary, amebic and balantidium forms of dysentery and in diarrhea.

91. Abstracted in The Journal, Jan. 22, 1910, p. 315.

92. **Closing Incisions in Renal Pelvis.**—For some years past Kelly has been in the habit of utilizing, in closing the renal pelvis, the lamella of Gerota's fascia (fatty capsule) which spreads out over the posterior surface of the kidney as well as its pelvis. The tissue of the pelvis *per se* affords no satisfactory secure hold for sutures closing an incision made, say, in extracting a calculus, but when this fibrous capsule is caught and sutured as an additional layer overlying the pelvis proper the whole is bound securely together and such a wound rarely leaks. Another valuable use of this fascial layer is in plication of the hydronephrotic pelvis. It is here the firm hold for the needle is secured in passing from the margin of the kidney where the fascia is unusually strong down toward the ureter and back again to the margin in the form of the letter V.

93. **Operation for Cystocele.**—The operation described by Graves aims to reduce the two component parts of the cystocele in such a manner as to restore the anterior wall to its natural contour and to eliminate all irregularities and protrusions which may impinge on a snugly repaired perineum. The operation as it is now performed by Graves, is somewhat less complicated than formerly described, but the essential principle is the same.

97. **A New Uterine Forceps.**—The uterine forceps devised by Schoenberg is to be used for the purpose of operating on the tubes, ovaries or round ligaments. The jaws are covered with rubber tubing.

Louisville Monthly Journal of Medicine and Surgery

August

98 Therapeutic Value of Calcium Lactate. J. J. Moren, Louisville.

Archives of Ophthalmology, New York

July

99 The Ocular Manifestations Associated with Acne Rosacea: Case of So-Called Rosacea Keratitis. T. B. Holloway, Philadelphia.
100 Methyl Alcohol Amblyopia. E. Gruening, New York.
101 Bacteriologic Examination of the Conjunctival Sac Previous to Cataract Extraction. H. S. Gradle, Prague, Germany.
102 Hyalin Degeneration of the Cornea. J. Rubert, Kieff, Germany.
103 The Etiology of Bilateral Congenital Corneal Opacity. R. Seefelder, Leipzig, Germany.
104 Influence of Pregnancy and Labor on Diseases of the Eye. J. Imre, Budapest.
105 The Pathogenic Element of Trachoma. Dr. Addario, Palermo, Italy.

California State Journal of Medicine, San Francisco

August

106 The Desirability of Surgical Diagnosis in Fractures. T. W. Huntington, San Francisco.
107 *Epidemic Meningitis in California and Its Treatment with Flexner's Antimeningitis Serum. P. K. Brown, San Francisco.
108 Treatment of Fractures of the Humerus Through the Musculospiral Groove. R. Brown, Santa Barbara.
109 Hemolytic Icterus. E. Schmoll, San Francisco.
110 Early Eye Symptoms in Secondary Syphilis. J. W. Twitchell, Sacramento.
111 *Skin Diseases in the Hawaiian Territory (Sun a Modifying Factor). H. L. Alderson, San Francisco.
112 Acute and Chronic Prostatitis. V. G. Vecki, San Francisco.
113 Causes and Diagnosis of Prostatic Hypertrophy. M. Krotoszyner, San Francisco.
114 Palliative Treatment of Prostatic Hypertrophy. J. C. M[illegible], San Francisco.
115 Operative Treatment of Prostatic Hypertrophy. G. S. Peterkin, Seattle.

107. **Flexner's Antimeningitis Serum in Meningitis.**—To date, the serum has been used in 38 cases, in nearly all of which Brown has seen the patient at least once. There have been 12 deaths, or a mortality of 30 per cent. Of the deaths, 1 occurred in an epidemic where the serum gave out, after decided improvement of the patient from its use; 4 patients were moribund when injected; 1 patient got streptococcus infection of the spinal canal (relapsed case); 1 died of acute diffuse myelitis after 7 injections; 2 patients were treated entirely by other physicians, with meager directions, and no complete data of the result was ever furnished Brown. Two of the 9 occurred in an epidemic on Goat Island, 1 a fulminant case, after a single injection of 2/3 the present dosage; and 1, a recurrent case, 6 weeks after the first attack in which the disease was probably very diffusely spread over the meninges. There have been 2 relapses in the 38 cases, both patients dying. Neither was so promptly treated in the relapse as in the first attack.

111. **Skin Diseases in the Hawaiian Territory.**—Some dermatoses, according to Alderson, are modified not by the heat of the sun, but rather by some other effects of its rays. In the Hawaiian Territory senile keratoses, various other pre-epitheliomatous conditions, basal cell epithelioma and cutaneous neoplasms in general are extremely rare. It cannot be denied that the sun's beneficent rays are a factor here also. In such a uniformly warm climate as that of Honolulu, the skin is naturally more or less hyperemic, and moist most of the time. It is due to this state of affairs that the use of the Roentgen ray demands extreme care and vigilance, for under these circumstances radiodermatitis develops very easily, as was proved in a number of cases in which exposure was not unduly prolonged (as measured by standards elsewhere) and severe burns resulted.

Journal Tennessee State Medical Association, Nashville

July

116 *Enlargement of the Prostate. L. E. Burch, Nashville.
117 *Chronic Prostatitis. G. R. Livermore, Memphis.
118 *Phases of the Diagnosis and Treatment of Prostatic Obstruction. B. Lewis, St. Louis.

116 to 118. Abstracted in The Journal, April 23, 1910, pp. 1400, 1401.

Woman's Medical Journal, Cincinnati

July

119 Obstetric Complications from a Preventive Point of View. E. V. Davis, Chicago.
120 Essential Paroxysmal Tachycardia. A. Martine, Utica, N. Y.

Western Medical Review, Omaha

August

121 Experimental Work on the Etiology of Poliomyelitis. L. B. Pilsbury, Lincoln, Neb.
122 *Clinical Varieties of Poliomyelitis. H. M. McClanahan, Omaha.
123 *Poliomyelitis in Polk County, Nebraska, During 1909. C. A. Anderson, Stromsburg, Neb.
124 *Fifty Cases of Poliomyelitis. J. C. Maister, Stromsburg, Neb.
125 Acute Poliomyelitis. F. E. Coulter, Omaha.
126 Epilepsy. M. W. Thifer, Wheatland, Wyo.

122. **Varieties of Poliomyelitis.**—In McClanahan's opinion all cases of poliomyelitis may be grouped under five heads, spinal, bulbar, meningeal, polyneuritic and abortive. His experience includes a study of 45 cases; about 15 of the patients he saw during the acute stage in consultation with other physicians while the others were examined after recovery from the acute symptoms. In all cases he had a good, clear clinical history, and many of the patients he has had opportunity of seeing a number of times. The ordinary or spinal type is the form of poliomyelitis as described by Lovett. In the bulbar type there is an involvement of the nuclear centers in the medulla oblongata. McClanahan saw 4 cases of this type all being fatal. In one there was paralysis of the facial nerve and in another, paralysis of the motor nerves of the eye, without the face being involved. By the meningeal type is meant that in which the onset is characterized by meningeal symptoms, fever, pain, often headache, neck rigidity and more or less unconsciousness. Indeed, some of these cases in the beginning are so similar to epidemic cerebrospinal meningitis, that the physician may easily make such a diagnosis. McClanahan saw one case that from the symptoms was typical of meningitis, and but for the presence of poliomyelitis in the vicinity he would have made this

diagnosis. But in that case a lumbar puncture with a clear fluid, and the subsequent history, established the fact that it was not a true meningitis but a meningeal type of poliomyelitis.

In the polyneuritic type of cases there is generally hyperesthesia, with suffering and sometimes intense, agonizing pains, usually in the lower extremities or in the back. McClanahan saw one such case. The pains in the back and extending down the left leg were so intense that for several days it was necessary to keep the child under the influence of opiates. The subsequent history of the case was that the pains gradually subsided with loss of power in the leg and permanent paralysis of the anterior tibial group of muscles. Finally, in all epidemics of poliomyelitis, alongside of the true cases which have developed all the symptoms of paralysis, there are the abortive cases, in which there occur all the symptoms of the onset of the disease, but in which there is no paralysis, the patients being ill but a few days and making a complete recovery. In other words, there is some general infection, but no lasting symptoms. Except in the presence of an epidemic, McClanahan says the diagnosis of the abortive type could not be made, without the occurrence of the disease in other children, in the same household. In that case, if the child had all the symptoms, and recovered in a few days, without paralysis, then such a diagnosis would be justified.

123. **Poliomyelitis.** From May 30 to July 4, 1909, there occurred in the Stromsburg territory (a place of residence) 30 cases, while from July 4 to August 3, there were 115 cases. The first case that is suspected of being infectious poliomyelitis in Polk County occurred about the middle of May, 1909. The patient was a child 5 or 6 years old who came from some distant part of the state, just after recovering from the acute stage. The first case that Anderson saw occurred 11 miles northwest of Stromsburg on May 30; the patient had been ill for one week and during that time had been under the care of a physician from the nearest town who had made a diagnosis of influenza. Of the 86 patients seen by Anderson, 81 per cent. were less than 10 years old. In 40 families of 150 children, 86, or 57 per cent., contracted the infection. Isolation of the sick was carried out so far as possible and when many were sick in one family infection had usually occurred before medical aid was called.

The number of patients who recovered from the acute symptoms in less than a week was 32. Thirty of these showed no marked paralysis, except that a leg might suddenly give way while walking along, thus causing the little patient to fall oftener than usual. The spine was more or less spastic, especially in the cervical region and the gait commonly stiff and awkward. The remaining 2 were paralyzed as follows: left leg and right arm, recovery almost complete in 5 months; mental symptoms, recovered in 9 months. Seventeen recovered from acute symptoms at the end of a week; 8 had no well-defined paralyses, and 9 were paralyzed. Three have not yet fully recovered; facial paralysis, one leg and back; both legs, subsequent history unknown. Seven recovered from the acute symptoms at the end of 2 weeks, one without paralysis and 6 paralyzed. Two recovered from paralysis as follows: one was affected mentally and recovered in one week; one eyelid paralyzed, recovered in 2 months; two paralyzed in one arm and two in one leg and were not completely recovered for 8 months.

Twelve patients recovered from the acute symptoms at the end of 3 weeks, and all were paralyzed. Six recovered from paralysis as follows: one leg recovered in 7 months; right arm recovered in 6 weeks; diffuse weakness, recovered in one week; both legs and back recovered in 2 months; both legs recovered in 5 months. Six patients have not yet (8 months) fully recovered from their paralysis: Right leg two patients; left leg, one; left leg and trunk, one; left leg, one; one arm and one leg, one. Seven patients recovered from the acute symptoms at the end of 4 weeks, and 3 recovered from the paralysis in 3 months: Both legs, 2 cases; one leg, one. Four have not yet (8 months) recovered from the paralysis: right leg; both arms; both legs and trunk. Of the 82 surviving patients, 48, or 60 per cent., were at first markedly paralyzed, and, of these, 27 have since functionally recovered, while 21 are yet more or less paralyzed, many of whom will need some orthopedic treatment to prevent deformity. Four patients in this series died, all of bulbar paralysis.

The treatment was eliminative and supportive with rest in bed in the lateral position. Cold was applied to the head and counter irritation used along the spine. Hot baths after the fever stage seemed to relieve the intensity of the neurotic pain somewhat. One patient improved remarkably during the night following the fumigation, while inhaling the formaldehyd fumes yet remaining in the bed clothing. The previous day the pain and the muscular contracture of the leg prevented extension of the knee to more than right angle, while the following day it could be extended completely, and even permitted some walking. No especial importance is attached to this, however, as improvements were frequently sudden.

124. **Poliomyelitis.** Malster treated 54 cases of epidemic poliomyelitis occurring in 40 families. Four of these patients were adults: Children in families, 96; children that had it, 50; families in which all children had it, 21; families of only one child, 10; paralyzed (30.3 per cent.) 16; recovered from paralysis (66 2/3 per cent.) 11; left paralysis (33.3 per cent. or 10 per cent. of all) 5; deaths 1 per cent.; recurrences 2; paralyzed, able to walk (one not old enough) 3; paralyzed before called (these are the only ones that cannot walk) 2. Ages of patients 9 days to 37 years. Of the 50 children, the oldest two were 10 and 12 years, and the remainder under 10 years. Nearly every case could be traced to some other case or to a locality where the children played together. Quarantine checked it and caused fewer in the family to have the disease; and isolation, together with care in not allowing kissing of the sick, eating and drinking after the sick, etc., also helped to check it.

Ophthalmology, Seattle, Wash.

July

127 Suggestion for an Operation for Chronic Glaucoma. R. Denig, New York.
128 Glaucoma Following Cataract Extraction. B. Chance, Philadelphia.
129 Id. H. G. Goldberg, Philadelphia.
130 Id. S. D. Risley, Philadelphia.
131 Things that Happened to me in my Operative Career. J. H. Claiborne, New York.
132 Treatment of Congenital Argamblyopia. W. L. Phillips, Buffalo.
133 Facts, Old and New, About the Lacrimal Apparatus. E. E. Blaauw, Buffalo.
134 Supra-Orbital Neuralgia. J. L. Dowling, Albany.
135 Trauma of the Eye. R. Kerry, Montreal.
136 Repair of the Cornea. F. H. Koyle, Hornell, N. Y.
137 A Rare Anomaly of the Inferior Central Vein of the Retina. C. A. Bahn, New Orleans.
138 Epibulbar Sarcoma. C. A. Veasy, Spokane, Wash.

Bulletin Lying-in Hospital, New York

March

139 Sternopagus Tetrabrachius. J. W. Markoe, New York.
140 *Normal Human Blood Serum as a Curative Agent in Hemophilia Neonatorum. J. F. Welch, New York.
141 *Peritonitis in Young Infants. C. G. Burdick, New York.
142 *A Modified Obstetric Forceps. G. W. Kosmak, New York.
143 Ichthyosis Congenita. H. J. Schwartz, New York.
144 *The Stomach Contents and Motility in Breast-Fed Infants. H. Heiman, New York.
145 Cerebrospinal Meningitis and General Streptococcemia Complicating Pregnancy; Cesarean Section. A. B. Davis, New York.
146 Five Successive Cesarean Operations on One Patient. A. B. Davis, New York.

140. Published in the *American Journal of Medical Sciences*, June, 1910, and abstracted in THE JOURNAL, July 2, 1910, p. 83.

141. **Peritonitis in Young Infants.**—Two cases of peritonitis in young infants are reported by Burdick. The infection in both cases was probably through the umbilicus, although there was no gross lesion in either instance. In one of the cases it is fair to suppose that erysipelas in the mother was the source of the infection, although there were no cutaneous lesions on the body.

142. **A Modified Obstetric Forceps.**—The particular field in which Kosmak's instrument could be used is limited to that class of cases in which the fetal head is caught at the outlet, where the patient's pains have simply given out and

no further progress of the advancing head is possible. The head may remain in this situation for a considerable time unless it is assisted over the remaining portion of the birth canal by means of forceps. In the instrument described, the hand of the operator comes close to the fetal head which can thus be more readily controlled. As the handles of the instrument are not elevated to the extent which they are in the long-bladed forceps, the points of the blades are not so apt to cut into the perineal floor as the head is being delivered. The Tucker-McLane instrument has been used as the basis of Kosmak's idea. With the exception of being slightly narrower, the size and contour of these blades are the same as in the large forceps, but instead of the usual shank the blades are inserted directly into the handles. The pelvic curve is also slightly less than in the ordinary instrument.

144. **Stomach Contents and Motility of Breast-Fed Infants.**—The stomach was found empty by Heiman at the end of 2 hours in 4 out of 13 cases, and in 5 out of 9 at the end of 3 hours, and in 5 out of 6 at the end of 4 hours. Free hydrochloric acid was present in 2 patients, 7 and 8 months of age, respectively. Pepsin was present in only 6 cases. Rennet was demonstrated in all but 2 cases, lactic acid was present in all but 3 cases. These data differ considerably in many respects from those recorded in previous studies.

American Journal of Urology, New York

July

147 Entire Absence of Right Kidney, Ureter and Blood Vessels. J. N. Vander Veer, Albany.
148 Surgical Aspect of the Abnormally Movable Kidney. O. C. Smith, Hartford, Conn.
149 Bacterin Therapy in Urethral and Prostatic Infections. E. G. Mark, Kansas City, Mo.
150 Anastomosis of the Vas. Time Following Operation Necessary for Successful Issue. G. K. Swinburne, New York City.
151 Hemorrhages from the Male Urethra. A. Ravogli, Cincinnati.

Journal of the Arkansas Medical Society, Little Rock

July

152 The Pharmacologic Action and Therapeutic Uses of Alcohol. C. P. Witt, Little Rock.
153 *Intramuscular Injection of Mercury; Especially the Insoluble Preparations. E. C. Hay, Hot Springs.

153. Abstracted in THE JOURNAL, June 11, 1910, p. 1992.

Maryland Medical Journal, Baltimore

August

154 *The Importance of the Eugenic Movement and Its Relation to Social Hygiene. L. F. Barker, Baltimore.
155 The Advantages of Operations for the Cure of Hernia. A. McGlannan, Baltimore.
156 *Care of Epileptics in Separate Institutions. W. T. Shanahan, Sonyea, N. Y.
157 Eclampsia. A. Samuels, Baltimore.

154. **Eugenic Movement.**—This survey of the subject of eugenics is closed by Barker as follows:

> Fragmentary as has been this presentation, I trust that it may stimulate thought regarding the eugenic ideal, and hope that the subject will be studied and that the people may become instructed in it. In becoming thorough eugenists, we shall act in accordance with the highest aims and purposes of all persons interested in true social hygiene. Though the old doctrine of predestination gets new support from the recent studies, these studies also teach us how mankind can control its destiny. It will be absolutely necessary to attack the problems of (1) the improvement of races and families and (2) the extinction of hereditary disease in the one single way in which permanent betterment is possible. We must more consciously control the union of germ cell qualities, and we can do this by creating new sentiments regarding marriage and parenthood.

156. **Epileptics in Separate Institutions.**—Shanahan urges that the patients should be divided into the voluntary and the legally or judicially committed. Many of those sent to a colony should be kept there indefinitely, both for their own good and for that of the public. The colony authorities should also have power to secure the commitment of those whose mental condition precludes their being able properly to become resident outside of an institution. The patients committed should as a rule be kept in the colony during the remaining years of their life. This might be at first perhaps looked on as a hardship, but when they learned that the restrictions laid on them were not unduly severe they and their relatives would as a rule cooperate to the best of their ability. The epileptic who is congenitally deficient to a marked degree or the one who is profoundly demented, will not improve as a result of colony treatment. The average epileptic does, however, show some improvement after a residence of several months, and from 3 to 4 per cent. have a complete cessation of seizures. At the Craig Colony 16 patients have been free from seizures for 2 years or longer, and in 14 years, 46 have been discharged as recovered. Shanahan can see no good reason why, if properly planned, a colony cannot be arranged so as to care for all types and classes of epileptics, thus enabling the other institutions for the abnormal to carry out their work to better advantage.

St. Louis Medical Review

July

158 Rupture of the Intestine from Abdominal Traumatism. H. P. Fuen, Kansas City.
159 Drugs that Increase Oxidation. G. F. Butler, Chicago.
160 A Plea for Statistics on Paretic Dementia in Railway Employes. F. Fry, St. Louis.
161 Sphere of Ophthalmology Incumbent on the Practitioner. M. Weiner, St. Louis.
162 Surgical Treatment of Bone Tuberculosis in the Adult. A. E. Horwitz, St. Louis.

Journal South Carolina Medical Association, Charleston

June

163 *Epidemic of Beriberi. A. J. Jervey, Charleston.
164 Beriberi. F. W. P. Butler, Columbia.
165 Appendicostomy. H. R. Black, Spartanburg.
166 *Pulmonary Tuberculosis. L. B. Morse, Hendersonville.

163, 166. Abstracted in THE JOURNAL, May 28, 1910, pp. 1815, 1816.

Yale Medical Journal, New Haven, Conn.

June

167 *Defectives and Degenerates: A Menace to the Community. J. M. Keniston, Middletown, Conn.
168 *Fresh Animal Serum in the Treatment of Hemorrhage. C. T. Beach, Hartford, Conn.
169 Features of Nasal Surgery. J. H. Egbert, Willimantic, Conn.

167. **Defectives and Degenerates.**—Keniston urges that the state law prohibiting the marriage of epileptics and the feeble-minded should be enforced. It should be somebody's business to enforce it. All "imbeciles with criminal instincts" should receive life-long care and supervision. Sterilization of the unfit—vasectomy—is essential, as it benefits the individual as well as the community. Prevention is the most important thing, if it be possible. Every physician should study and record every defective or degenerate he knows to be such.

168. **Animal Serum in the Treatment of Hemorrhage.**—Beach reports 8 cases, 3 in which the serum was used as a prophylactic and in 5 in curative doses, 2 of the latter patients being hemophiliacs.

Journal of Abnormal Psychology, Boston

June-July

170 The Relative Value of the Affective and the Intellectual Processes in the Genesis of the Psychosis Called Traumatic Neurasthenia. T. A. Williams, Washington, D. C.
171 The Anxiety Neuroses. A. A. Brill, New York.
172 The Nature and Cause of Galvanic Phenomenon. B. Sidis, Brookline, Mass.

Journal Advanced Therapeutics, New York

July

173 Ionic Surgery in Cancer of the Mouth and Nose. G. B. Massey, Philadelphia.
174 The Clinical Application of Various Electrical Modalities. J. H. Burch, Syracuse.
175 Electrotherapeutics in Gynecology. W. H. White, Boston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 30

1 *The Evolution of the British Medical Association and Its Work. H. T. Butlin.
2 *The Dominance of Etiology in Modern Medicine. J. M. Bruce.
3 *Malignant Disease. H. G. Barling.

1. **Evolution of the British Medical Association.**—Butlin limits himself entirely to an historical review of the British Medical Association.

2. **Modern Medicine.** After a brief review of some of the most important advances which have been made in medical science and practice during the 15 years which have elapsed since the Association last held its meeting in London, Bruce draws attention to the general nature and character of the progress made. This, he points out, has been chiefly characterized by a change in the general tendency and direction of investigation, so that instead of concentrating attention on the lesions produced by disease we have advanced to the elucidation of the processes leading up to those lesions, the causes determining them, and the various influences controlling and modifying the actions of those causes. The recognition of the paramount importance of etiologic considerations and of the closely cognate subject of functional pathology is regarded by Bruce to be deserving of historic recognition as the dominant feature of the medical research of the past 15 years.

After demonstrating the fundamental importance of the doctrine of causation, Bruce proceeds to analyze the nature of causative processes and of their relation to one another. Taking as an example acute infections, he differentiates three factors—first, the essential cause, which is specific in nature and extrinsic in origin; second, the patient's resistance, which is intrinsic; and, third, those various conditions which favor the action of the exciting cause, and are usually classed as incidental, indirect, or predisposing causes. It is more particularly to this third etiologic factor that Bruce devotes the greater part of his address, pointing out the importance of these considerations to the practitioner, not only as most valuable aids to prognosis, treatment and personal hygiene, but also as affording him valuable opportunities to participate in the advance of medical science. The bedside, the home, and the general environment of the patient, he says, offer fields for research as hopeful and as fruitful as the laboratory. It is with a patient, not with a disease, that the experienced practitioner is concerned, with a process, not with a lesion. Such a man appeals to the clinical laboratory when it can assist in the discovery of the exciting cause or in the determination of the organ at fault, but in his actual search for the cause of disease in his patients he has more often to rely on personal observations of the subject, of his surroundings, habits and mode of life, on knowledge of particular family history, and, perhaps, on general knowledge of human nature, the outcome of worldly experience.

3. **Malignant Disease.** Barling discusses the subject from three premises: (1) What experiment has taught us as to the growth of transplanted carcinoma and the methods by which immunity can be conferred on inoculated animals; (2) our knowledge of resistance to malignant disease in the human subject; (3) the means available for its successful treatment. He says that experiment has told us much of the growth of cancer, and of the means by which inoculated tumors may be inhibited and cured, but it has nothing yet to tell of the origin of cancer. Experimental immunity has so far been obtained within very narrow limits, and the alleged successful treatment of mouse carcinoma by a fluid from the human subject appears to contradict practically all that has been hitherto demonstrated with regard to experimental immunity.

Of the absolute nature of the resistance to malignant disease at present we know little, if anything. We cannot recognize the factor which heightens or lowers it, whether it be a chemical variation in the tissues, or an influence produced through the nervous system, stress or anxiety perhaps exaggerating or exaltation diminishing the activity of the growth. Barling thinks, however, that we can recognize one striking feature in the destruction of the cancerous epithelium which is common to the experimental production of immunity, to the disappearance of growths under radium, to spontaneous recessive processes in the human body. This is the active part played by the connective tissues; we have an irritative overgrowth, with hyperplasia and subsequent contraction, which appears to determine the death of the epithelial cell.

Speaking of the means available for the cure or the amelioration of malignant growths, Barling says that certain modes of treatment by cancer serums, by drugs, and by enzymes may be disregarded as futile. The x-rays have a real field of usefulness in relieving pain, in reducing the activity of inoperable growths, in healing rodent ulcers, if we are justified in including these among malignant formations. When, however, we examine the absolute curative value of this method of treatment, disappointment awaits us. Barling has never known an unequivocal malignant growth absolutely disappear under the influence of the x ray, though apparently others have occasionally been more fortunate. Radium, he thinks, is curative in rodent ulcer, with this reservation, that the permanence of cure must be certified by a longer period of time than has yet elapsed in most of the cases treated. His main objection to the use of radium even tentatively in such cases is the constant danger of lymphatic and vascular dissemination which may occur in the period occupied by treatment. For the present he would limit radium to the treatment of the least hopeful conditions until much wider experience has been obtained.

As to the treatment advocated by W. B. Coley, especially for sarcoma, the use of the mixed toxins in Great Britain has not given such results as those attained by the originator of the treatment. In the majority of Barling's patients no improvement has been effected, but in others he can speak of improvement which promises cure if further lapse of time confirms the results at present attained. With such experience as he has made, Barling would not advise any patient with an operable sarcoma to adopt Coley's treatment, and he would dissuade him from it as a substitute for operation, but if operation were refused, or the growth were inoperable, he would advise the use of toxins, with the expectation that some patients would be greatly benefited. With every desire to use all means available which may relieve patients of the distress, anxiety, and possible mutilation which operation inflicts, with the belief that time will provide happier and gentler means than we now possess, Barling says that at the moment we have to rely on operative measures as the great remedy for malignant disease. If all malignant growths could be excised at a certain stage in their development all these patients could be cured.

Lancet, London

July 30

4 *The Evolution of the British Medical Association and Its Work H. T. Butlin
5 *Recent Progress in Medical Science. J. M. Bruce.
6 *Malignant Disease. H G Barling.
7 *Pathology of Prostatic Enlargement F T Paul.
8 *Helminthic Infection and Its Relation to Eosinophilia G. D Whyte.
9 Volvulus of the Cecum and Ascending Colon R J Pye-Smith
10 *Successful Treatment by Colon Lavation of Some Cases of Eczema, Psoriasis, Urticaria, Acne, and Pruritus. A. Mantle.
11 Cesarean Section Undertaken in the Presence of Septic Infection. R. D. Maxwell
12 Prevention and Correction of Deformity Following Arthritis of the Hip-Joint R. P. Rowlands
13 Pretuberculosis and Prepulmonary Tuberculosis: Their Diagnosis in Relation to School Inspection. W Ewart.
14 *A Method of Staining Deep Colonies in Plate Cultures *in Situ* in Agar Media. E Dodson.
15 Thrombosis of the Inferior Mesenteric Vein A. A. Straton.

4, 5, 6. See Abstracts Nos. 1, 2 and 3.

7. **Pathology of Prostatic Enlargement.** It is held by Paul that the accepted theories as to the cause of prostatic hypertrophy all fail because each can only apply to a limited number of cases. The prostate and the breast are both controlled by their respective dominant sexual glands and respond to their influence in a similar way in health and disease. Both organs are subject to a disturbing influence at the climacteric period, which may, and frequently does, result in a hypertrophic change. In such change the microscopic appearances in the two organs show a remarkable resemblance in all essential details. Prostatic hypertrophy, like the mammary involution hypertrophy, occurs only at the climacteric period, whereas there is no known neoplasm which is so strictly limited to an age-period. For these reasons, Paul considers that prostatic hypertrophy is not due to a chronic inflammation of

septic or specific type nor to a neoplasm, but that it is an involution change similar in character to that occurring in the mammary gland.

8. **Helminthic Infection.**—The work on which this study is founded was undertaken to ascertain whether the *Clonorchis sinensis* (syn. *Opisthorchis sinensis*) is or is not responsible for any degree of eosinophilia. In only 2.1 per cent. out of 512 patients examined did the feces fail to show the ova of one parasite or another. *Ascaris lumbricoides* was found in 76 per cent. of the cases, and was equally prevalent among students, merchants and farmers. *Trichocephalus trichiuris* was found in 72.6 per cent. All classes were equally infected by it. *Ankylostoma duodenale* and *Uncinaria americana*: one or other of these parasites was found in 60.4 per cent.; both were often present in the same individual. *Clonorchis sinensis* was found in 16 per cent. out of 267 patients examined at Chao-chow fu, but in only 2 out of 295 patients in the hospital at Suabue. Both of these cases were imported from the Chao-chow region. The natives of both regions have the same dietetic and other habits. Whyte claims that the more varieties of parasite that infest a man, and the more numerous the individuals of each variety, the greater degree of eosinophilia he is likely to show. This will be especially marked if he is between 20 and 40 years of age, and will be less noticeable if he is older or is suffering from some form of tuberculosis.

10. **Successful Treatment by Colon Lavation.**—The benefit derived from lavage of the colon in certain cases of cutaneous eruptions suggested to Mantle that the skin disturbance should be more frequently associated with toxic absorption from the bowel than from the stomach, though doubtless the two absorptions are frequently associated. Mantle claims frequently to have found, after some experimental douches in cases of eczema, usually with, but at other times without, constipation, a considerable amount of mucus, and treatment directed to this abnormality has resulted in the cure of the skin manifestation. He has, therefore, been led to connect the abnormal condition of the colon with the eczematous condition of the skin, and to consider the latter as due to a toxemia of intestinal origin. When there is no skin eruption following a definite type with this condition of colon, there is usually a muddy appearance of the skin noticeable, and sometimes, in addition to this, an eczematous or other eruption. In several cases of psoriasis when the symptoms and experimental douching have pointed directly to an intestinal causation, the treatment already described has been brilliant in its results. In other cases with no particularly well marked colitis good results have often, though not invariably, attended washing out the colon. A number of cases of acne vulgaris and of acne rosacea, the latter being in association with acne vulgaris, have been treated on these lines. Intestinal lavation has been prescribed with success but as in practically all these cases there is found a lack of proper attention to the scalp, this as well as the face must receive special attention.

With pruritus ani there is not infrequently a certain amount of eczema around the anus, and the rectal mucosa is often involved in the itching. In all cases in which eczema has existed Mantle has found it to be the external and visible sign of a catarrhal condition of the mucous membrane of the colon, and internal douches of alkaline sulphur water, followed by immersion baths of the same water, have brought about such a marked change in the condition of the colon that the local skin lesions have soon cleared up.

The method adopted in carrying out this special treatment by lavage for mucous colitis, associated or not with skin eruptions, is as follows: An alkaline sulphur water is generally used both for the intestinal douche and for the immersion bath which follows it. The object of the internal douche is to wash away old fecal matter and mucus from the colon, and to give the mucous membrane an antiseptic dressing. This is done in the following way: A long rubber tube, after being sterilized by boiling, is passed into the sigmoid and is attached to a hydrostatic douche, when from 20 to 40 ounces of sulphur water at a temperature of 105 F. pass into the colon at a pressure of two feet, the patient lying first on the right side, then on the back, and lastly on the left side during the operation. This is repeated, and the ejecta after each douche are carefully examined. A warm immersion bath of sulphur water follows the internal douche and when in this bath a hot douche at a higher temperature plays on the wall of the abdomen under water from a large nozzle with fine perforations, and is chiefly directed over the site of the colon.

14. **Method of Staining Deep Colonies.**—The plates are made in Petri dishes in the usual manner. Ordinary agar can be used; the method is equally successful with modifications of agar, such as glucose, glycerin and whey agar. With a sterile scalpel cut a square of the desired size around the colony and lift out the slab of agar by inserting a wet chisel under it. Push the slab on to the slide, taking care to include no air bubbles; allow to dry in 37 C. incubator or other hot place, and soak in methylated alcohol for 20 minutes. Next put in 5 per cent. solution of the acetic acid for about 10 minutes to dissolve surface crystals. Wash and dry in incubator until the agar is quite dry, which usually takes about 20 minutes. Pour on scarlet writing fluid and allow to remain on until the deep colonies are well stained. This usually takes from 10 to 20 minutes, according to the thickness of the agar. Pour off and blot the edges and press lightly with soft paper to express any ink that may run under the edges of the slab. Now pour on Löffler's methylene blue, diluted with an equal volume of distilled water, and tilt the slide well until the ink is discharged from the agar and it turns violet. Decolorize in spirit until the color ceases to come out in a visible cloud; finish dehydration in aniline oil, pass into xylol, and mount in Canada balsam. It will be found that the organisms are stained a deep purple, and the agar medium a very pale green.

Medical Press and Circular, London

July 20

16 Displacements of the Uterus. H. R. Andrews.
17 Relation of Light Perception to Color Perception. F. W. Edridge-Green.
18 Preventive Measures and the Administrative Control of Tuberculosis. H. Scurfield.
19 The Permanent Slow Pulse. P. Rostaigne.

The Australasian Medical Gazette, Sydney

June

20 Infantile Mortality. A. J. Turner.
21 *The Bacterial Content of Ice Cream. B. Bradley.
22 Infantile Paralysis. J. M. Gill.
23 Recent Investigations on Infantile Paralysis. G. Craig.
24 Surgical Treatment of Infantile Paralysis. M. Herz.
25 Urethral Fistula. W. A. Verco.
26 Diabetes Associated with Disease of the Pancreas. C. T. Ch. deCrespigny.
27 *Rectal Serotherapy in Obstinate Gonorrhea. A. G. Salter.
28 Diabetes Insipidus and Chronic Hydrocephalus. P. T. S. Cherry.

21. **Bacterial Content of Ice Cream.**—The 28 specimens of ice creams and ices examined by Bradley in the majority of cases disclosed gross contamination with organisms of fecal origin and cocci of the pus-forming type, not with simple air-borne organisms, indicating that the contamination is most likely: (1) from milk used; (2) from dirty receptacles; (3) from handling. In 6 quantitative examinations the organisms growing in 12 hours at 37 C. exceeded 30 millions per c.c. in 3 cases. In one case there were over 17 millions, in another 500,000, and in a third the ice was possibly sterile, not 20,000 per c.c. The colon bacilli were present in the typical fecal types, and the numerical distribution of these types was such as one would find in feces.

27. **Rectal Serotherapy in Gonorrhea.**—This case responded remarkably to rectal serotherapy, after failure with all other usual remedies. Treatment was unsatisfactory as the patient was old and an alcoholic. He had various mixtures and injections, with no improvement; the discharge continued to be profuse, and he got into a miserable state, with incontinence of urine and strangury. Six months after the initial infection Salter began a course of vaccine treatment, the prostatic symptoms cleared up. During the course of this treatment the patient got relief from incontinence, but the discharge was apparently uninfluenced and remained profuse and purulent. Then Salter injected rectally 10 c.c. polyvalent anti-

streptococcus serum, repeating the dose on the two succeeding days. This was followed by immediate and marked improvement; the discharge ceased entirely for two weeks, but as a slight purulent discharge then reappeared, Salter repeated the rectal injections thrice. After this the purulent discharge cleared up, a little mucus discharge only remaining in the morning.

Australian Medical Journal, Melbourne

June

29 *Treatment of Fractures Implicating Joints. R. H. Russell.
30 *Spinal Fractures. J. S. Buchanan.
31 Recent Fractures of the Extremities. G. C. Rennie.
32 Fractured Spine and Injury to the Intestine. C. H. Mollison.
33 Radium Treatment of Superficial Lesions. C. E. Dennis.
34 Theory of the Graphic Method in Studying Heart Disease. M. C. deGaris.
35 Failing Gouty Heart. J. W. Springthorpe.
36 The Clinical Polygraph (Modified). E. M. Sweet.
37 Leukemia. E. W. J. Ireland.

29. **Treatment of Fractures Implicating Joints.**—The following precepts are made by Russell:

1. In fracture involving, or in the immediate vicinity of a joint, where there is no gross displacement of the articular surfaces, stiffness of the joint never supervenes, except as the result of passive motion carried out by the surgeon.

2. In fractures involving joints in which there is some displacement or irregularity of the joint surfaces, and in which, therefore, some impairment is inevitable, such stiffness will be greatly aggravated by the employment of passive movement; and complete abstention from passive movement by the surgeon will yield the best results attainable.

3. When great stiffness is present, in spite of the surgeon's efforts to increase the mobility by passive movement, such stiffness will persist so long as the surgeon persists.

4. When the surgeon abandons the case in despair, improvement will at once commence.

Condensing these four laws into one weighty generalization, he says that in fractures involving joints the most potent cause of stiffness is the so-called passive movement performed by the surgeon. Immobilization is never a cause of stiffness. The maximum degree of permanent usefulness is to be obtained by immobilization alone.

30. **Simple Fractures.** Buchanan agrees with Russell that in cases of fracture involving joints there are a fairly large number in which early passive movement is not remedial. The methods of Lane and Lucas-Championnière he regards as impracticable, because usually there is no necessity for that of the former nor for that of the latter because its use seems to be fraught with the gravest danger, especially if the movements carried out are not of the mildest character, and directly under the supervision of a skilled person. During the past five years Buchanan cannot recall a single case of marked deformity, ununited fracture or impaired use of the limb in such cases treated by the more ordinary method of manipulation, careful coaptation, assisted by the use of radioscopy, fixation by splints of muscles and joints of the affected limb.

Annales de Gynécologie et d'Obstétrique, Paris

July, XXXVII, No. 7, pp. 385-448

38 *Gangrenous Perforation of the Aborting Uterus. G. Fieux.
39 *Tubal Pregnancy. (Deux cas rares de grossesse ectopique.) P. Lecène.
40 *Tetany During the Puerperium. V. Wallich.
41 *Superheated Air in Treatment of Gangrenous Lesions After Delivery. (Emploi de l'aéro-thermo-thérapie dans les plaies gangréneuses succédant à l'accouchement.) R. Dupont.

38. **Gangrenous Perforation of the Uterus after Abortion.**—The case reported by Fieux shows that a gangrenous process may develop in the aborting uterus solely from partial retention of the placenta and putrefaction of the adherent mass. The gangrene may progress to an eschar entailing perforation as it drops off, and all this may occur without any direct traumatism of the uterine wall. Varnier has reported a similar case. In both the abortion had been induced by an intrauterine injection, the nozzle of the syringe not being long enough to reach into the uterus.

39. **Hemorrhagic Extrauterine Pregnancy.** In the first case fecundation dated from only a few days and the tube was permeable, without rupture, the hemorrhage pouring into the peritoneum. The blood oozed for more than two days until the tube was removed. In the second case the ovum settled in a diverticulum in the already inflamed tube.

40. **Tetany in the Puerperium.**—Wallich's patient developed tetany the seventh day after delivery, on receiving news of the illness of her child. Pinard has encountered but one similar case in his long practice. Wallich inquires whether others have met with cases of this kind, remarking that it is necessary to restrict so far as possible the disturbances laid to the score of the puerperal condition, as physicians should never lose an occasion to demonstrate that pregnancy, childbirth and lactation are physiologic states for the normal woman and not pathologic.

41. **Superheated Air in Treatment of Gangrenous Wounds.**—The wounds to which Dupont refers are the obstetrical tears which suppurate and show little tendency to heal. He has obtained excellent results by application of superheated air; the hot douche penetrates into all the infected crevices and destroys the putrefying tissues while inducing a reparative hyperemia in the surrounding tissues. In one of the three cases reported in detail this aerothermotherapy rapidly arrested the gangrenous process in the cervix and the development of the threatening vesicovaginal fistula was checked.

Annales des Maladies des Org. Génito-urinaires, Paris

July 1, XXVIII, No. 13, pp. 1153-1248

42 *The Venous Circulation of the Kidney. (Etude sur la circulation veineuse du rein.) E. Papin and Jungano.
43 Both Kidneys on Same Side. (Le rein ectopique croisé.) E. Papin and Palazzoli.

42. **The Venous Circulation of the Kidney.**—In the 28 illustrations accompanying this article the authors show that the venous system in the kidney differs materially from the arterial system, and that the descriptions in the text-books are incorrect in a number of points.

Archives des Maladies du Cœur, etc., Paris

July, III, No. 7, pp. 401-463

44 Ectopia of the Heart from Defect in the Sternum. G. Foy.
45 Case of Acute Leukemia of Myeloid Type. Rieux, Savy and Courjon.
46 Cardiovascular Modifications from Carbonated Baths. (Modifications cardio-vasculaires qui se produisent sous l'influence des bains artificiellement chargés d'acide carbonique, d'après les données de la tachographie.) D. Pletnew.

Lyon Médical, Lyons

July 10, CXV, No. 28, pp. 1-44

47 Advantages of Heliotherapy for Sluggishly Healing Wounds and Leg Ulcers. (Héliothérapie dans le traitement des plaies atones et en particulier de l'ulcère variqueux.) Jaubert.
48 Radiography of the Fetus in Utero. (Fabre, Barjon and Trillat.

July 17, No. 29, pp. 45-100

49 Alopecia of Dental Origin. (A propos de la pelade d'origine dentaire.) P. Jourdanet.

Presse Médicale, Paris

July 20, XVIII, No. 58, pp. 553-560

50 Opération for Secondary Strabismus. (La cure chirurgicale du strabisme sécondaire, déviation inverse post-opératoire.) A. Terson.

July 23, No. 59, pp. 561-576

51 Serotherapy of Snakebite. (Sérothérapie antivenimeuse.) M. Arthus.
52 The Seine Freshets Have No Influence on Incidence of Typhoid. J. Bertillon.
53 Talipes Equinovarus. (Le pied creux équin.) C. Ducroquet.

Revue de Chirurgie, Paris

July, XXX, No. 7, pp. 1-236

54 *Oblique Osteotomy Through the Trochanter in Treatment of Vicious Ankylosis of the Hip-Joint. E. Quénu and P. Mathieu.
55 *Umbilical Fistulas Consecutive to Gallstone Cholecystitis. M. Patel and G. Cotte.
56 Torsion and Strangulation of Seroappendices Epiploicæ in Hernial Sacs. L. Kendirdjy and P. Sejournet.
57 *Special Form of Pseudocoxalgia Grafted on Characteristic Malformations of the Upper End of the Femur. J. Calvé.
58 Mikulicz' Disease. (L'hypertrophie chronique et simultanée des glandes lacrymales et salivaires.) P. Sejournet.
59 Lateral Suture of the Portal Vein. P. Hallopeau.

54. **Oblique Osteotomy through the Trochanter for Vicious Ankylosis.** Quénu and Mathieu give an illustrated description of 3 patients whose deforming ankylosis of the hip-joint was corrected by sawing the femur from the top of the trochanter oblique to a point low down on the other side. The extreme slant permits the neck part to be slipped up on the shaft, thus lengthening the limb while it leaves the largest possible areas of the stumps in contact after correcting the position of the shaft. For correction of a shortening of 8 cm. the line

section should be at least 10 cm. long which leaves 2 cm. of the cut surfaces still in close contact, not merely the points alone. The slanting section causes the parts to be pressed together along the entire length of the cut surfaces in contact, the contact being aided by traction from the muscles. The osteotomy must be followed by continuous extension, they state, until the parts have healed. By flexion of the trunk on the thigh, rotation of the femur on the pelvis, after the consolidation has reached a certain point, it is possible to obtain some loosening of the ankylosis, aiding materially in the patient's ability to get about later.

55. **Umbilical Gall-Stone Fistula.**—In the case reported by Patel and Cotte the fistula developed from a gall stone forcing its way out through the skin from the inflamed gall-bladder. The patient was a woman of 37 who had borne three children and had had gall stone colic at times during the last 11 years. She was cured of all disturbances by an operation similar to that for obliteration of an artificial anus.

57. **Special Type of Pseudocoxalgia.**—In over 500 cases of coxalgia, Calvé has encountered 10 in which a brief subacute arthritis healed without impairment of movement, but a preexisting deformity of the bone persisted unmodified. The children had coxa vara or hypertrophy, atrophy or deformity of the head of the femur, but there was no destruction of bone tissue at any point. The type does not correspond to any of the known forms of hip-joint disease, and it has generally been mistakenly diagnosed as a tuberculous coxitis. The children begin to be occasionally a little lame and complain of pain in the knee, the movements of the joint are limited and there is some muscular atrophy in the region. After a certain period the pain subsides, with or without extension in the interim, and the children walk normally or with a slight limp. The features of the cases differ entirely from those of dry caries of the hip joint and deforming juvenile osteoarthritis. In his first cases differentiation was retrospective by examining more attentively the radiographs which had been taken as the children first came under treatment for supposed tuberculous hip-joint disease.

Revue de Gynécologie, Paris

July, XV, No. 1, pp. 1-96

60 *Hemorrhages in the Non-Pregnant Fallopian Tube. (La pachysalpingite hémorrhagique.) L. Bazy.

60. **Hemorrhages in the Non-Gravid Tube.**—Bazy's profusely illustrated article is based on 2 cases and on 2 other less typical examples of what he thinks may be described as a hemorrhagic pachysalpingitis. In a fifth case a tubal pregnancy was accompanied by this form of inflammation in the other tube. The rupture of the gravid tube put an end to the pains on this side while the pains in the pachysalpingitic tube persisted unmodified. Differentiation of this hemorrhagic inflammation is practically impossible, he says, before operating.

Revue de Médecine, Paris

July, XXX, No. 7, pp. 529-612

61 *Clinical Study of the Rhythm of the Secretion of Urine and of Diuresis Induced by Ingestion of Water. H. Vaquet and J. Cottet.

62 *Incomplete Form of Pericholecystitis of Gallstone Origin. P. Londe.

63 Influence of Intoxication from a Substance Inducing Anaphylaxis on Nitrogen Metabolism. P. Lassablière.

64 Action of Vichy Thermal Water on Arterial Tension. A. [illegible]

61. **Clinical Study of the Rhythm of the Secretion of Urine and of Diuresis Induced by Ingestion of Water.** Vaquet and Cottet emphasize the importance of not drinking more fluid than the kidney is able to eliminate; in heart and kidney disease the amount should thus be reduced to conform to the eliminating power of the kidney. This they test by the experimental polyuria test, that is, the diuresis that follows ingestion of over a pint of water, letting the patient recline for nearly two hours afterward. Recumbency materially promotes the diuresis and they advise having the patient lie down for a couple of hours after the morning draught in all courses of mineral waters. These patients lose weight more rapidly with this recumbency to promote diuresis than when they keep up after drinking the water. The rhythm of secretion of urine is tested by keeping separate the urine voided between 9 p. m. and 7 a. m.; 9 a. m. and 9 p. m. and between 7 a. m. and 9 a. m.; the latter period is that of the experimental polyuria after ingestion of 600 c.c. of mineral water (Evian).

62. **Pericholecystitis.**—Londe gives the details of 15 cases out of a total of 30 or 40 of a syndrome including a tendency to vomiting, vague abdominal pain and dyspepsia and more or less tenderness in the gall-bladder or stomach region or below. The pain sometimes is referred to the right shoulder as the abdomen is palpated. The main danger from the pericholecystitis is infection of the peritoneum, and operative treatment is justified with a history of some preceding severe attack, or the lingering nature of an apparently mild syndrome. Beware, Londe says, of the cases in which the patient eats and feels well but gradually tends toward cachexia—any discordance between the subjective and objective signs is instructive. The prognosis is less favorable if mild cholagogues and alkalines are not borne well, as in chronic appendicitis. Some of the cases reported in detail show the danger of delay in operating when the recurring attacks grow more severe. In one such case, subhepatic peritonitis developed and the patient succumbed to thrombosis. In one case the subfebrile pericholecystitis seemed to flare up anew before the menses each time.

Semaine Médicale, Paris

July 7, XXX, No. 80, pp. 349-360

65 *Hypnotism in Therapeutics and from Medicolegal Standpoint. J. Babinski.

65. **Hypnotism from the Therapeutic and Medicolegal Standpoints.**—Babinski is inclined to regard hysteria as about half simulation, and hypnotism the same. For example, he says, if a hypnotized individual has suggested to him that the house and stairway are on fire, he may exhibit terror but he will never be so terrified as to jump out of the window. Numbers of hysterical individuals have been cured after they have been hypnotized, he remarks, but psychotherapy waking would have been equally effectual in all, unless the hysterical patients had clamored for the hypnosis. From the medicolegal standpoint he insists that hypnosis does not deprive the subject of will-power to the point of committing a crime which he would not commit under other circumstances. The hypnotized individual is responsible for criminal deeds which he may commit, and even slight attenuation of the responsibility can be admitted only when the individual has been in the habit of being hypnotized frequently so that a special hypersensitiveness may have developed.

Archiv für klinische Chirurgie, Berlin

XCII, No. 3, pp. 597-912. Last indexed Aug. 13, p. 630

66 *Experiences with Ileus and Paralysis of the Intestines. (Ueber Darmverschluss und Darmparalyse, einschliesslich Peritonitis.) H. Thiemann. Commenced in No. 2.

67 Experiences with Stovain Spinal Anesthesia. (Beitrag zur Lumbalanästhesie mit Stovain-Billon.) F. Michelsson.

68 *Indications for and Mode of Action of Gastroenterostomy. A. Blad.

69 *Plastic Operations on the Face. (Zur Gesichtsplastik.) E. Lexer.

70 *Cancer Metastasis in the Ovaries and in the Cul-de-Sac of Douglas. (Zur Frage der Krebsmetastasen in den Ovarien und im Cavum Douglasii.) J. Rosenstirn.

71 *Prophylactic Plastic Operation for Duodenal Ulcer. (Die omentale Enterokleisis bei akut ulcerativen Processen der letzten Dündarmschlinge.) S. Solieri.

72 Operative Treatment of Pendulous Breasts. (Ueber Mastoptose und Mastopexie.) C. Girard.

73 Torsion of Great Omentum. (Torsion des grossen Netzes.) S. Hadda.

74 Trephining the Long Bones for Osteosclerosis with Intense Pains. (Trepanation der langen Röhrenknochen bei Osteosklerose mit heftigen Schmerzen.) A. Nehrkorn.

75 Practical Outcome of Free Transplantation of Fascia. (Die praktischen Ergebnisse der freien Fascien-Transplantation.) M. Kirschner.

66. **Lessons from Ten Years of Abdominal Operations.**—Thiemann reviews the experiences at the surgical clinic at Jena in charge of Riedel, and emphasizes the following points:

Swallowed foreign bodies very rarely cause ileus. If the foreign body be passed through the esophagus it generally slides along through the bowel without causing obstruction; the great danger is perforation, and when this occurs it is generally in the descending part of the duodenum. Characteristic for perforation by a foreign body is a peculiar tough induration of the vicinity which may secondarily interfere with the permeability of the bowel.

Cancer of the duodenum causes comparatively slight local symptoms in comparison with the general cachexia.

The favorable influence of a simple laparotomy on tuberculous peritonitis is confirmed by the experiences related.

The success of operations for correcting atresia of the rectum is often compromised by malformations elsewhere.

In 36 of the 321 cases of incarcerated hernia the trouble was an acute partial enterocele; the disturbances are so slight while there is so much danger of perforation even with cautious reduction that the mortality is unusually high, 41 per cent. It occurs almost exclusively with femoral hernia, but 3 out of the 4 cases of obturator hernia were partial enteroceles.

The symptoms with torsion of the appendices epiploicæ were extraordinarily severe.

The best measures to sustain the patient after operations are rectal saline infusion and systematic lavage of stomach and bowel.

Physostigmin generally fails, and saline-suprarenal extract infusion has only transient effect in peritonitis.

Perforation of a typhoid ulcer is inevitably fatal unless the process becomes walled off by adhesions.

In little girls, the peritonitis set up by diplococci, staphylococci or streptococci has a grave prognosis, contrary to that of gonococcus peritonitis. In 13 cases of this kind, only 2 of the patients were saved. In one case a right crucial incision showed the whole abdomen full of pus, the appendix being apparently normal and the tubes inflamed. After wiping out the abdomen it was completely sutured and the girl, aged 13, recovered after a few days of fever. Infection is by way of the genital tract and it may occur without lesions in the latter.

Symptoms suggesting ileus may develop after pneumonia, pleurisy and pericarditis, but the abdominal findings are negative. An important differential sign in such cases is the good aspect of the tongue.

Chloroform general anesthesia does not seem to affect the course of pneumonia unfavorably.

With acute dilatation of the stomach resisting all other measures, gastroenterostomy is justified.

Postoperative paralysis and dilatation are most effectively combated by early systematic lavage of the stomach.

Saline rectal infusion seems to be the most effectual means to prevent postoperative adhesions but the adhesions developed by the suppurative process are not influenced by it.

All stumps should be covered with peritoneum, and before removing a high rectal cancer, the peritoneum should be shut off above through a left crucial incision.

68. **Indications for and Mode of Action of Gastroenterostomy.**—A similar article giving Rovsing's views and experience was summarized in The Journal, Jan 15, 1910, page 248.

69. **Plastic Operations on the Face.**—Lexer's article is accompanied by 35 illustrations showing his technic and the results in various cosmetic operations, formation of a nose or ear, correction of hare-lip or defects left from removal of cancers in the face; in some cases he transplanted part of the scalp to supply a moustache or beard, in others a wedge from the tibia to make a frame for the nose. In some cases he supplied the lacking support for the skin by inserting a flap of adipose tissue from the abdominal wall. The favorable results of this free fat transplantation and of similar experiments on animals promise a future for this method. In the first case it was applied to remedy a deep depression in the cheek and temple left from suppuration after traumatic injury; in the other case to remedy ankylosis and atrophy of the jaws, introducing the round flap of fat through an opening under the chin. This method has been applied since to correct defects in the breast after excision of a benign tumor and for defects in the cheek.

70. **Cancer Metastasis in Ovaries and Pouch of Douglas.**—Rosenstirn reports 15 cases which emphasize the importance of the attraction of gravity in determining the location of metastatic growths from abdominal cancers. The primary cancer may be still securely enclosed in serosa and yet metastasis by implantation may occur from it. The laws of gravity, he declares, explain why the ovaries are so often involved. Still more often the implantation occurs in the very lowest part of the pouch of Douglas, and it is important to examine this region in all operations for abdominal cancer.

74. **Prophylactic Plastic Operation for Acute Ulcerative Intestinal Lesions.**—Solieri reports a case of paratyphoid intestinal ulceration in which he wrapped the bowel, just as it was on the point of perforation, in part of the omentum, fastening the omentum to the mesentery just below its attachment to the loop in question. The laparotomy did not affect the patient unfavorably, while the protecting sheath of omentum thus provided for the bowel warded off perforation and peritonitis. He calls the operation "omental enterocleisis" (from kleio, I surround), and remarks that it is scarcely more serious than an exploratory laparotomy.

Beitrage zur Geburtshilfe und Gynaekologie, Leipsic

XV, No. 3, pp 317-476. Last indexed Ma[illegible], p 1839

76 Another Case of Total Isthmic Placenta Prævia. Pankow.
77 *Abnormal Development of the Pelvis. (Ueber Entwicklungsstörungen des knöchernen Beckens: Assimilationsbecken und infantile Becken.) K. Hegar.
78 Case of Hemiacardius. H. Hunziker.
79 *Hypoplasia and Infantilism in Relation to Gynecology and Obstetrics. A. Mayer.
80 Holoacardius abrachius peropus. A. Sitzenfrey.
81 Placental and Congenital Tuberculosis. G. Leuenberger.

77. **Abnormal Development of the Pelvis.**—Hegar remarks that much can be done in prophylaxis and correction by breast-nursing, improving the hygienic conditions of the poor, and physical training of the young. Nature strives to correct disturbances in development by tardy growth late in life. This is observed especially in women under the influence of married life and pregnancy. The uterus and breasts may grow out of an infantile condition late in life; likewise the pelvis, at an age when its growth might be considered as definitely arrested, may continue to develop, especially under the influence of pregnancy. This may explain Sellheim's observation that the proportion of women with infantile pelvis grows constantly smaller after the age of 25 to 30.

79. **Hypoplasia and Infantilism in Relation to Gynecology and Obstetrics.**—Mayer discusses the various manifestations of hypoplasia and infantilism in the genitalia and the clinical importance of these anomalies, especially the light which they throw on physical processes. His article is based on the experiences at the Hegar, von Rosthorn and Sellheim clinics for women's diseases, and is profusely illustrated. Individuals of this type, he says, must be regarded as "unfinished," and the resulting disturbances have special importance from the standpoint of social insurance against invalidity.

Berliner klinische Wochenschrift

July 18, XLVII, No. 29, pp 1353-1396

82 Radioscopic Diagnosis of Gastro-Intestinal Stenosis. (Zur Röntgendiagnostik der Stenosen des Verdauungstraktes.) J. Tornai.
83 Cystoscopy with Turbid Urine and Ureter Catheterization with Infected Urine. M. Hoffmann.
83 Determination of Tubercle Bacilli with Lupus Erythematodes. G. Arndt.
85 Complement-Binding Reaction in Leprosy. K. Steffenhagen.
86 Serodiagnosis in Syphilis. (Zur Organisation der Serodiagnostik nach Wassermann.) G. Soberheim.
87 Behavior of Blood Before and After Eating in the Wassermann Reaction. F. Hoehne and R. Kalb.
88 The Wassermann Reaction in Paralytic Dementia. H. Boas and G. Neve.
89 *Treatment of Hysterical Aphonia. M. Senator.
90 Action of Quartz Lamp on Trachomatous Conjunctiva. (Wirkungsweise des Quarzlichtes auf die trachomatöse Bindehaut des Auges.) Hegner and G. Bauman.

89. **Treatment of Hysterical Loss of the Voice.**—Senator relates that his experiences with Seifert's method of treating hysterical aphonia have not been so favorable as those reported by Seifer, but still he found it successful in a number of cases in which no benefit had been obtained from other measures. The patient's head is bent far over backward or the entire upper part of the body is tilted back. In this position the patients find that they are able to speak or intone. Seifert found that he was unable to speak in a whispering tone when his head was bent over backward in this way. The upper part of the body must be completely relaxed. In the two cases refractory to this measure in Senator's experience, the aphonia was promptly cured by other measures in the first, and in the other a thickening from chronic laryngitis may have been responsible for the failure. He is inclined to explain the success of the measure in general as due to its moral influence, adding another weapon to the armamentarium at our disposal for effectually influencing hysterical aphonia. The list includes manual pressure on the larynx, electric vibration massage, improvement of the respiration, a deep breath being taken before each single sound, and training the patients to speak in a lower key, the hysterical-aphonic patients generally having had a high keyed voice.

Correspondenz-Blatt für Schweizer Aerzte, Basel

July 1, XL, No 19, pp 641-[illegible]

91 Inflammation the Result of Changes in Permeability of Cell Membrane. (Ueber die Entzündung als kolloidchemisches Problem.) A. Oswald.
92 *Bronze Diabetes. E. Bernoulli.

July 10, No. 20, pp. 633-664

93 *Acute Infectious Poliomyelitis. H. Eichhorst.

July 20, No. 21, pp. 665-696

94 *Present Status of Cancer Research. (Ueber den gegenwärtigen Stand der Krebsforschung.) M. O. Wyss. Commenced in No. 20.

92. **Bronze Diabetes.**—Bernoulli gives the clinical and autopsy details of a case of bronze diabetes with intense glycosuria in a man of 38 inclined to hemostaxis and headache, with pneumonia three years before. He states that he has found 41 detailed reports of cases of so-called bronze diabetes in the literature, and that in 7 there was no tendency to glycosuria.

93. **Epidemic Poliomyelitis.**—Eichhorst encountered 3 cases last year at Zurich although no epidemic of this disease has ever been known in Switzerland. He mentions that during the last four years an unprecedented number of cases of epidemic cerebrospinal meningitis have been observed at Zurich, from 8 to 23 cases each year at the clinic in his charge. He remarks that epidemic poliomyelitis interests in nearly equal degree the bacteriologists, epidemiologists, internists, neurologists and pediatrists, surgeons and orthopedists, and he applies the great general's appeal to his soldiers: "In scientific things press on alone, if necessary, but in attacking epidemics strike all together."

94. **Cancer Research.**—Wyss concludes his review of the present status of cancer research with the statement that the main thing now is to collect extensive and uniform statistics for comparison. He thinks that cancers should be classed not according to the tissues in which they are formed but according to their localization and origin. For this he proposes four classes:

1. Involution carcinomas: This includes cancer of the uterus, ovaries and breast, that is, organs of reproduction which regularly retrogress, aging according to certain early time limitations.
2. Intestinal carcinomas: This includes carcinomas of the alimentary canal, the organs which are most affected by the mode of life, the food and habits, and which are most subject to repeated mild infections.
3. Irritation carcinomas: This includes the cancers developing from repeated mechanical irritations, especially those of the tongue, lips and skin, larynx and biliary passages.
4. Carcinomas of all other origin or which cannot be grouped with the above, as those in thyroid, pancreas and lungs.

To illustrate the advantages of this classification, he gives a chart showing the prevalence of these various groups in several Swiss provinces during the last eighteen years. The chart shows that the involution cancers are most frequent in the provinces containing the larger cities, while the intestinal cancers and especially gastric cancer are responsible for the larger numbers of cancers in the provinces where cancer is most prevalent, Schwyz and Lucerne.

Deutsche medizinische Wochenschrift, Berlin

July 21, XXXVI, No. 29, pp. 1353-1392

95 *Diagnosis and Treatment of Cardiac and Vascular Neuroses. (Herz- und Gefässneurosen.) T. Rumpf.
96 *Experimental Study of Treatment of Malignant Tumors. K. Reicher. Commenced in No. 28.
97 *Myogenous Leukocytosis. E. Grawitz.
98 *Chloroform Addiction. (Habitueller Chloroformmissbrauch.) Storath.
99 Case of Nodular Rheumatism. O. Thorspecken.
100 Tincture-of-Iodin Sterilization of Field of Operation. (Desinfektion des Operationsgebietes mit Jodtinktur.) K. Streitberger.
101 *Technic for Macerating, Enriching and Staining Spermatozoa in Old Spots of Semen. (Ein neues Mazerations- resp. Anreicherungs- und Färbeverfahren zur Auffindung der Spermatozoen in alten Spermaflecken.) D. Gasis.
102 Acute Otitis Media with Abscess Around the Sinus and Abducent Paralysis. R. Lehmann.
103 Moving Roentgen Ray Pictures of Internal Organs. (Ueber Röntgenkinematographie—Bioröntgenographie innerer Organe des Menschen.) A. Wertheimer.

95. **Cardiovascular Neuroses.**—After reviewing the differential points Rumpf discusses treatment, emphasizing the necessity for discontinuing tobacco—he has several times, he says, witnessed an acute toxic action on the pulse from a single strong cigar. He also refers to helminths as liable to induce [illegible] cardiovascular syndrome. Repose is an important factor in treatment, especially an out-of-door rest cure when combined with systematic deep breathing to exercise the diaphragm. He tells the patient to place his hand lightly on the stomach and breathe so that during inspiration the abdomen bulges in front and downward. This relieves the heart materially as the compression of the abdominal contents forces blood and lymph into the thorax, and, as the diaphragm rises, the blood is further forced along in the chest veins. As the pericardium is adherent to the diaphragm, it is drawn down with the latter, stretching the heart lengthwise, and counteracting the widening influence of ordinary breathing. Long-continued, moderately deep, abdominal breathing sometimes permanently retarded the heart rate. The unusually rapid heart action in certain bicyclists may be traced to the lack of abdominal breathing. When the patient has been trained to abdominal breathing, gymnastic exercises can be cautiously commenced but the bending forward or twisting of the trunk must occur during an inspiration, and expiration accompany the raising of the trunk erect. Done in this way the exercises do not accelerate the pulse. All the exercises must be done with abdominal breathing. Massage and rhythmic compression of the abdomen and of the lower thorax are also useful to promote the circulation in the abdomen and with threatening collapse and edema of the lungs. Persons of sedentary habits are liable to do irreparable harm to their heart by over-exercise on vacations; especially the elderly should be warned against rowing, fencing and mountain climbing. The family physician should emphasize the necessity of prophylactic moderate physical exercise which is too often crowded out of the modern strenuous life. Rumpf warns against prescribing spa treatment for functional disturbances, as association with individuals with organic disease is liable to have an unfavorable influence. Mild hydrotherapy can be applied at home; the best measures are those which divert attention from the heart. The suggestive influence of the physician is of paramount importance in those cases in which a mild organic affection is accompanied by severe functional disturbances. A wise wife, Rumpf adds, can protect her husband in these cases against many annoyances and excitements, but what a world of superfluous annoyances a fool of a wife can load on her husband! The choice of reading matter is another element that may favor or hinder a cure.

96. **Experimental Treatment of Cancer.**—Reicher states that the active principle of the suprarenals injected around an experimental tumor on mice almost invariably led to its subsidence. From 5 to 13 injections accomplished this in rats and the results observed, he declares, encourage a trial in suitable clinical cases.

97. **Myogenous Leukocytosis.**—Grawitz examined the capillary blood and the blood from the ulnar vein before and after muscular effort and found in both a marked leukocytosis following the exertion. The leukocytes jumped from 4,400 to 11,200 or 7,500 to 11,700 in a few minutes. The increase cannot, he says, be ascribed to different distribution of the corpuscles. There is pronounced lymphocytosis at first but neutrophile leukocytes soon predominate.

98. **Habitual Use of Chloroform.**—A woman of 51 inhaled from 40 to 60 gm. of alcoholized chloroform (equal parts) almost daily for 15 years, but no signs of a cumulative action were apparent and there were no symptoms on suspension of the chloroform. She acquired the habit from a medical prescription of the preparation to apply locally to the face to relieve severe migraine.

101. **Improved Technic for Forensic Examination of Old Spots of Seminal Fluid.**—Gasis loosens up the spermatozoa with a 1 to 1,000 solution of corrosive sublimate, then stains with 1 per cent. solution of eosin and decolors with a 1 per cent. solution of potassium iodid.

Jahrbuch für Kinderheilkunde, Berlin

July, LXX, No. 1, pp. 1-120

104 *Simultaneous Lime, Phosphorus and Cod Liver Oil Treatment of Rachitis. (Die gleichzeitige Verabreichung von Phosphorlebertran mit einem Kalksalze bei Rachitis.) J. A. Schabad.
105 Fate of the Fat in Infants' Intestines. (Das Schicksal des Fettes im Darm des Säuglings unter normalen und pathologischen Verhältnissen.) S. Tunkl.
106 Chloroma. (Chloroleukämie, Chloroleukosarkomatose.) H. Lehndorff.
107 Hernia of the Diaphragm. (Ueber den Zwerchfellbruch im Anschluss an zwei Fälle.) Z. v. Bokay.
108 *Symmetrical Gangrene in an Infant. (Raynaudsche Krankheit beim Säugling.) C. Beck.

104. **Lime Salts, Phosphorus and Cod Liver Oil in Rachitis.**—Schabad writes from the pediatric clinic and laboratory of the Peter-Paul hospital at St. Petersburg to reiterate his former statements in regard to the efficacy of a combination of phosphorus and cod-liver oil in rachitis, and that calcium acetate has a remarkable effect in favoring retention of lime in connection with the phosphorus and cod liver oil. None of the other lime salts he tested seems to have this property, he states, the phosphate and citrate being all eliminated. His work is based on minute research on the metabolism and he tabulates the findings in one of the typical cases examined over a long period.

108. **Symmetrical Gangrene in an Infant.** In the case reported by Beck, the first child of healthy parents was apparently healthy until nearly five months old, when the mother noticed recurring capillary congestion and bluish discoloration of the hands, feet and ears. In the course of six weeks the cyanosis recurred every day, gradually becoming almost continuous and gangrene developed. The child died in a month with signs of heart weakness and serious atrophy and beginning gangrene of the left hand. The only pathologic findings at autopsy were patches of thickening of the intima of all the arteries of the extremities and in some of the veins on the arms, while the brain and spinal cord were apparently normal.

Medizinische Klinik, Berlin

July 24, VI, No. 30, pp. 1163-1204

109 *Progress in Abdominal Surgery. (Fortschritte der Magen- und Darmchirurgie.) L. Moszkowicz.
110 *Idiosyncrasy to Cow's Milk in Infants. (Kuhmilchidiosynkrasie bei Säuglingen.) F. Zybell.
111 Compression in Treatment of Phlebitis. (Neue Therapie der Phlebitis.) H. Fischer.
112 Elasto-Massage. (Eine neue Massagemethode.) A. Schnée.
113 *Treatment of Hemoptysis. (Unzweckmässiges und Zweckmässiges bei Behandlung von Lungenblutungen der Phthisiker.) K. Blümel. Commenced in No. 29.
114 Intestinal Hemorrhage in Appendicitis. (Ueber Darmblutung bei Epityphlitis.) C. A. Ewald.
115 Action of Marine Climate on Blood Production. (Einwirkung des Seeklimas auf die Blutbildung.) K. Häberlin.
116 Analysis of Abnormal Muscular Reaction to Electric Tests. (Die sogenannte träge oder wurmförmige Muskelzuckung bei der Entartungsreaktion, ihre Analyse und eine einfache Art der graphischen Darstellung zu Vorweisungszwecken.) A. Martin.
117 Tests for Pentosuria. (Nachweis der Pentosen im Harn.) A. Jolles.

109. **Progress of Abdominal Surgery.**—Moszkowicz concludes his review of the present status of abdominal surgery by appealing to general practitioners to diagnose high rectal cancers earlier. If in every case of rectal hemorrhage of obscure cause and negative findings with digital examination, the region was examined with the proctoscope it might be possible to detect high rectal cancers in an earlier stage. At present they are mostly in an inoperable phase when the surgeon first sees them. He urges the practitioner to call in a surgeon to aid in the diagnosis in every case of an obscure gastric or intestinal affection.

110. **Idiosyncrasy to Cow's Milk in Infants.**—Zybell has found on record 23 cases of an actual idiosyncrasy to cow's milk and adds 3 cases to the list from his personal experience. In one of Finkelstein's cases the resulting disturbances proved fatal, but in all the others the symptoms subsided on suspension of the cow's milk and feeding with small amounts of breast milk generally drawn and given to the infants with a spoon. The idiosyncrasy became manifest as the child, who had been fed at one time with cow's milk and then had been breast fed, was given cow's milk anew. In 5 cases, however, the idiosyncrasy was manifested at the first trial of cow's milk. This fact Zybell regards as sustaining the assumption that the idiosyncrasy is the result of some constitutional anomaly. This assumption is sustained further by the fact that several members of the same family or different generations may display the tendency. Even an hour or two after taking the cow's milk the temperature may run up to 104 F. and over; it may subside again as rapidly as it rose or it may persist for days at this height. In Finkelstein's fatal case the fever kept up for 9 days terminating at 106 F. Along with the fever the child looks collapsed, the skin is pale and cool or cyanotic, the respiration shallow and rapid, the whole impression being that the child is very ill. This extreme collapse suggests intoxication, but as a rule the threatening symptoms subside after a few hours. Gastrointestinal disturbances were noted in nearly every case and in 2 cases an eruption occurred during or directly after the milk feeding. The infants ranged from 9 to 42 weeks old. In weaning, only minute doses of cow's milk should be given at first to avoid being surprised by the discovery of an unsuspected idiosyncrasy to cow's milk, the manifestations of which may put the child's very life in jeopardy. The idiosyncrasy was finally conquered in all but one case by cautious administration of very small amounts of milk, the exception being a girl, now 15, who is still unable to take even the smallest amount of milk. In all the other cases the idiosyncrasy seemed to disappear as abruptly as it had developed, so that a few days later the children were taking rapidly increasing amounts of milk without the least inconvenience.

113. **Treatment of Hemoptysis.**—Blümel concludes his discussion of treatment of hemoptysis with the statement that salt is the most reliable means at our command for controlling hemoptysis. It overthrows the existing osmotic balance and fluids then pour from the tissues into the excessively salty blood, bringing with them the thrombokinase, the substance which promotes coagulation in the blood. It has been found that 10 minutes after ingestion of 10 gm. of salt by the mouth the coagulation time was reduced from 3¾ to 1½ minutes and to 1 minute after another 10 minutes. This hemostyptic action of sodium chlorid has been utilized by von den Velden in several hundred cases of inaccessible hemorrhage, hemoptysis, gastro-intestinal hemorrhage, etc., and the results were invariably equally good, as also in Blümel's and Reiche's experience. Blümel advises the physician called to a case of hemoptysis to insist on physical and psychic repose, the patient reclining in bed with the shoulders raised to promote expectoration. He must not be allowed to speak or to make any hasty movement and must remain in bed for several days after the sputum has ceased to show traces of blood. If the calm soothing words of the physician are not sufficient to tranquilize the patient, an ice bag should be applied to the heart or 30 grains of sodium or potassium bromid should be given. The ice bag helps to keep the patient still, if it does no other good, but it is not needed, of course, in every case. The application of adhesive plaster to immobilize the lung generally wearies and excites the patient unnecessarily. To check the cough if there is not much expectoration he gives about 3 grains of Dover's powder, if the patient is unable to control the cough himself, or some other sedative, repeating the dose at night, but never giving a sedative early in the morning as expectoration should be favored at this time. The temperature must be taken six times a day and the sputum collected to show to the physician. The food need not be changed if gas-generating and very cold substances are avoided. The room must be kept moderately cool and frequently aired. If the hemorrhage still persists when the physician arrives, he should give at once a heaping teaspoonful of salt in half a glass of water, and if the hemorrhage recurs or threatens, repeat the dose, alternating it with 45 grains of sodium or potassium bromid at intervals of 1½ or 3 hours, as required. If the hemorrhage is very profuse, the limbs may be ligated as an adjuvant—handkerchiefs answer the purpose but the constriction must not be too tight; the aim is to permit the arterial blood to flow into the limb. The greatest care must be exercised in undoing the ligature. If conditions are particularly threatening he advises an intravenous injection of 5 c.c. (81 minims) of a sterile 10 per cent. salt solution. A single dose of horse serum may be used also in these circumstances but it should not be repeated. The coagulating power of the blood may also be promoted, he adds, by a single subcutaneous injection of a sterile 10 per cent. solution of gelatin, repeated as needed. Ingestion of 5 gm. calcium lactate in 50 c.c. water, this dose repeated in 5 or 6 hours, may also be advised. If the patient is suffocating from clots in the throat they should be removed, artificial respiration applied or an emetic administered. Saline

[illegible] is contraindicated so long as the hemorrhage continues. The physician must never forget that the hemoptysis is merely a symptom and the cause must be sought. Blümel also adds a word of warning against the use of scopolamin and morphin as they have a paralyzing action on the reflexes so that suffocation is liable to ensue, to say nothing of the aspiration pneumonia that may follow.

Münchener medizinische Wochenschrift

July 19, LVII, No. 29, pp. 1529-1576

118 *Roentgen Rays in Treatment of Uterine Hemorrhage and Myomas. (Wie weit wird durch die Röntgenbehandlung unsere operative Therapie bei Uterusblutungen und Myomen beeinflusst?) B. Krönig.
119 Behavior in Human Body of Ehrlich's "606." (Verhalten des Ehrlich-Hataschen Präparates im menschlichen Körper.) P. Fischer and J. Hoppe.
120 Relations Between Potassium Iodid and the Seroreaction. (Welche Beziehungen bestehen zwischen Jod und dem Ausfall der Seroreaktion?) G. Stümpke.
121 *Study of Raynaud's Disease. H. v. Hoesslin.
122 Plethysmographic Research During Physical Exercise. P. G. Geissler and Zybell.
123 Conservative Treatment of Anthrax on the Face. (Konservative Behandlung der Gesichtsfurunkel.) L. Wrede.
124 Traumatic Neuroses Following Railroad Accident. (Nervöse Nachkrankheiten des Mülheimer Eisenbahnunglücks.) T. Becker.
125 The "Thread Reaction" in Diagnosis of Typhoid. (Die serodiagnostische Typhusreaktion von Mandelbaum.) A. Kessler.
126 Köhler's Bone Disease. (Die Köhlersche Knochenerkrankung.) K. Schäffer.
127 *Suprarenal Treatment of Osteomalacia. (Adrenalin und Osteomalazie.) Kownatzki.
128 Arrangement for Carrying Wounded in Railroad Cars. (Ein neues System zum Transport von Verwundeten auf den Eisenbahnen.) Waller.
129 Gonorrheal Corneal Ulcer. (Gonorrhoische Hornhautgeschwür.) C. Adam.

118. **Roentgen Ray Treatment of Uterine Hemorrhage and Myoma.**—Krönig and Gauss report 505 cases with operative treatment and 63 with treatment by the Roentgen rays and state that increasing experience is convincing them of the value of the latter in these gynecologic cases. Radiotherapy is definitely restricting the indications for operative treatment with myoma and hemorrhagic uterine trouble. It is especially indicated in cases of much debility, degeneration of the heart, obesity or bronchial catarrh. Operative treatment has still a mortality of from 4 to 6 per cent., which is altogether too high in the absence of vital indications. Excluding the above class of cases, radical treatment would have only 1 or 2 per cent. mortality, and this deserves the preference as a rule for the stronger patients because it is comparatively harmless for them and because the after-effects—if the ovaries are left—are decidedly less than with amenorrhea brought on by Roentgen-ray exposures. Necessity for rapid restoration of working capacity also compels operative treatment in many cases, so that radiotherapy will generally have to be reserved for well-to-do patients, but he who has beheld the brilliant effects of Roentgen ray treatment in his own practice will certainly prefer it, they declare, in the suitable cases.

121. **Raynaud's Disease.**—In one of the two cases reported by von Hoesslin the vascular spasm involved, besides the extremities, the nose, chin and tongue. The trouble was ascribed to a severe chill which had been followed by rheumatic pains in the joints and swellings of the fingers and toes. The pains fluctuated in intensity and the tips of the fingers and toes varied from pallor to cyanosis. The involvement of the tongue permitted a number of interesting physiologic tests. In the second case the local symmetrical disturbances came on after an attack of influenza followed by a nervous arthritis; rheumatic pains were the first symptoms also in this case. The intense pallor in the face and hands first came on suddenly in consequence of fright from a lightning stroke near by.

127. **Suprarenal Treatment of Osteomalacia.**—Kownatzki reports a case in which a young woman in the fourth month of pregnancy developed osteomalacia rebellious to the usual measures; there was a slight enlargement of the thyroid. But after a course of suprarenal treatment she gradually recovered and was normally delivered although one thigh was [illegible] a little thicker. The question now is to determine in which cases of osteomalacia suprarenal treatment is liable to prove efficient. It seems probable that the cases in which benefit may be anticipated are those in which the trouble is due to suprarenal rather than ovarian insufficiency. There are cases on record in which ovarian treatment proved successful and in certain experiments on animals thyroid treatment gave good results.

Therapeutische Monatshefte, Berlin

July, XXIV, No. 7, pp. 337-404

130 *Chronic Gastrosuccorrhea. F. Schilling.
131 *Treatment of Congenital Syphilis with Special Regard to the Wassermann Reaction. L. Halberstaedter and A. Reiche.
132 Treatment of Gonorrhea. (Zur Balsamtherapie der Blennorrhoe.) C. Cronquist.
133 Treatment of Alimentary Disturbances in Infants. (Zur Behandlung des Milchnährschadens.) F. Brandenberg.
134 Measures to Prevent the Spread of Venereal Disease in Austria. (Bekämpfung der Geschlechtskrankheiten in Oesterreich.) L. Sofer.
135 Pancreatic Dextrosuria. C. W. Scherk.
136 Historical Sketch of Adulteration of Certain Organic Remedies. (Historisches über die Fälschung einiger animalischer Heilmittel.) W. Fischer-Defoy.

130. **Chronic Continuous Excessive Secretion of Gastric Juice.**—Schilling lays great stress in treatment on dietetic measures to refrain from stimulating the secretion, especially by abstention from salt. The beneficial influence of a salt-poor diet on the discomfort from hyperchlorhydria has been recently emphasized by Enriquez and Ambard. Rest is an important aid also for patients with engrossing occupations and who are growing thin. Milk gruels, chocolate, butter, cream, oil, toast and zwieback are the main reliance at first in treatment, supplemented later with cheese and soft eggs; meat is entirely prohibited and no salt allowed except a little for the gruels. In the third week a little pea or bean soup is permitted; tender mashed vegetables aid in satisfying hunger. All sweets are to be avoided as also raw fruit and coarse vegetables, alcohol, tea, coffee and tobacco. The patients take a hot bath twice a week. By the second month a little boiled white meat and fish is allowed and by the third month boiled beef, macaroni and marmalade. Roast meats and raw fruit must still be avoided for weeks after this. If the improvement is only moderate on this diet he repeats the course of dieting again after a six-week's interval. It is important to have the patient rest for a time after the noonday meal, and a daily walk should be ordered for brain-workers. These and other measures to tone up the nervous system are supplemented by a mixture of equal parts of silver nitrate and belladonna extract, 0.15, 0.2 or 0.25 gm. in 150 gm. water, taking half a tablespoonful in half a wineglassful of water three times a day before eating. A bottle of this lasts a week, and the first week the mildest strength is taken, two bottles of the second strength follow, and then two or three bottles of the strongest mixture, then reducing the strengths progressively backward in the same way, the whole medicinal course thus requiring 8 to 9 weeks. After completion of the dietetic and medicinal course he sends the patient away for a brief change of air. Treatment along these lines has not been entirely successful in every case but the results have always been encouraging. The symptoms subsided and the patients slept and felt well. If there was retention from the preceding day along with the hypersecretion, he relieved the patients by lavage of the stomach at bedtime, allowing a tranquil night or the nocturnal pains might be relieved by eggs, chocolate and milk. The flow of gastric juice might be checked by 2 or 3 tablespoonfuls of melted butter or oil morning and evening.

131. **Treatment of Inherited Syphilis.**—Halberstaedter and Reiche relate their experiences with 43 children with inherited syphilis tested for the Wassermann reaction before and after each course of specific treatment. The children were in a special asylum and constantly under observation. The experiences with the Wassermann reaction were similar to those observed in the tertiary phase of syphilis in adults, the reaction persisting positive with great tenacity. A negative reaction frequently became positive again without apparent reason. The children given systematic specific treatment have thriven and developed well and are free from symptoms even although the Wassermann reaction continues positive.

Therapie der Gegenwart, Berlin

July, LI, No. 7, pp. 289-336

137 *Treatment of Diabetes in Children. M. Lauritzen.
138 *Tabetic Crises Consisting of Unconsciousness and Arrest of Respiration. (Krisenartig auftretende Bewusstlosigkeit mit Atemstillstand bei Tabes.) L. Jacobsohn.
139 Taste and Palatibility in Hygiene and in the Kitchen. (Geschmack und Schmackhaftigkeit in der Hygiene und in der Küche.) W. Sternberg.
140 *Treatment of Whooping Cough. (Zur Therapie des Keuchhustens.) G. Bradt.
141 Importance of Roentgen Rays in Gynecology. (Bedeutung der Röntgenstrahlen in der Gynäkologie.) M. Fraenkel.

137. **Diabetes in Children.**—Lauritzen reviews his experiences with 27 cases of diabetes mellitus in children; an inherited taint was evident in 7, but no indications of pancreatic disease or trauma affecting the brain were discoverable in any instance. Next in importance to the regulation of the diet, he declares, is the necessity for mental and physical rest, reducing tissue waste as much as possible; massage should be given while the child stays in bed, and for this and other reasons, he considers institutional treatment indispensable for diabetes in a child, even in the mild forms. The aim should be to relieve not only the organs in charge of sugar metabolism of all unnecessary work but also all the cells. He insists on the importance of recognizing an incipient tendency to diabetes in children and that the children in families inclined to metabolic disturbances, gout, etc., and children with acne, boils, eczema and other skin diseases should be supervised with special care in this respect, examining their urine frequently. If any reducing substances are found in the urine, a test meal of rice, fish, potato and bread should be given and the urine for the following four hours collected and analyzed. If the glycosuria increases, dietetic restrictions should be enforced at once. Only when the diabetes is detected in its earliest phase can material improvement or a cure be anticipated. Diabetes in children under 2 generally runs a rapidly fatal course. In the mild cases it is important not to jeopardize all with too early resumption of a mixed diet. In the mild and moderately severe cases the patients should return to the hospital four times a year for revision of the assimilating capacity and degree of production of diacetic acid and acetone and have the diet regulated anew accordingly. In the severe cases not until the urine has been made alkaline or is still only slightly acid under large prophylactic doses of sodium bicarbonate is it safe to inaugurate the strict antidiabetic diet. If the glycosuria persists he keeps the child in bed and occasionally allows nothing but water for a day. He accepts the beneficial and apparently specific action of oatmeal in diabetes and makes much use of it, but he always precedes the oatmeal days with a strict albumin-poor diet for a few days, then an exclusively vegetable day, then the oatmeal for a few days, then two or three vegetable days, and then the strict albumin-poor diet again, although in the severer cases the resumption of the stricter diet must be very cautious as otherwise the acidosis may suddenly increase and coma follow. He gives the tabulated details of several cases to show the great benefit that may be derived from treatment on these principles, generally following von Noorden's technic. Eight of the children are still living, including a girl of 8 with intense acidosis when first examined a year ago. The duration of the disease was from 2 months to 4 years in the others. He emphasizes the fact that the total acidity and ammonia content of the urine parallel each other and are a useful index of the daily fluctuations of the acidosis. He classifies the cases as mild when the sugar rapidly disappears on a diet poor in carbohydrates, and moderately severe when the sugar does not disappear unless the diet contains so little albumin that there is only from 7 to 13 gm. of nitrogen in the urine. The proportion of albumin allowed in the diet should be that with which the urine is kept free from sugar, and the amount of food should be kept down to what is actually required.

138. **The Sudden Appearance of Apnea with Unconsciousness in Tabes.** Jacobsohn reports a case which he says is similar to those reported by Hoover in THE JOURNAL, July 20, 1907, page 237. In all the cases on record of this suddenly appearing apnea with a semicomatose state the patients had tabes, with a single exception and in nearly every instance the attack followed administration of morphin or heroin as in his case. He accepts a temporary paralysis of the respiratory center as the cause of the trouble, and thinks that there is ground for incriminating the morphin as a factor in the process. Pal regards the phenomenon as similar in its nature to intermittent claudication. Jacobsohn's patient is a tabetic woman of 46 who has been under observation for a year and a half and several of these respiratory attacks have occurred in his presence; they seemed sometimes to take the place of gastroabdominal crises. In one attack a gastric crisis was followed at once by unconsciousness for 45 minutes, and during this time the respiration stopped ten times for from 60 to 80 seconds at a time. One day there were two attacks lasting 4 minutes each, followed the next day by unconsciousness for several hours with frequent pauses in breathing lasting from 2 to 4 minutes. The heart and pulse rate were not modified during the attack, the heart working powerfully as usual. As a rule cyanosis became evident about the end of the second minute; in another minute there was clonic twitching in the legs, then the respiration started up again full and deep and the patient regained consciousness.

140. **Treatment of Whooping Cough.** Bradt ascribes the symptoms of whooping cough to a local process in the upper air passages, and declares that local treatment of the nasopharynx is frequently able to arrest the syndrome. He uses a mixture of iodin and phenol 0.5 parts, with 1.5 parts potassium iodid and 15 parts glycerin in 100 parts water; with this he swabs the nasopharynx for 2 or 3 seconds once a day. This local treatment is supplemented by keeping the child in out door air as much as possible.

Wiener klinische Wochenschrift, Vienna

July 21, XXIII, No. 29, pp. 1063-1098

142 *Variations in Sugar Content of Cerebrospinal Fluid with Psychic Disturbances. (Schwankungen im Zuckergehalt des Liquor cerebrospinalis bei psychischen Erkrankungen.) L. Hess and O. Pötzl.
143 Vulvo-Vaginal Hematomas. J. Reich.
144 Influence of Alcohol on Syphilitic Serum in the Wassermann Reaction. (Einfluss des Alkohols auf luetische Sera bei der Komplementbindungsreaktion.) G. Satta and A. Donati.
145 Etiology of Psoriasis. J. Sellei.
146 The Newer Methods of Enrichment and Staining of the Tubercle Bacilli. (Einige neuere Methoden der Anreicherung und Färbung des Tuberkelbazillus.) H. Trunk.
147 *The Ronchese-Malfatti Test for Ammonia in Diabetic Urine. (Zur Beurteilung der Azidosis auf Grund eines einfachen Verfahrens der Ammoniakbestimmung im Harne der Diabetiker.) E. Marcovici.

142. **Sugar Content of the Cerebrospinal Fluid in the Insane.** Hess and Pötzl report 16 cases of mental disease in which the proportion of sugar in the cerebrospinal fluid fluctuated within wide limits, sometimes in the same patient at different times. These fluctuations were noted in cases in which there was nothing to suggest an inflammatory process. The list included cases of dementia præcox and epilepsy.

147. **Test for Ammonia in the Urine as Index of Diabetic Acidosis.** Marcovici gives the details of the simple Ronchese test based on the action of formalin on the ammonia salts. A 10 per cent. solution of sodium carbonate is added, a drop at a time, to the urine until the reaction becomes neutral. The formalin (40 per cent.) is neutralized with a one-fourth normal soda solution against phenolphthalein until a slight pink tint develops. Then 25 c.c. of the neutral urine and 10 c.c. of the neutral formalin are mixed and titrated against decinormal soda solution until a deep pink develops. The calculation is simple: 1 c.c. of the decinormal soda solution for 100 c.c. of urine corresponds to 0.017 gm. ammonia in 1,000 c.c. of urine.

Zentralblatt fur Chirurgie, Leipsic

[illegible] XXXVII, No. [illegible], pp. 97[illegible]

148 *Spengler's I. K. in Surgical Tuberculosis. A. [illegible] and R. Lenk.

148. **Inefficiency of Spengler's I. K. in Surgical Tuberculosis.** This communication from the university clinic at Vienna in charge of Hochenegg reports the application of I. K. in a number of cases of surgical tuberculosis with disappointing results. In 6 of the cases more than 6 months has elapsed since this treatment was commenced and the influence seemed to be rather deleterious. One woman with tuber-

culous peritonitis and enteritis with slight fever, died from miliary tuberculosis 2 months after commencing the I. K. treatment. In a case of bilateral tuberculosis of the testicles and slight apical lesions, the lesions in the testicles seemed to show improvement under the I. K. at first, but the apical lesions progressed to florid phthisis and the patient succumbed 8 months after the beginning of the five months course of treatment. In none of the other cases was any appreciable influence from the treatment discoverable and the use of I. K. has been abandoned.

Zentralblatt für Gynäkologie, Leipsic

July 16, XXXIV, No. 29, pp. 977-1008

149 Case of Mistaken Sex: External Masculine Pseudohermaphroditism. (Fall von Erreur de sexe.) W. Redlich
150 Technic for Dilatation of Cervix with Laminaria. K. Czerwenka

July 23, No. 30, pp. 1009-1040

151 *Acute Peritonitis Presumably Originating in the Genitalia. G Pallin.
152 *Systematic Tampon Drainage of Small Pelvis in Prevention of Postoperative Peritonitis. E Schürmann

151. **Acute Peritonitis of Non-Puerperal Genital Origin.**—Pallin is convinced that it is more than a mere coincidence that only one patient was a man out of his 7 patients with peritonitis of obscure origin during the last 5 years. In 4 of the women the symptoms developed with a menstrual period and the fifth had not commenced menstruating again after a childbirth. Pathologic changes in the adnexa were evident in only 2 of the women; the appendix was apparently sound in all. Nätzel found a gynecologic origin in 43 out of 241 patients operated on for peritonitis, and Hagen has reported 3 fatalities in a group of 7 of gynecologic origin. He emphasizes the grave prognosis and the injurious influence of menstruation. From these and other data Pallin concludes that acute peritonitis may develop from the female genitalia alone, and that the infection may reach the peritoneum through the tube without causing inflammation on the way.

152. **Systematic Tamponing of Small Pelvis to Prevent Peritonitis.**—Schürmann declares that postoperative peritonitis is far too common and that more vigorous measures are needed against it. The main source of trouble, he is convinced, is the actual contact of the intestines with the oozing pus in the operative area. A small strip of gauze laid over the suture is pushed along by the intestines as they slide back into place after a laparotomy; this leaves the suture bare so that intestines and peritoneum rest against it and become infected. In order to prevent this he systematically packs the entire small pelvis full of gauze before lowering the pelvis after the operation. Then when the intestines slide down they rest on the gauze and are saved from infection. Any infectious process developing in the operative area remains localized here. In case the whole pelvis has been contaminated, he supplements this tamponing by tamponing through the abdominal incision, packing the pelvis with gauze so amply that the intestines are not able to slide down into the small pelvis at all. Ordinary drains are unable to convey all the secretions away; even with the best gauze drainage pus was found still clinging to the suture whenever he was obliged to open the abdomen again for any reason. It was formerly believed that the great absorbing power of the peritoneum was able to protect it against the spread of infection, but recent research has failed to disclose bacteria in the circulation, such as would be found if the peritoneum absorbed them as assumed. On the other hand, the lymphatics in the peritoneum have been found clogged with a copious cellular and fibrinous exudation, and this is now regarded as the natural defensive mechanism. This walling off is realized further by the adhesions induced by the mechanical irritation from the gauze tamponing besides the direct protection afforded by the gauze itself. He does not use medicated gauze exclusively on account of the danger of intoxication.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 17, XXXI, No 85, pp 889-904

153 Presence and Determination of Tuberculous Sensitizers in Extracts of Human Scrofulous Glands. (Sensibilizzatrici tubercolari negli estratti di ghiandole linfatiche scrofolose umane.) S. Livierato.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

DIE HAUPTGRUNDGESETZE DER EPIDEMIOLOGISCHEN TYPHUS- UND CHOLERAFORSCHUNG. In Rücksicht auf die Pettenkofersche und die Kochsche Auffassung der Typhus- und Choleragenese. Auf Grund einer vergleichend-epidemiologischen Betrachtung einer grösseren Reihe von Typhus- und Choleraepidemien. Dargelegt von Dr med. Friedrich Wolter in Hamburg. Jubiläumsschrift zum 50 jährigen Gedenken der Begründung der Lokalistischen Lehre Max von Pettenkofers, II. Band. Paper. Price, 24 marks. Pp. 337, with illustrations. Munich: J. F. Lehmann, 1910.

AN INTERNATIONAL SYSTEM OF OPHTHALMIC PRACTICE. Edited by Walter L. Pyle, M.D., Philadelphia, Member of the American Ophthalmological Society. Therapeutics. By Dr. A. Darier, Paris. Translated by Sidney Stephenson, F.R.C.S., London, Late Honorary Secretary of the Ophthalmological Society. Cloth. Price, $4 net. Pp. 444, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

LEHRBUCH DER KINDERHEILKUNDE FÜR AERZTE UND STUDIERENDE. Von Dr. med. Bernhard Bendix, Privatdozent für Kinderheilkunde, Dirigierender Arzt der Charlottenburger Säuglingsklinik. Sechste, Durchgesehene und Verbesserte Auflage. Paper. Price, 15 marks. Pp. 671, with 83 illustrations. Wien: Urban & Schwarzenberg, 1910.

A TEXT-BOOK OF PHARMACOLOGY AND THERAPEUTICS. Or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.D., Professor of Pharmacology in the University of London. Fifth Edition. Cloth. Price, $3.75 net. Pp. 744, with 61 illustrations. Philadelphia: Lea & Febiger, 1910.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. XXII. Twenty-second Session held at Hot Springs, Va., Dec 14, 15 and 16, 1909. Edited by W. D. Haggard, M.D., Secretary, Nashville, Tenn. Cloth. Pp. 561. Published by the Association, 1910.

VII BERICHT DER DEUTSCHEN GESELLSCHAFT FÜR SAMARITER- UND RETTUNGSWESEN FÜR DIE JAHRE 1908 UND 1909. Herausgegeben vom Vorstand. Paper. Pp. 171. Leipzig: Nikolaikirchhof.

New Patents

Recent patents of interest to physicians

952903.	Charging vessels with carbonated liquid and flavoring-syrup under pressure. John Hicks, Summit, N. J.
953015.	Hernial truss. Byron F Lockwood, Jackson, Mich.
952957	Invalid bed. Walter R. Sterling, Wellsburg, W. Va.
952767	Apparatus for pasteurizing or cooling liquids. Magnus Thomsen, Davenport, Iowa.
952965.	Apparatus for making, stamping, and cutting lozenges. John Trenor, Colne, England.
953073.	Extracting caffein from coffee. Heinrich Trillich, Munich, Germany.
953071.	Extracting caffein from whole coffee-beans. Heinrich Trillich, Munich, Germany
953187.	Producing a sulphur compound of quinin. F. W. S Valentiner, Leipzig, Germany.
953901	Dipper for ice cream cones Albert J. Daniel, Boone, Iowa
953821	Artificial hand or tool-holding attachment for amputated arms. David W. Dorrance, Portland, Ore.
953945	Vacuum membrane-pump. Martin Falk, Cologne, Germany
953687	Convertible bed Michael D. Gavan, St. Louis.
954082	Invalid-bed. Michael D. Gavan, St Louis
954083	Massage apparatus. Richard H. Gay, Conesville, Iowa.
953691	Truss. George R. Harding, Utica, N. Y
953754	Bed-pan Amanda Jackson, St. Louis
953962	Device for raising and moving invalids. Charles W Lane, Fishkill, N. Y.
954398	Double acting syringe Peter G MacGregor, New York
954520.	Faucet for soda-fountains. William M. Megget, Greenville, Miss.
953922	Tracheal cannula or tube. John B. Rogers, York, Me.
95400.	Orthopedic device. Louis Roth, New York
954056	X-ray system. Homer C Snook, Philadelphia
954401	Drainage tube George E. Andrews, Philadelphia
95412.	Disinfecting appliance Max Dreifuss, Cleveland, Ohio.
955121	Apparatus for administering anesthetics. Charles A Hollett, Indianapolis, Ind
954519	Intravaginal infantile respirator. Walter E. Kelly, Belvidere, Neb.
954972	Foldable bath-hopper Burton D. Knickerbocker, Chicago.
954780	Ambulance Walter von Oettingen, Wilmersdorf, Berlin, Germany
954174	Confinement chair Emil C Schortmann, Bilboa, Spain
955006	Abdominal retractor Joseph E Sparks, Crossett, Ark
955312	Medicine cabinet Constantine Beltl, Philadelphia
955454	Condenser and mold for carbon dioxid William J. Flemming, Richmond Hill, N. Y
955818	Ozonizer Anthony Lohman, Philadelphia.
955339.	Massage device John C. Lumsden, New York.
955821	Anesthesia mask Victor F Marshall, Appleton, Wis
955342	Pendent sprayer support Walter H Maxwell, Cincinnati
955181.	Pasteurizer Charles Skidd, Kenosha, Wis.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOL. LV, NO. 10 CHICAGO, ILLINOIS SEPTEMBER 3, 1910

A CRITICISM OF THE BLOOD-PRESSURE APPARATUS*

C. F. HOOVER, M.D.
CLEVELAND

The sphygmomanometer is generally assumed to be an instrument which enables us to measure the maximum and minimum endovascular arterial pressure. If this assumption is true, it does not follow that we have any data on which to estimate the mass movement of blood, the real problem that remains to be solved in the study of cardiovascular diseases. In subjects with a normal vascular system the blood-pressure apparatus gives us reliable information about the maximum systolic pressure. But in clinical experience it can be shown that the blood-pressure apparatus gives misleading information even on this basic point. The diastolic blood-pressure can be measured about as accurately as the systolic blood-pressure. But the diastolic endovascular pressure is not a measure of the systole of an artery. In other words, we may have the equivalent of a normal diastolic pressure and the artery remain full of blood during the cardiac diastole.

We are perfectly familiar with stasis in the centrifugal stream with high diastolic pressure as seen in chronic interstitial nephritis, but I doubt if it is generally recognized that we may have the equivalents of normal systolic and diastolic pressures and still have a marked stasis in the centrifugal blood-stream.

ESTIMATION OF DIASTOLIC PRESSURE BY SPHYGMOMANOMETER CONTROLLED BY PALPATION OF ARTERIES

Another point of interest I wish to discuss is the manner of estimating diastolic pressure in an artery and the reason for its reliability. Since the sphygmomanometer has been devised there seems to be a very general concession by clinicians that endovascular blood-pressure can be estimated only by instrumental means and that the older method of relying on the fingers is inaccurate and misleading. The source of error does not lie so much in the sense of touch as in the choice of the artery from which the estimate is made. I readily admit the impossibility of making an accurate estimate of blood-pressure from the radial or even the brachial artery. The only artery which serves this purpose is the femoral artery. The reason for this is very apparent. The femoral artery at Poupart's ligament is very accessible and lies on the pubes against which the artery can be compressed. Here we have an artery which gives us practically the lateral pressure in the abdominal aorta and lies under the mastery of the finger. When we palpate an artery, we do not feel the endovascular pressure, but we really feel the bursting tension of the arterial wall. The bursting tension on the walls of a hydraulic tube is equal to ΠR times the pressure, that is, 3.1416 times the radius of the tube multiplied by the pressure. This result is obtained by multiplying the circumference of the tube, which is $2 \Pi R$ by the known pressure per centimeter square and then dividing the result by two. The product of the circumference and pressure must be divided by two, because the bursting tension would be equal to the pressure on one side only of any given diameter of the tube. Therefore, ΠR times the pressure equals the bursting tension in any artery.

If pressure remains constant, the bursting tension will vary directly as the radius of the artery. If we now assume the femoral artery to have a radius four times that of the radial artery, it is quite apparent that any variation in pressure will be magnified four times in estimating the bursting tension of the femoral artery as compared with the bursting tension in the radial artery. This is analogous to the comparison between a microscopic view of 200 diameters and a microscopic view of 50 diameters. During the past four years it has been my practice to estimate the arterial pressure by palpating the femoral artery and afterward to use the blood-pressure apparatus. A little practice will enable one to estimate the blood-pressure very accurately. In pressures between 150 mm. Hg and 250 mm. Hg I find that there is rarely a disparity of more than 20 mm. between the digital and instrumental estimate, and as a rule the disparity is within 10 mm.

RESISTANCE OF ENDOVASCULAR BLOOD-PRESSURE AND HYPERTONIC VASCULAR WALLS TO PNEUMATIC CUFF

When very high pressures are recorded by the sphygmomanometer, the question has been raised as to whether the resistance offered the pneumatic cuff really represents endovascular pressure or the resistance of a hypertonic arterial wall plus endovascular pressure. The fact that supposedly high blood-pressures are often tolerated for years and with so little evidence of myocardial enlargement compels us to respect this criticism; but, on the other hand, when we have opportunity to study great oscillations of blood-pressure in a patient it seems very improbable that the resistance offered by the femoral artery should consist in wall resistance and the artery vary so little in volume during the periods of high and moderate pressure.

A year ago a patient at Lakeside Hospital had a blood-pressure which varied from 180 mm. Hg to 350 mm. Hg. These periods of hypertonus would last for several successive days and then subside. When the pressure registered as high as 350 mm. Hg in the arm, the resistance in the femoral artery was enormous. When the pressure would again descend to 180 mm. Hg the femoral artery would feel slightly larger, but the difference in caliber could not have been great, for the variations in size of the femoral artery gave no hint of the change in pressure. If this great change in resistance of the arterial wall was due to resistance of a hypertonic wall and not to endovascular pressure we certainly had reason to expect great changes in the caliber of the vessels. This is always true in smaller arteries like the radial, where the proportion of muscular tissue in the arterial wall is much greater than in the femoral artery.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Since the arterial blood-pressure has been a subject of extended clinical observation, it has become apparent that either high endovascular pressure does not tax the heart so severely as we formerly believed or our measurements have been misleading, in so far as they have led to inferences regarding expenditures of energy in the output of the left ventricle.

REPORT OF CASES

CASE 1.—During the past winter a woman 50 years of age, who came under my observation, presented a very interesting problem in arterial pressure. The patient had not yet passed the menopause and had the appearance of being in good health. There is nothing in her family history or personal history which has any bearing on her present disability, except that the patient had always been a rather nervous person and for five years prior to the development of her first symptoms (which occurred eighteen years ago) she endured a great deal of worry and anxiety on account of the death of her husband and legal entanglements of his estate. Three years before the present attacks began, she found that in playing the piano her forearms became numb with a sense of tension, which was so uncomfortable and so persistent in its occurrence that piano-playing had to be abandoned. Fifteen years ago the first attacks of angina began. The pain begins between the shoulder-blades and runs about both sides of the thorax to the precordial area, and, when severe, runs down the inner side of both forearms. It is particularly severe in the right arm. These attacks of pain are accompanied by a sense of cardiac palpitation and eructations of gas from the stomach. The eructations of gas are not, however, followed by any sense of relief. After the attacks there is a peculiar feeling of numbness in the hands, particularly in the right hand. Both hands are then hypersensitive to both heat and cold. There is never any dyspnea on exertion, although exertion will bring on the attacks of pain. Eating a large meal will produce the attacks, and often the patient is wakened out of a sound sleep by the pain. The patient's appetite is good, the bowels are slightly constipated.

The urine showed no indications of any renal involvement. There were no signs of any kind brought out on physical examination which betrayed any alteration of reflexes or any change in afferent or efferent nervous impulses. All diseases of the brain and cord or peripheral nerves could be excluded. The lungs, mediastinum, liver, spleen and alimentary tract revealed no signs of disease. The eye-grounds were normal.

The left border of the heart in the fifth interspace was 12 cm. to the left of the median line and the right border of the heart at the third interspace was 3 cm. to the right of the median line. The upper border of the heart was at the top of the third rib in the left parasternal line. The left border of the heart was not sensitive to direct percussion. I mention this because we very commonly find in the early stages of cardiovascular disease when the myocardium begins to show some sign of distress that the external border of the heart is marked by tenderness to direct percussion. This tenderness is not present in cardiac enlargement due to Basedow's disease, for in the early stages of Basedow's disease the cardiac enlargement is not associated with any impairment in the mass movement of blood. The tenderness is not present in cardiac enlargements of long standing when due to either valvular or myocardial disease.

In our case, therefore, there was not a single sign of any kind which would indicate any impairment in the mass movement of blood. When the patient entered the hospital, there was perfect consistency between the feel of the femoral artery and the blood-pressure as registered by the sphygmomanometer applied to the arm.

The maximum systolic blood-pressure on entrance was 235 mm. Hg. The patient remarked that she had caused the bursting of every blood-pressure apparatus which had been used on her. The blood-pressure was first measured about two years ago and was then found to be 350 mm. Hg. The same high record was made by several physicians at different times. The highest pressure found during the patient's three weeks' stay in the hospital was 245 mm. Hg. Relief from the attacks of angina has invariably followed immediately after taking 1/100 grain of nitroglycerin. The pains were so severe and relief followed so promptly from the use of nitroglycerin (which was always at hand) that we never had the opportunity to measure the blood-pressure during an attack, but I think it is fair to assume there was a marked rise in blood-pressure during the attacks of angina.

On February 18 the following experiment was made with nitroglycerin to see how much the blood pressure could be lowered with nitroglycerin. A 1 per cent. alcoholic solution was used and the liquid was dropped on the tongue from a medicine-dropper.

Time, P. M.	Dose, Drops.	Pulse.	mm. Hg B.P.
9:30	1	75	215
9:32	1	72	..
9:34	1	76	224
9:36	1	81	...
9:38	1	81	238
9:40	1	84	...
9:42	1	84	234
9:44	1	81	...
9:46	1	81	208
9:48	2	81	..
9:50	2	78	162

In twenty minutes there were thirteen drops of a 1 per cent. solution of nitroglycerin given which was well tolerated. Nothing more than a slight sense of fulness in the head was complained of. The patient had the best night's sleep she had had for many weeks. The blood-pressure in the arm was never again as low as 162. This shows, however, that sclerosis of the artery could not have been a factor in resistance to the pneumatic cuff. There was no palpable thickening of any of the accessible arteries. An ophthalmic examination revealed no abnormality in the retinal nerve-heads or retinal vessels.

As soon as it was once learned that the blood-pressure could be reduced by the use of trinitrin without causing discomfort or any untoward symptoms, one drop of the 1 per cent. solution was given every hour and the dose was gradually increased in the course of three days to 5 drops every hour. The blood pressure chart showed no alteration. The pressure was taken from the right arm every four hours. I then palpated the femoral artery and found the pressure nearly normal in that artery. The cuff was then applied above the ankle of the right side and the dorsalis pedis artery used for control. The artery was of fair size and quite as suitable for the purpose as the radial. Here the maximum pressure was only 160 mm. Hg. The blood pressure apparatus nearly always gives a higher registration when applied to the leg, so it seems fair to assume that this measurement would be consistent with an arm measurement in the average normal subject of about 20 or 30 mm. less. The cuff was then applied to the left arm and the pressure measured there was slightly less than in the right. Here is a patient with a history of vasomotor angina with blood-pressure of 245 in the arms and 160 in the legs after trinitrin had been given in large doses. The pressure in the femoral arteries prior to the administration of nitroglycerin was consistent with the pressure in the arms; now, however, the femoral and brachial arterial pulses did not feel as though they belonged to the same person.

If it is possible to have widely differing blood-pressures in branches of the aortic system, then it is apparent why this patient, whose brachial pressure was so high for two years (of which we know), revealed no signs of distress in the heart. If the splanchnic arterial distribution constantly maintained the same low pressure, compared with the accessible arteries, as the femoral artery now shows, compared with the brachial, then it is quite apparent that the brachial pressure did not habitually represent the pressure in the thoracic aorta and for this reason the myocardium showed no signs of distress after years of supposedly high pressure.

Another explanation of myocardial preservation under such conditions was suggested by the history of another patient who was first seen in 1905.

CASE 2.—The patient, a man, then 35 years old, had marked cardiac hypertrophy, high arterial pressure and pulmonary édema. Rest in bed, milk diet, warm baths and nitroglycerin gave him great relief. After a month of this treatment he left the hospital and was not seen again until four and a half years later, in 1909, when he again presented himself with the same symptoms, although not quite so severe as four and a half years before. It was then learned that he had continued uninterruptedly at his vocation of barkeeper, that he had been quite comfortable during all that period, and that he had taken nitroglycerin for only a few weeks after his first stay in the hospital. We then found that his blood-pressure on waking in the morning was only 130 mm. Hg. and in half an hour it would again be 190 mm. Hg, where it obstinately remained in spite of the use of nitroglycerin. There was never any disparity between the feel of the femoral pulse and the brachial pulse in this man, but the pressure in the leg was not taken with the instrument. It was found later that if the blood-pressure was taken immediately when the patient awoke from a short nap of thirty minutes, it was only 130 and regained its original point of 190 about one-half hour after waking. These observations were made repeatedly in this man on waking in the morning and on waking after short naps and the results were always the same.

This patient, therefore, had an arterial hypertonus when awake, and vascular relaxation when asleep. What preserved him so long against myocardial exhaustion was the slumber relaxation. This amounts to a very great compensatory measure in a man who gets nine hours' sleep every day. To return to the first patient, however, it was found that she did not at any time have a lowered blood-pressure on waking; and furthermore her attacks of angina often came on during sleep; consequently, we can eliminate slumber relaxation as a compensatory measure in her case.

The other problem which presents itself is whether the patient really had such widely differing pressures in the femoral and brachial arteries or whether the hypertonus of the artery offered the resistance to the pneumatic cuff. Were we really measuring resistance of a hypertonic arterial wall and not endovascular blood pressure? Three resident physicians at Lakeside and I tried exposing an arm to extreme cold to see if the pressure in the exposed arm differed from the pressure in the other arm which was not exposed to cold. The experiment was made in the following manner:

The person under observation lay flat on a table with a trough of ice-water at his side. A blood-pressure apparatus was applied to the left arm and to the right arm at the same time and the pressure recorded. Then one arm was laid in the ice-water and, when the arm became painful from extreme cold, the pressures in both arms were recorded. In the other three men there was no essential change, but in my own case there was a marked rise in pressure in the cold arm and no rise in the other arm. The pressure in my right arm was 136 and in the left arm 126. Then the right arm was laid in the ice-water so that the upper arm as high as the top of the cuff was covered. When the arm became very painful, the pressure in both arms was measured. The left arm recorded 126 as before but the maximum pressure in the right arm was 158, a rise of 22. There could have been no error in palpating the radial artery, because I could tell the instant the least trickle of blood passed beyond the cuff by the feel of the water-hammer jet, which could be perceived equally well when the arm was in and out of the water. The instant the arm was lifted out of the water and the pain ceased, the pressure was again lowered to the original point of 136.

On another occasion I tested my blood-pressure much in the same manner, but under different conditions. The early part of the day from 9 to 11.30 a. m. was occupied in making a ward visit, from 12 to 2 p. m. was occupied with writing, then a moderate luncheon, at which two cups of tea were drunk, was followed by smoking one cigar. An hour later the experiment was made. The pulse-rate was 72 per minute. A blood-pressure apparatus was applied to each arm and the records were made by two resident physicians. One man watched each apparatus and recorded their results independently of one another. Before the right arm was put in the ice-water the maximum systolic and diastolic pressures, respectively, were 170 and 133 in the right arm and 168 and 132 in the left arm. The femoral artery was then palpated by Drs. McLaughlin and Boyer (who are experienced in estimating blood-pressure) and both agreed that, when the one arm was put in cold water, a decided rise in pressure was perceptible, which was consistent with the records made by the instrument. Several trials showed a rise to 180 in the chilled arm. It does not seem likely that the rise in pressure was due to pain, for, though the three other men experienced quite as much pain, their pressures did not rise after exposure to cold. On both occasions when the observations were made, the exposures to cold were made repeatedly. On the first occasion there was a rise only in the chilled arm and none in the other arm. The second trial showed a consistent rise in all accessible arteries. The rise was both in the systolic and diastolic phases. The disparity between the pressure in different arteries in the case of one patient was apparent only after trinitrin was used in considerable dosage, but this disparity was confirmed by repeated examinations during a period of a week. The differing results in my own experiments with the cold water were just as certainly established by repeated measurements.

Whether there were really different endovascular pressures in the several arteries, or different degrees of hypertonus in the arterial walls which gave the results, the deduction remains the same, namely, that the blood-pressure apparatus applied to accessible arteries does not give infallible information as to the aortic blood-pressure and, as a consequence, it is not safe to rely on routine measurements from the arm as a guide to the employment of vasodilators in treating patients with high arterial pressure.

The maximum systolic and minimum diastolic pressures may be within the normal limits and still the mass movement of blood be much impaired. Recently I observed a ward patient at Lakeside Hospital who had pronounced cardiac dilatation and tricuspid insufficiency, as evidenced by dilated jugular veins with a systolic centrifugal pulse, which was plainly seen in the jugular veins and was distinctly palpable in the liver, which was enlarged a hand's breadth below the costal border. The patient had general edema and very marked cyanosis and orthopnea. The pulse-rate was 90, the maximum systolic pressure in the arm was 135 and the minimum diastolic pressure 96. That there was a severe alteration in the mass movement of blood in this patient was clear enough from the cyanosis, dyspnea, venous and hepatic pulsations and edema of the lower extremities.

Although the maximum systolic and minimum diastolic pressures were equal to those we often find in patients with a good mass movement of blood, palpation of the arteries revealed an artery filled with blood during the diastolic phase. There was, then, an increased resistance in the peripheral arterial distribution and stasis in the centrifugal arterial stream without an elevation in either the systolic or diastolic pressure. With these arterial conditions, then, there must be a small ventricular output with each ventricular systole. A very small ventricular output is sufficient to elevate the pressure to moderate height (135 mm. Hg) in an arterial system which is full of blood at a moderate pressure during the cardiac diastole. This patient's myocardium was the factor which was chiefly at fault in the circulatory system. As a rule, patients with an increased peripheral resistance in the arterial system have high systolic and diastolic pressures, but, when the myocardium becomes inefficient at the same time that the increased arterial resistance develops, the systolic and diastolic pressures remain the same as in health, but the mass movement or minute volume of blood is greatly diminished.

If reliance is placed on the blood-pressure during systole and diastole, as a guide to the state of the circulation one can be greatly misled, for the pressure measurements are of value only when they are contemplated in the light of other evidence, which must be gained by observation.

DETERMINATION OF MINIMUM DIASTOLIC PRESSURE BY BLOOD-PRESSURE APPARATUS

Finally, I wish briefly to discuss the blood-pressure apparatus as a means of determining the minimum diastolic pressure. The two methods employed are (1) to find the pressure-point in the pneumatic cuff at which the mercury column has a maximum excursion, and (2) to find the point at which the sound heard distally to the cuff, suddenly diminishes in intensity, as the pressure in the cuff is gradually lowered. The first method is much less satisfactory than the second method. It is the second method which has some points of interest in the physics of the arterial circulation. If the brachial artery is compressed against the inner surface of the humerus, and the bell of a stethoscope is applied over the artery a short distance below the point of compression, there will be, of course, no sound audible so long as the artery is obliterated during cardiac systole. On diminishing the pressure so that a jet of blood escapes under the compressing finger, there will be a murmur and sound audible during the heart's systole, but the murmur predominates and often the sound is scarcely perceptible with the murmur. If a pneumatic cuff is applied and the pressure in the cuff is diminished so that a jet of blood escapes under the cuff during systole, but not during diastole of the heart, the relative intensities of murmur and sound are reversed. The sound, which is very like the "pistol-shot" tone, is loud and the murmur is faint. In many cases the murmur is not audible and only the pistol-shot tone is heard. If the femoral artery is compressed at the pubes, the so-called stenosis murmur is very loud and the pistol-shot tone is not heard at all. If one compresses the femoral artery, however, and then very cautiously relaxes the pressure so as to permit the very smallest possible jet to escape under the finger a pistol-shot tone is heard unaccompanied by a murmur, but unlike the case with the brachial artery, when a larger jet is allowed to escape by relaxing the pressure a very little more a loud murmur is heard without the pistol-shot tone. The sharply defined pistol-shot tone is heard only a short distance below the cuff or compressing finger in all instances.

The configuration of the jet seems to determine whether a murmur or pistol-shot tone will predominate. Digital compression of the artery gives, in all probability, a different contour to the narrowed lumen from that procured by the circular pneumatic constriction. In the latter case the compression is applied in a number of different radii, whereas, in the former case, only a narrowed chink can be formed. Probably, as the constricted lumen more nearly assumes a circular contour, the water-hammer effect is more in evidence and the murmur is wanting. When the pneumatic cuff is used, in many cases only a pistol-shot tone is heard and no trace of a murmur is heard. When the brachial artery is compressed by the finger, a murmur is always audible and predominates, whereas the pistol-shot tone is comparatively faint.

Another point about this pistol-shot tone is of interest. Suppose we have a maximum blood-pressure of 150 and a minimum pressure of 100. The pistol-shot tone below the constricting band will have attained its maximum, when the cuff pressure is at about 145, and will remain at the same intensity until the pressure in the cuff is just high enough to prevent the escape of fluid during the heart's diastole. Then when the pressure in the cuff is no longer high enough to shut off the centrifugal flow during diastole of the heart, the sound becomes faint, so that the pistol-shot tone will grow faint immediately when the cuff pressure goes below 100. The pistol-shot tone is due to the escaping jet of blood and not at all to the excursion of the collapsed arterial wall below the cuff. As the pressure in the cuff is diminished, the arterial lumen under the cuff increases; consequently, with a diminishing pressure in the pneumatic cuff the volume of the jet increases, but the velocity will diminish. Therefore, the mass times the velocity in the jet remains constant, until a point is reached at which a null pressure in the artery distal to the cuff no longer exists during cardiac diastole, and then the difference in pressure, above and below the cuff, is no longer great enough to produce the water-hammer effect.

I attempted to reproduce these phenomena by inserting a cannula in the subclavian artery of a fresh cadaver. The radial artery was opened and the cuff of a blood-pressure apparatus applied to the arm. Liquids of varying specific gravities were pumped through the artery, when the pressure in the pneumatic cuff was at varying points from 120 to 300 mm. Hg, but the pistol-shot tone could not be produced and the pulse of the jet of liquid, as it shot beyond the constricting cuff, was very different from the pulse of the jet of blood during life. Instead of the high velocity with which the jet of blood during life shoots under the cuff, there was a lazy rise and fall in the pulse below the cuff. No pistol-shot tone was heard; nothing but a murmur was audible with all the pressures and kinds of impulses we were able to give the jet of liquid. It would evidently require a nicely constructed power-pump to produce the same kind of jet which occurs in the blood-stream during life.

When air instead of liquid was pumped through the artery, the velocity of the jet was of course much greater and the pistol-shot tone immediately below the cuff was very loud. When a bandage was drawn about the forearm at the same time that air was pumped through the artery, the intensity of the pistol-shot tone diminished, as very slight pressure was applied by the constricting bandage. As soon as the pressure of air in the artery between the cuff and the bandage no longer [illegible] to zero between the impulses from the pump, the pistol-shot tone diminished in intensity.

When the brachial artery immediately below the cuff was exposed and opened and traction applied by means of two forceps so as to eliminate the factor of excursion of the arterial wall, the pistol-shot tone below the cuff remained the same as before.

CONCLUSION

I do not wish to discourage the use of the blood-pressure apparatus. It is a very valuable instrument, but its chief value consists in teaching us how to palpate the arterial pulse. No instrument can take the place of the finger, nor can any instrument teach as much about the pulse as can be learned by palpation.

702 Rose Building.

ABSTRACT OF DISCUSSION

Dr. Judson Daland, Philadelphia: We owe Dr. Hoover a debt of gratitude for calling attention so plainly and definitely to the facts, not generally remembered, that the blood pressure varies at different times of the day, and more particularly, in certain cases, and that there is a difference between the blood pressure in the waking and sleeping states. Again, the mere application of the pneumatic cuff in certain neurotic subjects often increases the blood pressure as much sometimes as 30 or 40 mms. Often the fainting patient will permit of a true reading. Observation systematically made will show in many instances a temporarily extraordinary increase in the blood pressure. Therefore, it seems to me that we should bear in mind that variations occur in many cases. The case reported by Dr. Hoover, so far as I know, is a very unusual one; I have no recollection of any such experience in my practice, nor do I recollect any such extraordinary disparity between the blood pressures of the inferior and superior extremities. So far as the determination of the blood pressure by means of the finger applied to the radial artery is concerned, I have found that in about three-quarters of the cases I can estimate approximately the blood pressure; but in the remaining 25 per cent. I am at sea. We should thank Dr. Hoover for calling our attention to the femoral artery where manifestly there is offered a physical condition vastly superior to the radial artery.

THE PATHOLOGY OF MASTOIDITIS AS REVEALED BY THE *X*-RAY [*]

SIDNEY LANGE, M.D.
Lecturer on Radiology in the Medical Department of the University of Cincinnati
CINCINNATI

The *x*-ray study of the mastoid region, which was begun in March, 1908, has undergone a slow but gratifying metamorphosis. Undertaken with grave doubts as to its practical value, it has developed into a method which rivals in its accuracy other recognized methods of physical examination.

At the inception of the work, it promised at best to show the anatomy and the grosser chronic changes in the mastoid region. Then the graver acute changes were registered on the skiagram, and later it was found that the milder acute mastoid affections yielded roentgenologic evidence of their presence. Within the last few months it was discovered that in acute otitis media without clinical signs of mastoid involvement, the *x*-ray would often show clouding and filling up of the mastoid cells just back of the antrum, which changes may either recede or progress as the patient either recovers, or goes on to what is clinically termed mastoiditis. The *x*-ray method is presented then as a method of studying *intra vitam* the gross pathology of the mastoid.

A correct roentgenologic technic is, of course, the *sine qua non* in this work, and all conclusions should be based upon technically good plates. The method employed for correctly skiagraphing the mastoids was presented before this section one year ago.[1] Further details of the *x*-ray technic were outlined by me in a previous paper[2] and need not be repeated here. In no instance has a technically good plate failed to give valuable and accurate information. Barring those uncommon cases in which the cortex over the mastoid is excessively thick, or in which the mastoid cells are poorly developed, the *x*-ray method should in every case reveal in a gross way the pathologic status of the mastoid process.

The question of excessive distortion of the relations of the mastoid as a result of the obliquity of the rays was answered by making a series of tests on the dried skull. Lead markers were placed on the tegmen, groove for lateral sinus, and mastoid tip, and measurements made from the skiagraph were compared with the actual distances. In no instance did the discrepancy exceed 3 mm., which difference for practical purposes may be disregarded.

My interpretation of the skiagram is always based on a comparison of the diseased with the opposite normal mastoid. After repeated comparisons, in normal individuals, in no case did I find essential differences between the two normal mastoids of the opposite sides. While there may be variations in the size, number and arrangement of the cells of the two sides, the mastoids as a whole were closely similar in type. That is, if there is a pneumatic mastoid on one side there will be a pneumatic mastoid on the other, or if the one mastoid is of the diploetic type the opposite one will be of the same type. Plageman says "On a basis of 85 skiagrams of normal skulls, we find that as a rule the two mastoid processes of healthy individuals are almost identical." Where both sides are diseased more difficulty is encountered in reading the plates, but after a study of many plates a fairly accurate interpretation may be made of a single plate without a comparison with its fellow of the opposite side.

Previous inflammation in a mastoid usually leaves permanent alterations in the bone, either in the form of more or less extensive absorption of the mastoid process or sclerosis of same, and if this inflammation occurs in early life the development of the mastoid may be so retarded as to result in a diploetic or even sclerotic type. Therefore, in interpreting mastoid plates the previous aural history must be ascertained.

On the mastoid skiagrams of children under 10 years the mastoid appears entirely spongy or diploetic, there are few visible cells, and the tip is undeveloped. The tip at this time consists simply of an inner and outer table, with little cancellous bone between, and shows little structure on the skiagram. From the age of 10 to 15 the mastoid takes on the pneumatic characteristics; large cells appear and grow downward toward the tip, its diploetic structure finally giving way to the more or less pneumatic adult type. The development of the mastoid may be beautifully demonstrated by a series of successive skiagrams.

---

[*] Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Iglauer, S.: The Clinical Value of Radiography of the Mastoid Region, The Journal A. M. A., Sept. 25, 1909, p. 1005.

[2] Am. Quart. Roentgenol., December, 1909, No. 1, ii.

In order to study the mastoid relations more graphically, stereoscopic skiagrams may be made. For this purpose, I have devised a small stereoscopic platform by means of which the two stereoscopic exposures may be made on a 5 by 7 plate. When developed and dried this plate may be placed directly without printing or reduction in a cheap parlor stereoscope and viewed by transmitted light. This method has not been used as a routine, because of the fact that four exposures (two for each mastoid) are required. A reluctance to make repeated exposures has interfered also in following the clinical cases at various stages from onset to cure. While the danger of the temporary Roentgen alopecia is a remote one, even though the exposures be repeated, provided an aluminum and leather filter be used, it was thought best not to take the chance of embarrassing the work at this time by any such untoward after-effects. Therefore, in most of the patients examined but one exposure of each side was made. Just one caution should be given in regard to the character of tube best suited to this work. The lowest or softest tube possible should be employed. The higher tubes give crisper and more beautiful pictures, but when we consider the small size of the mastoid cells and the fact that we are attempting to show all the smallest septa and contents of these cells, those tubes which give beautiful bone detail of the heavy cranial bones will often fail to show the slightest changes in density in the mastoid region.

CLASSIFICATION OF PATHOLOGIC CHANGES

The pathologic changes which may be noted on a skiagram may be tabulated as follows:

1. Slight haziness of cell spaces or complete filling of same with something denser than air. These changes represent clinically otitis media with slight mastoid involvement and the milder forms of mastoiditis. The something which fills the cells is in all probability serum. To show these slight changes the skiagram must be made with a soft tube and slightly underexposed.

2. Marked clouding of cell spaces with loss of distinctness and partial destruction of cell walls. Clinically these changes are found in the more severe grades of mastoiditis with pus formation and bone softening.

3. More or less complete loss of structure of the mastoid process occurring (a) either in the form of localized abscess formation, or (b) as is often seen in the subacute cases in the form of diffuse loss of structure, indicating advanced necrosis of the entire mastoid process.

4. Increased bone density of the mastoid process with (a) partial or complete obliteration of cells and (b) with or without bone defects. This class represents the chronic sclerosed cases.

These changes will be discussed in the reverse order, the order in which they are recognized.

CHRONIC MASTOIDITIS

The first report of this work was based entirely on the examination of the chronic cases. The ease with which chronic changes can be shown on the skiagram offers a method of determining in any case of chronic otorrhea the gross pathologic condition of the mastoid process. In those cases in which the cause of the continued discharge cannot be determined by the usual methods the skiagram may give the desired information by showing the extent of the sclerosis on the one hand or gross bone defects on the other.

The characteristic appearance in these cases is a thickening and obliteration of cells. In older cases the entire mastoid process appears dense and structureless, giving no indication of the presence of cells. From my experience it would appear that this extensive sclerosis occurs frequently after mastoiditis of a mild and not necessarily long-continued type, since the sclerosing process is a healing process. Interesting to note is the fact that, in the examination of supposedly normal cases for purposes of study, every now and then a markedly sclerosed and often undersized mastoid process would be found, and no history of previous ear trouble could be elicited from the patient. These undersized sclerotic types probably represent a sclerosis, partial absorption or retardation of mastoid development, consequent on a forgotten otitis media of early childhood. Aside from these occasional exceptions in all of the markedly sclerosed cases the patients examined had symptoms in the form of intermittent otorrhea. To illustrate different phases several cases will be cited briefly.

CASE 1.—*Sclerosis.*—A. V., aged 16, presented intermittent discharge from the left ear dating from an attack of acute otitis media three years back. Examination revealed a thickened drum with a small perforation in the antero-inferior quadrant. *X*-ray examination showed a sclerotic mastoid on the left side, with very little evidence of cellular structure. Subsequent operation verified the *x*-ray findings. This history is typical of a majority of chronic cases encountered.

CASE 2.—*Sclerosis with Bone Defect.*—J. Z., Italian, was admitted to the Cincinnati Hospital because of some pain and tenderness over the mastoid. Previous history could not be obtained, except that the affected ear had discharged for some time. Examination of the canal revealed changes associated with chronic middle-ear suppuration. An *x*-ray examination of the mastoids showed no cells on the affected side. Instead, the bone seemed to be hollowed out just back of the antrum. On operation, no cells were found, but a large bone defect in a small sclerotic mastoid.

CASE 3.—*Subacute Case with Bone Softening.* This is a subacute rather than a chronic case, but is included here because the plate showed typical bone defects in a thickened mastoid, such as might be encountered in the more chronic cases: Mr. C., aged 35, came in from one of the surrounding towns because of continued discharge and pain over the mastoid dating back seven weeks. The case had received practically no treatment. Examination showed a perforation in the anterior inferior quadrant. No bulging of the canal. Temperature was 99.5 in the evening, normal in the morning. Pain was marked especially at tip. The patient was referred to me for *x*-ray examination, which revealed an apparently thickened and structureless mastoid except for several irregular areas of apparently more necrotic bone which seemed to honeycomb the mastoid. Operation the following day substantiated the diagnosis in every detail.

SEVERE ACUTE MASTOIDITIS

Every case of severe acute mastoiditis has given distinct evidence on the skiagram. The changes varied from filling of the mastoid cells with something other than air (serum, pus or granulations), with indistinctness and partial disappearance of cell outlines, to circumscribed abscess formation or diffuse loss of structure of the mastoid.

CASE 4.—Mrs. S. gave a history of a running ear following an attack of influenza. Discharge continued two weeks and then stopped. Two weeks later, or four weeks after the onset, the patient came under medical observation because of pain over the mastoid, especially right. Examination revealed a thickened drum, no discharge, no perforation, marked tenderness over mastoid, but no redness or swelling. Temperature was 99 to 100. *X*-ray examination revealed a hazy mastoid whose cells were no longer air filled and septa partially broken down. Operation the day following the *x*-ray examination verified the skiagram.

CASE 5.—Miss W., aged 25, had had influenza three weeks previously with a running ear, but without pain or tenderness over the mastoid. Discharge continued for three weeks, and patient finally sought medical attention because of an increasing malaise. Examination revealed a large perforation in posterior part of drum, with scant or no discharge. There was no swelling or redness over the mastoid, but marked tenderness on deep pressure over antrum, no fever. *X* ray examination revealed a small abscess in the mastoid about the size of a hazel-nut. The rest of the mastoid appeared hazy and indistinct. Subsequent operation verified this finding in every detail.

The following case is typical of a number of cases observed from the onset, in which there were definite signs of severe mastoid involvement, but in which the operative indications were not clear. Operative interference is often delayed in these cases awaiting a spontaneous resolution. The *x*-ray plate showing the amount of destruction may be a deciding factor.

CASE 6.—Miss H., a nurse at Cincinnati General Hospital, aged 30, developed, incident to influenza, intense pain in the ear, which in a few hours was followed by rupture of the drum, and a profuse bloody discharge. Three days later the staff otologist was called to see her because of pain and tenderness over the mastoid. He found a small perforation and enlarged it by incision. Tenderness and pain abated, and it was thought that recovery would follow in a few days. Seven days later there was a recurrence of the pain and paracentesis of the drum was again performed. The pain and tenderness now persisted in moderate degree, and a week later I was asked to make a skiagram. The skiagram showed absolutely positive evidence of a breaking down of the entire mastoid, and the operation the following day, almost three weeks after the onset, verified the *x*-ray finding.

MILD ACUTE MASTOIDITIS

In the study of the milder acute cases an interesting problem presented itself. By the milder cases is meant those cases in which there are distinct demonstrable changes in the mastoid but in which there is little or none of the gross destruction seen in the more severe cases. These cases may or may not progress to spontaneous recovery. The first change is that of fluid-filled cells. That is, the cell-spaces, instead of standing out sharply and clear, show by comparison with the opposite side that the air is displaced by a more solid substance, which may be serum, pus or granulations, or all three combined. The cell walls are fairly distinct and not broken down. This appearance of fluid-filled instead of air-filled cells is very characteristic of this stage; and in the attempt to draw operative indications from the plate the question as to how much bone change in the mastoid may occur without precluding spontaneous recovery, that is, what amount of skiagraphic bone change makes operation imperative, presented itself. Of course, I did not attempt to decide such a weighty problem. In discussion the fact that each text-book and each specialist has individual ideas regarding the pathology of acute mastoiditis was somewhat confusing. Those of the conservative school cite many instances of clinically severe mastoiditis which recover under the expectant treatment, whereas those of more radical tendencies advise early operative interference when fairly positive clinical evidence of mastoid involvement is at hand. The thought at once suggests itself whether it would not be possible by means of the *x*-ray to decide this point, and by a comparative *x*-ray study of a large series of cases to determine what amount of bone destruction makes operative interference imperative, if, indeed, the question can be settled at all. Although my series of cases is far too small and too incompletely studied to warrant any definite conclusions, yet I adhere to the following tentative rule: If in an acute case the skiagram shows fluid-filled cells with little or no breaking down of cell walls, an expectant line of treatment is suggested, whereas, if the bone destruction is definite and considerable, operation is recommended.

The following two cases are typical of this milder type of mastoiditis:

CASE 7.—Mrs. E., aged 35, had for ten days suffered with pain in the ear. Examination revealed in addition to inflamed drum, pain and tenderness over the mastoid. There was some fever, 100° in evening 99.5° in morning. The drum was incised but symptoms continued a week unabated. An *x*-ray examination made at this time revealed the mastoid cells fluid-filled but little or no bone change. After two weeks, discharge gradually ceased and mastoid symptoms abated. Drum returned to normal, pain and fever disappeared, whispered voice heard at 12 feet. A second *x*-ray examination made two weeks later showed the affected mastoid apparently normal, the cells containing air.

CASE 8.—Mrs. M., aged 33, suffered severe pain in ear following an acute rhinitis. On examination, drum was bulging, covered with hemorrhagic blebs, mastoid tender over antrum. Drum was lanced and few drops of serum exuded followed by sero-bloody discharge which continued three days, and suddenly stopped. Pain returned. Drum was again incised, and mucoserous discharge continued. Marked tenderness was present over mastoid and antrum, extending toward tip, but there was no fever. After several days discharge again stopped, and buzzing and throbbing pain was complained of. *X*-ray examination at this stage revealed a haziness of the cells just back of the mastoid antrum, but not extending over the rest of the mastoid. The slight changes seen in the plate did not seem to warrant any active interference. From this time the case went on to recovery and a second plate made (two weeks after the first one) showed apparently a restoration to the normal.

Several cases similar to these were encountered at the Cincinnati General Hospital, but as the patients treated here often insist on leaving before entirely recovered and are then lost track of, the ultimate outcome could not always be followed. Of great interest would be some statistics as to how frequently such mild mastoid involvement goes on to ultimate recovery, and what percentage become chronic or give rise to intercranial or other complications.

ACUTE OTITIS MEDIA

After this success in detecting the milder changes in the mastoid a small series of patients with acute otitis media without clinical signs of mastoiditis was examined. To my surprise more than 50 per cent. of the patients skiagraphed gave evidence on the plate of slight mastoid involvement. This involvement was indicated by a slight haziness of the cells just back of or surrounding the antrum. The bone contours were, however, sharp and distinct.

The *x*-ray study of the mastoid region is submitted at this time as an aid in the obscure cases. A more extended study of a large series of cases will, it is hoped, put this work on such a firm basis that in any case an *x*-ray examination may yield results so valuable as to justify the procedure.

But the work has a broader application. By repeated examinations the course of a single case may be studied. By extended studies over long intervals of months or years some new phases of the pathology of mastoiditis may be brought out. The ultimate results of acute and chronic mastoiditis in early childhood, their influence on the development of the mastoid and the auditory function in later life, the final results of those types of mastoiditis in which the patients apparently recover without operation, and the relation of mastoid sclerosis to the capsule and functions of the internal ear, are problems on which systematic *x*-ray work may possibly throw some light. As a preliminary to such studies involving repeated exposures, it must first be determined at what intervals and how many exposures may be safely given without causing alopecia and what form of technic will best guard against it.

The cases of acute, subacute, and chronic otitis media in young children aged 1 to 10 presented such unique appearance on the skiagram as to warrant special consideration. It was my privilege to examine about ten patients of this kind, who presented no marked clinical signs of mastoid involvement. Almost without exception the mastoid showed changes varying from a slight haziness of cells in the earlier cases to more or less bone destruction in the more severe cases, while the chronic ones showed pronounced sclerosis. Owing to the small size of the cells and the immature development of the mastoid, the amount of bone change is often hard to determine in these cases. In every case, however, in which such haziness of the mastoid was evident if operation was subsequently performed, actual mastoid involvement was found, justifying operation. It would appear that in a majority of cases otitis media in early childhood is accompanied by distinct mastoid involvement. As mentioned above, the small size of the mastoid in these cases made it rather difficult to draw operative indications from the plate.

22 West Seventh Street.

ABSTRACT OF DISCUSSION

Dr. Henry Horn, San Francisco: Dr. Lange said that in about 50 per cent. of these cases of acute diseases there were some slight changes in the mastoid tip. That simply shows how accurate have been our clinical observations up to this time. There can be no question as to the value of the *x*-ray in the study of these conditions and in the study of accessory cavity disease, but the principal point is this: that it is essentially a matter for the expert *x*-ray man. It is out of the question for every physician, or even for every hospital to try it. An *x*-ray, especially of the accessory nasal cavities, must be sent to a man who has special expertness in this particular line of work. A man who makes a good pelvic or chest picture may not necessarily make a good plate in this work. Then, of course the enormous expense of the thing puts it exclusively in the hands of large clinics and makes it applicable here and there for the rich patient. As a clinical method of diagnosis it is valuable, but it is not yet one that can be used in general practice.

Dr. Cullen F. Welty, San Francisco: This subject was up last year for discussion and I criticized it, as I am going to criticize it today for the following reasons: We have clearly defined indications for operative procedure in both acute and chronic mastoiditis. I would much rather depend on my judgment in an individual case and possibly, I may say, do an unnecessary operation than depend on any [illegible] for making a diagnosis. I have operated in a few cases to my knowledge in which probably the patients would have recovered without operation; at the same time I have not lost a single patient with acute mastoiditis and I maintain as an otologist that no such loss should occur. If we [illegible] on this thing in one case and that thing in another we [illegible] our individuality of judgment. We have all the [illegible] for us and it makes us sleepy.

Dr. [illegible] Ayres, Belleville, Ill.: I believe that the *x*-ray examination in mastoiditis is a valuable aid. It may be a little out of the reach of most of us but it should be used when available. I had recently a case in which the patient did not want to have the mastoid opened and I would have liked very much to have this means of diagnosis at that time.

Dr. Sydney Lange, Cincinnati: The presentation of a method of this kind before an audience that has not had the opportunity of seeing and studying the plates and comparing them with the clinical and operative findings may leave a doubt in the minds of some as to its practical value. I purposely refrain from showing any lantern-slides owing to inadequate facilities for darkening the room, but I have many of the original plates with me which I shall be pleased to demonstrate to those who may be interested.

While in the average case of mastoiditis, the clinical features may be clear enough, I am convinced after speaking with a number of otologists that operative indications are not always clear, and I believe that all recognized authorities have so expressed themselves. Politzer in his book makes the statement that the most extensive necrosis may occur in the mastoid without any of the usual signs being present. And I have seen a few such cases of mastoiditis in which there were indefinite general, cerebral or septic symptoms without the usual local signs of mastoiditis.

In one case presenting obscure septic symptoms the greater trochanter of the femur seemed to be the focus of infection. It was drilled into and nothing was found. The cause was a broken-down mastoid which did not declare itself in the usual way. I have not examined any case of thrombosis of the lateral sinus but I do not think that the thrombus would show on the *x*-ray plate.

CONTINUED SUBNORMAL TEMPERATURE IN INFANCY*

HENRY W. CHENEY, M.D.
Associate in Pediatrics, Northwestern University Medical School
CHICAGO

The opportunity to observe and study a case of continued subnormal temperature in an infant, recently, has interested me in the subject.

On looking up the literature, however, one finds much written about fever and increase of temperature, but very little recorded or written on subnormal temperature. The text-books, also, usually dismiss the subject with a few lines or, perhaps, in the description of a disease, merely say that the temperature may be below normal.

Have we not, as physicians, been too prone to disregard those depressions of temperature below normal and to consider only the occurrence of fever as of clinical significance? We do this perhaps from indifference or because there seems no ready explanation of the hypothermia.

Cases of noticeably low temperature in adults appear to be recorded more often than do those of infants or children. Then too, the cases observed have been usually of some fatal illness and the hypothermia was marked just prior to death.

Manson[1] of the Craig Epileptic Colony reports eighteen cases of subnormal temperature, more or less continuous, in which three patients were children. All were epileptic and all died. Of the children, one was a girl of 7 who was both tuberculous and epileptic and had a temperature of 91 F. before death. In the other two children the temperature sank as low as 81 in one case and to 76 in the other, both of course fatal. J. H. Williams[2] reports a 5 months old babe with tuberculous meningitis in which for ten days preceding death the temperature was below normal, hovering around 94 and 96 and at one time going as low as 87. Dr. F. W. Loughran[3] reports a 6-weeks-old babe who died of septic infection. The last two days before death the temperature varied around 84 F. and even dropped as low as 80 F. These references were all that could be found of definitely recorded cases in children or infants.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Munson: Some cases of Low Temperature, Arch. Int. Med., 1910, v, 120.

[2] Williams, J. H.: Med. Rec., New York, 1898, p. 640.

Other observers agree, however, that the condition of low temperature is usually a serious one, and much more liable to be disastrous than a corresponding elevation above normal. Inquiry among my friends who also see many babies elicited the fact that temperature below normal is not so uncommon, but that the condition seldom lasts long and is almost always followed shortly by death. In other words the usual subnormal temperature is a terminal condition.

Suppose we now inquire what are the sources of heat, and how an even temperature is maintained in the human body. It is probably unnecessary to mention that physiologists agree that the origin of the body heat is the oxidation of the food materials taken in. Just where this oxidation takes place is not well understood. There is little doubt that the energy manifested by the activity and work of the muscles, both voluntary and involuntary, is an important factor in heat production. This heat is distributed by the fluids of the body to its various parts and members. Heat production, then, in the muscles is controlled by the nervous system and, correspondingly, heat loss is regulated by the vasomotor and by the respiratory nerves. All of these various acts of heat production and heat loss are undoubtedly under the control of the heat center in the brain, which constantly exercises its governing influence. Thus we have the condition of a steady, even body temperature most highly developed in man, who, of all the animals and in spite of environment, maintains in health a constant temperature which varies but a minute fraction day after day and year after year.

In infants, however, this fine regulation is far from perfect and is easily disturbed. Thus we find slight causes creating greater disturbances in the child than in the adult.

Let us consider what are the causes of continued depression of temperature. These may conveniently be grouped under four heads:

1. Insufficient heat production.
2. Excessive heat loss.
3. Disturbed heat regulation.
4. Diseases of metabolism.

Under the first heading, insufficient heat production, may be classed those cases due to starvation or stenosis, to infantile atrophy or athrepsia, to the condition of prematurity, to inanition and to inactivity. Under the second, excessive heat loss, we place those cases caused by loss of body fluids, as in severe diarrheas or hemorrhages, also perhaps certain skin diseases. Under the third head, disturbed heat regulation, are the cases occurring in disease of the heart and nervous system, those due to drugs, to unconsciousness and to intoxication. The fourth head includes certain diseases of metabolism such as anemia, diabetes, and myxedema.

The first group of causes, namely, starvation, atrophy, prematurity and inanition are perhaps more likely to affect young infants and are often the cause of subnormal temperature.

One can easily understand also, how the loss of a considerable amount of fluid from the body, as in diarrhea or hemorrhage would at the same time lower the body temperature. The diseases of the skin in which the temperature is lowered are sclerema neonatorum, large or extensive burns and perhaps, also, severe cases of pemphigus.

Among the drugs which cause a temperature below normal are the general anesthetics, such as ether and chloroform, also nicotin and morphin. Alcohol, contrary to former views, does not raise temperature but depresses it, as I shall show later. It acts thus because it increases heat loss by superficial vascular dilatation and diminishes heat production by limiting muscular activity. Possibly, also, the heat center is directly affected by alcohol.

There seems to be some relationship between consciousness in an individual and a steady temperature. For do we not often find a subnormal temperature after the use of general anesthetics and of hypnotics, and also in profound sleep or concussion of the brain, in severe collapse or in the last stages of a fatal disease? In myxedema it is not at all uncommon to find a subnormal temperature and this has also been observed in diabetes and severe anemia.

It is perhaps needless to emphasize the fact that great care must be used in taking the temperature in infants and also in recording it, so as to make the record accurate and valuable. In infants the rectal temperature is undoubtedly the most reliable and this was the method employed in the case here reported. The various temperature readings in this case were all taken and recorded by trained nurses accustomed to the work and when the figures seemed especially low, another trial was made with a different thermometer, so that I am quite sure the temperatures, here recorded, may be depended on.

REPORT OF CASE

The history of the case I desire to report was as follows:

The babe was a 3 months-old girl when she first came under observation. The father had poor health, was an alcoholic and died of delirium tremens two months before the babe was born. The mother was in good health and this was her first and only child. She worked up to within four days of the birth. Labor was not difficult, lasting only three hours.

The babe was never strong and was breast fed only three weeks. Then began artificial feeding, first malted milk, later condensed milk. She did not take the food well and had to be fed with a spoon. The baby's birth weight was not known but at 1 month of age she weighed 5¾ pounds. She began to get thin when 6 weeks old and continued getting thinner until her admission to the hospital, when her weight was 4¼ pounds.

There was some gastro-intestinal indigestion on her entrance to the hospital, shown by occasional vomiting, undigested stools, etc. This, however, soon cleared up under a proper diet and daily colonic flushings.

The infant remained at the hospital for nearly five months during which time the temperature was more or less continuously subnormal, on one day going as low as 89 F. and frequently reaching 92 and 93 F. It was the exception for the temperature to reach 98 or 99 F. and only a few times did it go above those figures. For one whole week it was below 96, varying for the most of that time from 92 to 94.

The babe was fed a mixture of fresh cow's milk and water, the caloric value regulated somewhat as to the child's weight. She was either too weak or had no desire to suck her food through the nipple, for most of the time she was fed by a spoon or through a stomach-tube. The stools showed usually that digestion was good. The weight increased very gradually from 4¼ pounds on admission to 5½ pounds when discharged.

The child may have been syphilitic but an inunction of mercurial ointment daily for two weeks made no permanent effect on the temperature curve.

---

[3] Loughran, F. W.: Pediatrics, January, 1908.

As illustrating the harmful effects of alcohol in such cases, it may be of interest to mention that small amounts of whisky varying from twenty minims to two drams were given on six successive days when the temperature began to be low, with the expectation of raising it thereby. But, on the contrary, it fell to 92 and on the two days following remained continuously below 93. Later the whisky was tried again and from the sixty-fourth to the seventy-first day about one dram was given daily, when the temperature declined rapidly and, on the third day following, reached 89 F., the lowest observed.

External heat in the shape of hot-water bags was applied continuously for two weeks at first, without appreciable effect. A hot-water bath at a temperature of 105 F. was also tried daily for ten days, but with no permanent change noticed.

When the child was 7½ months old it left the hospital and has been lost track of; but it was apparently doing as well as usual, when it left, and was gaining slowly in weight, although the temperature was still the subnormal type.

The interesting question is, what the cause was of the continued low temperature in this case? I think it would come under the first heading in our classification, that of incomplete heat production. No doubt the condition of inanition had much to do with it. The inactivity also was a cause. The child was not active and playful as other healthy babes are, but would lie quietly in one position much of the time, making almost no disturbance and crying little. Although several months old it resembled the premature infant, because it had to be fed by hand; it was quiet and passive and lacked the life and vigor of a normal child.

The question has been raised whether or not there is anything in this condition analogous to the state of hibernation in animals. I find on looking it up that the hibernating state also is not fully explained or understood. Pembrey[4] says that during hibernation the temperature of so-called warm-blooded animals is much depressed resembling that of the cold-blooded animals; also that respiration and heart action almost stop and that absolutely no food is taken. There is an intermediate stage, however, when the animal is listless and inactive and with a body temperature below normal. In this condition its power of heat regulation resembles an immature mammal.

We cannot carry the analogy far, however, for the subnormal temperature and the inactivity are the only points of resemblance and, unlike the hibernating animal, this child's respiration and heart-beat were active and food was taken regularly.

My reasons for presenting this subject are, partly, the desire to place on record an unusual case and, partly, the hope that the discussion may bring out something further as to the causation and treatment of cases of subnormal temperature.

1230 East Sixty-third Street.

ABSTRACT OF DISCUSSION

Dr. J. S. Leopold, New York: I should like to ask Dr. Cheney how much the patient gained in weight during the period of observation? I have seen several of these cases of subnormal temperature in infants and the picture in this case seems to me to resemble very closely what is known in America as atrophy, and what Finkelstein calls "decomposition." There is loss of weight, subnormal temperature and at times collapse. The temperature usually becomes normal as soon as the weight curve remains stationary. Often subcutaneous injections of saline solution do good in these cases and bring the temperature up to normal.

Dr. Godfrey R. Pisek, New York: I saw in consultation one of the cases the author cited. The case was one of infantile atrophy. The temperature was 84 F. I remember I had to get a dairy thermometer to take the temperature. In that case all manner of expedients were tried to increase the temperature, but they failed. Hot-water packs, hot colonic flushing all failed, and in forty-eight hours the child died. In this case the condition of subnormal temperature had probably existed and been unnoticed for several weeks. These cases can be accounted for by profound disturbances of metabolism.

Dr. William J. Butler, Chicago: I believe the doctor mentioned one case of tuberculous meningitis running a subnormal temperature. I think it is rather the exception to see a subnormal temperature in these cases, although it is often but little above normal. I recall seeing a case of what was apparently meningitis running a subnormal temperature. In that case the temperature was subnormal all of the time; about 96 F. was as low as it went. There was dulness in the right apex. I thought it was either hemorrhage into the posterior fossa or a tuberculous meningitis with subnormal temperature. The middle ground was taken that it was possibly a combination of both, and the post mortem showed tuberculous meningitis and hemorrhage into the cerebellum. In this case there was arteriosclerosis, with its associate heart changes, and struma of one suprarenal.

Dr. Frank Gengenbach, Denver: What was the condition of the pulse, the result of examination of the heart and the appearance of the skin as regards cyanosis?

Dr. H. W. Cheney, Chicago: There was no loss of weight; the child made a gradual gain, weighing 5½ pounds when it left the hospital. As to the administration of some of the sodium salts, I think in another case I will try it, as they are said to cause a rise of temperature in infants. As to the heart action and condition of the skin, the pulse itself was about what would be normal for a child of that age. The skin was somewhat anemic, such as we can expect to find in an atrophic child like that, but there was no cyanosis. As to other measures, Dr. Coit says that he keeps these babies in a separate room with a temperature at 75 or 80 F. This baby was kept in a room with other children. Possibly an incubator might be tried with satisfaction.

IN MEMORIAM: WILHELM MEYER *

HOLGER MYGIND, M.D.
Professor of Laryngology in the University of Copenhagen
COPENHAGEN, DENMARK

My first words to-day must be words of thanks to the chairman of the Section on Laryngology and Otology of the American Medical Association, Dr. Chevalier Jackson, and to the other members of the committee for the honor they have shown me by inviting me to this session and asking me to read a paper here.

Permit me to say that it is a great and heartfelt pleasure for me to be among you and to meet so many confrères, whose names have for years been familiar to me; above all I appreciate the opportunity of seeing again the faces of old and faithful friends, though, alas! I miss some, who, having completed their appointed task, are now at rest.

It is, however, not without considerable hesitation that I have accepted your kind and gratifying invitation, for I have but little news to tell you with regard to our specialty—a specialty in which America occupies so prominent a position—but I feel that the attention paid by you was not only to myself but to the Danish school of laryngology founded by my late dear and honored master, Wilhelm Meyer. Such being the case, it may not seem inappropriate if, before speaking on more special and scientific topics, I give you a brief sketch of the life of that great otologist, to whom we are all so deeply indebted. Would the manner were worthy of the matter.

---

[4] In Schafer's Physiology.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Wilhelm Meyer was born in 1824 in the Danish town of Fredericia, where his father was a regimental surgeon in the Danish army.

In 1826 the family removed to Glückstadt in Holstein. Here Meyer passed his childhood and youth until, in 1843, he entered the University of Copenhagen as a student. Meyer's mother came of an old Danish family and she remained faithful to her native land until her death; his father, who was born in Eckernförde in Holstein, and the remainder of the family were distinctly German in their sympathies. Accordingly, on his return to Glückstadt after completing his studies in Copenhagen, Meyer found the greater part of his family circle hostile to Denmark.

For some time he assisted his father in his private practice in Glückstadt and while thus engaged caught scarlet fever. It was during the period of his convalescence after this illness that the insurrection against Denmark broke out in Schleswig-Holstein (1848). Meyer's father, to whom he was tenderly attached, immediately left the Danish army and joined the Germans, and it was doubtless owing to his persuasion that his son was induced to enter the insurgent army as a surgeon, the attack of scarlet fever having prevented his return to Denmark at the outbreak of war. Later he was, however, a Dane with his whole heart, and, as I have often heard him assert with warmth, loved his native country truly.

As a student at the University of Copenhagen, where he took the highest honors attainable, Meyer had greatly distinguished himself, and on his return to Copenhagen after the war of 1848-50 he was offered a position as physician at the University Hospital by Professor Fenger. But so bitter was the feeling against him at that time that the students called a general meeting to protest against any public office being filled by one who had served in the insurgent army. Meyer was thus shut out forever from that brilliant university career which his talents would undoubtedly have procured him.

After this he travelled for some time, visiting various European universities, studying principally internal medicine and forming friendships with many foreign colleagues which were to prove of lifelong duration. In 1853 Meyer established himself as a general practitioner in Copenhagen. At first he had a hard struggle, but it was, as at all times during his career, in unremitting labor that he found both his compensation and refuge. During this period he produced his first scientific work on "Bread, Especially Rye Bread," an extensive essay, principally remarkable for its thoroughness—one of Meyer's most characteristic qualities. By degrees his circumstances improved, clients became more numerous, and in course of time he became one of the most sought-after of private practitioners in the whole of Copenhagen.

It is, however, as an otologist that Meyer will be remembered, and, as he has often told me, it was his pity for suffering humanity that first attracted him to this specialty. In his extensive practice he constantly came across patients whom deafness, buzzing and pains in the ear had rendered almost desperate. Such patients the majority of the medical men of that period were only too glad to get rid of as quickly as possible, considering the ear to be a *noli me tangere*, and for which no treatment was possible beyond the ordinary syringing with water or dropping in of warm milk and oil. In the hope of rendering some assistance to such unfortunates Meyer made an exhaustive study of the otologic literature then existing, and, purely self-taught, he became by degrees one of the greatest otologists of his time.

It was while engaged in the treatment of ear diseases that Meyer made the discovery of the adenoid growths, a discovery which for all time will be associated with his name. On Oct. 22, 1867, a young girl came to his surgery to be treated for deafness. Meyer observed that in this case nasal respiration was almost totally impossible, even after treatment for chornic catarrh of the nose and of the throat, which did not alleviate the deafness. He came to the conclusion that respiration was impeded by causes to be sought for in the nasopharynx, and he therefore explored this cavity by passing his finger up behind the soft palate—which, strange to say, no one had done previously—and he found the nasopharynx full of peculiar swollen growths, on the removal of which respiration became perferctly free and the hearing improved.

Meyer now began to suspect that these growths were the cause of the patient's deafness, and on examining other patients with ear trouble found in several the same conditions in the nasopharynx. He continued his researches with characteristic patience and energy, and in 1868 published his first article on the subject in the Danish medical paper *Hospitals-Tidende*. In 1869 Schmidt's *Jahrbücher* had a report on this article, and in 1870 Meyer published his further investigations in *Medicochirurgical Transactions*, without, however, attracting much attention to the subject.

In 1873 Meyer published his classical description of "Adenoid Growths, Their Etiology, Pathologic Anatomy, Symptomatology, Consequences and Treatment" in the *Archiv für Ohrenheilkunde*, earning now for his discovery universal recognition and for himself undying fame.

Besides shorter articles relating to his specialty Meyer wrote an excellent paper in the *Archiv für Ohrenheilkunde* demonstrating the importance of necrosis of the walls of the tympanic cavity as an etiologic factor in chronic suppuration of the middle ear.

Great as he was as a physician, Meyer as a man was even more worthy of admiration, uniting, as he did, the highest qualities of head and heart. A remarkable memory, strong power of observation and a keen critical faculty bore witness to his superior intellectual powers. The last he employed impartially and so ruthlessly was he wont to criticize his own literary productions that authorship cost him an immense expenditure of time and labor. He therefore wrote seldom and unwillingly. I may mention in this instance that he was eighteen months writing his paper on the history of otology in Schwartze's large "Handbuch der Ohrenheilkunde," although it is only forty-eight pages in length. He first wrote a long and comprehensive essay, which he condensed and abbreviated twice before reducing it to the length desired for the "Handbuch." This little work is, however, justly esteemed a standard work, both on account of the learning it evinces and of the purity and polish of the style.

To these great intellectual powers Meyer added an almost unique industry and power of application. He was absolutely never idle. After a long and arduous day's work he would sit up far into the night reading not only medical works, but also works on all subjects which could interest the cultured mind: natural science, philosophy, literature, religion, etc. His knowledge was marvelous. He was an enthusiastic lover of music and no mean performer on the piano. As an astronomer he was more than an amateur, and many a summer and winter night has he spent studying the heavens through his large telescope. Finally, I may mention those wonderful linguistic gifts, which, as some of you may remember, aroused such universal admiration among his colleagues at the International Medical Congress in Copenhagen in 1884.

But noblest of all was that warm and faithful heart, which, beating under a seemingly formal and cold exterior, endeared him to all who had the good fortune to become intimate with him. To his patients he was always the tender and self-sacrificing physician for whom no labor was too wearisome. He was a faithful friend whose value was especially felt in adverse fortunes, and, though severe toward himself, he was always exceptionally lenient in his judgment of others.

Meyer married, at the age of 46, Catherine Jane Emerson, a widow, by birth Baroness de Bretton, a relation of Sir Lytton Bulwer. By her he had three children, all of whom are living. His son is a medical man in Copenhagen.

It was during a journey in Italy, in 1885, undertaken after a severe attack of influenza, that Meyer, who was then 71 years old, contracted the typhoid fever which in the brief space of a week brought the seemingly healthy man to his grave. His body is interred in the beautiful island cemetery at Venice, a fitting resting-place for one who ever loved the sea and had made his much-loved summer home on the very verge of the beautiful Danish Sound, so that the music of the waves might be ever in his ears. Of all who loved him—and they were many—none but his wife, who died a few years later, and one daughter had the privilege of following him on that last solemn journey over the silent waters of the lagoons. A simple stone marks his last resting-place.

The medical profession, however, felt that to the memory of so distinguished a member honor was due, and at the initiative of Sir Felix Semon a monument was erected in Copenhagen by subscription from all parts of the world as a graceful tribute to one of whom I can truly say:

> He was a man, take him for all in all,
> I shall not look upon his like again.

OBSERVATIONS ON THE VOCAL CORDS IN ONE THOUSAND CASES OF GOITER *

JUSTUS MATTHEWS, M.D.
ROCHESTER, MINN.

My report is made on the observations of the vocal cords in 1,000 cases of goiter examined during the past two years. About 95 per cent. of the patients were operated on; all were examined before operation and reexamined after operation.

The anatomy of the larynx may be passed over with the exception of the motor nerve supply of its intrinsic muscles, which will be considered only with reference to liability to paralysis from pressure by enlargement of the thyroid gland.

The cricothyroid muscles, which are the tensors of the vocal cords, are supplied by the external branches of the superior laryngeal nerves from the pneumogastrics. These branches enter the muscles so high that only the largest lobes, which extend unusually high on the throat, can exert pressure on them. All the other muscles, including abductors, adductors and decreasors of tension, are supplied by the recurrent laryngeal nerves, which also arise from the pneumogastrics. These opposing muscles are supplied by different fibers which merely travel in the same nerve trunk, either set of which, or all together, in any degree may be subject to paralysis.

In this series of cases, as well as in the observations of others, it appears that the fibers supplying the abductor impulse to the posterior crico-arytenoid muscle are the most readily affected by pressure.

The right inferior laryngeal nerve arises at the level of the right subclavian artery and, winding around that vessel, passes upward in the groove at the right side of the trachea and esophagus and enters the larynx at the edge of the cricoid. The left inferior arises at the level of the arch of the aorta around which it passes and ascends on the left in the same manner as the right inferior nerve. The relation of the left laryngeal nerve to the aorta and its longer course account in part for the fact that it is more frequently affected by local pressure. Moreover, the position of the esophagus to the left of the median line forces the nerve to take a position more exposed to pressure, especially at the level of the thyroid gland.

EXAMINATION OF CASES

In the examination of 1,000 cases there were found seventeen with paretic affections of both cords, ninety-three of the right cord and 162 of the left, making a total of 289 partial or complete paralyses in 272 individuals. Total paralysis of the right cord occurred eighteen times; of the left, thirty times. Partial or complete abductor paralysis of the right occurred fifty times; of the left, eighty-three times. Partial loss of both motions of the right occurred thirty-eight times; of the left, sixty-two times. Bilateral tensor paralysis occurred in four cases.

In classifying the cases as to the size of the right, median and left lobes, a division was made for each one-half inch in diameter. It was found that paretic conditions of the right cord increased from 5.3 per cent. in 226 cases with small or non-palpable right lobes to 25 per cent. in eight cases with lobes over 5 inches in diameter. Abductor paralysis and partial paralysis of both movements increased more rapidly in goiters ranging up to 3½ inches in diameter, and then gave place to a relatively greater increase of total paralysis. The left cord showed 10 per cent. of paresis in the goiters with small left lobes, increasing to 47 per cent. with those over 5 inches in diameter. There was a still more marked tendency for all affected cords to become totally paralyzed as the lobes became larger. This occurred in five of fifteen cases. Even great enlargement of the median lobe alone was seldom associated with affections of the cords. Total paralysis occurred in but two such cases; bilateral tensor paralysis in four, and minor affections in nine. In nearly every division, except that of the largest lobes, abductor paralysis, either partial or complete, was the lesion most frequently seen.

Although the average frequency of symptoms of pressure on the nerves was directly proportional to the size of the lobes, there were exceptions. For example: paralysis occurred when the corresponding lobe was not palpable. On the contrary, in some cases which had the most tremendous enlargement of the lobes, displacing and distorting the larynx and the trachea, there was no apparent effect on the movements of the cords.

---

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

In a series of 100 consecutive cases in other than goiter patients, or patients coming on account of laryngeal symptoms, there were found one case of total paralysis of the left cord without noticeable symptoms, one case of partial and one of complete abductor paralysis, and two of partial loss of both motions of the left cord. In one case only, the right cord showed a deficiency of both motions. These patients were more than normally liable to affections of the cords, since most of them came for other pathologic conditions in the nose and throat. But, since goiter patients are also especially affected by diseases of the nose and throat, it might be considered proper to deduct from the percentage due to goiter the 6 per cent. found in these cases. This would, in cases of slight enlargement of the thyroid, make the percentage for the right and left cord nearly equal, while in cases of greater enlargement the left cord would still show a relatively greater tendency to paralysis from pressure, probably on account of the more exposed position of the left recurrent laryngeal nerve.

The position of the lobes is quite as important as the size of the goiter, since, for goiters of the same size, affections of the cords are much more frequent in those cases with lobes located near the clavicle, especially if all or a portion of the goiter is intrathoracic. Exceptions to this are the cases in which the large lobes extend so high as to reach the external branch of the superior laryngeal nerve. This condition occurred in four cases which showed bilateral tensor paralysis caused by large, high median lobes. Firmness is likewise important, since small, hard lobes are more apt to injure the nerves than larger soft lobes.

Long duration of the goiter increases liability to vocal paralysis, probably because as a rule the older cases have the greater enlargement. Apparently there is also an additional danger from long-continued pressure.

Men are about three times as liable as women to paralysis from goiters of the same type.

Exophthalmic goiter does not differ materially from other forms of goiter in its effects on the vocal cords, except in cases of extreme hyperthyroidism, in which its effects are evidently increased as a direct result of general wasting of muscular tissue.

The age of the patient has no demonstrable relation to the pressure on the recurrent laryngeal nerves except that goiters of large size and long duration are more frequently found in older individuals.

RESULTS OF OPERATION

In five cases the partial paralysis observed before operation had disappeared after operation, showing that the pressure must have been of short duration and not sufficient to cause permanent degeneration of the nerve. In eight cases of partial paralysis following operation, probably due to the pressure of edematous tissue in the region operated on, later observations showed complete recovery. Twenty-two case of partial paralysis following operation were observed but once, so that the ultimate result was not ascertained. In several cases with disturbance of phonation after operation, positive diagnosis could not be made between paralysis and edema.

Twelve cases of total paralysis followed extirpation of the lobes; three of these were malignant. Two cases followed ligation of the thyroid artery. In four of these cases aphonia appeared two or three days after operation, indicating that the cause was pressure and not section of the nerves, and therefore that the prognosis was good. No patient with total paralysis, observed either before or after operation, was seen to have recovered, though, through lack of opportunity for reexamination after the lapse of considerable time, such recovery might have escaped notice.

The frequency of paretic conditions, often without change of voice or other symptoms, emphasizes the necessity for careful laryngoscopic examination of all cases before operation. This is important, since it is essential to the prognosis of postoperative lesions and might be especially valuable in some cases, as showing the possibility of repairing damage by suturing the nerve severed during operation. Moreover, a beginning paralysis of the laryngeal muscles, apparently due to the pressure of the goiter, would be an indication for early operation in order to prevent complete and permanent degeneration of the nerve.

TABLE OF OBSERVATIONS IN CASES OF GOITER

Number of cases	1,000
Cords affected (Right 110, Left 179)	289
One or both cords affected	262
Bilateral	17

Paralysis	Paresis.	Abductor.	Tensor
Right 18	38	50	4
Left 30	62	83	4

Right Cord

Size in inches	0–1	1–1½	1½–2	2–2½	2½–3	3–3½	3½–4	4–5	5+
Number cases	226	159	152	141	138	85	70	21	8
Cords affected	12	13	14	14	17	18	15	5	2
Number per cent.	5.3	8.1	9.2	10.0	12.5	20.6	21.3	23.8	25.0
Paralysis	1	0	0	3	3	2	5	2	2
Number per cent.	0.5	0.0	0.0	2.1	5.1	2.3	7.1	10.0	25.0
Abductor	6	7	8	5	7	9	6	2	0
Number per cent.	2.7	4.4	5.2	3.5	5.1	10.3	8.5	10.2	0.0
Both motions	4	5	5	6	7	6	4	1	0
Number per cent.	1.8	3.2	4.4	4.2	5.1	7.1	6.7	5.0	0.0

Left Cord

Size in inches	0–1	1–1½	1½–2	2–2½	2½–3	3–3½	3½–4	4–5	5+
Number cases	259	155	183	146	101	65	52	21	15
Cords affected	28	19	27	29	26	20	15	8	7
Number per cent.	10.8	12.2	14.7	20.0	25.0	30.7	28.8	38.0	46.6
Paralysis	3	1	3	4	3	2	5	4	5
Number per cent.	1.1	0.6	1.6	2.7	3.0	3.1	9.6	19.0	33.3
Abductor	11	10	13	15	13	10	6	3	2
Number per cent.	4.2	6.0	7.1	10.0	12.5	15.3	11.5	14.3	13.3
Both motions	13	9	10	10	9	7	4	1	0
Number per cent.	5.0	5.2	6.6	6.8	8.6	11.8	7.7	5.0	0.0

ABSTRACT OF DISCUSSION

Dr. W. B. Casselberry, Chicago: Elsewhere I have advocated the examination of the larynx in every case of goiter and have stated that paralysis, leading toward impairment of the voice, might be the determining factor in advising an operation for removing the bulk of the thyroid. There are so many cases in which there is hesitancy, where it is doubtful whether the patient should take the risk of operation, the symptoms not being extremely urgent, that if the vocal cords are examined and impairment of one or both observed it would plainly justify operation. I have had a case operated under these circumstances. Nowhere in the literature have we reports of such numbers of accurately observed cases. The essayist referred to one point that I would ask him to be a little more explicit, that is, whether he noticed preliminary paralysis of those nerves which cause the vocal cords to separate, thus permitting the closure of the glottis with dyspnea, to precede for a time the total paralysis of motor innervation. This greater vulnerability of the abductor fibers of the recurrent laryngeal nerve is known as Semon's law. I have noticed it in cases of compression of the nerve by aneurysm of the aorta. Even though the paralysis be one-sided, if that cord is fixed in the closed position, and there is a little swelling of the other side as from the "cold," dyspnea is produced. I would also ask whether he has observed from pressure by goiter a paroxysmal barking cough, which I have observed from pressure on the laryngeal nerves by enlarged lymphatic glands, especially by one gland located on the right side almost under the clavicle.

Dr. George F. Cott, Buffalo: I should like to call attention to the fact that in the removal of the thyroid, either partial or total, it is almost impossible to tell whether you are going to have paralysis on one side or not. It is sometimes impossible to find the thread-like nerve, especially if you have a good deal of bleeding; you are liable to include the recurrent laryngeal or to injure it. You may get paralysis days or weeks afterward, which, however, usually recovers. It does not always depend on the expertness of the operator either. The best men get a certain percentage of paralyses. I know a number of men who are most expert who have had this happen. I have had in twenty cases one case of paralysis that I know of and I think the reason I haven't observed more is that I did not examine the larynx in the others.

Dr. Henry Horn, San Francisco: The essayist did not speak of a preliminary bronchoscopic examination of these patients, so I suppose it was not carried out. It would have been of extreme interest and I think it is going to be one of our preliminary methods of examination in all cases of struma. I hardly feel competent to speak of the surgical treatment of struma, but in certain cases of large cystic goiter where there is dyspnea it is often a question to know how much to remove. If the bronchoscopic examination shows a half circle formation we know from the start that the operation can be made on that side and afterwards the cystic tumor on the other side will come to the middle and there will not be so much deformity. It is a bad term to use "bronchoscopic examination" for these cases as it is not necessarily that, but a tracheoscopic examination. It is an exceedingly simple procedure to pass the small tube of the tracheoscope in far enough to examine the sub-glottic region, and it seems to me that it is a means of diagnosis that should not be overlooked. There are three cases, so far as I know, of what is called tracheal struma and the second was diagnosed by means of the bronchoscope. For these reasons I hope that a great many will acquire enough experience to make such a diagnostic examination, which I consider entirely justifiable. In fact I believe a great many general physicians will find these examinations much easier than the use of the laryngoscopic mirror, for there are still many general practitioners who cannot use the mirror satisfactorily.

Dr. George Paull Marquis, Chicago: Carrying out the idea the last speaker has given us, I think a great many diagnoses as to whether these cases of struma are operable and as to the extent of operation advisable, can and should be made by means of the bronchoscope. I have during the past winter made several examinations for some of the Chicago surgeons for this purpose. In one case a diagnosis was made by the bronchoscope in which there was no enlargement of the gland on the outside, and by direct laryngoscopy I could not see any involvement, but on using the tracheoscope I found the condition about two inches below the vocal cord. The operation was performed by the surgeon and it was found that there was a lobe pressing from the posterior surface of the trachea. This diagnosis could not have been made in any other way.

Dr. Justus Matthews, Rochester, Minn.: As to Dr. Casselberry's question with regard to the comparative frequency of abductor paralysis, it occurred in 133 cases of my series while partial paralysis of both cords occurred in only 119. But while abductor paralysis was much the more common, I found in only a few cases abductor spasm associated with it. I attribute this to the gradual increase of pressure due to slow growth of the goiter which did not produce sufficient irritation of the abductor fibers to cause spasm. I found it in about eight or ten cases. Cough, associated with abductor paralysis, was not a rare condition, though not common. I found it, I believe, in at least fifteen cases. It was necessary to make a differential diagnosis between cough due to nervous irritation and cough due to colds or bronchitis, with relation to the giving of an anesthetic. The indication being to operate immediately in case of the former and to delay operation in case of the latter. We rarely, if ever, used the bronchoscope or tracheoscope in the examination of goiter patients, since most of them were to be operated on and the exact condition could be more accurately diagnosed at operation, and the passing of instruments would result in more or less inflammatory reaction that might delay operation. Our patients are practically all non-residents and anxious to be operated on and go home, so we make no unnecessary manipulations that might delay operation.

THE CURRENTS AT THE EASTERLY END OF LAKE ERIE AND HEAD OF NIAGARA RIVER *

THEIR INFLUENCE ON THE SANITATION OF THE CITY OF BUFFALO, N. Y.

GEORGE EDWARD FELL, M.D., F.R.M.S.
BUFFALO

Buffalo for many years has taken its water-supply from an intake near the center of the Niagara River, near its head at Lake Erie. The current at this intake runs from 7 to 9 miles per hour, carrying "220,000 cubic feet per second," which was considered at the time of the location of the intake as a valuable factor, influencing the character of the water through its rapidity. A location much nearer to the American shore or Bird Island pier was recommended by one of the engineers, but fortunately for the future of the sanitation of the rapidly growing city this was not adopted. The general course of the currents at the head of the river and in the lake had virtually nothing to do with the question of location. To the southward the sewage of the city was thrown partially into Buffalo River, which in its

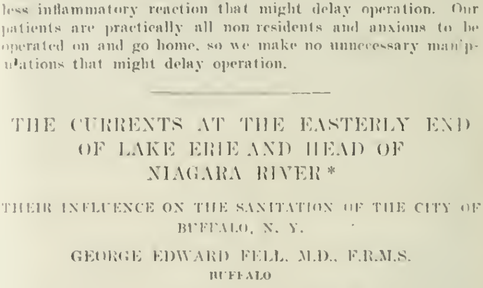


Fig. 1.—Chart of Lake Erie, trend of current easterly. The body of one of the victims of the wreck of the car ferry, shown in the illustration, was found in the Niagara River three or four months after the disaster. It had floated eastward with the current.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

current course down the Niagara runs with its contaminated water close to the American shore and gave most positive proof of its virulent nature (Figs. 1, 2, 3, 13 and others).

From the following account of the typhoid fever epidemic (Buffalo, 1894) it is seen how quickly an epidemic can be produced by contaminating the water supply of a great city. In the month of January, 1894 (official reports), there were twelve cases of typhoid fever in the city; in February eleven cases. Fine ice coming down the river clogged the entrance to the intake in the middle of the river. In the emergency, and as a provision in case of a large fire, the Bird Island inlet (No. 13) at the easterly side or shore of the Niagara River was opened and more or less of the waters of the contaminated Buffalo River pumped into the water-supply in March, 1894. The number of typhoid fever cases jumped from 11 cases in February to 510 cases in March. As soon as the cause of the epidemic was discovered and the shore intake closed, the cases decreased in number, so that in June, 1894, but 15 cases were reported by the health authorities. Just remember this when we discuss the possibility of throwing an entire winter collection of typhoid epidemic débris into the same water-supply.

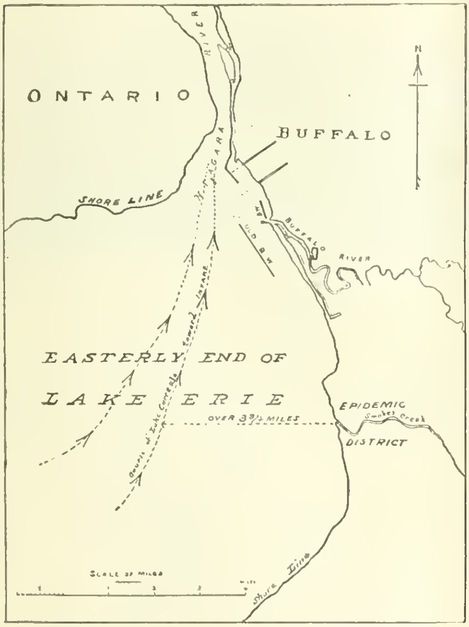


Fig. 2.—Eastern end of Lake Erie, City of Buffalo and head of Niagara River.

Now to indicate that the water of Lake Erie to the southward of Buffalo and about a mile out in the lake is clinically, and virtually bacteriologically, pure, we note that the intake of the western New York water works, from which the supply to the community of Father Baker, numbering several thousand, has been supplied for years, has never known a case of typhoid fever. This is the character of the water according to the testimony of the currents which dominate the area directly westward of the long series of United States breakwaters, which the charts indicate (Figs. 3 and 4 with and without the breakwaters).

CONDITION WHICH BROUGHT ABOUT THIS INVESTIGATION

On the charts (Figs. 2, 3, 4 and 5) will be noted the location of Smoke's Creek, and the Lackawanna Steel Plant, which was under construction when, in the fall and winter of 1903, an epidemic of typhoid fever broke out along the banks of the creek where the laborers were living under deplorable conditions.

Happening at the same time as the noted epidemic at Ithaca, N. Y., the conditions were considered somewhat parallel by many prominent physicians. One prominent physician said, (so reported), "What they have experienced at Ithaca we are liable to experience at any time from the same condition." A representative of the state board of health reported, "Existing conditions were excessively dangerous to residents of the immediate neighborhood, and to the people of Buffalo."

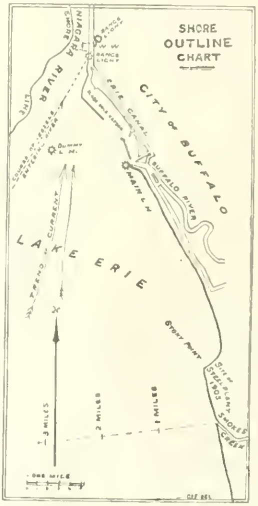


Fig. 3. Shore outline chart, from Smoke's Creek, the epidemic district to Buffalo Water Works intake

The health commissioner of the city, and 90 per cent. of the physicians of the city through newspaper interviews voiced but one opinion, and that was of positive and certain great danger when the spring freshets carried the débris from the typhoid district at Smoke's Creek out into the lake. The epidemic of 1894, costing over a hundred deaths, was not forgotten. But the general belief was openly expressed in one of the most prominent newspapers of the city of March 4, 1903. The article was headed, "Buffalo's Peril and Its Source." A chart of the lake front on the front page of the paper, depicting the outflow from Smoke's Creek, coursing outside of the breakwaters (Chart 4 with breakwaters), and directly toward the intake, had the following description of the impending disaster:

> The above map, showing the source of the city's water supply conveys a striking object-lesson to the people of Buffalo. Near the top is shown the pumping station, where water is drawn from Niagara River to supply the city.

At the lower end is seen Smoke's Creek, emptying into the lake its daily burden of pollution in the form of millions of disease-breeding germs, the drainage of the great steel plant colony at that point. The currents all set directly toward the point where the lake empties into the Niagara, and the outlying breakwalls direct this deadly filth-laden current toward the intake of the Buffalo Water Works. (Chart 4.) All winter long an army of laborers have been working at this point and living in improvised shacks on the premises. There is no sewerage, and slops and filth of every description have been dumped in immense quantities on the surface. With the first spring thaw this entire mass of pollution must inevitably be washed into the lake, and no human power can prevent its being swept out into the Niagara River, pumped into the reservoir, and distributed with its burden of disease and death throughout the length and breadth of the city.

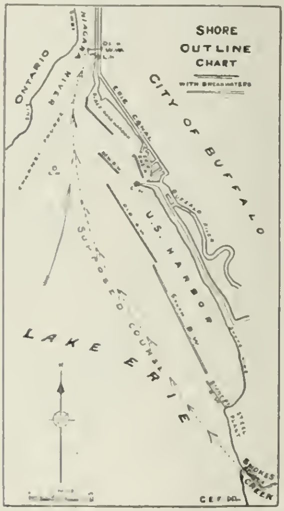


Fig. 4.—Shore outline chart, with breakwaters constructed by the U. S. Government, showing erroneously supposed course of currents from Smoke's Creek.

These reports naturally spread consternation in the city, gave the city a bad name abroad, kept industries away (so reported), and did great harm to the community.

When this agitation was its height, I questioned the truth of it, and stated to the editor of a leading paper that there was no reason for such a scare, that it was uncalled for, and that proper investigation of the currents of the lake and river would so demonstrate. My stand was actually ridiculed by one paper. I was berated for presuming to question the statements of the authorities as though an old citizen had no right to assist in protecting the community in which he lived, under such contingencies. It being a public matter, I gave to the public the following statement:

> When a careful study is made of the currents at the head of the Niagara River it will reveal that we are not in any danger of having our present intake supply of water seriously infected with septic material coming either from Smoke's Creek or Buffalo River, not only in the spring freshets but any time under existing conditions.

I was opposed *in toto* to the views of the great majority of our leading physicians and the state and city health authorities. But one physician, as I recall it, Dr. Matthew D. Mann, of the hundreds interviewed, expressed the idea that the currents might avert the threatened disaster.

Through the assistance of the editor of a prominent paper I obtained the use of the little steam yacht *Empire* and its old engineer, and demonstrated to my satisfaction by preliminary experiments, the truth of my assertions. This was as far as I intended to proceed, as I had not time to give to a more complete investigation of the subject. The mayor of the city, Hon. Erastus C. Knight, knowing of my former experience as a hydrographic engineer, and believing there might be truth in my statements, requested the continuation of the work and gave it his unqualified support. This placed the work on an official basis. The investigations extended over three months of time and were carried on at considerable personal expense, which was never reimbursed.

PHYSICAL CONDITIONS

From ordinary observations of the geographical features and the arrangement of the breakwaters at the easterly end of the lake, it would appear on superficial examination that the littoral or shore current at Smoke's Creek would proceed to the west of the breakwater limits. It was found on observations of the current that it passes into the openings between the breakwaters, and that under the ordinary conditions existing when the lake is at normal height and when the gales from the west prevail, the American shore waters at the eastward end of the lake hug closely the easterly side of both river and lake. If Buffalo Harbor was a landlocked bay, with but one narrow entrance and no outlet, there would be an ebb and flow, influenced entirely by the rise and fall of the lake level as at Erie Harbor (Presque Isle), Pa. At Erie Harbor when the lake rises the water rushes through the one channel opening into the bay at the rate often of 7 to 9 miles per hour, and when the lake falls it passes out as rapidly, according to the rapidity of rise and fall in the lake. This I know from personal observation. It is merely a question of water seeking its own level. But the condition at Buffalo is very different. We have the terrific outflow of Niagara Falls

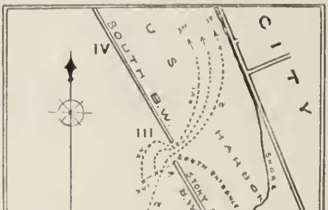


Fig. 5.—South channel entrance, showing actual currents.

exerting its power at the head of the Niagara (a flow of "215,000 cubic feet per second"). This flow is always to the northward—in one direction. The breakwaters act as barriers holding back the water until it reaches the openings between them, when it passes through, as our floats indicated, but not in sufficient quantity to equalize the level, or to make up for the continuous flow to the northward to the falls. Hence the condition is usually constant, even with sudden fluctuations in the water of the lake, which are usually slight.

Fig. 3.—View of south channel in distance from superstructure, Union Bridge.

DESCRIPTIONS OF FLOATS USED

The float consisted of two tin cans (Fig. 15) tightly sealed, each 3 inches in diameter by 6 in length, the lower one weighted sufficiently almost to submerge the upper one so that the wind would not influence it. The lower one was placed so as to float clear of the bottom of the lake, the observations thus recording the average current—not top or bottom current—of the water through which it coursed. Each float was followed by a policeman in a boat as an absolute necessity to keep track of it, throughout its full course. Many more observations than are depicted on the charts were made, all of which emphasized the fact that the currents follow the courses given in the charts.

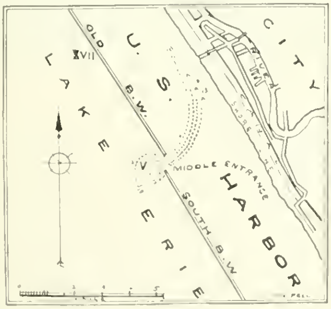


Fig. 7.—Middle channel entrance to U. S. Harbor. Actual currents.

Complete detail charts are provided showing the course of the current observations, covering the area influenced by the question at issue. They will be described together with the detail of the course of the floats, beginning with those indicating the shore currents at Smoke's Creek, or proceeding from the south, northerly.

Observations were made when the lake was under normal conditions as to stage of water, and with light winds, the condition usually prevailing in the summer season.

To appreciate the import of this work it must be remembered that the generally believed course in a freshet of Smoke's Creek was that it would course out into the lake away outside or to the westerly of the breakwater, as shown on the chart (Fig. 1).

CURRENTS AT SOUTH HARBOR ENTRANCE AND SMOKE'S CREEK

Two floats were used here and placed 100 feet and 300 feet, respectively, from the shore at the mouth of the creek. In the course of five hours they had floated northward about parallel with the shore and about a quarter of a mile from their starting point (Fig. 5).

A float was placed one mile out in the lake from Smoke's Creek, and arranged to take in a depth of 28 feet of water. It passed into the South Harbor entrance, as shown by same chart, and what is significant—within a short distance of the northerly end of Stony Point breakwater. Floats located 200 feet, 500 feet and 1,000 feet westward of the north end of Stony Point breakwater passed into the inner or United States Harbor through the south channel entrance, and in a broad sweep well toward the eastern shore of the harbor (Figs. 5 and 6).

As the mass of water passing eastward through the south channel entrance is very many times more than could possibly pass out of Smoke's Creek even when filled to its greatest capacity in freshets, it is reasonable to believe that material from Smoke's Creek does not pass north of the south channel entrance; also that the character of the water passing along the westerly side of the south breakwater is of same purity as that one mile out in the lake at Smoke's Creek. I have already indicated [illegible] the clinical demonstration of the purity of the water used at Father Baker's establishment at West Seneca, which uses water taken from this part of the lake.

Fig. 8.—View of middle channel from roof of Export Elevator

MIDDLE CHANNEL ENTRANCE

Floats of suitable depth placed 75, 150, 500 and 1,000 feet, respectively, westward of north end of the south breakwater passed into the United States harbor through middle channel entrance, and in a wide sweep to midharbor, before passing northerly toward the light house pier (Figs. 7 and 8). The conclusion here must be that water coursing along the westward side of the south breakwater, even as far west as 1,000 feet from the breakwater, passed into the middle channel entrance, and renders much more remote the probability or possibility of waste water from Smoke's Creek ever passing westerly of the breakwaters. But let me pass on to the northern section of the harbor.

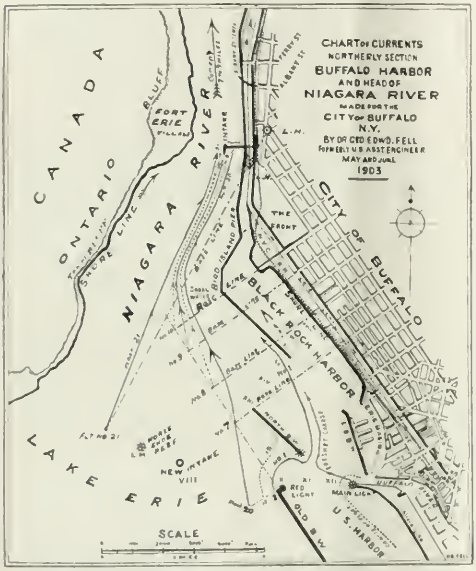


Fig. 9.—Chart, northerly portion of Buffalo Harbor, showing actual currents and main harbor entrance.

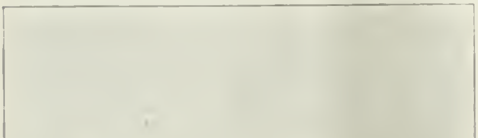


Fig. 10.—View of main harbor entrance from roof of Chamber of Commerce building.

OBSERVATIONS NORTHERLY SECTION OF BUFFALO HARBOR AND HEAD OF NIAGARA RIVER

Here we find a most extraordinary and interesting confirmation (Figs. 9 and 10) of the facts which we are forced by these observations of natural conditions to accept, namely, that no material from Smoke's Creek or Buffalo River gains access to the Niagara River intake under normal conditions of wind and weather mentioned, and, in all probability, under no abnormal conditions with which old lake residents, who have observed these waters for many years, of which I am one, are acquainted.

Float 1 (15-foot depth) started at a point 50 feet westward of the northerly end of old breakwater (red light), instead of passing to the northward, as many would believe, passed eastward and southward, fully 150 feet southerly of the north breakwater.

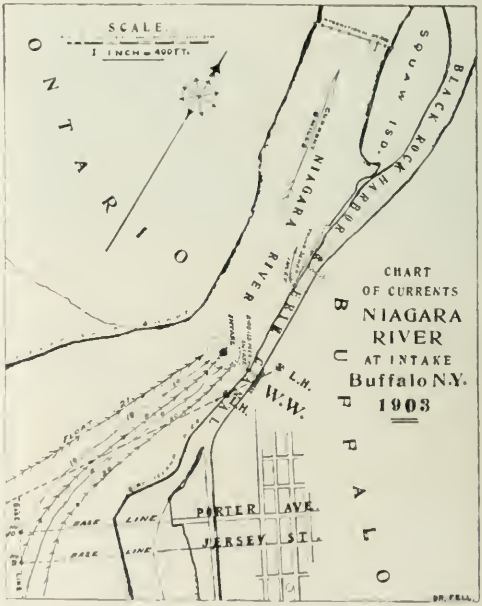


Fig. 11.—Chart of Niagara River at intake. Detail of currents.

The wind at the time was blowing briskly from the east, which was directly against the course of the current, and the float. Mayor Knight witnessed this demonstration. The idea that the wind produces currents opposing the natural flow of water was proved to be false in this case. The float further coursed in a good sweep to the north and east and lodged against the west side of Bird Island Pier as shown on the chart. This might be called the initial official observation, except that I had known of this current from almost the beginning of the construction of this north breakwater, watching it daily in my trips to what was then my summer home at Crystal Beach, Ontario, and studying it for some time since, the fact is emphasized that this current always sets from the lake toward the shore and forces the outflow from Buffalo River and the United States Harbor to the eastward; that all septic material from these portions of the harbor is actually driven further eastward from the intake pier than it was before this breakwater was constructed. Again, I have frequently observed the outflow of Buffalo River in the spring freshets. From any of the high buildings (Fig. 10) the line of demarcation of the muddy water of Buffalo River can be distinctly seen to the east of the clear blue water of the lake. I have called the attention of several engineers of repute to this fact, which they have verified. The great importance of this current on summing up the results of all these factors, which have been questioned by engineers who have made a cursory examination of the question, will be noted.

Float 19 started 500 feet westward of the north end of the old breakwater, was picked up about midway along the westward side of the north breakwater indicating that at that point the current divides, one portion going north and the other south (Fig. 9).

Float 20 started at a point 1,000 feet westerly and at right angles at the north end of the old breakwater, in 37½ minutes was picked up at the intersection of Virginia Street, prolonged westerly, and the prolongation of the old breakwater northerly. From this point it was again started and followed to a point one-half the distance between the intake and Bird Island Pier, or 320 feet eastward of the pier. Without giving the course of intermediary floats, which show on the chart, it was found that the one started from the intersection of Jersey Street and the old breakwater prolonged took the course to the center of the intake pier. (The new intake takes the same water). From this it is seen that the intake is supplied by water coming from the starting-point of Float 9, intersection of Jersey Street and breakwater prolonged, and which if carried in the regular course of lake flow from the southward strikes a point over three thousand feet westerly of the north end of old breakwater (red light—Fig. 9).

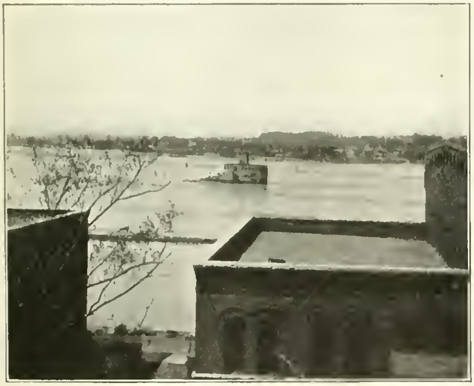


Fig. 12.—View of present Intake from American shore.

Now let us see what kind of condition would carry any material from Smoke's Creek to the intake under the conditions of wind and weather cited. If we continue the general course of this current further southward to opposite Smoke's Creek it will be found to be about three and one-half miles out in the lake. Hence, to reach the intake pier, material from Smoke's Creek would have to start about three miles out in the lake to begin with. Taking it as it is, material from this creek floats along the shore, but would have to jump over 1,000 feet out into the lake before it could pass the current passing into the south harbor entrance. If it could do this it would have to repeat the performance at the middle entrance, and if such an absurd occurrence could take place it would be necessary for the floating material to jump out at least 500 feet at the north end of the old breakwater to prevent being forced around the southerly end of the new breakwater and be carried northward closely skirting the Bird Island Pier at the region of the intake. And again, as I have shown, to reach the intake such material would have to gain a position at least 3,000 feet west of the north end of the old breakwater to reach the intake pier.

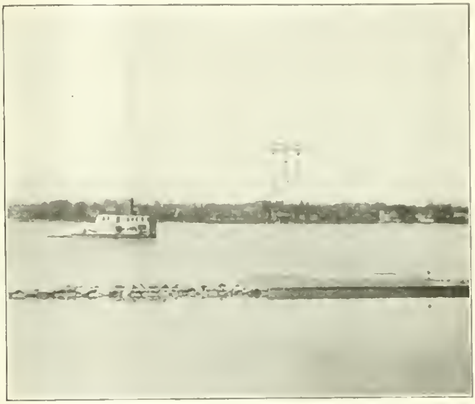
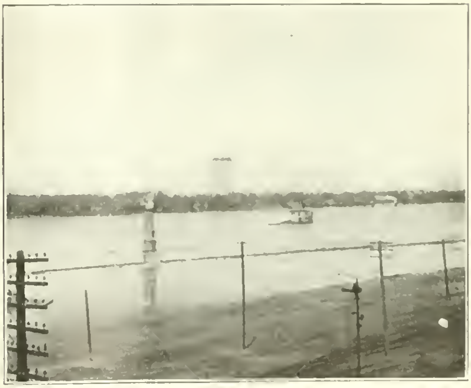


Fig. 13.—View of Intake, and Bird Island Pier Intake, the latter the source of epidemic of 1894, costing over 100 lives.



14. View of Intake, range lighthouse and Bird Island Pier.

That any one could make the statement that material from Smoke's Creek, in the face of such natural conditions, could reach the intake is absurd, but the assertion has been made by sanitary engineers. No one who valued his reputation would do it after knowing the actual conditions of the currents, which through my investigation was first definitely given to the knowledge of the citizens of Buffalo. The strongest argument in favor of my stand in this matter is that in the spring when the rains poured down, when both Buffalo River and Smoke's Creek were pouring their waters filled with typhoid infection, out into the lake with their fullest flow, no increase in typhoid fever or even in enteric diseases, according to statistics, took place. Had the material from the epidemic district of Smoke's Creek and Buffalo River reached the intake and been pumped into the water-supply, notwithstanding the precaution to boil the water, which was only partially carried out by the people at the time, there would have been a typhoid epidemic such as no large city in the country ever dreamed of, and the prognostications of dire results from the Smoke's Creek epidemic would undoubtedly have been realized. One great point of interest which I believe will make this paper appreciated is the remarkable and wholly unexpected course of these currents, never before studied, and their clear influence in protecting a great city, (through the location of the intake pier by fortuitous decision only, and not from any true knowledge of current conditions based on investigation), from its own infectious factors. The epidemic of 1891, costing over 100 human lives, I may again state proves this point.

Special attention is called to the current passing around the southerly end of the new breakwater. Its influence can be observed, as I have stated, any time in the spring freshets from the high elevations of the large buildings overlooking this portion of the harbor. It retains the freshets of Buffalo River and all material coming along the shore of the United States Harbor to the eastward and forces it closely along the westerly shore of Bird Island Pier, and much of it passes into Black Rock Harbor and the Erie Canal. From the Morgan building, in which my office formerly was located, I have observed it hundreds of times.

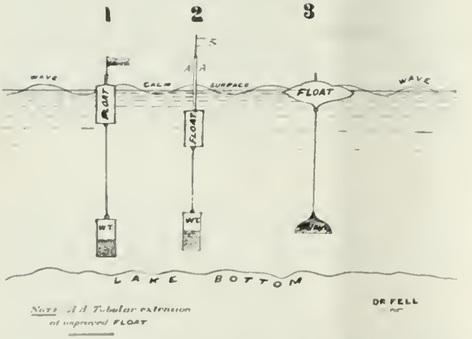


Fig. 15.—Diagram of floats. No. 1 used. No. 2 recommended. No. 3, a form condemned by author as unreliable in light seas and wind.

It was natural that opposition to my views based on the results of these extended and careful observations of the currents should persist even after the result was known. It was held that undercurrents, never known in any lake, occurring through unknown or never heard-of wind conditions, carried the infection from both Smoke's Creek and Buffalo River out to the Buffalo intake, and also that the north breakwater aided in carrying infection farther out in the lake than before it was constructed. And it is on record by one New York City engineer's report that the waters along the westerly side of the old and south breakwaters is seriously contaminated according to his bacteriological reports. I am not entering into any controversy with those who differ from me on this subject at the present time, but present these observations honestly, carefully made, and from an engineering point of view, without triangulation, most interestingly and correctly located and charted.

VALUE OF CURRENT OBSERVATIONS TO THE CITIES ON NIAGARA RIVER RECEIVING THE SEWAGE OF BUFFALO

About the year 1868, prior to the location of the draw of the international bridge (Fig. 11), I assisted in taking triangulation observations of the current of the river for about one-half mile south from and to the bridge site. This work was done at the suggestion of the officers of the Corps of Engineers, U. S. A., to aid in determining the rapidity of currents with reference to the best location of the draw of the bridge and resulted in a change from the proposed location from the center of the river in 36 feet of water to the eastern side in 16 feet of water. It also demonstrated that at this point the currents followed closely the general axis of the river, so that the pure water of the river follows the Canadian shore, and the contaminated water, owing to virtually the entire sewage of the city of Buffalo being thrown into it, the American shore. If the city of Niagara Falls takes its water-supply from the Canadian side of the river at a suitable point relatively pure water should be obtained. This observation may apply to many other cities.

It is to be sincerely hoped that the befouling of our potable water-supplies through sewage thrown into the lakes, rivers and streams of the country will be discontinued, as it can and should be.

21 West Eagle Street.

PRESENT-DAY PROBLEMS AND PROGRESS IN PREVENTION OF TYPHOID FEVER*

WALTON FOREST DUTTON, M.D.
CARNEGIE, PA.

The health of a people is its most valuable asset. This truth has been recognized by most governments of the world. They have found that the virtue of national strength lies, in great part, in the conservation of national health.

The United States government in its battle against malaria, yellow fever, cholera, uncinariasis, and plague, has accomplished much for the common good, but seems to have taken little interest in the prevention of typhoid fever. The first effort of any magnitude in this direction was during the Spanish-American war. The result was a signal, dismal, and disgraceful failure. The camps of Chickamauga, Tampa, Fernandino, Anniston, Montauk Point, and those in Cuba, were enough to arouse the medical world to the inefficiency of the medical department in the prevention of typhoid fever. The national government's aid in the past twelve years, however, has materially increased, but not to the degree of one of intrinsic value to the people of the country.

It has been, comparatively, a recent procedure for the states and municipalities to take active part in the prevention of typhoid. Rural districts in all parts of the United States and Canada are practically without preventive measures. In northern Canada, during the year 1909, typhoid fever appeared to be generally epidemic, especially in the mining regions.

---

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The preventive measures used are nothing beyond the occasional disinfection of stools and urine with chlorid of lime or bichlorid of mercury, and the boiling of drinking water. Contaminated springs and wells are not condemned, but cleaned out, sprinkled with lime or salt, and used again. Within the scope of my personal knowledge are several dug wells that have been the source of typhoid for twenty years. Any reference to them, however, as a means of infection, is met with apathy on the part of the consumers.

Present day problems, as well as those of the past, concern, first, the individual; second, the community; third, the state.

In considering the individual, we must take his responsibility or importance as a factor in the causation or prevention of typhoid fever. The individual, in health, may be the means of carrying and distributing typhoid germs, and, in fact, may be the sole origin of the bacilli.

We know with what ease he may carry the bacilli by contaminated food, etc., and, on the other hand, through some error of diet or irritation the digestive

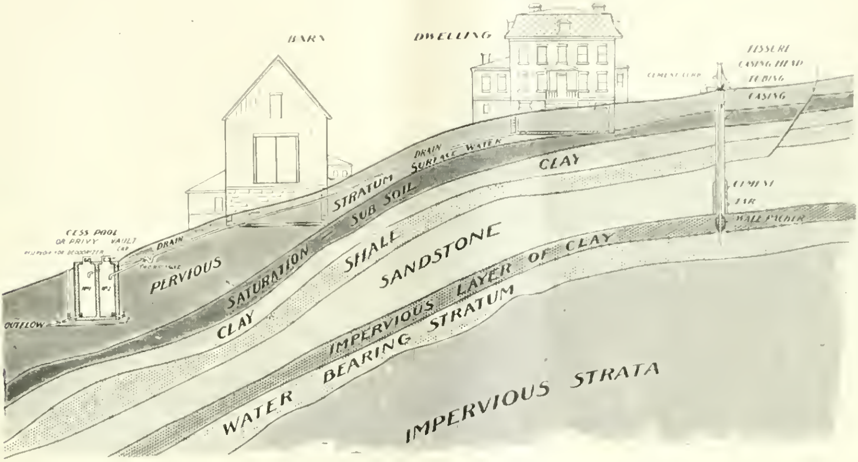
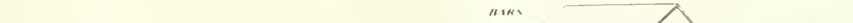


Fig. 1.—The proper method of sanitary construction in rural districts.



tract, the colon, paracolon, or the paratyphoid, may, I believe, generate typhoid.

The individual comes to be a factor in the prevention of typhoid through a due process of education and law. He must be educated to know the nature of typhoid fever and the processes by which bacilli may be disseminated. Laws concerning preventive medicine and public health become more forcible through the individual's hearty cooperation.

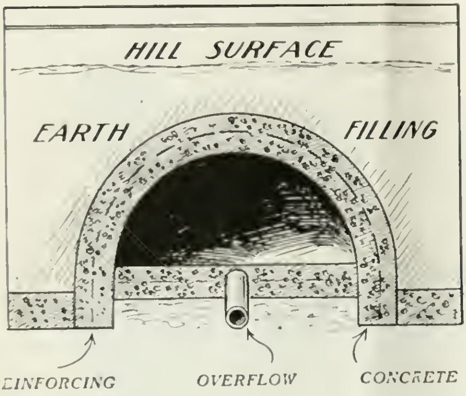


Fig. 3.—Concrete spring cover.

The problem of the community is somewhat more difficult than that of the individual or the state. An epidemic may present many sources of infection and the situation may be complicated by the restriction of the authority of the community.

A commendable procedure, however, is the isolation of bacillus-carriers until the microbes can no longer be found in them. Precautions should be taken that the discharges of the carrier will not be a source of danger to his family, and to others. The individual is warned of the danger of the dejecta, urine, kissing, coughing, etc., and taught the processes of rendering these harmless. He is also to be instructed to wash his hands after defecation, and before handling clothing, foodstuffs, or vessels used for drinking purposes. This warning applies to the healthy, as well as the unhealthy bacilli carriers. A very great deal of responsibility rests on physicians, nurses, and hospital authorities. It requires tact, skill, and ingenuity to impress on individuals especially, the gravity of the disease, without causing undue timidity on the part of the persons involved.

The supervision of carriers employed as teachers, nurses, cooks, or employes in bakeries, dairies, restaurants, saloons, etc., should be rigid, for the community has a right to insist on the isolation of such carriers, until such a time as they are free from the germs. Hospitals should regulate their subordinate personnel, keeping careful record of all known bacillus-carriers, and using every precautionary measure to prevent contamination by instruction and enforced cleanliness.

Physicians should keep a record of all typhoid cases and systematize the record of carriers that due prophylaxis may be secured. The healthy, as well as the unhealthy germ-carriers, may be trained in the importance of prophylaxis, and thus reduce the source of danger to a minimum.

In every case, systematic search should be made for the source of infection, and the finding of bacillus-carriers will prove an important adjunct in the prophylaxis of typhoid fever. The prevailing idea that healthy carriers cannot be brought under supervision like other carriers is worthy of serious thought. The time is near at hand when the community and the medical profession will have the problem solved for their ready perusal and use.

The state is the great supervisor of preventive medicine and public health. In its hands lies the governing power, which, if duly exercised, can eliminate, not alone the major, but the minor sources of diseases. In Pennsylvania, the department of health, under the efficient supervision of Dr. Samuel G. Dixon, has typhoid, as well as other diseases, under practical control. From this department, means of communication is had, through its police system, with every dale, hamlet, and city, within the borders of the state. Within a few hours, infections and contagious disease, in the most remote part of the state, is reported to the department of health and receives prompt attention.

Our present knowledge of typhoid is limited to the following factors as sources of infection: water, food, personal contact with the diseased individual and insects.

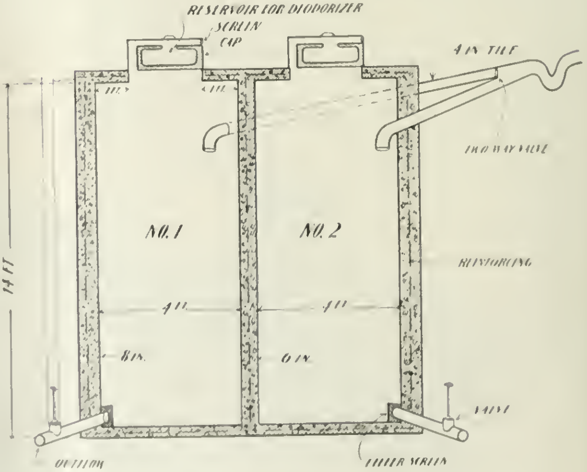


Fig. 4.—Concrete cess pool or privy vault of two compartments.

A great deal of progress has been made in eliminating water as a factor in our large municipalities by filtration, or by supply from large fresh-water lakes and streams.

The water-supply in small towns and rural districts presents a problem of more difficult solution. I believe however, that this factor may be overcome by proper sanitary regulation and legislation enforcing the protection of wells and springs. (Fig. 1) All wells should be drilled and the supply should be from depths beyond all possible contamination by surface or fissure water. This may be best accomplished by casing the well to or on a stratum of rock or shale which is impermeable to surface, subsoil, or fissure water, and above the supply of water to be used for drinking purposes. A well not cased in this manner my be protected by a wall-packer. It is advisable, whether using a wall-packer or casing on the shale or rock, to run four feet of tar around the bottom; and above the tar, three feet of cement, or vice versa. The top of the casing should be protected with a casing-head, and the pump so adjusted that it will be both water-tight and air-tight. If, for any reason, the well must be dug, the tile (rough stone should never be used to wall a well) should be put down to an impermeable stratum, the bottom protected in the same way as the drilled well, each joint cemented thoroughly and the top protected by a concrete curb, as it keeps out the surface water and is easily cleaned.

The pathetic inscription of "the town pump" might be written as an epitaph on many a tombstone. The vine-covered spring where the wayfarer's thirst has been quenched and the rock-walled dug well are landmarks of the dark ages of sanitary science. The poetical "moss-covered bucket" has held a beverage deadly to thousands of human beings.

It is therefore time for a change from the ancient custom of placing dwellings, barns, privy vaults, etc., in such a location that they will drain into the spring or well, either over the surface, or through the soil, or permeable stratum (Fig. 2). Springs which may possibly be contaminated should be condemned, or they should be protected by cement or brick (Fig. 3). The shield or covering should be inserted into the surface far enough to shut out contamination from local sources. The basin of the spring may be easily constructed so that it can be cleaned at any time.

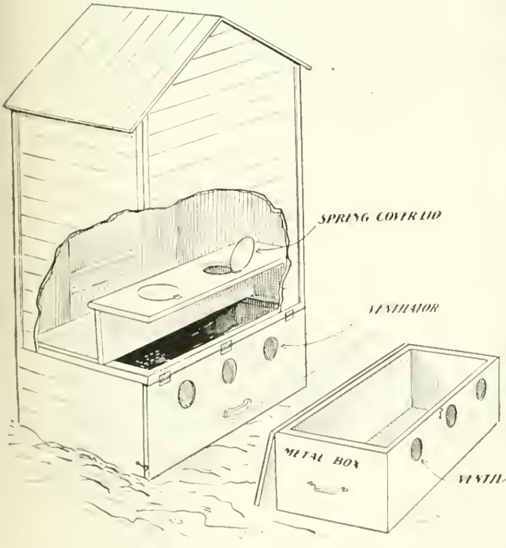


Fig. 5—Perfection box closet.

Municipal sanitation has taken a step forward in disposal of garbage. Seattle, Washington, Milwaukee, Wisconsin, New Brighton, Long Island, Vancouver, British Columbia, and Westmount, a suburb of Montreal, have destructors in successful operation. The reduction method, used by Cleveland and Columbus, Ohio, seems to be profitable and efficient. The examples set by the foregoing cities should be followed by all other American towns and municipalities. Rural districts, by the use of metal cans and wagons, may accomplish the same end, in an unobjectionable and sanitary manner, if instructed and compelled to do so.

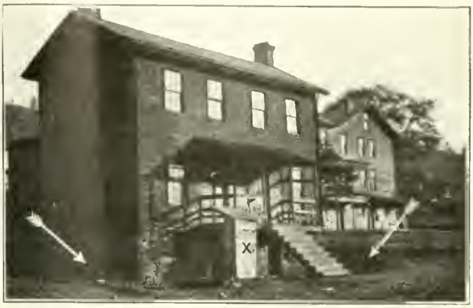


Fig. 6.—Well which has been contaminated twenty years.

The care of feces and urine presents another problem for rural districts. This problem can be effectually met in three ways.

The first way is by the construction of a double compartment, reinforced concrete cesspool or privy vault (Fig. 4). The cesspool or vault should be so built that only one compartment is in use at one time, thus providing for the disinfection and cleaning of the other.

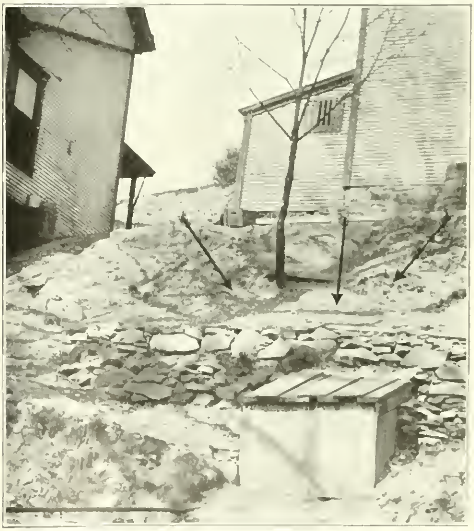


Fig. 7.—Drainage from house, barn and closet toward spring

The second is by the construction of a perfection box closet (Fig. 5). This closet may be so constructed as to be perfectly sanitary, allowing for free ventilation.

providing for disinfection, and screening from insects.

The third is by the use of a closet in which the stools and urine are sterilized or disinfected before being discharged into soil-pipe or drain. All railroad cars and vessels on bodies of fresh water should be provided with closets that disinfect and sterilize the stools and urine before discharging them.

The present method of constructing cesspools and privy vaults is a great error in so far as it pollutes the soil in the immediate vicinity, to say nothing of the drainage is some distance from the cesspool. The seeds of disease that are sown in the soil and the subsoil to-day will grow and be reaped in the harvest of disease and death to-morrow.

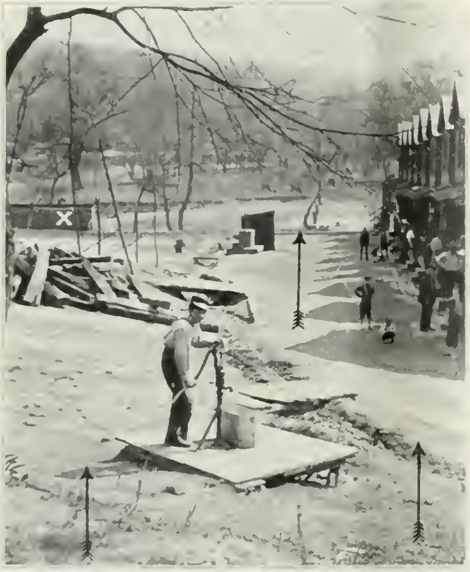


Fig. 8.—Proper location of well with reference to drainage. Privy vaults marked X.

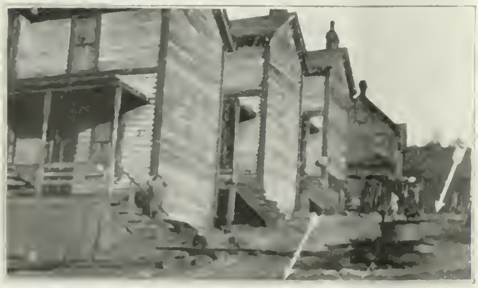


Fig. 9.—Improper location of well with reference to drainage.

The law should be so stringent as to compel all patients who have had typhoid to carry some efficient germicide that when they urinate or defecate in promiscuous places the excreta may be rendered harmless.

Much has been said about insect carriers of typhoid, and the best method of prevention is prevention of breeding. Manure and other food on which flies and other insects breed should be kept in screened or other insect-proof receptacles. As to the breeding and destruction of insects, the Bureau of Entomology issues literature, which, if the instruction is followed, will in due time eliminate this factor.

Vaccination against typhoid fever is practically in its infancy, yet, I believe, in due time, it will be quite effective and valuable.

I believe that the following provisions should be embodied in state health law: The state should be the supervisor of all water-supplies used for drinking and cooking purposes. It should specify, at all times, from which sources they should come, how they should be protected, and condemn all sources deemed detrimental to health. It should be the duty of the state to enact and enforce such laws as may seem fitting, relative to the disposal of urine and feces from typhoid patients or health carriers. It should be the duty of the state to specify how closets may be constructed on trains and vessels on bodies of fresh water, for purposes of disinfecting stools and urine. The state should specify, in given towns, how springs are to be protected and cleaned, how wells are to be drilled or dug, and protected from contamination. The state should hold severely responsible the individual, property-owner, attending physician, hospital, or whosoever may be found

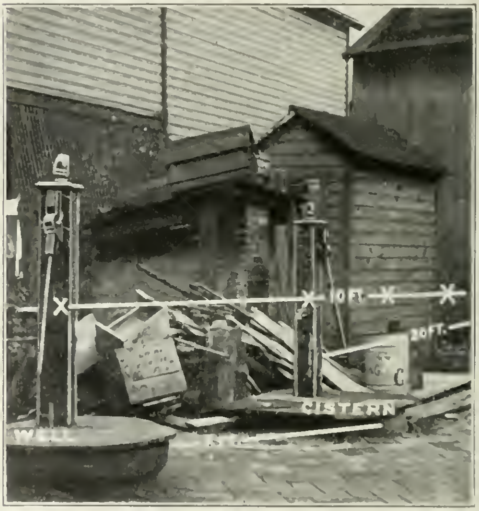


Fig. 10.—Insanitary location of well, cistern, privy vault and house within twenty feet of each other.

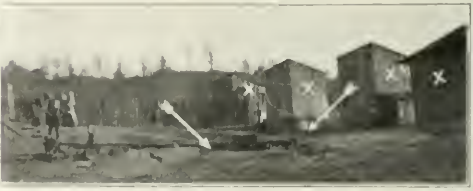


Fig. 11.—Insanitary conditions found in small towns and rural districts. Privy vaults marked X.

guilty of violating any hygienic or sanitary rule, which will in any manner, whatsoever, disseminate typhoid fever infection. All physicians, hospitals, or those having supervision over typhoid case or cases, should systematize their records in such a manner that carriers may be traced, isolated, and cared for until such a time as they may be free from typhoid bacilli.

409 Fourth Avenue.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. DUTTON AND FELL

Dr. H. W. Hill, Minneapolis: Dr. Dutton spoke very strongly about the question of typhoid from wells. I cannot speak for any other state than Minnesota, but I know that typhoid from wells is very uncommon in that state, probably for the reason that the character of the soil is such that the contamination is filtered out before it reaches the well. Our rural typhoid is practically never from wells in our state. Our well typhoid has been, as a rule, from the public wells of large communities infected very seriously with pollution of various kinds carried directly into them.

Dr. C. Hampson Jones, Baltimore: Baltimore is considerably interested in the control of typhoid fever. In a résumé of the subject for a period of four years, which was published in our annual report of 1907, I mentioned the ten possible sources of typhoid fever in the city. Contrary to many excellent authorities, I believe that a great deal of our fever comes from the pollution of the water supply. The characters of the outbreak of typhoid fever due to milk infection are so peculiar, so clearly defined, that it is quite easy, I think, for us to detect practically every milk outbreak. In one there were 157 cases on one man's milk route; in another about 58 cases, and there were three or four others, which fortunately were checked in the very beginning of the outbreak, which produced only a few cases. We have followed out also the typhoid carriers, and we have had two very interesting cases. One was in a home for young women. The woman in charge of the pantry—of the foodstuffs—was discovered to be a typhoid carrier, after there had been fourteen cases of typhoid fever in this place. We excluded the possibility of the milk being infected, and also the water supply in that special locality. Dr. Stokes, our bacteriologist, followed out two carriers lately in a convent where there was a laundry; in it were a large number of colored girls. Two sisters in charge of the girls were the carriers, and the curious and interesting part of it was that there were two distinct outbreaks—one of paratyphoid fever and the other of pure typhoid. One sister was a carrier of the typhoid organisms; the other sister was the carrier of the paratyphoid; the children associated with each case developed typhoid fever according to the sister in charge of them.

In Baltimore we are about to perform an experiment on a great scale. We are putting in a sewerage system including the entire city. We will in a few years do away with all privy wells, of which we now boast in the neighborhood of 70,000. Just previous, however, to the doing away of these privy wells, the drinking water will be filtered. This will enable us to determine how much, if any, typhoid fever was due to both and to each.

Dr. Liston H. Montgomery, Chicago: There seems to be a good deal of difficulty in taking care of the welfare of the people in public health matters in certain communities. May it not be due frequently to the fact that a layman has been appointed as the official health officer? I think this condition prevails in some portions of the northern states as well as in the South. People are not prone to look on a layman as very much of a medical scientist, especially when it comes to the matter of pollution of well waters, cisterns and rivers and streams, or in the matter of the eruptive diseases, and do not respect his opinions, and therefore may be careless in carrying into effect sanitary measures in detail.

Dr. W. Forrest Dutton, Carnegie, Pa.: I think it is a grave mistake on the part of the municipalities and the health officers in rural districts to countenance the pollution of soil. Some of our most eminent sanitarians are working on the question of soil pollution year after year, not alone with typhoid but with other diseases; Dr. Stiles, I think it is, has pointed out to us most forcibly the effect of soil pollution; and in most of our northern states, especially those that have been settled for two hundred years, soil pollution is a serious problem that will remain with us as long as we will countenance these open privy vaults. I believe that the state of Pennsylvania has caused to be constructed within the last few months privy vaults that are to be bricked up about half way, and then are to be cemented the rest of the way up with an ordinary covering over the vaults, and has prohibited the discharge of sewage into certain streams. I think that is a grave error. If they are going to compel the citizens in the rural districts to construct privy vaults, why not erect them properly, so that there will not be this pollution of soil that has been going on for years? We have regular epidemics of typhoid fever which may not be due to the water originally, but to drainage from privy vaults into the soil. According to a great many eminent authorities these bacilli are viable for an indefinite period, possibly multiplying in the soil, and as far as Dr. Hill's reference is concerned, Minnesota is comparatively a newly settled country, and a hundred years from now if they allow this soil pollution to go on they will have the seeds of disease sown that will be reaped by future generations.

SURGICAL MISTAKES IN INFANCY AND CHILDHOOD *

SAMUEL WALTER KELLEY, M.D.
CLEVELAND

Not all the mistakes here related are of my own making, for which I am duly thankful. But many of them or their results have come under my own observation. Others have been related to me by my colleagues.

The cases are, for the most part, not merely such as would in the adult present difficulties in diagnosis or in treatment; but they are such as are met only in the surgery of infancy and childhood, or in these periods of life present peculiarities when compared with corresponding conditions in the adult, and lead the practitioner unfamiliar with them into error.

I have taken especial pleasure in presenting the illustrative cases furnished by my colleagues, because they show that the idea that mistakes in the surgery of infancy and childhood are altogether too common is entertained not by myself alone; they show also that the condition of ignorance of children's surgery is not confined to any one part of the country.

NECESSITY FOR CAUTION IN OPERATING ON CHILDREN

Take for example the following case, related to me by Dr. Zahorsky of St. Louis: An infant 5 days old had an enormous cephalematoma, which was aspirated by a physician, but promptly refilled. A surgeon then made an incision and packed the cavity with gauze. But in spite of all measures slight bleeding continued until the baby died. There was no history of hemophilia and none of the doctors considered the baby a "bleeder;" but it taught them a lesson they should have known before—for such cases are not uncommon—namely: never to operate on cephalematoma unless, later on, an abscess results, which must be drained.

A baby 3 days old with a hare-lip was operated on, losing some blood, of course, at the operation, and suffered from severe secondary hemorrhage, from which it died on the sixth day. This illustrates the point that, since there is no necessity for operating at once on a hare-lip, a child should never be operated on for this condition during the first few days of life, when the tendency to hemorrhage is so pronounced. The same is true of phimosis, a spina bifida or any malformation not immediately endangering life. In anorectal imperforation, atresia of the esophagus or the like, it may be necessary to risk immediate operation to save life.

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

A child of 4 years, in good general health, but with a cleft palate, was operated on in the presence of a purulent rhinitis; the result was failure of union and sloughing of a portion of the flaps. The lesson from this mistake is obvious. No such patient is fit for operation until the adjacent tissues have been rendered free from infective inflammation.

A boy of 5 years with cleft palate came to a dispensary and, although he had a cough, was somewhat hastily put through an operation for cleft palate. The cough proved to be whooping-cough. It was not very severe, but it was persistent and had the spasmodic paroxysms of that disease, and it tore out some sutures. Bronchitis followed the operation, perhaps favored by the hemorrhage, bronchopneumonia supervened on the bronchitis and the boy succumbed in the third week of his illness. It was a mistake to operate on that child with a cough.

Dr. Zahorsky relates a similar case in a girl of 4 years operated on for cleft palate, by mucoperiosteal flaps and staphylorrhaphy, with chloroform as the anesthetic. A mild bronchitis was present at the time of operation, but grew worse, developed into bronchopneumonia and resulted in death two weeks after operation.

It is a mistake to perform any similar operation on a child in whom elevated temperature indicates the possible onset of an acute illness, and especially is this true if it is a child who is subject to convulsions on the slightest provocation, for convulsions are disastrous to the results, not only in operations on hare-lip and cleft palate, but in many postoperative conditions which will readily occur to mind, and convulsions are a great deal more likely to supervene in a child than in an adult

Dr. Cattermole states that he has several times seen operations performed for adenoids and enlarged tonsils when the child was in no fit condition, having acute pharyngitis or bronchitis at the time of operation. Dr. Cattermole also relates the case of a child of 5 years with appendicitis gone to abscess. After evacuating the abscess the surgeon persisted in removing the appendix, and the child died. Dr. Cattermole considered that it would have been better merely to drain the abscess for the time being, and he was right.

DANGER OF DELAYING OPERATION

I shall never be able to forget my first case of foreign body in the larynx. That was more than twenty years ago, but it remains indelibly impressed on my memory.

A girl of 6 years was brought from the country to my clinic at the dispensary. She thought she had drawn into her windpipe a piece of the kernel of a hickory nut. There was some dyspnea which was worse in paroxysms with coughing, and some aphonia; but again, at times the breathing would be easy and comfortable. The girl was quite able to walk about. I placed her in the hospital intending to operate. But a distinguished laryngologist and a senior surgeon on the staff, both my superior officers in the institution, advised against operation. The laryngologist inspected the throat on several occasions with the laryngeal mirror, and attempted with laryngeal forceps to remove the foreign body. On failing to do so he advised postponed operation in hope of better luck with his fishing tackle on the morrow. On the fourth day the foreign body suddenly shifted its position and the dyspnea became extreme. The house physician hastily summoned aid. I was the first to arrive on the scene and in a moment had opened the larynx and extracted the nut-kernel. The child took one easy breath, but that was her last. She was exhausted. That child could have been saved by timely operation.

It is a mistake to rest and wait with a foreign body, however quiet, in the larynx or trachea unopened. There is no safety until it is removed.

MISTAKES IN DIAGNOSIS IN CHILDREN

Many a case of retropharyngeal abscess has been mistaken for tonsillitis. Less frequently, a passive edema of the pharynx, an angioma, a mucous cyst, or a gumma has been mistaken for an abscess.

In one patient 2 years old, a few weeks after diphtheria, when nasal intonation occurred, and difficulty of swallowing, the fluids returning through the nose, I was about to make a diagnosis of postdiphtheritic paralysis. But, on exploring the throat, I found retropharyngeal abscess, and close examination revealed the fact that both paralysis and abscess were present at the same time. Postpharyngeal abscess may readily be mistaken for paralysis or both may exist together.

Retropharyngeal abscess may be mistaken for uremia. The following case is contributed by Dr. Le Grand Kerr:

A boy of 3 years, afflicted with postscarlatinal nephritis, suffered from indefinite symptoms for three days, but with such marked prostration and mental dulness that the onset of uremic convulsions was feared. Dyspnea became more and more marked. During all of this period the child refused to partake of food. It was difficult to collect the urine and that was given as the excuse for its not being examined. Mouth-breathing finally became established and there was a free flow of saliva from the mouth. The prostration was the most marked feature of this illness. On the fifth day Dr. Kerr saw the child and an examination of the throat revealed, when the tongue was depressed, a very slight bulging of the posterior pharyngeal wall. Digital examination then confirmed the suspicion of abscess. Stenotic breathing was a noticeable feature of this case.

Quite recently, I was called by Dr. B. to see a little girl of 4 years. She had always been a delicate child. The present illness had lasted five weeks. It had begun as a pneumonia, and then developed an undoubted nephritis, with abundance of albumin and casts in the urine. The pneumonia and nephritis had subsided. The urine cleared up almost entirely. Some cough remained. But the child continued to have fever up to 102 and 103 or more; complained of pain in the right hypogastrium and loin, and had become so emaciated and reduced in strength that her death was expected from day to day, and from night to night. The attending physician had called in counsel one of the most noted practitioners of the city, who had made an exhaustive examination. Appendicitis, among other diseases, was suspected and excluded. It was thought likely a stone in the kidney was producing the pain and the fever, and it was advised that the child be transferred to hospital and examined with the *x* ray for the purpose of detecting the stone. After hearing this history I examined the patient, with the result that I drew off with a trochar several ounces of pus from the right pleura, drained the cavity by a free incision the next day, and the child made a gradual, but uninterrupted and complete recovery.

It seems almost incredible that such a mistake could occur in the hands of competent men. This is explained by the fact that they were men more accustomed to handling adults than children. The severe pain in the hypogastrium and loin misled them. A pediatrist would have known that the pain of pleurisy in a child is just as apt to be referred to the abdomen as the chest; that in the small body of a child a tympanitic percussion note from the stomach or intestines may be so transferred to the chest as to mask the dulness of an effusion or a consolidation, and that stone in the kidney of a child is comparatively rare, while purulent pleurisy is very common.

Pneumonia and pleurisy, especially, because of the pain associated with them, which is as frequently referred to the abdomen as to the seat of the lesion, have in numerous cases, when located on the right side, been considered as appendicitis. So deceptive may these cases be that a diagnosis of appendicitis should never be made, or at least a decision to operate never arrived at, until the chest has been most thoroughly examined by one accustomed to physical diagnosis in children. Of course, it is to be remembered that chest and abdominal inflammation may co-exist.

Dr. Elterich of Pittsburg considers empyema and intussusception the two surgical conditions which are most apt to be overlooked or to lead to mistakes in diagnosis.

Dr. Hollopeter states that the overlooking of a remaining effusion, which, as is well known, is apt to be or to become purulent, is the most common error he meets. Next in frequency he places neglected otorrhea requiring surgical intervention.

In this connection Dr. L. K. Shaw cites three cases in which diagnosis of appendicitis was made when the trouble was pneumonia.

Dr. Van Derslice recently related to me a case of pneumonia in an infant at which he arrived just in time to find the physicians, already in consultation, discussing the advisability of operating for intestinal obstruction.

Dr. E. H. Bartley of Brooklyn refers me to a case reported by him,[1] in which he assisted at an operation for appendicitis and found the ileocecal valve plugged with lumbricoid worms.

Speaking of wrong reflection of pain by children reminds me that I have several times seen a persistent and troublesome abdominal pain treated by all sorts of attention to the digestive tract, when the real cause of it was caries of the spine. The spinal nerves near the lesion were irritated and caused the pain, but this was referred to the point of distribution of the irritated nerves in or on the abdomen. Meantime, the serious tuberculous inflammation in the vertebræ was neglected, because no curvature had yet appeared and the physician failed to recognize the early signs, which are quite as distinctive. A lateral curvature may cause abdominal pains, but when it does the curvature is usually so marked that it could scarcely be overlooked. Again, it is not uncommon to see a spinal curvature due to rachitis mistaken for an angular curvature and the condition aggravated by loading the weak frame with a plaster jacket or a brace. This is a quite unpardonable mistake.

A case which occurred but a couple of months ago illustrates a typical mistake and brought freshly to my attention a class of cases in which mistakes too frequently occur:

Marion P., a well-grown, beautiful babe of 9 months, had been sick ten days at the time I was called in consultation. The history showed a sudden onset of the illness, with pain, evidently paroxysmal, judged by the screaming spells induced, with vomiting which, on the following day, brought up greenish fluid, and with frequent small bowel movements with straining which discharged a small amount of fecal matter together with mucus and blood. A diagnosis of gastro-enteritis was made by the attending physician and the usual remedies used. The acute character of the symptoms abated, but did not cease. The diagnosis was modified to ileocolitis, which might run a course extending over weeks. But, as the second week advanced without cessation of the symptoms, the parents became alarmed and requested counsel. With a dim suspicion of appendicitis or of intussusception in mind a general surgeon was called in. The diagnosis of ileocolitis was confirmed, intussusception being considered, but excluded because of the presence of fecal matter in the discharges, and because of the length of time the illness had continued without fatality. On seeing the case, the first thing that struck me was the facial expression of the infant, a peculiar expression of distress and hopelessness that the face assumes in cases of intestinal obstruction. On hearing the history—the sudden onset, the paroxysmal character of the pain, the amount of the blood passed, the severity and persistence of the symptoms without a corresponding height of fever, —I was almost convinced that the condition was one of accident, rather than of disease. Then, in spite of objections, I insisted on examination under anesthesia and found what I had expected to find, namely, a tumor, that peculiar crescent-shaped tumor characteristic of the intussusception. It was lying deep, above and to the left of the umbilicus, with its concavity toward that landmark. It could be easily moved about and picked up in the fingers, and handling it brought on a paroxysm of pain and tenesmus. There needed nothing to complete the diagnosis. Within the hour the bowel was completely reduced by measured aerohydrostatic pressure, and the babe promptly recovered.

I have seen a case of intussusception of as much as three weeks' standing, with the mass descended as low as the rectum and even projecting through the anus, treated for dysentery together with rectal prolapse. My notes contain reports of several cases which had been mistaken for either dysentery or prolapse of the rectum.

Dr. J. Ross Snyder of Birmingham furnishes the following case:

The patient was a 3-year-old boy. After being ill with bowel trouble for several weeks, the patient awoke screaming in the middle of the night, complained of great pain in the abdomen and vomited very often. Next day he had dysentery, so called, which was checked by bismuth, but the movements still contained mucus and pus. The boy complained continually of pain in the abdomen and could not sleep. This persisted for eight days, when a tumor in the abdomen was discovered. After two days more Dr. Snyder was called in consultation with the family physician and a surgeon well known locally, who had agreed on a diagnosis of a diseased kidney, because the tumor was near the region of the right kidney and the boy cried out at each urination. Dr. Snyder convinced his confrères that the trouble was intussusception. The patient died ten hours after an operation which, if performed earlier, would probably have saved his life.

Dr. Snyder relates also the case of a babe of 16 months with a gastro-intestinal infection in which the conservative diarrheal process was not established, but in which the toxemia had paralyzed the bowel. This case was diagnosed by a surgeon as intussusception.

Dr. Cattermole relates the history of a case in which he made a diagnosis of sarcoma of the kidney in a young child. A surgeon was consulted, who advised against operation, not from any unusually conservative spirit, but because he did "not know what could cause such a condition in a child." Autopsy revealed the sarcoma, which evidently originated, as is often the case, in the suprarenal gland.

I cannot recall the number of times I have seen children wearing a truss on a hydrocele under the supposition that it was a hernia. To be sure, hydroceles of the cord or of the canal of Nuck, in which this mistake is usually made, occupy the position of an inguinal hernia, yet there is little if any excuse for a mistake in the diagnosis, if only the possibility of these forms of hydrocele be borne in mind, as the diagnostic signs are usually distinctive. I have seen a truss worn on undescended testicle supposed to be hernia—a blunder quite inexcusable, in view of the obvious diagnosis of the latter condition.

---

[1] Bartley, E. H.: Arch. Pediat. 1898, p. 272.

A few days ago a case of a new-born babe was referred to me with the statement by the physician that the penis was imperforate and that the babe had passed no water all the day of his birth. The physician had tried to find the urethra by making a puncture with a narrow-bladed bistoury through the glans in a longitudinal direction, but his effort was in vain. On examination it proved to be one of those not infrequent cases of hypospadias in which the urethra ends, a half inch or more posteriorly than it should, in a membrane so thin that its margin is invisible. In this case a small probe, directed in the proper direction, readily located the attenuated margin and found the urethra, which was patulous throughout, and a small catheter was passed, a small amount of urine being found in the bladder. The child soon urinated naturally and of course no operation at all was necessary. Through the employment of a little diplomatic talent the almost ludicrous blunder, which might have ended in several varieties of trouble, was prevented from becoming obvious to the family.

It is far too common to find hip-joint disease mistaken for disease of the knee-joint, because of the pain referred to in the latter location. It is not at all unusual to find a knee stained with iodin or blistered or abraded by the use of liniments, or even to find it encased in a splint, for a trouble located as far away as the length of the femur. And this not merely in the hands of the laity, but, I am sorry to say, sometimes under the advice of a physician. The disease supposed to be affecting the knee-joint in these cases is usually rheumatism. And, on the other hand, many a case of tuberculosis of the knee-joint and of some other joints, as well as cases of acute arthritis and of acute osteomyelitis, have gone on to irreparable damage while being treated under this mistaken diagnosis of rheumatism. As I have before remarked, "the scapegoats of puzzled medical pediatricians are teething and worms; the scapegoat of joint and bone surgery in childhood is rheumatism."

Dr. Le Grand Kerr contributes the following report:

A male infant, 18 months, was taken suddenly ill with high fever which fluctuated almost hourly and was accompanied with marked prostration and nervous symptoms. The left lower limb was held rigid, and severe pain was elicited about the knee-joint and ankle. There was redness, but no swelling. On the third day of such symptoms, the infant was sent to the Williamsburg Hospital with diagnosis of rheumatism. Examination now showed some swelling about the knee and ankle as well as redness and severe pain on handling. Fluctuation was detected on the fourth day. Complete operative procedure brought relief.

The following, also contributed by Dr. Kerr, illustrates how easily syphilitic periostitis may be mistaken for rheumatism:

A boy, 5 years of age, was sent to my service at the Seney Hospital (1909) with diagnosis of acute articular rheumatism. The knee was much swollen and reddened, and very painful. Temperature slightly elevated (100.2 F.). The child had been subject to frequent attacks of sore throat. Examination showed the knee-joint swollen, reddened and painful in front and at sides, but at back of joint slight fluctuation was elicited. Incision was accompanied by free flow of pus. There was slight redness and swelling about one wrist and incision released a small amount of pus. With specific treatment recovery began at once.

Dr. Charles Douglas of Detroit reports several interesting cases in which scorbutus was mistaken for other conditions. The first case had been treated by one physician for rheumatism, and then by another physician for fracture of the neck of the femur or a dislocation, and, after plenty of manipulation, the limb had been put up in splints. Another patient with scorbutus presented two bluish swellings, one on the back of each hand. A surgeon was consulted and advised operation for their relief. Another surgeon saw them and acknowledged ignorance of their character. Both of these patients recovered quickly on orange-juice and raw milk.

A babe returned to Detroit after a summer in the Lake Superior region. It had staphyloma of both eyes, one being very large and ready to rupture. The oculist treated it locally and gave a hopeless prognosis for one eye, but hoped to save the other. When the case came under the care of the pediatrist raw food and orange-juice worked an immediate improvement, and a final cure, though leaving a large scar on the worst eye. The oculist was delighted and acknowledged to the pediatrist that the latter had saved the eye.

Dr. Douglas relates another instance in which a pronounced case of rickets was treated for rheumatism.

Dr. Shaw writes: "I have seen a surgeon excise a tumor on the leg which turned out to be a large blood-clot due to scurvy. I have seen a baby entered in the surgical ward with a diagnosis of sarcoma of the shoulder, which was infantile scorbutus, and cleared up in a few weeks with orange-juice."

Two boys, from their second or third years on, showed extensive contusions from any slight bump and when the eighth year was reached they suffered with joint swellings, the knees and elbows being most affected. These joint swellings would last from ten to fourteen days accompanied with pain, loss of function and discoloration. After repeated recurrences the joint attacks disabled them from all work or exercise, since extension of the joints was impossible by reason of the tenderness and swelling. When the elder brother was 18 years of age a surgeon, disregarding the history of the cases and the clinical condition which should have been sufficient to warn him of the presence of hemophilia, made the mistake of undertaking an operation. He tried to straighten the right knee by tenotomy of the hamstrings. The hemorrhage was not profuse at first, but it was most obstinate, and the first dressing was left on three days. Removal of the bandages was followed by renewal of hemorrhage which took place both externally and into the tissues subcutaneously. And this hemorrhage continued in spite of all efforts to control it until the eleventh day after the operation, when he died. (The younger brother of this boy died in his seventeenth year of a spontaneous hemorrhage.)

Another mistake by another surgeon occurred in a connection of the same family, as follows: A nephew of these two boys manifested in his second year the swellings and discolorations of joints and the tendency to acquire contusions, characteristic of hemophilia. When he was 2 years old a slight cut on his finger bled four days. When 4 years old he accidentally bit his tongue and the wound bled three weeks. A small punctured wound on his chin bled nine days. When a few years older, a small cut on his brow received while coasting was repaired by two sutures. Six days later a large secondary hemorrhage occurred. Now a surgeon was called in. He heard the history of the case, but said he "didn't believe in bleeders"; that the trouble was all because people didn't know how to control hemorrhage, and that some doctors also were afraid of a little blood. In his opinion this hemorrhage was caused by a vessel, deeper in the tissues, wounded but not completely divided. He enlarged the wound to search for the wounded vessel. The bleeding which followed could not be controlled by ligatures, sutures, or even by forceps which were left attached to the wound, but which broke away with the sloughing tissues, bringing the ligatures and the sutures with them. All known styptics were used but the blood continued to ooze during five days. Then, when the boy was nearly dead it ceased spontaneously, and the wound healed leaving a frightful scar. It is to be hoped that ere this the surgeon realized that he had made a mistake in not paying heed to the history, and in not believing in "bleeders."

Syphilitic osteochondritis, sometimes called osteochondrosis or perichondrosis or epiphysitis, will in rare cases cause a separation of the epiphysis from the shaft, and will produce the lesion so promptly and unexpectedly that it is mistaken for a traumatic separation. In more instances this affection has been mistaken for rheumatism or for scurvy. As an instance I will cite a case from Dr. Kerr:

> A female infant one month old, suddenly developed inability to move one lower limb. The parents denied history of syphilis and the infant did not exhibit any of the usual manifestations of syphilis except a slight, but persistent rhinitis. As sterilized milk had been used from birth, the diagnosis was made of scurvy. When Dr. Kerr saw her in consultation, the left lower limb was immobile and the infant screamed at the slightest touch. A slight swelling was noted at the epiphyseal line. When direct questions were avoided and the history taken cautiously as to events in the lives of the parents, the history of syphilis was established. Later this infant exhibited many of the other manifestations of syphilis.

Traumatic separation of an epiphysis is notoriously apt to be mistaken for a dislocation, which it much resembles. This mistake occurs more often in injuries at the elbow than at any other joint in the body.

Zahorsky notes a case in which a periglandular edema (accompanying scarlatinal adenitis) was mistaken for abscess and was lanced with the expectation of discharging pus. But no pus was found. I am certain a number of us have seen the same mistake made. I certainly have, on several occasions.

Dr. Le Grand Kerr reports the following: A boy of 3 years was taken suddenly ill after a fall, with fever, vomiting and diarrhea, and within twenty-four hours it was noticed that the child did not move the arm. The general symptoms cleared up in four days (evidently owing to digestive disturbance following the shock of the fall), but the inability to move the arm persisted. In consultation on the sixth day, examination revealed a fracture of the clavicle. This illustrates a mistake which is very frequently made.

OVERESTIMATING VITALITY OF THE INFANT

It is a common mistake to overestimate the vital power of an infant and to undertake to put it through an operation too severe for it to withstand—such an operation for instance as that of forcing together the sides of the cleft in cleft palate when performed on a weakly young infant as in the Brophy operation. The chances of death following this procedure are far too many to justify it in the great majority of cases. Another example is that of rib resection in a weakly child of less than 18 months for empyema. A third instance is extensive resection of bowel in intussusception.

JUDGMENT IN USE OF SURGICAL PROCEDURES

But for the fact that it would consume too much time, I could give details of cases to illustrate the fact that often the administration of an anesthetic in an infant or young child with bad digestive organs may, by the nausea and vomiting it produces, lead to inanition, resulting ultimately in death, days or even weeks after the anesthesia. The anesthesia and the operation may at the time have been perfectly safe and pronounced successful, but it was a mistake to excite the gastric difficulty by an anesthetic in a patient thus predisposed. A good illustration of this point is the following from Dr. Zahorsky:

> Twins, 2 months old, artificially fed, were suffering from clubfoot. They were operated on, chloroform being used for anesthetic. Following the operation, vomiting occurred, followed by indigestion and atrophy. Both died about five weeks after the operation.

The same observer related to me the following instructive case:

> A boy, aged 7 years, had an osteomyelitis of the left tibia which resulted in denudation of almost the entire bone and extensive necrosis so that the lower two-thirds of the shaft had to be removed. The wound healed, and subsequently the surgeon attached the upper end of the fibula, which had remained sound, to the remains of the tibia. The result of the operation was very good. But three months later it was found that the tibia had been entirely reformed by its periosteum.
>
> Moral: The surgeon should have known that this spontaneous repair was likely to occur. Thus the osteoplastic operation was not only entirely unnecessary but the outcome of the case would have been better without that operation, if only time had been allowed for Nature's reparative work to take place.

The cases are too numerous to count in which mistakes have been made in the employment of antiseptic solutions in common use in surgical practice, but too strong and irritating for the delicate texture of the integument of the young. Ordinary solutions of mercuric chlorid used in moist dressings will often produce a dermatitis and, in the use of phenol in strong solutions or over large areas, phenol poisoning has not infrequently occurred.

Twice within the past five weeks and many times before, have I seen the mistake made of dressing an extensive scald or burn too hurriedly for strict antisepsis and without an anesthetic.

I think that in these days of antiseptic surgery, scalds and burns are more frequently badly dressed than any other kind of wound. An extensive scald or burn is a serious injury in a child, and even a small one may become infected and give rise to serious results. An anesthetic should be administered to relieve the suffering and diminish the shock, and then the wound should be as thoroughly cleansed as if it were an extensive laceration, and the chosen dressing applied. Then the case will probably progress as a clean wound instead of an infected, poisonous and vile-smelling one, as is too often the case, probably ending with toxemia with toxic symptoms in about the third or fourth week.

It is a mistake to suppose that anesthetics are without danger in cases of infants and children. Three times in my life I have encountered such knee-shaking experiences as have given me a very wholesome respect for the dangers of anesthesia in children. It is true that the heart and kidneys of the young are less likely than those of their elders to be diseased, and that ordinarily children bear anesthesia better than their elders, with less nausea, from which they more quickly recover; but they do not well endure prolonged anesthesia; and the danger of sudden failure of respiration or of the heart is a very real one.

A mistake one not infrequently sees in visiting various clinics and operating-rooms is unnecessary exposure of the child during operation. Children, with their small bulk and thin and vascular skin, part very rapidly with their animal heat, and exposure of the surface, especially if it be a wet surface, to the air often induces chill and increases shock. During operation every particle of surface not necessarily exposed should be kept dry and covered and extra warm.

CONCLUSIONS

These are but a few examples among many that could be cited, which show not only that it is easy to make mistakes in surgical practice, but that it is extremely easy to make them in the surgery of children; that many conditions may be present in the child which never or seldom occur in the adult; that it is a great mistake to suppose that surgical conditions in the child present the same phenomena, pursue the same course, are followed by the same results and can be handled in identically the same manner as conditions bearing the same name, but exhibited in the adult patient; that many mistakes are made which are entirely unnecessary and inexcusable and would not be made, if the profession possessed the proper knowledge of children and their surgical conditions.

1175 Wilson Avenue.

ABSTRACT OF DISCUSSION

Dr. Frank Gengenbach, Denver: No doubt all of us could recite instances similar to those recited by Dr. Kelley. I wish to relate an instance in which several mistakes were made. About eight years ago, while I was on duty in the hospital a boy was sent in with a diagnosis of appendicitis. About all I could find was the symptom of pain referred to McBurney's point. After an examination of the chest I found increased cardiac dulness, but the heart sounds were clear. Posteriorly I heard bronchial breathing, and I made a tentative diagnosis of bronchopneumonia. He had irregular temperature, some cyanosis and some dyspnea. The next day the symptoms were, if anything, worse. The area of dulness still persisted and the breath sounds and heart sounds were still as clear as ever. I suggested the possibility of a purulent pericardial effusion. The next day the symptoms were so bad that we did a pericardial paracentesis and withdrew some pus. The surgeon was called in and he accepted my diagnosis as correct, and decided to resect some ribs and empty the pericardial sac. Just before the operation one of my confreres examined the boy and said my diagnosis was incorrect and that I had probably gotten into a sacculated pleuritic effusion. The chest was tapped in several places with negative results. Resection of the ribs was then performed and nearly a quart of pus evacuated. The patient did very nicely and I went off duty shortly afterward. A few days later I was asked to come at once, as the intern was unable to get the surgeon and the boy was in extremis. When I reached the hospital the boy was dead. We performed an autopsy and found nearly a quart of pus in the sac. The drainage tube had been taken out too soon, and a reaccumulation of pus had caused death.

Dr. John Zahorsky, St. Louis: I think the most common mistake I have seen is circumcising the young baby during the first few days of life because he does not pass any urine. Often they pass no urine because they do not get any fluid. Again I have seen them circumcised on the eighth or tenth day in the presence of intense icterus. I think icterus is a contraindication. Another thing is the applying of strong [illegible]. A recent mistake I saw occurred in an infants' hospital in a case of septic arthritis. An *x*-ray was taken and it was thought to be a separation of the femur but it was found to be septic arthritis. I had a case of acute scurvy [illegible] of inflammation of the hip-joint. There was [illegible] of scurvy [illegible], except that the child had been taking food for months that frequently produces scurvy. In one case the physician was called to see a child that had stenosis of the larynx and he thought it was diphtheria. He injected four or five thousand units of antitoxin and sent for me to intubate. Just before I arrived the child coughed up a piece of peanut shell. The parents thought that this excellent result was due to the injection. We have often seen posterior laryngeal abscess diagnosed as diphtheria. One child had a stenosis of the nose and the surgeon thought it was laryngeal obstruction. In another case there was a large post-pharyngeal abscess and I was asked to intubate because it was thought to be a laryngeal stenosis.

Dr. S. W. Kelley, Cleveland, Ohio: My primary object in writing this paper was to draw attention to the fact that inasmuch as pediatrics has been cultivated more by physicians than by surgeons, it has come about that through ignorance of pediatrics by certain surgeons and ignorance of surgery by physicians many mistakes are made, and children suffer and sometimes die as a consequence.

RESULTS OF EXPERIENCE WITH NOGUCHI MODIFICATION OF THE WASSERMANN SERO-DIAGNOSIS TEST FOR SYPHILIS*

J. F. WAUGH, M.D.

CHICAGO

In selecting a method for the performance of the complement-fixation test of syphilitic sera, we were influenced by several factors, chief of which were the following:

In studying the different methods carefully and comparing the results obtained by different workers, we were impressed by the apparent accuracy of Noguchi's modification of the Wassermann test as shown by Noguchi[1], Fox[2], Swift[3], and others.

It was also much more convenient to secure human than sheep's blood for immunizing our rabbits and for the corpuscle suspension used in the test.

This paper is not intended to criticize any one method or to compare the efficiency of the different methods; but to give the results and conclusions drawn from the examination of four hundred and ten sera by Noguchi's method.

The majority of the patients were private patients of Drs. Hyde and Ormsby. The control specimens of syphilitic blood were secured from patients in Cook County Hospital.

Technic of the Test.—The technic employed was practically that originally recommended by Noguchi and described by him. A few minor changes were made in the method of securing some of the materials necessary for the test, but these had no relation to, and changed in no respect, the method of procedure in the test.

Five factors are employed in the test: antigen, complement, amboceptor, patient's serum, and human corpuscles.

Antigen.—The antigen used in this series was very kindly furnished by Dr. William T. Mefford, of Chicago. It was an alcoholic extract of a syphilitic liver and prepared by him. It was standardized by us according to the outline given by Noguchi.

Preparation of the Complement.—In the majority of cases, old guinea-pigs give the most satisfactory complement. I have found the most convenient and efficient method of securing the blood to be as follows:

---

* Read in the Section on Dermatology of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Noguchi: Serum Diagnosis of Syphilis, 1st Edition, 1910.

[2] Fox: Jour. Cutan. Dis., xxvii, 338-357.

[3] Swift: Arch. Int. Med., iv, pp. 376-404.

The pig is anesthetized, the precordia shaved and sterilized and with a sterile syringe and needle sufficient blood for the test in hand is withdrawn from the heart. With a little practice and experience, difficulty is rarely encountered in piercing the heart with the needle. As much as 5 c.c. may be withdrawn from a good sized animal; from 5 to 10 c.c. N. NaCl are then injected into the peritoneal cavity in order that the vitality of the animal may remain at par. After the blood is withdrawn, it is permitted to clot at room temperature, the serum is removed with a pipette and placed in the ice box till ready for use. I never use a complement over thirty six hours old.

The results in the earlier cases of this series clearly indicated that the sera of guinea-pigs varies greatly as to the amount of complement present. This undesirable feature was remedied in the following manner:

In securing the blood, as described, the life of the animal is spared and its health does not seem to be impaired. The serum from each animal is standardized according to Noguchi's directions as to the strength of the complement present; and after the first serum from each animal is tested, the additional labor of standardizing the complement every time a test is made, as suggested by Clark,[4] is dispensed with. Furthermore, in private laboratories and in isolated districts where difficulty is encountered in securing guinea-pigs, it is very essential that the life of the animal be spared. Some of our guinea pigs have been bled eight or ten times at intervals of three weeks, and the titer of the complement of each animal remains unchanged.

Preparation of Amboceptor.—A rabbit, preferably an old male, is immunized against human corpuscles as follows:

The blood from a normal individual is obtained by venipuncture from the arm, placed in sterile centrifuge tubes, defibrinated by stirring briskly with a piece of firm twisted wire. After being centrifuged the serum is removed with a pipette and the corpuscles washed with normal salt solution. After three washings, the supernatant NaCl solution being pipetted off each time, the suspension is made up with salt solution to the original amount of blood. It is then injected into the peritoneal cavity of a rabbit in increasing quantities and at intervals of five days, beginning with 3 c.c., then 6 c.c., 9 c.c., 12 c.c., 16 c.c., and lastly 20 c.c. Eight to ten days after the last injection, two or three c.c. of blood is withdrawn from the heart in the same way as when taken from the guinea pig, the animal being anesthetized. The serum is inactivated and tested as to its hemolytic properties as suggested and outlined by Noguchi. If the serum is found to contain an amboceptor of from .003 c.c. to .008 c.c. titer, 15 or 20 c.c. of blood are taken from the heart and immediately the same amount of salt solution is injected into the peritoneal cavity. At intervals of ten or twelve days, about 10 c.c. washed human corpuscles are injected into the rabbit. In this manner, an animal producing a good amboceptor can be kept indefinitely, and a fresh amboceptor of sufficient strength is always at hand.

Owing to the fact that so many rabbits after being injected are not satisfactory, it is very desirous that when we secure a good animal it be kept as long as possible. If after one series of injections the serum does not contain sufficient hemolytic properties, another series of injections may give a serum of the desired strength.

Blood to be Tested.—From 1.5 to 2 c.c. of the patient's blood is secured from the lobe of the ear, which has been properly cleansed. A puncture is made with a straight, three-cornered, sharp, surgeon's needle, which makes an opening sufficiently large so that the blood as a rule flows quite freely. It is collected in a glass tube that has been drawn out to a capillary point and bent in U-shape, the capillary arm being much the shorter. The small opening must be sufficiently large so that the lumen will not be occluded by the clotted blood before a sufficient quantity has been obtained. By making a good deep puncture, then gently squeezing the lobe, the drops are forced out; the capillary end of the tube is placed against the drop, which is drawn into the tube by capillary attraction. The tube should be held in the horizontal position. Difficulty is rarely experienced in getting sufficient blood in this way and it is usually less painful and disagreeable to the patient than when taken from the finger or by venepuncture. The specimen of blood is kept at room temperature for three or four hours, during which time the clot forms and the serum separates. The latter is withdrawn by a pipette, the rubber bulb on the pipette being perforated in order to control the serum better, inactivated by heating to 56° C. for thirty minutes and then placed in the icebox. It is advisable to make the test as soon as possible after the blood is procured. However, when the serum is inactivated and kept in a cool place it may be kept for several days. A strongly positive syphilitic serum was kept in the icebox several months with no impairment of its strength.

Suspension of Normal Corpuscles.—Two graduated centrifuge tubes are desirable in preparing the suspension. Into these is put a definite amount of normal salt solution. Blood is secured from the finger, a tourniquet having been applied and then the puncture made. The blood is permitted to drop into the tubes of salt solution in the proportion of one drop to 4 c.c. salt solution. The number of specimens to be tested will determine the number of drops to be drawn. The corpuscles are washed twice, after which the proper suspension is made. Two tubes are required for each serum to be tested, 1 c.c. of the quarter drop suspension being placed in each. A fresh suspension will usually give better results than corpuscles kept in the icebox for one or more days. Hemolysis is more complete in the control tubes and the contrast in a very mildly positive case more pronounced.

After the material for the test is prepared an outline similar to that in Table 1 is used.

TABLE 1

	Tube number.	Inactivated serum, .08 c.c., 4 capillary drops.	Antigen, 1 unit	Complement, 2 units.	Corpuscle suspension, 1 c.c., ¼ drop.	Amboceptor, 2 units.	Result.
Patients' serum	1	+	+	+	+	+	
	2	+	0	+	+	+	Hemolysis
Positive syphilitic serum	3	+	+	+	+	+	No hemolysis
	4	+	0	+	+	+	Hemolysis
Normal serum	5	+	+	+	+	+	Hemolysis
	6	+	0	+	+	+	Hemolysis
	7	..	+(2)	+	+	+	Hemolysis
	8	..	..	+	+	+	Hemolysis

The tubes are numbered and arranged in a suitable rack or holder. One unit antigen, two units complement (usually from .03 to .04 c.c.), .08 c.c. of the inactivated patient's serum or four capillary drops are placed in tube 1. The same, with the exception of the antigen, which is omitted, is placed in tube 2. In tube 3 is the same amount of antigen, complement and corpuscle suspension, but positive syphilitic serum is added in place of the serum to be tested. Tube 4 is the same as tube 3, except that antigen is again omitted. Tube 5 contains normal serum with antigen, complement, and corpuscles. The antigen is again omitted in tube 6, the other material being the same. Tube 7 contains two units antigen, complement and corpuscles. Double the amount of antigen is added to this tube to see if it will inhibit hemolysis. Tube 8 contains complement and corpuscles. The tubes are shaken up well, then incubated for one hour at 37 C. Two units of amboceptor are then added to each tube and all the tubes are again incubated at the same temperature. Progress in the process of hemolysis should be closely observed. When hemolysis is complete in the control tubes, 2, 4, 5, 6, 7, and 8, and if there is complete inhibition to hemolysis in tube 3, the result in tube 1 is noted.

In part of the cases of this series additional control tubes were used, in some of which the complement was omitted, and in others the amboceptor was not added. But when the controls, as noted in above table, are satisfactory, they seem to be amply sufficient.

The sera from fifty-two patients representing thirty-two diseases other than syphilis gave the results shown in Table 2.

---

[4] Clark: Jour. Infect. Dis., vii, p. 476.

The entire list was negative with the exception of one case of general paresis and seven cases of tabes which were positive; six cases of tabes being negative. There were also thirty cases of hypochondriacal syphilis and thirteen normal sera, all of which were negative.

In Table 3 are two hundred and ten cases in each of which is given the duration of infection, the type of lesion, if any was present, the treatment including both remote and recent, and the result of the test.

TABLE 2.—DISEASES OTHER THAN SYPHILIS

Disease.	Number of Cases.	Result	
		Positive.	Negative.
[illegible]	1	0	1
Blastomycosis	3	0	3
Brain tumor	5	0	5
Adenoma	1	0	1
Eczema	1	0	1
Tabes	13	7	6
General paresis	1	1	0
Granuloma	1	0	1
Dermatitis	3	0	3
Chorioiditis	1	0	1
Cancer	3	0	3
Scleroderma	1	0	1
Chancroid	6	0	6
Keratosis palmaris	1	0	1
Salpingitis	1	0	1
Urethritis	1	0	1
Lichen planus atrophicus	1	0	1
Morphea	1	0	1
Morphea guttata	1	0	1
Hepatic cirrhosis	1	0	1
Lymphatic leukemia	1	0	1
Cellulitis	1	0	1
Psoriasis	2	0	2
Papilloma	1	0	1
Pruritus hiemalis	1	0	1
Osteomyelitis	1	0	1
Periostitis	1	0	1
Tuberculous arthritis	2	0	2
Sarcoma	1	0	1
Leucoplakia	3	0	3
Dermatitis exfoliativa	1	0	1
Pityriasis rubra pilaris	1	0	1
Normal sera	13	0	13
Syphilis (hypochondriacal)	30	0	30

TABLE 3.—SYPHILIS †

Case No.	Duration of Infection.	Type of Lesion.	Treatment.		Result of Test.
			Remote.	Recent.	
1	[illegible] years	Late	None	None	[illegible]
6	1½ years	Late	None	None	[illegible]
8	1 month	Early	None	None	[illegible]
9	[illegible] year	Late	None	None	[illegible]
[illegible]	[illegible] months	Early	None	None	[illegible]
[illegible]	[illegible] years	Tabes	1 year	Intermittent	[illegible]
[illegible]	1½ years	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] months	No signs	Continuous	Continuous	[illegible]
14	[illegible]½ years	No signs	[illegible] years, Intermittent	Continuous	[illegible]
[illegible]	6 weeks	Early	None	None	[illegible]
17	[illegible] years	No signs	Continuous	Continuous	[illegible]
[illegible]	11 months	No signs	Continuous	Continuous	[illegible]
[illegible]	1[illegible] months	Late	Continuous	Continuous	[illegible]
[illegible]	4 [illegible]	Early	Continuous	Continuous	[illegible]
[illegible]	[illegible]	Early	None	None	[illegible]
[illegible]	[illegible] years	Late	[illegible] years	None	[illegible]
[illegible]	11 months	No signs	Continuous	Continuous	[illegible]
[illegible]	4 years	No signs	[illegible] years	Few months	[illegible]
[illegible]	[illegible] years	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] years	No signs	Unknown	None	[illegible]
[illegible]	[illegible] years	Late	Continuous	Continuous	[illegible]
[illegible]	[illegible] years	Late	Unknown	[illegible] months	[illegible]
41	[illegible] weeks	Early	None	None	[illegible]
44	[illegible]	No signs	[illegible] years	None	[illegible]
4[illegible]	[illegible] weeks	Early		None	[illegible]
[illegible]	[illegible] years	Late	Unknown	6 months	[illegible]
[illegible]	[illegible] years	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] years	No signs	Continuous	Continuous	[illegible]
61	[illegible] years	Late		[illegible] years	[illegible]
[illegible]	[illegible] weeks	Early	None	None	[illegible]
[illegible]	[illegible] years	Late		[illegible] year	[illegible]
[illegible]	[illegible]½ years	No signs		[illegible]½ years	[illegible]
[illegible]	[illegible] years	Late	Unknown	None	[illegible]
[illegible]	[illegible]½ years	No signs	Continuous	Continuous	[illegible]
70	[illegible] months	Early	None	None	[illegible]
[illegible]	[illegible] months	Early	[illegible] months	None	[illegible]
[illegible]	[illegible] years	No signs	[illegible] years	None	[illegible]
76	[illegible] year	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] years	No signs	[illegible] years	None	[illegible]
[illegible]	Not [illegible]	Late	Unknown	[illegible] years	[illegible]
79	[illegible]½ years	No signs	Intermittent	Intermittent	[illegible]
80	[illegible]	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] years	Late	[illegible] years	None	[illegible]
84	[illegible]	[illegible]		Continuous	[illegible]

TABLE 3.—(Continued)

Case No.	Duration of Infection.	Type of Lesion.	Treatment.		Result of Test.
			Remote.	Recent.	
85	15 months	Early	....	Continuous	—
86	9 years	Tabes	2 years	Intermittent	+
87	[illegible] years	No signs	3 years	Intermittent	++
88	7 weeks	Early	None	None	—
89	3 months	Early	None	None	—
91	[illegible]½ years	No signs	2 years	None	+
93	8 years	No signs	2 years	None	+
94	12 years	No signs	Not known	2 years	—
95	4 years	No signs	2 years	Intermittent	+
96	1½ years	No signs	2 years	5 months	++
97	2 years, 3 mos.	Late	Continuous	Continuous	—
98	7 years	No signs	3 years	None	++
100	2 years, 5 mos	No signs	2 years	None	—
[illegible]	4½ years	No signs	2 years	None	—
103	13 months	No signs	Continuous	Continuous	—
104	8 years	No signs	2 years	None	—
[illegible]	15 years	No signs	2½ years	None	—
[illegible]	3 years	No signs	20 months	None	—
111	1 year, 9 mos.	No signs	Continuous	Continuous	[illegible]
112	13 years	No signs	Continuous	Continuous	++
113	7 years	Late	2½ years	None	+
115	3 years, 4 mos.	No signs	3 years	None	+
116	7 years	Late	2 years	None	++
117	9 years	Tabes	2 years	None	++
118	3 years, 9 mos.	No signs	....	3 years	—
[illegible]	15 months	No signs	Continuous	Continuous	—
123	8 years	Late	3 years	None	—
125	1 year, 8 mos.	No signs	Continuous	Continuous	[illegible]
[illegible]	4 years	No signs	2 years	None	[illegible]
128	2½ years	No signs	Continuous	Continuous	[illegible]
[illegible]	6 months	Early	Continuous	Continuous	[illegible]
[illegible]	5 years	Late	Continuous	Continuous	[illegible]
[illegible]	15 months	No signs	Continuous	Continuous	[illegible]
[illegible]	20 years	No signs	Intermittent	None	[illegible]
[illegible]	Denied	Alop.	Not known	None	[illegible]
[illegible]	15 years	Headache	Much	Much	[illegible]
[illegible]	2 years	No signs	Continuous	Continuous	[illegible]
[illegible]	9 years	Tabes	2 years, intermit	None	[illegible]
[illegible]	3 years	No signs	2 years	None	[illegible]
[illegible]	8 years	No signs	Much	None	[illegible]
142	6 weeks	Early	None	None	[illegible]
[illegible]	2 years	No signs	Continuous	Continuous	[illegible]
147	18 years	No signs	2 years	None	[illegible]
148	14 years	No signs	4 years	None	[illegible]
149	2 years	Late	Not known	None	[illegible]
150	8 years	No signs	About 3 years	None	[illegible]
151	25 years	Tabes	Much	300 gr. K.I daily	[illegible]
153	10 years	Late	2 years	None	[illegible]
154	3½ years	Late	3 years	None	[illegible]
158	6 weeks	Early	None	None	[illegible]
159	2 months	Early	None	None	[illegible]
160	15 months	Early	1 year	1 year	[illegible]
161	Not known	Early	None	None	[illegible]
[illegible]	5 years	No signs	1½ years	None	[illegible]
164	38 years	No signs	Not known	None	[illegible]
166	15 years	No signs	Considerable	None	[illegible]
168	1½ years	No signs	None	6 months	[illegible]
169	Congenital	Early	None	None	[illegible]
[illegible]	20 years	Headache	Not known	None	[illegible]
171	3 years	No signs	1½ years	None	[illegible]
[illegible]	9 years	No signs	Almost continuous.	Almost continuous	[illegible]
176	2 years	Late	Almost continuous.	Almost continuous	[illegible]
177	2 years	Late	....	2 years	[illegible]
180	20 years	Late	Not known.	None	[illegible]
181	4 weeks	Early	None	None	[illegible]
[illegible]	5 years	No signs	2 years.	None	[illegible]
[illegible]	1½ years	No signs	Continuous	Continuous.	[illegible]
[illegible]	2 years, [illegible] mos	No signs	Almost continuous	Almost continuous	[illegible]
[illegible]	3 years	No signs	Continuous.	Continuous	[illegible]
[illegible]	10 months	Early	....	Few months	[illegible]
[illegible]	5 years	No signs	2 years	Intermittent	[illegible]
[illegible]	8 years	No signs	3 years	None	[illegible]
[illegible]	1 year	No signs	Continuous	Continuous	[illegible]
[illegible]	5½ years	Generalized alopecia.	2½ years	None	[illegible]
[illegible]	9 years	Late	2 years	Intermittent	[illegible]
[illegible]	17 years	No signs	Not known.	None	[illegible]
[illegible]	5 months	Early	....	Continuous	[illegible]
[illegible]	5 months	Early	None	None	[illegible]
[illegible]	1 year	No signs	....	1 year	[illegible]
[illegible]	2½ years	No signs	Continuous.	Continuous.	[illegible]
[illegible]	6 years	Late	Not known.	None	++
[illegible]	4 weeks	Early	None	None	[illegible]
[illegible]	2 years	No signs	Continuous.	Continuous.	[illegible]
[illegible]	Not known	No signs	Not known	2 years	[illegible]
[illegible]	[illegible] months	No signs	Continuous.	Continuous	[illegible]
[illegible]	[illegible] years	Late	2 years	None	[illegible]
[illegible]	[illegible]½ years	No signs	Continuous	Continuous	++
[illegible]	1 month	Early	None	None	+
[illegible]	8 years	Late	Almost continuous	Almost continuous	[illegible]
[illegible]	[illegible] years	No signs	2 years	None	+
[illegible]	1½ years	No signs	Continuous.	Continuous	—
[illegible]	[illegible] years	No signs	2 years	None.	+
[illegible]	1½ years	No signs	2 years	Intermittent	—
[illegible]	14 years	No signs	2 years	None	—
[illegible]	8 years	No signs	About 2 years	None	++
[illegible]	[illegible] months	No signs		Continuous	+
[illegible]	[illegible] years	Late	2 years	Intermittent.	—
[illegible]	1[illegible] years	No signs	Moderate amount	None	—
[illegible]	[illegible] years	No signs	2 years	None	—
[illegible]	10 years	No signs	2 years	None	[illegible]
[illegible]	1 year, [illegible] mos	No signs	Continuous	Continuous	[illegible]
[illegible]	[illegible] months	Early		2 months	[illegible]

TABLE (Continued)

Case No.	Duration of Infection.	Type of Lesion.	Treatment. Remote.	Treatment. Recent.	Result of Test.
241	20 years	Late	Much	Intermittent	+
242	15 years	No signs	2 years	None	[illegible]
244	9 years	Late	About 2 years	None	[illegible]
245	9 months	Early		Few months	—
250	15 months	No signs	Continuous	Continuous	—
251	3 months	Early	None	None	—
252	12 years	No signs	2 years	None	
254	15 months	Late	Continuous	Continuous	
258	5 weeks	Early	None	None	—
259	15 months	Late	Continuous	Continuous	
262	1½ years	Late	Almost continuous.	Almost continuous.	
263	1 year	No signs	Continuous	Continuous	
264	8 years	No signs	About 2 years	None	
271	6 weeks	Early	None	None	—
279	1½ years	No signs	Almost continuous.	Almost continuous.	—
280	25 years	No signs	Not known	Intermittent, 14 years.	+ +
282	3 years	No signs	1½ years	Intermittent	+ +
283	22 years	Late	Not known	9 months	—
285	3 years	No signs	About 2 years	None	
289	3 years	Late	Continuous	Continuous	—
291	3½ years	Late	About 2 years	Intermittent	[illegible]
293	14 years	Late	Much	Much	+
294	1½ years	No signs	Continuous	Continuous	—
295	4 years	No signs	3 years	None	
299	1½ years	No signs	Continuous	None for 6 weeks	—
301	1 year, 9 mos.	Late	Continuous	Continuous	+
302	3 years	No signs	Almost continuous.	Almost continuous.	+
303	1 year	No signs	Continuous	Continuous	[illegible]
305	4 years	No signs	Not known	Little	+ +
308	3 weeks	Early	None	None	—
310	3½ years	No signs	2 years	None	—
311	9 months	No signs		8 months	+
320	1½ years	Early	Continuous	Continuous	—
323	2 months	No signs		2 months	—
324	15 years	Late	Several years	None	+
327	6 weeks	Early	None	None	+
331	6 months	Early	None	None	+
332	2 years	No signs	Continuous	Continuous	—
334	20 years	Late	Not known	None	+
335	3 months	Early	None	None	+ + +
336	4 months	Early	None	None	+
339	1 year, 9 mos.	No signs	Continuous	Continuous	—
340	17 years	Late	Much	Much	+
351	11 years	No signs	About 3 years	None	+
353	18 years	Headache	2 years	None	+
354	5 weeks	Early	None	None	+ +
356	8 years	No signs	3 years	None	—
362	2½ years	No signs	2 years, 3 months	None	+
363	5 years	No signs	3½ years	6 months	—
364	12 years	Late	3 years	Intermittent	+
365	3½ years	No signs	2 years	None	—
366	17 years	Late	Much	Intermittent	+
373	2 years	No signs	1½ years	None	[illegible]
374	4 years	Late	3 years	None	+
385	9 years	Late	About 2 years	None	+
393	2 months	Early		1 month	+
397	6 weeks	Early		None	+ + +
400	2 years	No signs	Continuous	Continuous	+
401	8 years	Tabes	2 years	Intermittent	+
404	10 years	Late	3 years	Intermittent	+ + +
406	12 years	No signs	2 years	None	—
407	6 years	No signs	Almost continuous.	Almost continuous.	+
415	8 years	Late	Almost continuous.	Almost continuous.	+ + +
417	15 years	No signs	2 years	None	+

---

* In this and following table — indicates a negative reaction; +, mildly positive; + +, strong; + + +, very strong.

TABLE 4.—TREATED CONTINUOUSLY OR IRREGULARLY FROM THE TIME OF INFECTION

Duration of Infection.	Manifest Signs. 1-6 Mos.	6 Mos.-1 Year.	1-1½ Yrs.	1½-2 Yrs.	2-3 Yrs.	No Signs. 1-6 Mos.	6 Mos.-1 Year.	1-1½ Yrs.	1½-2 Yrs.	2-3 Yrs.	Total.
—	1	..	2	..	3	2	4	11	12	13	48
+	4	3	4	2	1	..	1	4	2	3	24
+ +	..	2	..	..	1	..	..	1	..	2	6
+ + +	1	..	1	..	1	..	..	1	1	..	5
Total	6	5	7	2	6	2	5	17	15	18	83

Manifest signs: Positive, 77 per cent.; negative, 23 per cent.
No signs: Positive, 26⅔ per cent.; negative, 73⅓ per cent.
Total: Positive, 42 per cent.; negative, 58 per cent.

In Table 4 there are eighty-three cases in which the duration of infection was from one month to three years, the patients having been treated continuously or irregularly for the same period of time. Of this number, twenty-six had manifest signs of the disease, 77 per cent. being positive and 23 per cent. negative. Fifty-seven patients had no signs of syphilis, 42 per cent. of tests being positive and 58 per cent. negative.

In fifteen cases of the above number giving a negative result, treatment was continued till the day of the test. Later when mercury was discontinued for three or four weeks, a positive reaction was secured in those cases where a second test was made. So it is evident that mercury influences the result of the test in a great many cases. In order to eliminate this factor, treatment should be dispensed with for at least one month before the specimen of blood is taken for examination.

It is interesting to note that some cases of syphilis under vigorous mercurial treatment, regardless of the manner in which the metal is administered, will give a strongly positive reaction even when the treatment is continued till the day of the test; others will become negative with but little treatment. So the question of the virulency of the infection becomes a very important one. This not only depends on the activity of the infecting organism itself, but is also influenced by the resistance on the part of the individual. In all probability a patient under treatment, giving a positive test requires a longer period of treatment to effect a cure than one giving a negative result under similar conditions. In the former case, the patient may not be reacting well to treatment or the virulency of the infection may be greater.

TABLE 5. TWO YEARS OR LESS TREATMENT. DURATION OF INFECTION 3-30 YEARS

Duration of Infection.	Manifest Signs. 3-5 Yrs.	5-10 Yrs.	10-15 Yrs.	15-30 Yrs.	No Signs. 3-5 Yrs.	5-10 Yrs.	10-15 Yrs.	15-30 Yrs.	Total.
—	.	2	1	2	7	10	6	3	31
+	1	14	1	4	4	7	2	1	34
+ +	.	1	..	..	2	..	1	..	4
+ + +	1	..	..	..	..	1	..	1	3
Total	2	17	2	6	13	18	9	5	72

Manifest signs: Positive, 81½ per cent.; negative, 18½ per cent.
No signs: Positive, 42 per cent.; negative, 58 per cent.
Total: Positive, 57 per cent.; negative, 43 per cent.

Table 5 represents seventy-two cases of patients having had two years or less of remote treatment, the duration of the infection being from three to thirty years. Forty-five of this number were free from signs of syphilis, 58 per cent. being negative and 42 per cent. positive. The remaining twenty-seven cases had signs of the disease, 18½ per cent. being negative and 81½ per cent. positive.

TABLE 6. TWO TO THREE YEARS' REMOTE TREATMENT. DURATION OF INFECTION 3-20 YEARS

Duration of Infection.	Manifest Signs. 3-5 Years.	5-10 Years.	10-20 Years.	No Signs. 3-5 Years.	5-10 Years.	10-20 Years	Total.
—	1	1		4	7	1	14
+	.	..	3	2	1	2	8
+ +	.	..	..	..	..	.	.
+ + +			1	1	..	..	2
Total	1	1	4	7	8	3	24

Manifest signs: Positive, 66⅔ per cent.; negative, 33⅓ per cent.
No signs: Positive, 33⅓ per cent.; negative, 66⅔ per cent.
Total: Positive, 58⅓ per cent.; negative, 41⅔ per cent.

In Table 6, there are twenty-four cases of three to twenty years' duration, and from two to three years remote treatment. Of these 58⅓ per cent. were negative and 41⅔ per cent. positive.

TABLE 7.—TREATMENT NOT KNOWN. DURATION OF INFECTION 3-30 YEARS

Duration of Infection.	Manifest Signs 3-5 Yrs.	5-10 Yrs.	10-15 Yrs.	15-20 Yrs.	20-30 Yrs.	No Signs. 3-5 Yrs.	5-10 Yrs.	10-15 Yrs.	15-20 Yrs.	20-30 Yrs.	Total.
[illegible]	.	4			2	..	3	9	4	3	25
[illegible]	.	5	2	7	..	..	..	2	1	1	18
[illegible]	.		2	..	1	1	..	2	..	.	6
[illegible]		1	1	..	..	..	..	.	..	..	2
Total		10	5	7	3	1	3	13	5	4	51

Manifest signs: Positive, 76 per cent.; negative, 24 per cent.
No signs: Positive, 27 per cent.; negative, 73 per cent.
Total: Positive, 51 per cent.; negative, 49 per cent.

Table 7 represents fifty-one cases in which the duration of infection was from three to thirty years, the amount of treatment being unknown. In twenty-five of this number, signs of the disease being present, 76 per cent. were positive and 24 per cent. negative. Of the remaining twenty-six cases without signs, 27 per cent. were positive and 73 per cent. negative.

TABLE 8.—TREATMENT AND DURATION OF INFECTION UNKNOWN

	Manifest Signs. Early.	Late.	No Signs.	Total.
[illegible]	.	4	9	13
[illegible]	1	19	2	22
[illegible]	2	10	1	13
[illegible]	.	12	..	12
Total	3	45	12	60

Manifest signs: Positive, $91\frac{2}{3}$ per cent.; negative, $8\frac{1}{3}$ per cent.
No signs: Positive, 25 per cent.; negative, 75 per cent.
Total: Positive, $78\frac{1}{3}$ per cent.; negative, $21\frac{2}{3}$ per cent.

In Table 8, there are sixty cases in which the duration of the infection and amount of treatment are not known. Forty-eight of these had manifest signs, $91\frac{2}{3}$ per cent. being positive and $8\frac{1}{3}$ per cent. negative. The remaining twelve patients were without symptoms of syphilis; 75 per cent. were negative and 25 per cent. positive.

TABLE 9.—NOT TREATED

Duration of Infection.	Manifest Signs. 1-6 Months.	6 Mos.-1 Yr.	1-2 Years.	2-5 Years.	Total.
[illegible]				.	[illegible]
[illegible]	[illegible]			..	
[illegible]	7	1		..	8
[illegible]	.	1	3	..	4
Total	[illegible]	[illegible]	[illegible]		[illegible]

Positive, 86 per cent.; negative, 14 per cent.
* In four of the five negative cases the exanthem had not appeared.

In Table 9, thirty-six patients with manifest signs and no treatment gave 86 per cent. positive and 14 per cent. negative reactions. Four of the five negative cases were in the chancre stage of the disease.

From a study of these cases we can readily see that in a large percentage of cases two or three years of treatment even when continuous is not sufficient to eradicate the disease. The patient may have had no signs of the trouble for many years and believe himself entirely cured, yet when the test is made, evidences of the old infection are shown when a positive reaction is secured.

In latent syphilis where the patient has been free from symptoms for a number of years and the disease again makes its presence known by signs or symptoms referable to the skin, the central nervous system or some one of the viscera, the question at once arises where has the hidden and concealed focus been located? There seems to be no doubt that such a focus of infection may be present in a great many cases, and, being walled off by connective tissue in Nature's attempt to overcome the disease, may lie dormant for variable periods of time, until, owing to some unknown etiological factor, the spirochetes and their toxins are taken up by the blood and lymph and carried to all parts of the body. A positive serum test in such cases would be expected even if at some former date it had been negative, owing to the quiescent state of the concealed focus of infection. When these walled-off foci are on the surface of the body, it is not difficult to secure a few drops of serum from the lesion to be used in the test; at the same time serum from the patient's blood can be tested and the difference in strength of reaction noted. In Case 228 of this series, the serum from the blood was negative, while the serum from the lesion on the patient's arm, which had been present five years, gave a strongly positive reaction. In Case 404, both the serum from the blood and that from the lesion were strongly positive. More work along this line will be necessary before final conclusions can be drawn; but we are led to believe that in such cases a protecting wall of tissue is preventing the organism and their toxins from entering the general circulation in any appreciable amount. This condition would explain why we get so many negative reactions in cases where there are evidences of the disease, and positive results where no signs of syphilis can be found; the focus being concealed in some part of the body not accessible to touch or vision. If such a condition is possible, the difficulty in clearing up some of the latent lesions which do not react readily to vigorous specific treatment is more readily understood, as but little if any of the medicinal preparation penetrates the protecting wall of tissue. The palmar and plantar syphilides are striking examples of this class of cases.

CONCLUSIONS

1. In serum diagnosis of syphilis a positive result is an indication that the disease is still active and that more treatment is necessary.

2. One negative result should not suffice in any suspected case of syphilis. The test should be repeated at intervals of six months for the first year after all treatment is discontinued and afterward at longer periods.

3. In quite a large percentage of cases two years of specific treatment, regardless of the manner in which it is administered, is not sufficient to insure a negative result from the serum test.

4. The tendency at the present time is rather to give insufficient treatment in syphilis than to over treat the disease.

5. The Wasserman test is of inestimable value in obscure cases of syphilis, and in differential diagnosis.

100 State Street.

Origin of the Term "Stone Blind."—A correspondent writing to the *Lancet* of July 23 refers to the words "stone blind" as a popular term for complete and hopeless blindness. He states that he has been unable to trace its origin but imagines that it first came into use in the days before glaucoma was understood as a pathologic process. At that time, he says, it was common knowledge that an eye of "stony hardness" had no chance of sight, and he quotes Platner, who in 1745 spoke of the eye "*oculus qui caligat . . . durusque fit.*" The explanation is plausible and interesting.

TWO YEARS' EXPERIENCE WITH THE WASSERMANN REACTION IN PRACTICE

A PRELIMINARY REPORT ON FIFTY-SEVEN CASES TREATED FROM THE STANDPOINT OF THE WASSERMANN REACTION *

B. C. CORBUS, M.D.
Adjunct Professor of and Instructor in Genito-Urinary Diseases, College of Physicians and Surgeons, Medical Department, University of Illinois
CHICAGO

The years 1903, 1905 and 1907 each marks a definite step in the advancement of our knowledge of syphilis.

With Metchnikoff's and Roux's inoculation experiments on the higher apes in 1903 the scientific world again renewed its efforts to discover, if possible, the cause of syphilis, and when Schaudinn and Hoffmann announced the *Spirochæta pallida*, in 1905, the diagnosis of primary syphilitic lesions was placed on a definite basis.

The establishing of the *Spirochæta pallida* as the etiologic factor in syphilis has been fraught with much criticism, because the discovery did not conform to Koch's postulates. The work of Metchnikoff, Roux, Neisser and many others stands out in bold relief and has put the specificity of the *Spirochæta pallida* on so firm a basis that, notwithstanding their inability to culture the organism, it is now accepted by syphilographers the world over.

The complement-fixation test as discovered by Bordet and Gengou, and elaborated by Wassermann, Neisser and Bruck, has brought us in still closer relation with this universal disease. Like the *Spirochæta pallida*, it has had its full share of criticism and condemnation, a large part of which was due to imperfect technic and application. That it is absolutely specific and of immense clinical value is a conclusion that can be drawn from the many reports that have appeared in the literature and the thousands of cases that have been examined.

The Wassermann reaction is valuable for both the general practitioner and the specialist. Neisser[1] says that the Wassermann reaction reveals syphilis with such certainty that nothing would induce him to dispense with it now.

Positive findings are a distinct indication of existing syphilis, and repeated negative findings are extremely valuable for a favorable prognosis, although the test is not infallible in every case. It is as important for the general practitioner as is the microscope for the determination of gonorrheal secretions. The Wassermann test is most valuable for the syphilographer, not only as an aid in the diagnosis but also in the treatment of syphilis. Until the discovery of the *Spirochæta pallida* and the application of the Wassermann test little indeed was known about this universal disease, save what could be seen externally and on the mucous surfaces. With the introduction of these two means of diagnosis we have at last something tangible to work with. It is possible now to make an exact diagnosis and to begin treatment at once, telling the patient with some degree of assurance what his future may be.

Höne[2] analyzes the findings in 1,512 cases of certain and of suspected syphilis and in 320 non-syphilitic patients. The findings confirm the specific importance of the test and show that energetic mercurial treatment is able to transform a positive into a negative reaction in a large proportion of cases.

A positive reaction was obtained in 23 out of 107 prostitutes with apparently no signs or history of syphilis.

Boas[3] has applied the Wassermann test in 1,315 cases. He states that positive findings after systematic treatment of syphilis are invariably the precursors of a recurrence. The serum test applied once a month in the first years after infection, and the resumption of treatment in case of positive findings, will certainly have a marked influence in warding off recurring trouble.

Purkhauer[4] reports from Neisser's clinic the findings of the Wassermann test as applied to 5,200 cases of syphilis. The findings were positive in inverse proportion to the number of intermittent courses of treatment that had been applied in the individual cases. The more energetic the treatment, the smaller the proportion of positive reactions. A single course of treatment does not seem to have much effect on the outcome of the test, but the general impression is all in favor of a thorough treatment in the first months and years after the infection.

W. Scholtz[5] says that the Wassermann reaction is generally negative from the third to the sixth week after infection, and as a consequence it is only of slight value for early diagnosis.

Therapeutically the Wassermann test is of importance because it indicates that it is possible in a degree to cure syphilis by abortion, but the proof cannot be substantiated without further observation, extending over years.

Jesionek and Meirowsky[6] say that we should bend every effort to change a positive to a negative reaction, because every syphilitic with a positive reaction is in danger of tabes and paralysis.

The earlier the treatment commences and the more energetically it is carried out the sooner will a positive reaction become negative. Chronic intermittent treatment unquestionably gives the best results, but we cannot as yet say whether this can make a negative reaction permanent.

It is true that these discoveries may dull the diagnostic shrewdness of the clinician and in time lessen his ability, but, like all biologic tests, they should be used as adjuncts, not as first aids, in diagnosis.

I have been working two years with the Wassermann reaction in practice. I began with the original Wassermann technic and have adhered to it throughout the whole time.

In reporting these cases, care has been taken to note carefully the results in making the Wassermann test. Alcoholic extract of a liver of a congenital syphilitic was used as an antigen, with plenty of known normal and syphilitic serums as controls, and each tube was tested twice with different strength antigens, each acting as a control for the other.

For convenience I have adopted the following classification:

Group I. New cases treated after the biologic method.
  A. Chancre, *before* the Wassermann reaction was positive.
  B. Early secondaries, *after* the Wassermann was positive.

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. München. med. Wchnschr., May 25, 1909, lvi, 1057.
2. Berl. klin. Wchnschr., May 10, 1909, xlvi, 862.
3. Berl. klin. Wchnschr., March 29, 1909, xlvi, 577.
4. München. med. Wchnschr., April 6, 1909, lvi, 697.
5. Deutsch. med. Wchnschr., February, 1910, No. 5, p. 215.
6. München. med. Wchnschr., 1909, lvi, 2291.

Group II. Old cases treated before the biologic method was used.
- A. Late secondaries.
- B. Latent.
- C. Tertiary.
- D. Congenital.

Group III. Apparently cured.

GROUP I: A. CHANCRE BEFORE WASSERMANN REACTION WAS POSITIVE

All patients presenting themselves for examination were treated in the following routine manner: Diligent search was made in the primary lesion for the *Spirochata pallida*. If this was not successful, puncture of the inguinal glands was resorted to and, regardless of whether the diagnosis was conclusive or not, a Wassermann test was made. This gave me immediate control of the diagnosis. I found that the Wassermann reaction was positive in direct proportion to the time of the presence of the primary lesion.

Depending on the length of time of the presence of the primary lesion, excision of the chancre was practiced whenever it was possible; however, rarely later than the tenth day or second week, as later than this systemic involvement to some degree has, as a rule, taken place.

In this series there were seven cases. In five of them excision was employed; one was situated in the coronary sulcus beneath the frenulum and could not be removed without great destruction of tissue; one was treated locally with calomel.

I still warmly advocate the principle of excision, but believe it to be a dangerous procedure for the operator, as a needle-prick or an excoriation on the finger may easily become the atrium of infection.

In examining many lesions that had previously had calomel used as a dusting powder, invariably the spirochete was not to be found, or if found at all it was with difficulty, showing that mercury in this form has some action locally in the destruction of the spirochete. I offer this time-worn method as the best both for the patient and the surgeon. Some may argue that this does not accomplish the desired effect; i. e., the removal *en masse* of the first known collection of spirochetes. This cannot be proved unless sectional stains are made. It seems perfectly rational to assume that if calomel has such a marked local effect on the spirochetes as to prevent their being found in the serum of the initial lesion, its free use should act as an efficient substitute for the highly scientific but hazardous procedure of excision.

Whenever it was possible to make a diagnosis from the primary lesion, the blood for the Wassermann test being previously taken, an injection of mercury was given at once, the object being to begin treatment at the earliest possible moment after a positive diagnosis was made, with the one idea that if the blood test showed negative it should be kept so; if it showed positive it should be made negative and kept negative throughout the whole time.

Of the seven patients, the first two discontinued treatment after two months, but up to this time neither had ever an adenopathy. Both have disappeared. Of the other five, one relapsed, and at the time of his second blood test, which was positive, he had plaques on his tonsils. The remaining four have continued along in an uninterrupted course. Wassermann examinations were made at intervals, on an average, of from four to six months.

The most recent case was of five months duration; the patient had two blood tests and both were negative.

TREATMENT

In these cases the treatment was most energetic; except for a few injections, rubbings and internal treatment were the regular routine. Where the patient could afford it, I preferred to have a masseur give the rubbings.

Some observers have argued that beginning treatment so early predisposes to the parasyphilids, as these patients are not sufficiently impressed with the severity of their own clinical picture and soon stop treatment. This in a measure is true among a certain class of patients, but it is equally true that patients of this class will do exactly the same thing if permitted to wait for secondaries before beginning treatment; they will treat until symptoms disappear and then stop. I believe that relapses would be fewer and that our success would be greater if vigorous treatment were instituted before the body was fairly saturated with the spirochetes, taking it for granted that the patient will only submit to treatment for a short while.

In this series the four cases that have remained with a negative Wassermann reaction have not had the slightest sign of syphilis, and except for the sites of their initial lesions they are absolutely clean.

GROUP I: B. EARLY SECONDARIES AFTER THE WASSERMANN REACTION WAS POSITIVE

In this series there are eleven cases; seven have become negative; four have remained positive. In the seven cases that obtained a negative, one patient relapsed, but has since regained a negative. All the other cases that obtained negatives have continued along without any unfavorable symptoms.

The shortest time in which I was able to change a positive Wassermann reaction in a patient with a papular eruption to a negative was two and one-half months. The patient had rubbings and internal treatment, rubbing an even 300 gm. of mercury in succession.

Of the four patients who did not progress, two absolutely gave up, preferring an easier method of living; two made several attempts at continuous treatment, but were not successful.

GROUP II: A. LATE SECONDARIES

In this series, in which the patients began treatment with external symptoms before the biologic treatment was in use, there are thirteen cases. All have had external manifestations within one year except two cases; the infections date from three to eight years prior to observation. Twelve patients have continued treatment; one has dropped out. Of the twelve that have continued treatment, it has been possible to obtain and continue a negative Wassermann reaction in only two, and these are two that have shown no external manifestations of syphilis for two years.

Three cases in this group presented spirochetes in the mouth in mucous plaques four, six and eight years after infection. The older the infection with active lesions the more difficult it seems to be to get a negative Wassermann reaction. Some of these patients were on their one hundred and fiftieth rubbing with only short intermissions between treatments.

It is here that one begins to see a direct relationship between a positive Wassermann reaction and persistent infection. All of these patients presented themselves for treatment from the eighteenth month to the fourth year after infection, and in one instance eight years. Their treatment from the beginning had been of a mild, intermittent, chronic type, so that at the time of beginning treatment under the biologic method they were, so to speak, thoroughly impregnated with the spirochetes.

GROUP II: B. LATENT CASES

In this series there are fifteen cases. All gave a typical syphilitic history but were free from external signs of syphilis for three years, and longer in some instances. All showed a positive Wassermann reaction.

Seven of these cases obtained a negative Wassermann reaction; of the seven, four relapsed. Of the eight remaining cases one discontinued treatment; the remaining seven were not able to obtain a negative blood test.

GROUP II: C. TERTIARY

In this series there are two cases.

CASE 1.—Infection eighteen years ago; one and one-half years ago gumma of finger. Wassermann reaction positive. In spite of fairly vigorous treatment this case had remained unchanged at the last examination three months ago.

CASE 2.—Infection nine years ago; three years ago gumma of left testicle, which promptly disappeared under specific medication; treatment vigorous at the onset, but later desultory, and still later discontinued. Blood-test always positive.

The discouraging results in Group II, B and C are attributed to the following circumstances:

1. Latency of infection: apparent freedom from the disease, so far as symptoms go.
2. Inability to apply continuous energetic treatment for any length of time.
3. Energy and financial resources exhausted in long continued treatment.
4. The difficulty of convincing the layman of the significance of a positive Wassermann reaction in the face of apparent good health.

GROUP C.—APPARENTLY CURED*

Patient.	Time of Infection, Years Ago.	Kind of Treatment.	Last Treatment, Years Ago.	Biologic Test.
G. K.	12	Internal and rubbings, fairly vigorous.	4	Test 1 neg., 8/1/08
C. K.	6	Internal, injection, rubbings, chronic intermittent form.	2	Test 1 neg., 4/1/09 Test 2 neg., 11/1/09
A. C.	5	Internal, rubbings and injections, vigorous.	$1\frac{1}{2}$	Test 1 neg., 7/5/09 Test 2 neg., 3/1/10
L. D.	12	Rubbings, internal and injections.	3	Test 1 neg., 2/1/09 Test 2 neg., 8/1/09 Test 3 neg., 3/1/10
J. M.	19	Internal, injections and rubbings.	5	Test 1 neg., 5/4/09 Test 2 neg., 2/10/10
S. C.	8	Injection, rubbings, internal, chronic, intermittent form.	$1\frac{1}{2}$	Test 1 neg., 6/1/09 Test 2 neg., 2/2/10
R. C.	5	Rubbings, injections and internal, vigorous.	$1\frac{1}{2}$	Test 1 neg., 8/2/09

* In this series there are the seven cases here given.

GROUP II: D. CONGENITAL SYPHILIS

In this series there are two cases.

CASE 3.—Male child, son of a male patient of mine who was married in the second year after his infection. Patient was under observation for five years. Treatment was begun in the second year, at which time there was only anemia and general adenopathy, with slightly stunted growth.

Blood-test was positive two years ago; one year later negative, and in April, 1910, negative again, with no treatments in the interim.

CASE 4.—Male; came under observation in the ninth year, after his infection, with many typical signs of congenital syphilis; had had many courses of mercury. Eighteen months ago blood-test was positive. Almost continuous treatment for the following eighteen months gave no success so far as a negative blood test is concerned, three examinations being made.

This boy is in apparently good health and is able to work as a messenger, having graduated from the grammar school last spring. As suggested by Purkhauer[6] and Bruck,[7] it is a question whether this case can ever become negative.

In this series the more favorable cases are the older ones with a corresponding repeated negative biologic test. Those of more recent origin, with vigorous treatment and two or more negative biologic tests, I regard as likewise favorable; whether they will relapse again time alone will tell. To guard against any further trouble it will be necessary to make a Wassermann test from time to time in such a manner that the test will become necessary less often the further back the primary infection lies, provided that the reaction has been found negative on several tests repeated from year to year.

If this so-called biologic method is to be adopted it will be necessary for us to lay new foundations in the way of treatment. If we expect to maintain a negative Wassermann in a given patient the treatment must be continued after the negative goal is reached, as withdrawing treatment at this time only permits of the rehabitation of the patient by the spirochetes, with a resulting positive biologic test.

How long this vigorous treatment is to be continued the future will have to decide. It may be possible to prophesy one and one-half to two years, but the test is far too recent to permit any definite conclusions. It is true that some of these cases may develop a Wassermannophobia, but beyond this, with careful examination of the urine and gums and attention to general hygiene, these patients should show only steady improvement.

CONCLUSIONS

The biologic treatment of syphilis seems to offer a tangible guide in the management of syphilitic cases. For its successful culmination it is positively necessary to have:

1. An early diagnosis, either by finding the spirochetes in the lesions, or by the positive serum reaction of Wassermann.
2. Control of the treatment by biologic tests; not by the clinical manifestations of the disease.

100 State Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. WAUGH AND CORBUS

DR. J. GRINDON, St. Louis: There is probably not a man in the room but could relate a number of striking instances bearing on the Wassermann test. I will limit myself to one. Six years ago, a young attorney came to me with the history of an initial lesion, which was followed by a papular, secondary eruption. He was at once put under active treatment, and remained under such treatment and observation for three years, developing no further symptoms. At the end of that time he was apparently in splendid health. At intervals of three or four months he would come in and see me, when I would tell him that to the best of my knowledge he was well. A year ago last June I explained the Wassermann test to him, and advised him to submit to it. He did so, and the reaction was positive. He returned home and submitted to a mercurial course, which, contrary to my advice, was taken internally instead of by injection. Six months later, which was five and a half years after his last symptom, he wrote to me that a painful growth was developing above the inner condyle of the humerus. I examined him carefully, and in spite of what I knew of his history, believed that the growth was probably a sarcoma. We cut down on it and found a gumma. The case presents a striking confirmation of the value of the Wassermann test.

---

[7] Bruck: Die Serodiagnosis der Syphilis, Berlin, 1909.

Dr. M. L. Heidingsfeld, Cincinnati: There is one phase of the Wassermann test to which I wish to direct special attention. Cases of syphilis, after treatment has been instituted, frequently develop a negative Wassermann, sometimes after very little treatment. On the other hand, other cases, in spite of very vigorous treatment, will show a decidedly positive reaction for a long period. This is probably due to the fact that the Wassermann test is a test of "antibodies," or the reaction of the system against syphilis, and not of the virus itself. In two cases of malignant syphilis on my service at the Cincinnati Hospital, in which both patients developed early rupia, and the malignant nature of the disease was well defined in all its aspects, the Wassermann reaction was negative from the very beginning, and in spite of the most energetic mercurial and arsenical treatment, it never gave a single positive reaction after repeated tests. One of the patients died eighteen months after infection; the other is still alive, but is in desperate straits. These patients have never reacted against the disease; probably no antibodies were formed, and the Wassermann test was therefore negative.

Dr. J. A. Fordyce, New York: I have watched the results of the Wassermann reaction during the past two years in my private and public practice, and these observations have led me to the belief that it is a method of great diagnostic importance. Regarding its practical or therapeutic application, it seems to emphasize the fact that mercury given hypodermically or by inunction has a greater influence over the reaction than mercury given internally. Furthermore, the earlier the treatment of the disease is begun the sooner the reaction becomes negative. It may be stated conservatively, I think, that the treatment of syphilis as generally carried out is very inefficient; that mercury is given in too small doses and that the use of potassium iodid is only exceptionally indicated in the secondary stage of the disease, though frequently it is relied on by practitioners from the beginning.

Dr. William Litterer, Nashville, Tenn.: I have made Wassermann tests, using different antigens, in twenty cases of pellagra. Three out of the twenty reacted positively. In one out of the three positive cases there was a history of syphilis; in another, an indefinite history of lues. I do not believe that the Wassermann reaction will be positive in non-syphilitic cases of pellagra; and this is in accordance with the experience of Dr. Howard Fox, although Bass has reported positive reactions in practically every case examined by him. In our cases we employed both the original Wassermann and the Noguchi tests, and both gave uniformly negative results.

I have found that in some cases, the use of the protoiodid of mercury internally does not obliterate the Wassermann test, but when we change to the inunction method, it usually becomes negative in a fairly short time. In some cases, the inunction method seems to be more efficacious than the injection method, and *vice versa*. We cannot be absolutely positive which is the better method, but I agree with Dr. Fordyce that either is preferable to the internal method.

Dr. William T. Corlett, Cleveland: I think we are generally agreed as to the value of the Wassermann reaction in syphilis. A year ago I spent some weeks in the laboratory of Professor Finkler at Bonn, working up the Wassermann reaction. The difficulties in carrying out the reaction in private practice are great, and I think it should be largely left to men doing laboratory work. This applies not only to the technic but to the skill and experience necessary to read the reaction aright. There is another point I wish to refer to, and that is the influence the Wassermann reaction may have on our therapeutic methods in the treatment of syphilis. For a number of years my observations have taught me that cases of syphilis treated with any form of iodin during the early stage of the disease run a more protracted course and prove more obstinate to treatment than do cases in which iodin has been withheld. Further, I have long been convinced that mercury is the only drug that has any definite and constant influence in combating the syphilitic virus. Both observations have been verified by the Wassermann reaction.

Dr. Alfred Schalek, Omaha: I wish to report a case that came under my observation lately. The case was one of syphilis pursuing a very malignant course, but under persistent treatment with inunctions and injections the symptoms finally cleared up. The patient subsequently went to Europe where he saw Prof. Neisser, who had a Wassermann test made, which proved negative. A similar test was afterward made by Dr. Schamberg of Philadelphia and was again negative. Shortly after that the patient developed symptoms pointing to a syphilitic brain lesion, and he is in a hopeless condition today. Our indications are clear when the Wassermann test is positive, but how do we stand as to the continuation of treatment when it is negative?

Dr. E. H. Martin, Hot Springs, Ark.: I was very much interested in the statement made by one of the speakers that the spirochetes might remain sealed up in the connective tissue for a number of years, and that under these conditions, mercury was not effective. I was also interested in the statement made by Dr. Corlett that mercury was the only drug that was effective in controlling this disease during its early stages. That I believe is a mistake. We have in the arylarsonates a powerful remedy for the treatment of early syphilis. I have used the various preparations of the arylarsonates in about 200 cases of syphilis, and while I am not prepared to say that with them I am satisfied to get along without mercury in the treatment of this disease, yet I have found them very effective. Under the use of these remedies the lesions cleared up in at least one-third of the time that they would with the iodids, and in one-tenth of the time that they would with mercury alone. Arsenic, we know, has the power to penetrate the tissues, and hence may destroy spirochetes sealed up against mercury. In the case reported by one of the speakers here today, where the Wassermann test gave a negative reaction in the face of marked pernicious syphilis, I can almost promise him that the symptoms in such a case will respond to the arylarsonates.

Dr. Alfred Schalek, Omaha: In the case I reported, the symptoms failed to yield to any of the preparations of arsenic.

Dr. Edward Bowe, Jacksonville, Ill.: I am more particularly interested in this subject from the standpoint of mental and nervous diseases, as I have seen a number of cases of teritiary brain lesions. Presuming, as a neurologist, that one is called on to make the differential diagnosis between a specific lesion of the brain and a brain tumor, one can readily appreciate the importance of having such a test as the Wassermann reaction to fall back on. In many such cases we get a very obscure history of syphilis, or none at all. Given a history of syphilis, the treatment may have been inadequate or inefficient, and under such conditions you can readily see the value of such a diagnostic test as this. If the reaction was positive, it would give us a direct indication as to treatment and aid us in the prognosis. The same applies in dealing with obscure cord lesions.

Dr. Oliver S. Ormsby, Chicago: In our office it has now become a routine measure to examine all doubtful cases of syphilis by the serodiagnosis test. In cases in which syphilis is shown to exist, the treatment should be continued as long as the test is positive. Some authorities say that a patient with syphilis should be treated as long as he lives; others differ from this view. It is evident that in some individuals syphilis persists for many years, while others recover promptly. The results of the Wassermann test confirm this. Some cases show a negative reaction after a few months, while others persist in giving a positive reaction in spite of long-continued treatment; the latter are usually of the virulent type. As an example the following case is cited: A patient developed a profuse exanthem of the florid type; this disappeared under energetic treatment, mercury being given by injection, inunction and internally at different times during two years of constant treatment. Three months after he was discharged his blood was tested and gave a positive Wassermann reaction. At the time the patient was apparently healthy and had exhibited no symptoms of syphilis since the first outbreak two years previously. Before we had time to institute further treatment, he developed paralysis of the third nerve, and since then he has had almost uncontrollable symptoms. The Wassermann test is a most valuable addition as an aid in diagnosis and should always be considered in conjunction with our knowledge of the clinical manifestations of syphilis.

Dr. V. J. Cohenour, Joliet, Ill.: In reply to Dr. Bowe I would say that a patient may have a non-syphilitic brain tumor and still have syphilis, and in such a case the Wassermann reaction would not throw much light on the differential diagnosis. If the case is one of brain syphilis without a brain tumor, the chances are that the symptoms will clear up under anti-syphilitic treatment, whereas in brain tumor you would get at best but a temporary remission of the symptoms. The fact I wish to bring out is that we may have a combination of these two conditions. I have seen individuals with chronic syphilis in whom the Wassermann test gave a negative reaction at one time, and a strongly positive reaction perhaps six months later. In some cases of gumma, for instance, where a negative reaction is obtained, the administration of potassium iodid for some time may be followed by a positive Wassermann, indicating that the drug has stirred up some of the syphilitic products. As to the curability of syphilis, I think that when once a man has syphilis, he always has syphilis. I have examined men who were treated in the ordinary way for ten or fifteen years, and thoroughly treated, and still, in spite of that, they showed decided symptoms of the disease later on. I have found that by the inunction method of treatment the reaction is decidedly quicker than by any other. Next to this, I favor the injection method, and lastly, internal treatment. The test I prefer is the unmodified Wassermann, and I do not find it particularly difficult.

Dr. J. F. Waugh, Chicago: My experience with this test in the field of nervous diseases has been rather limited. In the series of cases reported, there were thirteen cases of tabes, seven being positive and six negative; and two cases of general paresis, both positive. In cases of suspected syphilitic involvement of the central nervous system, the test is of the greatest value. However, a negative result does not preclude the possibility of syphilis, as the results of practically all investigators in latent syphilis will prove. Judging from the effect of treatment in converting a positive into a negative result in a given case, it would seem that the most efficient manner of administering mercury is by injection or inunction. Even after a negative result is secured and the patient is apparently free from his disease, the test should be repeated at intervals for a number of years. In this manner it is quite probable that many of the late manifestations of the disease can be prevented. Future work along this line will undoubtedly disclose interesting facts.

Dr. B. C. Corbus, Chicago: In order to get accurate results from these tests we must of course have a good laboratory, and the technic must be faithfully carried out. When the result is positive, it demands early and energetic treatment.

THE TREATMENT OF STAMMERING *

G. HUDSON MAKUEN, M.D.

Professor of Defects in Speech at the Philadelphia Polyclinic Hospital and College for Graduates in Medicine; Laryngologist
and Otologist to the Chester Hospital, Chester,
Pa.; Consulting Laryngologist and Otologist to the Douglass Memorial and
the Roosevelt Hospitals,
Philadelphia

PHILADELPHIA

CLASSIFICATION

In any consideration of the treatment of stammering, it is convenient and desirable to make three classes. In the first class we put all those nervous children who present any abnormalities of speech development; in the second class, those who have begun to show a tendency to stammer by an occasional hesitancy of speech, and in the third class, the confirmed stammerers, those who not only stammer but who know that they stammer, and whose natures have been deeply influenced by it. There are three stages of the affection, therefore, the prodromal, the acute, and the chronic. The first stage is generally characterized by the psycho-physical condition called nervousness, and the speech is rapid and blustering. The second stage is like the first, but it presents the added phenomena of speech hesitation and a more or less frequent repetition of certain sounds. The third stage may represent all the characteristics of the first two, but in a more pronounced form, and it presents in addition all those phenomena both mental and physical which together consitute what may be called the stammering habit.

First Stage.—What shall we do for the nervous child who inherits, it may be, a tendency toward stammering, whose ideas are confused, whose speech is rapid and blustering and whose environment is such as to aggravate all these unfortunate conditions? The remedy is not far to seek, but we must admit that it is not always so easy of application. The time to cure stammering is before it begins. Children should never be allowed to stammer, and the so-called habit never should be formed.

Speech is an acquired faculty and stammering is an acquired defect. To save the child from the second and third stages it is manifest that he must be taken out of his unfavorable environment; he must not be allowed to hear rapid and blustering speech, which, by the way, is common in families of which stammerers are the offspring, and by no means must he be allowed to hear others stammer, because of his natural and almost perverse inclination to imitate anything which is unusual and undesirable. By the same reasoning he must have good examples of speech, he must be taught to do things quietly and in order, to think of only one thing at a time, and to speak with deliberation. Don't scold the child because he is already in an excited condition and scolding will merely add fuel to the flame. Don't make fun of him or call his attention to his defect, for this will embarass him and lead to a nervous dread of future trouble. Always keep in mind the fact that the child is striving to combine the art of ideation with that of oral expression. It is all new to him. His thoughts come rapidly and the words with which he attempts to clothe them tumble out spasmodically, somewhat as water comes out of a bottle. He tries to say everything at once. He cannot arrange his thoughts in order and he has difficulty in selecting suitable words for their expression. The vocal and articulating organs share in the general confusion and they soon begin to lose their normal automatic action. It is at this point that careful treatment will almost surely prevent a further development of the trouble.

The treatment should begin at the kindergarten age, and it could be given in the kindergarten school by especially trained teachers, but the work would be greatly hampered, if not altogether negatived, by the home environment of such children, in which confusion and excitement usually reign supreme. The ideal place, therefore, for such a patient would be in a special hospital school, away from his mother and father, and brothers and sisters, who together, unwittingly of course, are oftentimes directly responsible for his condition, and who if given a little time and opportunity, will surely lead the unforunate one into the second stage.

The Second Stage.—I have described the second stage as that of speech hesitation and frequent repetitions of sounds. The treatment of this stage should be similar to that of the first, but some additional measures must now be adopted. In the first place the patient must be speedily cured in order to save him from the mental complications attendant on the third stage of the affection. It is cruel to send such a child to school, and as a rule he should be taken out of his home and kept in the atmosphere of good speech. He should be drilled in the elements of speech, and given respiratory, phonatory and articulatory exercises. The child should be trained in the natural easy use of the speech mechanisms, and this should all be done without any reference being made to his tendency to stammer. Indeed it is quite possible to cure him of the affection at this stage without his really knowing that he had it.

---

* Read before Chicago Medical Society April 6, 1910

Third Stage.—Coming now to the third stage of stammering. It is in this stage that we find the affection in its fullest development and with all its psychological variations. The ultimate cause, whatever it was, may have long since disappeared, but the disastrous results are plainly manifest in the character and disposition of the afflicted one. Mentally, physically, and sometimes also morally, there seems to be no health in him, and I know of no disease which so taxes the skill and ingenuity of the physician as does this combination of nervous derangements.

ESSENTIALS OF CURE

The stammerer himself is of the opinion that he is organically and radically different from other people, and he is skeptical as to the outcome of any line of treatment or practice. If you, perchance, succeed in removing his skepticism, he even then has scarcely enough will power or energy to pursue any course of treatment which may be prescribed for him. His great desire oftentimes is to be cured quickly and without any effort on his own part. To whom shall such a one turn for relief? "Certainly not," as Alexander Graham Bell says, "to any pretender who veils his method in convenient secrecy, nor to any who profess to 'charm' away the impediment—or to effect a cure in a single lesson! Not to any whose 'system' involves drawling, sniffing, whistling, stamping, beating time—all of which expedients have constituted the 'curative' means of various charlatans; nor to any who bridle the mouth with mechanical appliances—forks on the tongue, tubes between the lips, bands over the larnyx, pebbles in the mouth, etc., etc. The habit of stammering can only be counteracted by the cultivation of a habit of correct speaking founded on the application of natural principles."

I quote further from Dr. Bell because his thought on the subject concurs so thoroughly with my own: "But with the best assistance the stammerer must work out his own cure. He cannot be passive in the matter. He must clearly apprehend the principles on which he is to proceed and diligently apply them. Nor must he in this depend too much on the watchfulness of his instructor, but must learn to watch over himself. His perfect release from the habit will require time, patience, and hopeful, energetic effort."

How shall we assist the stammerer to work out this cure? That is the problem. We are somewhat in the position of a watchmaker who is handed a chronometer that will not keep time. It is not enough for him to say that the steel is not properly tempered and that the springs are not properly annealed, but he must make the watch go. So it is not enough for us to say that the stammerer has inherited or acquired certain characteristics, but we must show him how to overcome them or to supplant them with desirable mental and physical characteristics.

If he has weak will power, we must show him how to strengthen it. If he lacks the faculty of attention or concentration, we must show him how to acquire it. If he has grown morbidly introspective and self-conscious, he must be shown how to overcome this condition. If he is suffering from fixed ideas and obsessions, if he has become neurasthenic or psychasthenic, as many of them have, he must be cured of these diseases before he can possibly be cured of his speech malady. In other words, he must learn to control himself before he can hope to control his speech.

SPECIFIC METHOD

As to specific methods, I should say that it is not so much the method as its application that is of value. Of course, there are methods good and bad, and there are methods which are better than others, but the best methods are those the application of which will result in the development of the proper mental attitude on the part of the patient, and incidentally in the highest efficiency of voice and speech. Mental culture, voice culture and speech culture must form the basis of every rational method of treatment. The stammerer should acquire a high degree of vocal power and the greatest possible articulatory skill and efficiency These he can get, of course, only with the assistance of an experienced teacher. He thus learns to play on his own instrument as the pianist learns to play on the piano, all the time acquiring skill and proficiency by well directed and persistent practice.

Now what are the special exercises that have been found to be the most suitable for this purpose? I shall have time only to refer to them and their application. In a general way, the stammerer should learn the "physiologic alphabet" theoretically as well as practically. He should learn exactly how to produce and articulate, if you please, every one of the elementary sounds of speech and he should learn to hear them accurately and know when he himself produces them accurately. In other words, he must develop his ear for speech before he can make any progress in speech culture.

He must also learn the exact musculature of speech, and when an untoward action or coordination appears in any of the three peripheral mechanisms, it should be pointed out to him, and suitable exercises given to correct it. In this way the patient gradually learns how to regulate his nervous energy, how to inhibit certain hitherto overacting nerve impulses which have resulted in the muscle spasms characteristic of stammering, and how to distribute the innervations to the various mechanisms in their proper order and intensity.

One difficulty with the stammerer is that he tries to speak entirely with the articulatory mechanism, apparently ignorant of the fact that the effort should be chiefly directed to the vocal mechanism. His attitude in this respect towards singing is more nearly what it should be. In singing he directs his attention to the vocal mechanism and therefore he rarely stammers.

Having learned the physiologic alphabet, or table of sounds, we have found it good practice to drill the patient in phonetic reading, and what Dr. Bell has called syllabication. Normal speech, of course, is largely automatic and independent of any conscious interference. Moreover, it is acquired originally by imitation and without any conscious effort. Hence it is that when the child stammers he knows neither why he does it nor how to stop it. He may be helped to stop it, as I have said, during the first and even during the second stage without his ever having known that he did it, but in the third stage it is generally necessary to have him thoroughly reorganize his methods of speech, to have him bring all the processes well within the domain of his consciousness and to teach him to control them entirely by volitional effort. This reorganized or relearned speech must then be practiced until great facility has been acquired in the new physiologic use of all the muscles, respiratory, phonatory, and articulatory, and this should be done in precisely the same way and for much the same reason that the student of the piano practices finger exercises.

Indeed the stammerer should be taught to regard his organs of speech as an instrument apart from himself, on which he must learn to play just as the pianist learns to play on the piano. This facility of speech is absolutely essential to the stammerer. He must know that he can control his speech; not only so but he must know that he knows that he can do it, in order that in the future he may be able to overcome the distracting influences of the fear of stammering which always lurks in the mind long after the cure has been accomplished. The stammerer himself is oftentimes the last one to be convinced that he is cured, and hence it is that we have here a field for the practice of psychical as well as physical therapeutics.

STAMMERERS AND THOSE WHO STAMMER

Finally, as someone has said, there are those who stammer and those who are stammerers, meaning, I suppose, that we all stammer to some extent, but the stammerers are those who are conscious of their difficulties and whose cerebral activities are disturbed by them. Those who stammer are the ones described as being in the first and second stages of the affection, and the stammerers belong to the third or chronic stage.

Those who stammer may be unconsciously relieved of their difficulties by simple elocutionary measures, consisting of training in respiration, phonation and articulation, while the stammerers must reorganize their speech by means of the same elocutionary measures, plus training in mentalization. I always ask my assistants to train the patients in these four things, respiration, phonation, articulation and mentalization, entirely regardless of the fact that they are stammerers, and I tell them that the object of the training should not be primarily to cure stammering but rather to develop good voice, facility of articulation and the right mental attitude, and when this is done all other desirable things will be added thereto.

The stammerer naturally cares little for voice and speech culture, but his chief desire, as I have said, is to get rid of his difficulties and the shorter the cut to this goal the better it suits him. His mental attitude in this respect must be changed. He must become interested in speech culture for its own sake if he would be safely and permanently cured. It is this faulty mental attitude that explains why stammerers are attracted to the various "get cured quick" schemes such as are in vogue, of course, for purely mercenary ends.

PROGNOSIS

I am often asked how long it takes to cure stammering, and in answering this question I am reminded of the following little incident: An old book gilder was asked how long it would take to learn his art and he said, "Some learn it in five years and some never learn it." I do not wish to leave you with the impression that there are some people who never can be cured of stammering, but I mean to say that there are people so organized constitutionally that the acquirement of any degree of facility of speech is an exceedingly laborious task, and for them to overcome a defect like stammering requires long and persistent practice of physiologic methods. The prognosis, however, is always good when the patient can be induced to do the things that are essential to the reorganization of his speech, and there can be no more healthful physical exercise or efficient mental discipline than that which comes with the study and practice of speech culture.

1627 Walnut Street.

A CASE OF OPIUM-POISONING

E. B. CLAYBROOK, M.D.
CUMBERLAND, MD.

The following case is reported, because the man was in such profound stupor, and seemingly in such a dangerous condition, and yet responded so promptly to the treatment instituted, as to give no trouble or uneasiness to those in attendance.

History.—J. W. S. was admitted to Alleghany Hospital on June 30, 1910, with no history except that he was taken from a train on the way from a near-by town, in profound coma. There happened to be in the hospital a patient from the same town, who knew the man, and said that he was a painter subject to painter's colic and a hard drinker.

Examination.—The man was in profound coma, pupils pin-point, pulse soft and regular, respiration three to the minute, temperature normal, urine normal. The diagnosis of opium-poisoning was made.

Treatment and Result.—The stomach was washed out, and the bladder emptied. Supra-orbital pressure and castigation with a wet towel brought no response whatever. The left median cephalic vein was opened for saline transfusion and five pints of saline solution in which 7½ grains of caffein citrate had previously been dissolved, were allowed to flow in rapidly through an eye-dropper. The man made no response to any attempts to arouse him, or to the incision and the handling of the wound, but began to writhe as the stitches were put in; and by the time the wound was sutured, sat up in bed and talked rather clearly. His recovery was complete and he gave no further trouble. It was afterward found on questioning him that his home doctor gave him a "good strong" hypodermic before he left home and some powders of morphin with directions as to taking them. As the pain was not relieved in a few minutes from the hypodermic he then "took all the powders at once" and boarded the train.

61 Washington Street.

NOTES ON CERTAIN TESTS FOR INDICAN IN THE URINE

H. I. DAVENPORT, A.M., M.D.
AUBURN, NEW YORK

The following notes are published as a caution to those who make routine examinations of the urine for indican. It is sometimes necessary to preserve the urine for a time before the test can be made, and for this purpose formaldehyd solution should not be used; at least not when bleaching powder or potassium permanganate is employed as the oxidizing reagent. I have been unable to find note of this in the texts at my command (Emerson, Wood, Simon), nor have I seen attention called to the fact in any published article. Emerson says, however, "A person must be wary in a chemical examination of such a urine" (i. e., one preserved with formaldehyd solutions).

The tests used are the ordinary ones, as follows: Ten c.c. of concentrated hydrochloric acid is poured into a test-tube containing a like amount of the urine to be tested. This is mixed and potassium permanganate and chloroform added alternately drop by drop, agitating, until about 2 c.c. of chloroform and a sufficient quantity of the permanganate have been added. The other test is the Jaffe test. Ten c.c. of concentrated hydrochloric acid are placed in a test-tube and a very small drop of fresh concentrated solution of ordinary bleaching-powder is placed on the lip of the tube. The hydrochloric acid is poured into a tube containing 10 c.c. of the urine, carrying with it the drop of bleaching-powder solution. Two c.c. of chloroform are then added. In either of the tests after the addition of the chloroform the tubes are slowly inverted and the chloroform takes up the indican, the result being a bluish color of the chloroform layer.

Case 1. An acid urine containing a rather large amount of indican (both tests) was divided into two portions and the one left unpreserved, the other preserved with formaldehyd solution (one drop of the 40 per cent. solution to 4 fl. oz. of urine).

In testing these specimens on the following day it was found that the unpreserved urine gave the indican test as on the previous day while the one containing the formaldehyd did not show the slightest color in the chloroform layer. Both tests were employed with the same result. The urines were acid.

Case 2.—This patient was taking potassium iodid and the chloroform layer showed the purple color due to the mixture of the pink color of the iodin and the blue of the indican. The urine was divided into two portions as before. The indican tests had shown a very large amount present. To one portion was added formaldehyd solution as before; the other was left unpreserved. The next day the unpreserved portion gave both tests as before, while the one containing the formaldehyd solution showed the pink color due to the iodin and a very slight trace of the blue. These two specimens were again set aside and tested on the tenth day. At this time the unpreserved urine gave no trace of indican with either test and the preserved urine showed only the pink color of the iodin. The urine remained acid in all cases.

Case 3.—This patient was suffering from acute pulmonary tuberculosis and the urine was loaded with indican (first test only). The specimen which was acid was divided into three portions; one was left unpreserved, one was preserved with formaldehyd solution as above; the third was preserved with chloroform in the proportion of one part of chloroform to twenty-five parts of urine. The one to which the formaldehyd solution was added was tested immediately with a negative result (both tests). On the tenth day all were tested; the unpreserved urine was alkaline but showed indican in almost the same amount as at first; the specimen preserved with formaldehyd solution showed no indican, the specimen preserved with chloroform was acid and showed as much indican as the original. (Both tests were used on all specimens.)

Case 4.—Acid urine with a fairly large amount of indican. This was divided into two portions and one left unpreserved. After eight days the specimen preserved with chloroform showed indican but the result in the unpreserved specimen was doubtful. Both were acid and were acid on the fifteenth day when tests showed indican present in the one preserved with chloroform but absent from the unpreserved specimen (first test only).

Case 5.—Acid urine with considerable indican, divided into three portions and formaldehyd solution added to each in the proportion of 1 to 800, 1 to 150, 1 to 75 respectively, as nearly as could be approximated. Tested at once, the first specimen showed some indican but not nearly so much as the untreated urine; the second specimen was doubtful; the third (1 to 75) was negative.

Case 6.—Acid urine with small amount of indican. Formaldehyd solution added to three portions in the proportion of 1 to 1700, 1 to 700 and 1 to 300 respectively, as nearly as could be approximated. Tested after five days the first specimen showed some indican, the second result was doubtful, the third specimen negative. After ten days the same specimens showed, the first positive, the second and third negative. (The first test only was used).

In all forty-eight cases were tested, but the results were in no case at variance with the following conclusions, and only selected cases are mentioned above.

CONCLUSIONS

1. Formaldehyd added to urine as a preservative interferes with the tests for indican above described (Cases 1, 2, 3, 5 and 6).

2. This interference seems to be in proportion to the amounts of formaldehyd solution and indican present (Cases 5 and 6).

3. Formaldehyd does not seem to interfere with these tests for the presence of iodin (Case 2).

4. Chloroform as a preservative does not seem to interfere with these tests for indican (Cases 3 and 4).

5. The urine should be examined fresh, if possible, as the indican may disappear from an unpreserved urine on standing (Cases 4 and 2).

The following case is also of interest in this connection:

A patient showing much indican in the morning specimen on each of two successive days was given, on the second day, ten grains of hexamethylenamin in two-grain doses two hours apart. The morning specimen on the third day showed no indican by either of the above tests. No more of the drug was given, and on the fourth day the morning specimen showed considerable indican while on the fifth and sixth days the amount of indican was about as on the first two days. The source, or rather cause, of the indicanuria in this patient could not be determined.

We must conclude from this case that if the patient is receiving hexamethylenamin these tests for indican may fail to show any present, and this failure is probably due to the influence of the formaldehyd contained in the drug.

67½ East Genesee Street.

SUCCUSSION SPLASH IN DIVERTICULUM OF THE ESOPHAGUS

C. M. COOPER, M.B., Ch.B. (Edin.)
SAN FRANCISCO

In a recent paper I referred to the presence of a succussion murmur in one patient with a pharyngo-esophageal diverticulum. The finding of this splash in three other patients similarly affected would seem to indicate that this sign is of distinct value in the clinical investigation of patients. As the real condition in all four of these cases had escaped recognition, a description of this maneuver may be of value.

The patient is asked to drink as much water as he conveniently can, preferably at a time when the sac is most likely to be empty, i. e., the early morning. Then the patient's larynx is grasped by the hand and the soft tissues of the neck vigorously shaken. During this time the patient is requested not to breathe or swallow. The examiner, with the ear near the patient's neck, can readily hear the splash of the fluid in the sac. The dry creak or rattle heard and felt while shaking the larynx of thin or aged people must be differentiated from the splash.

Butler Building.

IMPROVISATION OF A ROLLER BANDAGE FROM A SQUARE OR HANDKERCHIEF BANDAGE

W. H. BAILEY, M.D.
Assistant Surgeon to Out-patient Department of Rosedale Hospital
KANSAS CITY, MO.

In emergency cases in which a dressing or a splint is required it sometimes happens that a square or handkerchief bandage does not serve the purpose nearly as well as a roller bandage. The method here described is one by which a roller bandage may be made from a handkerchief very quickly and easily. It might seem that the improvised bandage would be too clumsy and weak; but if it is applied firmly and neatly it will be found to hold quite as snugly as a regular roller bandage.

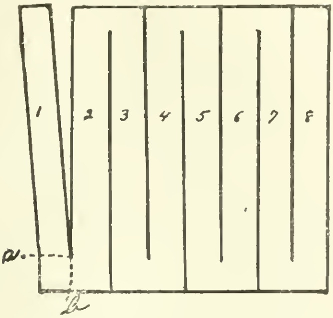


Fig. 1. Method of tearing cloth so as to improvise a roller bandage from a square of cloth.

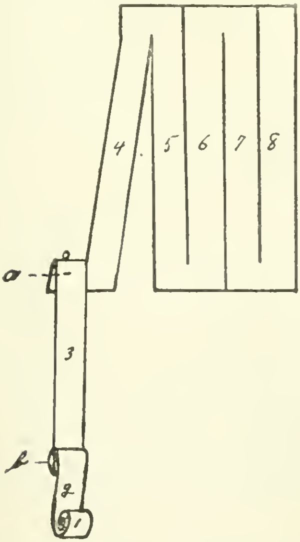


Fig. 2. Method of folding strips of cloth before being rolled.

The cloth is first torn or cut as shown by the heavy lines in Figure 1. The first strip is then folded directly backward or downward, as far as to the point *a* (Fig. 1) where it is joined to the second strip, as shown at *a* (Fig. 2); now the first strip (1) is folded on its longitudinal axis along the line *b* (Fig. 1), so that the first and second strips are in the same straight line as at *b* (Fig. 2). This process is repeated for all the strips, the folding taking place at alternate ends of the square. It makes no particular difference which way each strip is folded to bring it into line with the next one.

The bandage is then rolled and applied like any roller bandage. The strength and neatness of the bandage can be added to a little if it is pinned, before being rolled, at the places where the folds occur; but it works very satisfactorily without this added precaution.

This method can be used with a piece of cloth of any length or width. The bandage, of course, can be improvised out of other shapes than the square. Also the width of the completed roller can be made anything that is desired simply by varying the width of the original strips cut or torn in the square used.

3700 Brooklyn Avenue.

PARTIAL GANGRENE OF THE LEFT INDEX-FINGER

CAUSED BY THE SYMBIOSIS OF THE FUSIFORM BACILLUS AND THE SPIROCHÆTA DENTICOLA

J. F. HULTGEN, M.D.
CHICAGO

L. E., aged 7, was brought to consultation by her relatives August 6, 1910, on account an ill-smelling but fairly painless affection of her left hand, which had existed for a week but had become worse the last two days. On examination I found the nail of the left index-finger hanging to its bed by only a few shreds, covering a necrotic area which was surrounded by discolored, pultaceous, and extremely fetid tissue remnants. The upper half of the distal phalanx of the left index finger was destroyed, but the sphacelus was limited at the distal phalangeal joint by slightly irritated, reddish, and moderately swollen tissues. There was similar, but only slight, perionyxis of the left thumb; no systemic disturbance, slight left axillary adenitis; several carious teeth; gums not very healthy; throat negative. The patient was well developed, and evidently in good health.

Microscopically, smears from the affected finger tips showed a pure culture of the peculiar, symbiosis of two germs, the *Bacillus fusiformis* of H. Vincent (1896) and the *Spirochæta denticola* of W. D. Miller (1892). Preparations from the carious teeth showed the same organisms. The girl is in the habit of biting her fingers, and the etiologic connection between her teeth and the gangrenous affection of the left finger nail beds is quite plain.

This is, I believe, the first case on record of a gangrenous perionychia due to this symbiosis. It must be remembered that these parasites are also the specific pathogenic agents of the following affections: ulcero-membranous angina (Plaut and Vincent), ulcerative stomatitis (Bergeron, Bernheim and Poposcil), pyorrhea alveolaris or Rigg's disease, of many cases of noma, of hospital gangrene (Vincent), of tropical phagedenic ulcer (Vincent), of balano-posthitis (Bataille and Berdal) the so-called "fourth venereal disease" of F. G. Harris and B. C. Corbus. These germs live as facultative saprophytes in the mouth of normal individuals, and thence are inoculated into various parts of the body, internally as well as externally, attaining there pathogenic virulence under conditions as yet unknown to us.

504 Ashland Avenue.

Therapeutics

HEMORRHAGE FROM GASTRIC ULCER

Before instituting treatment for this very disturbing condition the physician should remember that statistics show that fatal hemorrhage from ulcer of the stomach is rare, probably not far from 1 per cent. of patients with this trouble dying during hemorrhage. Frequent occurrence of hemorrhages, of course, will soon cause anemia and perhaps lead to very serious loss of nutrition. Long before this condition occurs a surgical cure should have been instituted.

The object of this editorial is to call attention to a discussion of the subject by Dr. J. Kaufmann, of New York (*American Journal of the Medical Sciences*, June, 1910). He very sensibly states, in the first place, that gastric hemorrhage from this cause is rarely fatal; in the next place that an operation performed while the hemorrhage is going on would be extremely unsatisfactory. Either it is not necessary and the hemorrhage has ceased, or the patient is so exsanguinated as to make an anesthetic of any kind unjustifiable, and in the third place, it is difficult at the best, and more especially when there is blood in the stomach, to determine where the ulcer is located. The bleeding stops naturally from two causes; either from vaso-constriction of the bleeding vessel or vessels, or from the formation of a thrombus at the mouth of the bleeding vessel. Anything, then, that would increase the power and force of the general circulation as cardiac tonics, saline transfusions and circulatory stimulants would seem to be, and generally is, contraindicated. It has been repeatedly urged in article after article that cardiac tonics and vasoconstrictors are not indicated when the bleeding point cannot be reached and the hemorrhage locally stopped. In other words, when there is internal hemorrhage, whether somewhere in the abdomen, in the lungs, or in the brain, anything like digitalis or ergot is contraindicated, and when the bleeding stops after such medication it is a matter of sequence and not on account of the drug action. It is perfectly true that venous oozing and venous hemorrhage, sometimes bleeding from the nostrils, bloody expectoration from the lungs, when an insufficient heart is the cause, may be very well stopped by a cardiac tonic like digitalis, but generally when we discuss hemorrhage we mean arterial hemorrhage or an actual erosion of a vessel.

Therefore, anything that depresses the circulation unless the bleeding is sufficient to cause lowered arterial pressure and actual syncope, would be of advantage. It would be a brave man who would do venesection to stop a gastric hemorrhage, but as a matter of fact such treatment would often save the patient blood

Kaufmann states that he has seen Esmarch bandages placed on the limbs, thus removing the blood from the body circulation, and in causing the cessation of the hemorrhage.

As to local treatment aimed at stopping the hemorrhage, we can but agree with Kaufmann when he states that styptics and most local hemostatics such as acetate of lead, perchlorid of iron, oil of turpentine, and even tannic acid are as likely to cause nausea and vomiting as to stop the hemorrhage. As above stated, ergot should not be given at all, either by the stomach or hypodermatically. The vasoconstriction which adrenalin locally causes is followed by a reaction dilatation. This Kaufmann thinks may eventually cause a renewal of the hemorrhage. However, by the time of the vasodilatation a thrombus may have become firmly fixed in the bleeding vessel. Gelatin given by the mouth or in any other way is unsatisfactory. Calcium chlorid can do good only after absorption by rendering the blood a little more coagulable, hence it is a useful medicament only in repeated hemorrhages.

Kaufmann speaks of the serum treatment of hemophilia. We cannot see how this can be of any value in perforation of a vessel in the stomach, unless the patient is a hemophilic.

He finds the most satisfactory method of treating gastric hemorrhage is at first to do gentle gastric lavage. He has done this gastric washing so many times with satisfaction that he is not afraid of causing more hemorrhage. He does not believe it can ever cause perforation, unless the stomach is over-distended by very large quantities of water. In fact, if perforation was about to take place, he is not sure but that gastric lavage might save the patient's life by cleaning the stomach before the perforation. In other words, an ulcer that was not ready to perforate would not be perforated by lavage. If in his opinion the hemorrhage had ceased he would not do lavage, but if there was more or less constant bleeding he would do it, and the removal of a possibly insufficient thrombus from the bleeding part would only enhance a better contraction of the blood vessels and prevent a second or repeated serious hemorrhages.

The tube is inserted, (the patient lying down) and pushed just far enough to secure siphonage. The quantity of water used at a washing should be about 300 c.c. This cleansing of the stomach from what may have been there before the hemorrhage and from digesting and decomposing blood is of marked advantage in preventing vomiting and distress and causing the stomach to be at complete rest. In fact, these masses of clotting, disintegrating blood may cause gas and stomach distention and really actually cause another hemorrhage. Kaufmann also finds that a bleeding stomach may suddenly become dilated which would leave blood and perhaps food in the pendent portion, and this alone should be another cause for lavage.

Certainly after the lavage, and often before if it seems that the hemorrhage is about to stop, large doses of "crystalline bismuth subnitrate" should be administered. The crystalline form supposedly sticks more pertinaciously to the surface of the ulcer and allows the blood to agglutinate to the bismuth mass. Bismuth is not sufficiently astringent to contract the blood vessels to stop hemorrhage, but does aid in the coagulation of the blood and at the same time is soothing to the stomach, the exact opposite of the more active astringents.

For the subsequent treatment of gastric ulcer see The Journal of July 16, 1910, page 219.

It is interesting to note that Kaufmann believes that, paradoxical as it may sound, ulcers that have some time or other caused profuse hemorrhage are those that are the most readily cured.

APPENDICOSTOMY

This surgical procedure in order to better medicate the colon has passed the stage of experiment and is a resource for cure that must be considered in protracted colitis. The development of the various specialties has given increased importance to local treatment. It is of course true that so-called general or constitutional treatment stands in little danger of being entirely abandoned at any early date. It is also unquestionably true that some specialists in their enthusiasm over operative and local treatment have many times neglected general treatment to the disadvantage of their patients. But one who concentrates his study on a particular part or organ of the body naturally becomes more and more eager to get directly at the seat of the trouble, to examine it with direct vision, to manipulate it with the fingers, and to apply remedies directly to the lesion or to treat it instrumentally or operatively.

The small intestine and the colon long resisted such direct attacks for diagnosis and treatment. Colonic irrigation is a not very ancient attempt to apply local treatment to the large intestine, while exploratory laparotomy greatly broadened our opportunities for diagnostic investigation of the small intestine.

Mayo Robson, in 1893, reported a case of colitis in which a cure had been effected by means of an artificial anus in the colon.

In 1898, Dr. Francis W. Murray, of New York, treated a case of amebic dysentery of two years standing by performing a right inguinal colostomy and subsequently irrigating the colon with antiseptic solutions. The patient left the hospital before he was entirely cured, but was seen six months after, when his condition was found to be very satisfactory. He had gained in weight, was able to resume his work as a tailor, and had an average of two or three movements a day, generally formed, sometimes loose, and generally containing mucus.

By this operation two important indications of treatment were met. First, securing complete rest of the affected part by diverting the feces from the colon, and second, irrigations of the colon with solutions of quinin or nitrate of silver.

Further observation demonstrated that the latter indication was the more important and that the former might be disregarded.

Bolton, in 1901, proposed to make an artificial anus in the cecum with a finger-like projection of the tissue into the lumen of the cecum which should act like a valve and prevent the escape of the intestinal contents.

In 1902, Dr. Robert F. Weir, of New York, having commenced to do Bolton's operation in a case of ulcerative colitis, saw the appendix appear in the wound and decided to utilize it in making the desired fistula, which he did by suturing the appendix in the wound, removing its tip, and through its lumen injecting a solution of nitrate of silver.

Since then this operation has been done by many surgeons in the treatment of a variety of conditions affecting the intestines.

Dr. W. B. Russ, of San Antonio, Texas, has recently published (*Texas State Journal of Medicine*, August, 1909) a comprehensive review of this subject, describing the evolution and the various modifications of the operations and enumerating the various diseases and conditions in which it has proved useful.

The disease in which appendicostomy has its field of greatest usefulness is amebic dysentery. J. M. Holt, of the Public Health and Marine-Hospital Service, has expressed the opinion that this disease is much more common in the United States than has been commonly supposed, and that microscopic examination of the stools will often demonstrate that a "case of intractable diarrhea" is really amebic dysentery. These cases often resist indefinitely all forms of medical treatment.

At first advised only in chronic cases, some surgeons now advise operation in acute cases which do not soon yield to medical treatment. Many remarkable results following operation have been reported by surgeons of widely separated localities. Various solutions have been used for irrigating the bowel. Some excellent results have been reported from simple water; commencing with water at the temperature of the body and using water of lower temperature at each irrigation until ice cold water is used.

Most surgeons have used solutions of quinin 1 to 5,000 to 1 to 2,000, or of nitrate of silver 1 to 1,000 to 1 to 250. The fistula should not be allowed to close until there is no question of the complete recovery of the patient.

In mucous colitis irrigations with nitrate of silver solutions have proved very beneficial. In tubercular and syphilitic ulceration of the colon, irrigations with nitrate of silver solutions and ichthyol solutions, in connection with appropriate general treatment, have caused great improvement and in some instances have effected a cure. Gant, of New York, after a large experience says, "I have no more hesitation in advising appendicostomy and cecostomy for the relief of chronic diarrhea than I have for recommending appendectomy for appendicitis."

Appendicostomy with irrigation has also been recommended in septic peritonitis, in connection with drainage through tubes passed deeply into Douglas' cul-de-sac; in pernicious anemia in which it assists in removing from or diminishing the number of the anaerobic bacteria in the colon; in chronic constipation with headache, insomnia, and mental depression; and in the ileocolitis of children, which is not promptly controlled by dietetic and medicinal treatment.

It is becoming realized of late that in some instances of gastrointestinal irritation in which the symptoms have been attributed to appendicitis, and an appendectomy has been performed, the operation has not effected a cure, but the symptoms have persisted. In such cases there is considerable reason to believe that appendicostomy with irrigation of the colon will relieve the symptoms much more completely than the removal of the appendix and the closure of the abdomen.

Other conditions in which this operation has already proved, or seems likely to prove, beneficial are ileocecal intussusception, volvulus in which the cecum is involved, autointoxication, enteric or typhoid fever; also to prevent gaseous distention of the ileum, and to relieve dangerous post-operative conditions, in which irrigation through the appendix with warm saline solution will prevent or relieve shock, avoid distention, and assist elimination.

In some cases where irrigation of the ileum as well as of the colon is desirable cecostomy may be preferable to appendicostomy.

In rare instances this up and down or proximal and distal irrigation has been accomplished by means of an appendicoenterostomy, the tip of the appendix being opened and fastened into the ileum at its lower extremity. The loop of the appendix being brought into the abdominal wound, and after it had become united to the surrounding tissues being opened, irrigation may be readily performed in both directions.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

(For other information see second page following reading matter

SATURDAY, SEPTEMBER 3, 1910

FOURTH OF JULY CASUALTIES IN 1910

We present this week statistics of deaths and injuries resulting from the celebration of the Fourth of July for 1910. The returns this year are most encouraging, since they show an enormous reduction in the number of deaths and of injuries. The totals are the lowest since The Journal began the compilation of these statistics in 1903. The reason for this marked reduction in both deaths and injuries is clearly due to the adoption of saner methods of celebration by several of our larger cities and by hundreds of smaller ones. In the bringing about of this change the annual reports of The Journal have unquestionably had much effect.

Beginning in 1903, The Journal began the compilation and publication of statistics showing the awful results of the unrestricted use of fireworks. This was done year after year, nevertheless each year the resort to lawlessness continued and the maiming, the killing, the burning to death of little children and the torturing by lockjaw went merrily on. Besides stating the awful toll of life and limb from this annual carousal, The Journal also pointed out that the responsibility clearly rested with city governments. As the constant dropping of water wears away stone, so this annual presentation of the facts began to have an effect. At first a few public-spirited newspapers—notably the Chicago *Tribune*, which had made a news feature of the list of accidents even before The Journal began the collection of more complete data—published the facts, then newspapers generally took up the cry and finally numerous magazines and periodicals, so that the demands for restriction of the sale and use of fireworks became too insistent to be disregarded. Several cities like Toledo, Chicago, New York and Boston employed restrictive measures whereby the casualties were greatly reduced, while other cities like Baltimore, Washington, Cleveland and Trenton passed prohibitory ordinances with the result that deaths and injuries were entirely prevented or were reduced almost to the minimum.

On the other hand, municipal authorities, civic organizations, medical societies and others took up the task of providing more intelligent methods of celebration. Two years ago Springfield (Mass.), St. Paul, Detroit, Toledo and other cities arranged special programs in which music, the marching of soldiers, the flying of flags and banners, children's parades, and historic floats illustrating national achievements, were prominent features. The results in these cities were more than satisfactory, and during the past year many other cities provided similar forms of celebration. Chicago this year spent over fifty thousand dollars in its pageant; Pittsburg employed special artists to direct its pageants for this and next year, and cities in all parts of the country reported the adoption of these exemplary methods of commemorating our national freedom—a freedom not to maim and kill for the sake of creating a noise but a freedom which insures to the greatest number of citizens the blessings of life, peace and happiness.

So in the greatly reduced number of casualties this year The Journal feels the natural satisfaction that its labors have not been in vain. However, it is still too early for a cessation of effort. One hundred and thirty-one people needlessly killed or tortured and nearly three thousand people mutilated, not a few for life, are still too many to permit a conscientious people to halt in this good work.

The movement for reform must go on until our method of celebration has been completely changed from the hitherto pseudo-patriotic frenzy, with its aftermath of suffering and sorrow, to a commemoration which will not only instill in our hearts a just pride in our nation, in its achievements and in its customs, but—and this is still more important—a commemoration which will create a stronger love for law, order and civilization. And when could such ideals be better set forth than in the celebration of July Fourth? Every paper we pick up and every popular magazine have articles nowadays showing that low morals, disregard for law, and graft, in high places and low, are rife enough without giving over our national holiday to further this decadence in our national life.

The commemoration of the Fourth of July is the nation's greatest opportunity for preaching the gospel of national and civic righteousness and for pointing the attention of hundreds of thousands of children to the characters which have made and developed this nation.

To The Journal it seems as though this is but the beginning of a mighty movement, not only to do away with the wanton destruction of life and limb by the use of fireworks, but to make of our national holiday a day of national upbuilding, a day for calling attention to the important incidents in American history; in fact, a day for the development of a genuine patriotism.

A HITHERTO UNDESCRIBED SEXUAL GLAND

The field of anatomy has been so thoroughly covered by investigation as to make one feel that there remains but little to be discovered. Yet every now and then a new fact comes to light, and therefore those engaged in this line of inquiry need not despair of the result of their researches. A recent careful study shows that the accepted explanation of a long-recognized fact has been based on a fallacy in observation.

It has been noted that at times the urethra in some of the lower animals is occluded by a coagulum, whose formation has been attributed to the interaction of the secretions of the prostate gland and the seminal vesicles. It now turns out, according to a discovery made by Dr. George Walker,[1] that this phenomenon is in reality due to the mixture of the secretions of the seminal vesicles and of two small glands adjacent to the vesicles and hitherto supposed to form a part of the prostate. This observer found that coagulation did not take place when a pure secretion obtained from the anterior lobes of the prostate was employed, but it did take place immediately when secretion from a small glandular structure lying in the same sheath of fascia as the seminal vesicles was used for the purpose.

The gland in question consists of two lobes differing morphologically and histologically from the prostate and giving rise to an independent and distinct secretion. It is reasoned that it is the function of the prostate gland to furnish a secretion in which spermatozoa can move freely and acting as a diluent and perhaps as a stimulant, while the secretion furnished by the newly isolated gland causes coagulation of the secretion of the seminal vesicles so that a plug is formed in the outer portion of the vagina, and thus prevents the escape of deposited semen. The gland has been found in rats, guinea-pigs, mice and probably in hedgehogs, but not in human beings, rabbits and bullocks. It is further thought not to be present in the *Carnivora*, most of which have no seminal vesicles. In human beings the existence of the gland is suggested by the presence of coagulated particles in the semen and it may be the purpose of such coagula to prevent escape of spermatozoa from the vagina when the female is in the upright position.

INFLUENCE OF AGE AND TEMPERATURE ON THE POTENCY OF DIPHTHERIA ANTITOXIN

Many physicians, having occasion to use diphtheria antitoxin, have found that the return date on the package to be used had been reached or passed. This raised a doubt in their minds as to whether they should use this or obtain a newer package. Until recently there was little information on the question of the influence of age and temperature on the potency of diphtheria antitoxin and considering the importance of the subject it is surprising how little attention it has received from workers with serum. The question has recently been taken up by Anderson[1] in the Hygienic Laboratory.

Most of the work previously reported had been done by serum experts employed by the manufacturers of antitoxin, and while in some instances a large number of different lots of serum were examined, the experiments were not sufficiently conclusive to be of value owing mainly to the fact that the potency of the serum had not been determined within sufficiently close limits to justify an exact determination of the loss in potency. The results also lost some of their value on account of failure to take into consideration the excess allowed by all producers for decrease in potency of serum when put on the market.

Anderson studied the influence of age and temperature on eighteen lots of diphtheria antitoxin, fourteen being the untreated horse serum and four the globulin preparation. Each lot of serum studied by him was divided into three portions; one portion was kept at room temperature, one at 60 F., and the other at about 40 F. The potency of each lot was determined every six months for three years, at the end of which time the results were tabulated and published. As a result of his work he finds that the average yearly loss in potency of diphtheria antitoxin at room temperature is about 20 per cent.; at 60 F. about 10 per cent.; at 40 F. about 6 per cent., though in some instances these percentages were increased. There appears to be but little difference in the keeping properties of the untreated serums and the globulin solution.

In regard to the lack of confidence in old serums, Anderson says that the only reason for not using such serums would be that a larger amount would have to be used to allow for the decrease in potency; but that old serums, unit for unit, are just as potent as fresh serums and would be perhaps less apt to cause severe reactions than fresh serums. He found that when diphtheria antitoxin was dried and kept in the dark at 10 F. it retained its potency practically unimpaired for five and one-half years. He suggests that such a dried antitoxin might be of value for use on long voyages and in the tropics.

Current Comment

POLIOMYELITIS

Reports indicate that poliomyelitis or infantile paralysis is quite prevalent in an epidemic form in many parts of the country. In some cases the true nature of the disease does not seem to have been appreciated until a considerable number of cases had occurred. This fact emphasizes the importance of physicians being on the lookout for the earlier cases, so that the disease can be controlled before it becomes epidemic. The conception of the disease has somewhat widened in consequence of recent investigations and experience. That it has the nature of a general infection is evident from the manner of onset in many instances. Symptoms referable to the general system or to the digestive tract are apt to precede those which indicate the seat of the principal lesions in the nervous system. The early symptoms may also indicate involvement of the cerebrum so that the incautious practitioner may be led to conclude that he is dealing with an acute local disease of the brain. The general character of the early symptoms and the known prevalence of the disease should lead the physician to suspect the occurrence of poliomyelitis in cases presenting obscure indications of general infection with involvement of the nervous system. While the mode of transmission is not yet worked out it is evident that the disease is contagious, although there seems to be marked differences in susceptibility. The isolation of actual or even suspected cases is therefore important. Such isolation should be especially strict as regards young children. Unfortunately no curative or immunizing serum has yet been perfected, but with the activity of present bacteriologic research we may hope for an improved method of diagnosis and a specific treatment in the near future.

---

[1] Walker, G.: Bull. Johns Hopkins Hosp., June 10, 1910, p. 182.

[1] Anderson, John F.: The Influence of Age and Temperature on the Potency of Antidiphtheric Serum and Antitoxin Globulin Solution, Jour. Infect. Dis., 1910, vii, 481.

CHOLERA AND SUPERSTITION

Reports from southern Russia indicate that cholera is especially prevalent, while in St. Petersburg, with 1,000 cases in the hospitals, the number is increasing daily. The Russian authorities are said to be unable to suppress the spread of the disease and, too often with fatalism, regard it as unavoidable. The educated classes are inert and indifferent, while the peasants are fiercely opposing the sanitary authorities in their efforts to prevent the spread of the disease, attributing it, as usual, to the officials and the doctors who are trying to suppress it. Bulletins issued by the Russian government August 19 show a total to date of 112,985 cases, with a death roll of 50,287. As these figures show only the reported cases and deaths, it is probable that the actual numbers are even greater. Ignorance, superstition and fanatical opposition to progress still go hand in hand with filth, preventable diseases and an unnecessarily high death rate.

ABOLISH THE BLANK CARTRIDGE PISTOL

Blank cartridge wounds in eight years have caused 860 cases of tetanus, or 81.5 per cent. of all tetanus cases from Fourth of July injuries. Furthermore blank cartridge wounds cause more deaths in the annual celebration of our Independence Day than all other factors combined. In eight years, 851 deaths have been caused by this one factor. Most of the victims were bright, active boys from 6 to 18 years of age, who were doomed to die the most awful death known to medical science—a death the agony of which is probably not paralleled even by the tortures of the Inquisition. If this annual sacrifice were really necessary, it would be far more merciful to pick out the hundred or more youths each year and deliberately shoot them. But this annual outrage is not necessary; it is entirely preventable, and the prevention rests with the authorities of cities, towns and villages. For eight years The Journal has heralded these facts to the world; they have been given even wider publicity by some of our public-spirited newspapers and periodicals, and now no one can plead ignorance of the awful facts. Nevertheless, the governing bodies of the majority of our cities still view with the blind eye of callous indifference the fatalities for which they are morally responsible. Some cities have, indeed, passed prohibitory ordinances, but have not enforced them vigorously. To permit the use of blank cartridges and blank cartridge pistols at any time is little less than criminal.

WILLIAM JAMES

The death of Prof. William James, the eminent psychologist and writer, removes a distinguished member of the medical profession, though the fact that he was a member of our profession may not be generally known. Dr. James graduated from Harvard Medical School in 1869 and from 1872 to 1880 he taught in that school, first anatomy and later physiology. It was but a short step from physiology to philosophy, which he commenced to teach in 1880; and a still shorter one to psychology, of which he became professor in 1889. He is best known as a psychologist, both in this country and abroad. He would have been prominent in his original profession, but his work in mental science has so put in the shade his earlier record that it has been almost forgotten that he was a physician and a medical teacher. There is hardly any modern philosopher who is more often quoted in medical works, more especially those treating of mental affections and the mental treatment of disease. By his death our country has lost one of its most brilliant and lucid thinkers and broadest minded philosophic investigators. Incidentally, as an instance of heredity of talent, it is worth mentioning that he was a son of a talented clergyman, and his brother, Henry James, Jr., is the well known psychologic novelist whose name is familiar to lovers of literature wherever the English language is spoken.

DOLLARS VERSUS LIVES

The recent hearing at Washington in the Indiana benzoate of soda case places the manufacturers involved in a somewhat equivocal position through the emphatic replies of Dr. Wiley to some of the questions put to him. In the course of the cross-examination, according to the press despatches, the following statements were made:

> "These tests are immensely important to the business world and involve thousands of dollars in property and products," said the attorney for the manufacturers.
>
> "I don't care a hang for the business world," Dr. Wiley replied, promptly, "what I care for is the health of the people."
>
> "You consider that more important than the interests of those who have hundreds of thousands of dollars tied up in property and products?" asked the attorney.
>
> "I most certainly do," replied Dr. Wiley, "where there are thousands of dollars involved, there are millions of lives hanging in the balance which these investigations affect. It is these which I consider and not the business which may be done by any corporation."

Friends of the national Food and Drugs Act and advocates of its proper enforcement are certainly under obligations to the attorneys for the manufacturers for giving Dr. Wiley an opportunity to make such a straightforward statement of his position. The Journal and the medical profession have insisted from the beginning that the campaign was one of dollars versus lives. It was not to be expected, however, that the issue would be so clearly defined by the manufacturers themselves.

VITAL STATISTICS A BUSINESS ASSET

The Mississippi Land Development Association desires to attract immigration to that state. In preparing literature, the committee wished to make positive statements concerning the comparative healthfulness of the state. When the association attempted to secure reliable data on this point, however, it was found that no records of any sort existed by which the mortality or morbidity of the state could be ascertained. This proved such a serious drawback that business men interested in real estate and land development have taken up the question as a business proposition and are inaugurating a movement for the passage of a vital statistics law in order that official records of the state's healthfulness may be obtained. This action in a southern state is particularly gratifying, as that section has for many years been without adequate vital statistics. Only by carefully compiled official records is it possible to overcome the popular impression, which was created by serious epidemics in past years, of the comparative unhealthfulness of that portion of the country. It is therefore important that southern states adopt and enforce adequate vital statistic laws in order that the mortality and morbidity of the population may be a matter of record and not of rumor or surmise. Increasing healthfulness consequent on the suppression of malaria, yellow fever and hookworm disease, will be one of the best business assets for the new south.

HOGS SAVED FROM CHOLERA: NO HELP FOR BABIES

Two items recently appeared in a southern newspaper which apparently have no relation and yet are extremely suggestive. Here is the first one:

> Hog-Cholera Eradicated. A report comes from Jackson that hog-cholera has been entirely eradicated from the state. Only one case was reported, it is said, that one being near Natchez. The usual serum was prepared and administered with excellent effect, so that there is said to be not a single case in Mississippi at the present time. The live-stock commission furnishes the serum for hog-cholera free of charge to veterinarians, and in the event of any outbreak, it can be quickly administered and the disease immediately suppressed.

The second was not considered of sufficient importance to call for a heading:

> Without warning, little John McCabe, ten years old, son of Mrs. Elizabeth McCabe, was stricken by the hand of death this morning, and forty-five minutes later was no more. Death was due to spinal meningitis.

Careful examination of previous and subsequent issues of the newspaper fails to show that the state which furnished serum for hog-cholera made any effort to secure a serum to save the life of little John McCabe, or to prevent the development of more cases of meningitis. A single case of hog-cholera is reported at once and the state live-stock commission takes immediate action. Yet no one knows how many children in Mississippi are suffering from spinal meningitis or even how many have died from that dread disease in the last year. The state which demands a report of every case of hog-cholera does not even record the death of a child from spinal meningitis or from any other cause. Another strange feature—no one objects to the state suppressing hog-cholera. In fact, the hogs of Mississippi have not even organized a National League of Medical Freedom.

FLORENCE NIGHTINGALE HER WORK IS HER MONUMENT

The other day, Florence Nightingale was laid to rest in a quiet country churchyard in Hampshire. But for her known opposition to notoriety, the popular demand for her interment in Westminster Abbey would doubtless have been carried out. It was the personal request of the "Angel of the Crimea" that the strictest privacy should mark her funeral. It is proposed to erect a tablet in Westminster Abbey, as well as a public monument in London in memory of the woman who lessened the horrors of military hospitals and helped to ameliorate so far as possible the barbarities of war. This is right. But no monument can be erected that will adequately commemorate the services of this remarkable woman.

EIGHTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

For the eighth consecutive year we are presenting statistics of injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Every possible effort has been made to secure reliable data and all serious cases have been carefully investigated, so that, so far as the figures go, dependence may be placed on them. Lists of the patients treated at a large number of hospitals have been sent in and thousands of letters have been received from physicians in all parts of the country. In this way many cases have been reported which otherwise could not have been included in the statistics. Doubtless many injuries occurred which were not reported, but these must have been of very minor character. Thanks are extended to the health officers, the hospital superintendents, the physicians and others for the careful reports which have made these statistics practically complete and the figures reliable. The data are presented in the same manner as heretofore so that comparisons with the figures of previous years may be made.

FEWER CASES OF TETANUS

There were 72 cases of tetanus this year, the lowest number reported during the eight years The Journal has been gathering these statistics and less than half the number of last year, when 150 cases were reported.

It is a significant fact that the number of blank cartridge wounds shows a correspondingly large decrease, from 1,225 last year to 450 this year (Table 6). It is interesting also to note that, since they form the most prolific cause of tetanus, wounds from the formerly considered "harmless" blank cartridge result in a higher percentage of deaths (12.7) than those from loaded firearms (10.2 per cent.). The most common cause of the wound is the blank cartridge and the most common site is the hand. Of the 72 lockjaw patients all but one were males, and all but 6 were under 18 years of age. The youngest was 6 years old, the oldest was 56 and the average age was 13½ years.

The duration given in the table is the number of days between the time of the injury and death or recovery. Figures are also given (in parentheses) showing the number of days following the injury, before active symptoms appeared. This was 3 to 10 days, the average for fatal cases being 6½ days. A longer incubation period probably indicates a less virulent infection and, therefore, a better chance for recovery under treatment. Following the appearance of the symptoms, death resulted in from 1 to 8 days, the average of all cases this year for which this information was given being 2¾ days. In six cases the entire duration of time between inoculation and death was five days or under, the shortest being three days. The average for all fatal cases reported was about 10 days.

USE OF ANTITOXIN

So far as reports were received tetanus antitoxin was employed in 25 cases, but in only one instance this year, according to the report, was it employed before the active symptoms had set in. In this one case (occurring in Ogden, Utah), antitoxin was not given until the fourth day because no supply had been provided by the city and the physician was unable to secure it before that time. The value of tetanus antitoxin as a prophylactic appears so positive that very few cases have ever been reported in which active symptoms began after its administration. The list of tetanus cases is given in Table 1.

Tetanus occurred in 18 states, 7 less than last year and 2 less than 1908. Heretofore for five years Illinois has had the largest number, having had 20 cases last year, but this year that state reports 10 cases, falling below Michigan and Pennsylvania, each of which had 11. New Jersey had only 9 cases this year as compared with 19 last year, and Ohio reports only 4 cases this year, whereas there were 12 last year. Table 2 allows comparison of the number of cases in each state for the eight years.

Blank cartridges continue to be responsible for the great majority of tetanus cases, 64, or 88.9 per cent., this year being due to that cause as compared with 86.5 per cent. last year, 73.3 per cent in 1908, 71 per cent in 1907 and 60 per cent in 1906. With the full knowledge of the awfulness of the deaths caused by blank cartridge wounds it is certainly inexcusable that the use of these instruments of torture is not absolutely prohibited. Five cases of tetanus this year were from gunshot wounds, 2 were due to injuries by firecrackers and 1 was caused by a dynamite cap. None

TABLE 1.—CASES OF TETANUS

Name.	Sex.	Age.	Cause of Wound.	Site of Wound.	Duration in Days*	Day Antitoxin was used.	Termination.
			CALIFORNIA				
Lauritson	M.	25	Gunshot	Hand	(5) 7	..	D.
			ILLINOIS				
Bailey	M.	12	Bl. ctg.	Hand	(10)18	..	D.
Crowe	M.	9	Bl. ctg.	Hand	(7) 9	.	D.
Ford	F.	38	Bl. ctg.	Hand	17	..	D.
Hampton	M.	13	Firecracker	Hand	(5) 6	.	D.
Hendrichson	M.	9	Bl. ctg.	Side	5	..	D.
Longwell	M.	14	Bl. ctg.	Finger	(8)10	No	D.
Lukashasski	M.	11	Gunshot	Hand	10	.	D.
Panter	M.	15	Bl. ctg.	Finger	(6) 8	7	D.
Pierre	M.	13	Bl. ctg.	Finger	.	..	D.
Scholes	M.	14	Bl. ctg.	Hand	(5) 6	5	D.
			INDIANA				
Barnes	M.	Adult	Gunshot	Hand	(5)	..	D.
Jackson	M.	12	Bl. ctg.	Hand	14	..	D.
Kardasz	M.	10	Bl. ctg.	Hand	4	..	D.
Lacey	M.	12	Bl. ctg.	Hand	(6) 8	No	D.
Seifert	M.	9	Bl. ctg.	Hand	.	..	R.
Williams	M.	12	Bl. ctg.	Hand	10	7	D.
			IOWA				
Reese	M.	14	Bl. ctg.		10	..	D.
			MAINE				
Stabler	M.	9	Bl. ctg.	Leg	..	..	...
			MARYLAND				
Hanna	M.	11	Bl. ctg.	Hand	(9)16	..	D.
			MICHIGAN				
Bean	M.	8	Firecracker		..	..	D.
Congdon	M.	13	Bl. ctg.	Hand	(6) 8	6	D.
Cousani	M	6	Bl. ctg.	Hand	(4) 5	5	D.
Engstrom	M.	22	Gunshot	Hand	12	..	D.
Lathridge	M.	13	Bl. ctg.	Hand	6	..	D.
Reed	M.	6	Bl. ctg.	Shoulde	8	..	D.
Rogner	M.	10	Bl. ctg.	Finger	11	..	D.
Shrock	M	14	Bl. ctg	Finger	(7)12	7	D.
Sorenen	M.	11	Bl. ctg.	Hand	(6) 8	6	D.
Tervanen	M	56	Bl. ctg	Hand	7	..	D.
Wallin	M.	11	Bl. ctg	Hand	9	..	D.
			MISSOURI				
Anderson	M	12	Bl. ctg.	Hand	8	..	D.
Stotzer	M.	12	Bl. ctg.	Hand	(6)10	6	D.
			MONTANA				
Norris	M.	10	Bl. ctg.	Hand	(9)	9	R.
Smith	M.	8	Bl. ctg.	Hand	6	..	D.
			NEBRASKA				
Chapman	M.	10	Bl. ctg.	Arm	10	..	D.
			NEW JERSEY				
Bellis	M.	11	Bl. ctg.	Finger	10	..	D.
Daljnic	M.	14	Bl. ctg.	Face	.	..	.
Gourley	M.	12	Bl. ctg.	Hand	(8)11	..	D.
Hoffman	M.	12	Bl. ctg.	Hand	.	..	D.
Karcher	M	11	Gunshot	Hand	(6) 9	7	D.
Kappes	M.	17	Bl. ctg.	Finger	(6)10	7	D.
Strang	M.	11	Bl. ctg.	Hand			D.
Van Gorden	M	14	Bl. ctg.	Finger	(7) 9	No	D.
Wilson	M.	12	Bl. ctg.	Finger	(7) 8	7	D.
			NEW YORK				
Anthony	M.	9	Bl. ctg.	Hand	6	..	D.
Cole	M.	17	Bl. ctg.	Hand	5	..	D.
Kroppe	M.	18	Bl. ctg.	Thigh	(7)11	7	D.
Mickey	M.	[illegible]	Bl. ctg.	Arm	7		D.
Ratelyea	M	11	Bl. ctg.	Hand	(6) 8	7	D.
See	M	13	Bl. ctg.	Hand	(8)16	9	D.
Taylor	M.	Boy	Bl. ctg.	Hand	(6) 9	..	D.
			OHIO				
Arendt	M	12	Bl. ctg.	Thigh	(6) 7	6	D.
Bomb	M.	15	Bl. ctg.	Hand	9	..	D.
Liebenderfer	M.	14	Bl. ctg.	Hand	7	..	D.
			PENNSYLVANIA				
Adatoski	M	21	Bl. ctg.	Hand	(7) 8	7	D.
Anezak	M.	15	Bl. ctg.	Finger	(5) 7	6	D.
Bovitch	M	38	Bl. ctg.	Arm	5	..	D.
Dorshock	M	10	Bl. ctg.	Hand	14	..	D.
Fagell	M	11	Bl. ctg.	Finger	(3) 5	3	D.
McIlaney	M.	12	Bl. ctg.	Finger	(6) 7	6	D.
Rosbaugh	M.	11	Bl. ctg.	Hand	(6) 8	7	D.
Serbo	M	7	Bl. ctg.		8		D.
Sutherland	M	16	Bl. ctg.	Hand	(10)13	12	D.
Tenant	M	11	Bl. ctg.	Hand	8	.	D.
Teal	M	7	Bl. ctg.	Leg	8	..	D.
			UTAH				
Clark	M	17	Bl. ctg.	Hand	(8) 9	4	D.
			WASHINGTON				
[illegible]	M	12	Bl. ctg.	Hand	10	..	D.
			WISCONSIN				
[illegible]	M	8	Bl. ctg.	Hand		[illegible]	R.
[illegible]	M	12	Dyn. cap	Hand	(7) 8	7	D.
[illegible]	M	11	Bl. ctg.	Finger	(7) 11	7	D.
			OKLAHOMA				
[illegible]	M	[illegible]	Bl. ctg.		8	.	D.

* Figures in parentheses show incubation period.

TABLE 2. TETANUS CASES BY STATES

Comparison with Previous Years

	1903	1904	1905	1906	1907	1908	1909	1910
Alabama	..	..	1	..	..	..	..	..
Arizona	..	..	..	.	1	..	..	..
California	2	4	4	3	1	..	2	1
Colorado	4	..	1	..	..	..	..	..
Connecticut	3	..	3	..	4	1	..	..
Delaware	..	..	1	1	1	..	2	..
District of Columbia	1	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	1	..
Georgia	..	..	..	..	1	..	..	..
Idaho	1	..	..	.	..	..	1	
Illinois	49	15	20	16	12	12	20	10
Indiana	11	6	3	8	2	..	9	6
Iowa	14	2	3	4	4	1	1	1
Kansas	11	1	..	..	2	1	6	.
Kentucky	4	2	..	1	..	1	1	..
Louisiana	..	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1	1
Maryland	1	..	1	1	..	..	2	2
Massachusetts	16	5	7	3	2	5	8	..
Michigan	29	7	9	4	4	2	11	11
Minnesota	15	2	2	2	2	..	..	.
Missouri	29	1	3	3	1	5	8	2
Montana	2	1	1	..	1	..	3	2
Nebraska	4	3	3	1	..	1	3	1
New Hampshire	2	..	..	1	..	..	1	.
New Jeresy	8	9	3	10	8	10	19	9
New York	36	9	6	8	4	9	11	7
North Dakota	..	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12	3
Oklahoma	1	..	1	1	..	1	..	1
Oregon	2	..	..	1	1	1	..	.
Pennsylvania	82	17	12	5	7	7	10	11
Rhode Island	3	..	..	1	..	..	..	..
South Carolina	..	..	..	..	..	..	..	..
South Dakota	..	..	..	..	..	1	1	..
Tennessee	..	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..	.
Utah	..	1	1	..	..	..	..	1
Vermont	3	2	..	2	2	..	..	.
Washington	2	1	..	..	2	4	4	1
West Virginia	3	..	..	2	..	1	4	..
Wisconsin	10	4	13	2	3	5	9	3
Wyoming	..	..	..	1	..	..	..	..
Total	415	105	104	89	73	76	150	72
No. states having cases	30	21	23	25	23	20	25	18

was caused by toy cannon this year. The causes of the tetanus cases from Fourth of July injuries for each of the past eight years are shown in Table 3.

TABLE 3.—CAUSES OF TETANUS CASES

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Fire-arms.	Powder, etc.	Total.
1903	363	17	5	3	27	415
1904	74	18	5	1	7	105
1905	65	17	4	5	13	104
1906	54	17	1	7	10	89
1907	52	8	6	4	3	73
1908	58	5	4	3	6	76
1909	130	9	1	4	6	150
1910	64	2	..	5	1	72

Of the 72 cases of tetanus from Fourth of July injuries this year 67, or 93.1 per cent. ended fatally as compared with 81 per cent. last year, 72 per cent. in 1908, 85 per cent. in 1907 and 84 per cent. in 1906.

TETANUS FROM INJURIES NOT CAUSED BY FIREWORKS

Besides the cases of lockjaw due directly to Fourth of July fireworks, it is interesting to note also those due to penetrating wounds from other causes, such as nails or splinters, to crushing injuries, etc. There were only 47 such cases reported during the Fourth of July season this year or about one-third the number of last year, when 128 were reported. The cases of tetanus due to other than Fourth of July injuries are shown by states in Table 4. A comparison of this table with Table 2 is interesting.

TABLE 4. CASES OF TETANUS FROM OTHER CAUSES

	1908	1909	1910		1908	1909	1910
Alabama	..	..	1	Nevada	..	..	..
Arizona	..	.	..	New Hampshire	..		.
Arkansas	2	.	..	New Jersey	7	8	8
California	4	4	1	New Mexico	..	1	
Colorado	3	..	..	New York	17	12	4
Connecticut	2	2	..	North Carolina	1	.	..
Delaware	2	1	..	North Dakota	1		.
District of Columbia	.	..	..	Ohio	23	13	2
Florida	2	.	..	Oklahoma	..		
Georgia	..	1	..	Oregon	..	1	3
Idaho	..	..	..	Pennsylvania	21	21	8
Illinois	17	18	7	Rhode Island	..	1	..
Indiana	6	4	1	South Carolina	.	.	.
Iowa	2	7	3	South Dakota	2	2	
Kansas	4	.	1	Tennessee	3		.
Kentucky	5	5	..	Texas	4	1	1
Louisiana	1	..	..	Utah	..	.	.
Maine	..	..	..	Vermont	.		1
Maryland	3		2	Virginia	4	1	..
Massachusetts	3	5	..	Washington	2		..
Michigan	4	5	1	West Virginia	.	1	..
Minnesota	4	2	..	Wisconsin	5	4	1
Mississippi	..	..	..	Wyoming	..		.
Missouri	12	5	1				
Montana	.	..	..	Total	166	128	47
Nebraska	.	3	1	States reporting cases	29	25	18

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS

Besides the 67 deaths due to tetanus, 64 persons were killed by various forms of fireworks, making a total of 131, a decrease of 81 below last year and 32 less than in 1908. This is the lowest number of deaths from such causes since The Journal began publishing these statistics in 1903. Nineteen people were killed outright this year by firearms, 11 by explosions of powder, bombs or torpedoes, 3 by cannon and 3 by various causes, as blood poisoning, explosion of chemicals, etc., while 26, mostly little girls, were burned to death by fire from fireworks, in several instances, from the so-called "harmless" varieties. All accidents not due directly to the discharge or handling of fireworks or other means of noise production and display on or about the Fourth of July have been omitted. Table 5 shows a comparison of other causes of death than tetanus for the past six years.

TABLE 5.—CAUSES OF DEATHS NOT DUE TO TETANUS

Year.	Gunshot.	Fire from Fire-works.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes	Total
1905	[illegible]	23	6	5	7	17	95
1906	38	18	18	3	3	3	83
1907	20	31	13	13	3	22	102
1908	30	22	19	23	7	7	108
1909	17	37	16	7	7	6	90
1910	19	26	11	2	3	3	64

In Table 6 will be found a summary of all injuries including tetanus, and of all causes arranged by states. Beneath the totals at the bottom are given the totals for the seven previous years in order that comparisons may be made. The grand totals for the eight years are also given. Table 7 allows of comparison by states of the total deaths and accidents for the eight years.

The decrease in the number of injuries is most remarkable this year and unquestionably is the result of the efforts to secure more intelligent methods of celebration. This is evident from the fact that the most marked decreases are in the states which heretofore have had the largest numbers injured and where the agitation for restrictive measures was strongest. Mas-

TABLE 6.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of Tetanus Cases.		Causes of all Cases Aside from Tetanus Cases.				
States.	From Tetanus.	From Other Causes.	Total.	Loss of Sight	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-Fatal Injuries.	Total Persons Dead or Injured.	Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Powder and Fireworks.
Alabama		1	1					2	2	3			1			2	
Arizona																	
Arkansas								4	4	4			1	3			
California	1	2	3			1	7	52	60	63		1	6	23	3	5	25
Colorado		1	1				2	16	18	19				17			2
Connecticut		1	1		1	1	7	68	77	78			26	16	13	9	14
Delaware						1		7	8	8			2	5		1	
District of Columbia																	
Florida		1	1					3	3	4			1	1	1		1
Georgia								5	5	5							5
Idaho								3	3	3				2			1
Illinois	10	4	14		4	1	15	251	271	285	8	2	53	105	18	15	81
Indiana	5	3	8		2	1	9	147	159	167	5	1	13	87	10	12	39
Iowa	1	3	4		1		3	133	137	141	1		8	64	9	6	53
Kansas		2	2					48	48	50			9	12	11	1	17
Kentucky		1	1					25	25	26			3	10	1		12
Louisiana								4	4	4				2		2	
Maine								7	7	7	1		1	4			1
Maryland	1		1				1	6	7	8	1		1	1	1	1	3
Massachusetts		2	2		1		3	57	61	63			4	11	4	8	36
Michigan	11	4	15		2	2	11	113	128	143	9	2	20	56	6	5	45
Minnesota		1	1	1	4	1	1	56	63	64			2	25	9	5	23
Mississippi																	
Missouri	2	1	3	1	1		3	104	109	112	2		25	48	6	4	27
Montana	1		1					9	9	10	2		1	6			1
Nebraska	1		1		1			34	35	36	1		3	7		6	19
Nevada						1			1	1				1			
New Hampshire							1	9	10	10			3	3	1		3
New Jersey	8	4	12	1		3	5	146	155	167	8	1	32	41	8	22	55
New Mexico								3	3	3			2	1			
New York	7	9	16	1	7	5	9	289	311	327	7		63	80	34	45	98
North Carolina								1	1	1					1		
North Dakota							2	11	13	13			1	8	1	1	2
Ohio	3	5	8	1	3	1	7	146	158	166	3		31	67	9	12	44
Oklahoma	1		1			1	1	8	10	11	1		2	6			2
Oregon							1	18	19	19				10	3		6
Pennsylvania	11	14	25	2	3	2	14	577	598	623	11		33	200	43	49	287
Rhode Island								19	19	19			3	3	2	2	9
South Carolina																	
South Dakota								4	4	4			2				2
Tennessee						1		9	10	10			4	2	1	2	1
Texas								2	2	2			1				1
Utah	1	1	2					6	6	8	1		1	3		3	
Vermont						1		3	4	4			1	3			
Virginia																	
Washington	1		1			1	4	31	36	37	1		3	14	1	2	16
West Virginia								20	20	20				17		2	1
Wisconsin	2	4	6		3	2	7	153	165	171	2	1	24	83	16	6	39
Wyoming							1	3	4	4				3		1	
1910 totals	67	64	131	7	33	26	114	2,612	2,792	2,923	64	8	386	1,050	212	229	971
1909 totals	125	90	215	16	36	41	176	4,823	5,092	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	181	5,115	5,460	5,623	58	18	816	1,793	399	481	2,658
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	831	1,268	508	406	1,057
1903 totals	406	60	466	10	75	54	171	3,670	3,983	4,449	363	29	1,309	1,152	397	236	366
Grand totals	968	694	1,662	122	551	432	1,541	33,218	35,864	37,526	860	195	6,660	11,831	3,092	3,131	11,757

chusetts this year had only about 1/7 of the injuries it had last year; Missouri, New Jersey and New York reduced their injuries to 1/3 and Illinois and Ohio had 1/2 of their last year's totals. Pennsylvania reduced its total to 2/3 of what it had last year. Of all the states having over 100 injured, only Indiana, Iowa and Wisconsin show larger totals than last year. Pennsylvania continues in the lead with 623 injuries, followed by New York with 327 and Illinois with 285. Note that last year the same three states had respectively 986, 897 and 546 injuries! Altogether there were 2,923 injuries this year, a little more than half of last year's record.

NON-FATAL INJURIES

There were 2,792 non-fatal injuries this year, a little more than half (55 per cent.) of the total reported last year. Only 7 persons were totally blinded this year, but 33 lost one eye each, 26 lost legs, arms or hands and 114 lost one or more fingers. The giant firecracker—which, by the way, has a much shorter fuse than the smaller varieties—holds the first place as a cause of mutilating wounds and is responsible for most of the losses of eyes, hands and fingers. In the awfulness of its destructiveness the giant firecracker is equaled in a few instances only by the explosion of bombs, or of home-made cannon. The fact that the wounds made by giant firecrackers are so lacerated is probably the reason they do not cause more lockjaw. Again, these cases are taken to the physician, while the supposedly insignificant wounds made by blank cartridges are neglected. This year 1,050 injuries including 2 deaths and 2 cases of lockjaw were due to the giant firecracker.

Firearms caused 229 accidents this year including 19 killed and 5 cases of lockjaw. The percentage of deaths from this cause was 10.2. Of the total number thus injured, 78 were struck by

TABLE 7. TOTAL DEATHS AND ACCIDENTS BY STATES DURING EIGHT YEARS

	1903	1904	1905	1906	1907	1908	1909	1910
Alabama	2	7	1	2	1	1	1	.
Arizona	1	......	4	5	2	5	3	. . .
Arkansas	......	......	3	1	......	5	1	4
California	100	138	142	96	121	136	89	63
Colorado	39	44	26	23	25	13	18	19
Connecticut	162	133	132	169	63	105	86	78
Delaware	1	5	11	8	16	12	13	8
Dist. Columbia	2	10	24	5	12	21	......	......
Florida	1	2	2	......	......	......	1	4
Georgia	......	......	......	4	2	4	......	5
Idaho	4	4	3	3	4	4	2	3
Illinois	366	423	542	598	468	558	546	285
Indiana	160	211	217	250	......	255	164	167
Iowa	168	137	328	255	231	174	91	111
Kansas	63	88	56	61	64	72	86	74
Kentucky	30	72	17	21	18	33	17	26
Louisiana	......	2	3	7	8	4	......	4
Maine	31	32	29	15	11	16	22	7
Maryland	21	22	13	10	23	21	10	8
Massachusetts	637	193	467	329	168	430	430	63
Michigan	144	157	288	193	163	203	177	143
Minnesota	157	102	174	95	95	65	69	64
Mississippi	......	......	......	2	2	1	......	......
Missouri	147	84	218	325	299	375	352	112
Montana	5	17	40	3	6	11	9	10
Nebraska	46	63	43	47	58	46	42	36
Nevada	......	1	2	......	1	4	......	1
New Hampshire	37	23	9	29	13	13	23	10
New Jersey	228	204	350	398	402	472	488	167
New Mexico	......	1	5	1	6	......	1	3
New York	522	549	566	681	752	647	807	327
North Carolina	......	......	1	1	......	......	......	1
North Dakota	10	8	29	11	8	13	4	13
Ohio	413	327	329	490	375	543	323	166
Oklahoma	1	3	7	14	194	9	12	11
Oregon	16	13	9	11	5	9	21	19
Pennsylvania	533	744	721	969	491	987	986	623
Rhode Island	64	30	11	21	39	39	42	19
South Carolina	......	......	......	1	......	......	4	......
South Dakota	4	10	15	5	8	10	9	4
Tennessee	4	1	5	6	4	5	4	10
Texas	2	2	4	11	7	11	4	2
Utah	23	22	25	18	30	12	18	8
Vermont	15	14	10	14	18	19	12	1
Virginia	......	11	5	8	......	5	4	......
Washington	21	25	15	25	23	38	32	37
West Virginia	19	16	34	64	27	29	35	20
Wisconsin	190	215	230	155	150	187	157	171
Wyoming	1	2	8	3	......	1	1	4
Totals	4,449	4,169	5,176	5,466	4,413	5,623	5,307	2,923

stray bullets from the reckless use of firearms by others and 3 deaths resulted. Toy cannon caused 212 injuries including 3 killed, but this year caused no cases of tetanus.

TOTALS IN CHIEF CITIES

Table 8 shows the number reported killed and injured in our largest cities during each of the past three years. The population figures are from the United States Census Bureau's estimate for 1909. This table is of particular interest since by it the results of the adoption and enforcement of prohibitive or restrictive ordinances can be seen. Sometimes, however, although very small numbers of injuries are reported, more deaths resulted than in other cities having many more injuries. Pittsburg and New York City each reported six deaths, the largest number this year; Chicago and Philadelphia each report 4 deaths; Cincinnati and Milwaukee each report 3; and Wilkes-Barre, Pa., reports 2. Pittsburg had one more death than last year regardless of the fact that the number of injuries was reduced by half. Although Chicago had only half as many injuries as last year, nevertheless there were four deaths this year to none last year. New York had three deaths less than last year and only 1/3 as many injuries were reported. For the first time in four years St. Louis and Boston report no deaths and the returns show greatly reduced casualties. Of non-fatal injuries this year, Philadelphia leads with 405, followed by New

TABLE 8. NUMBER REPORTED KILLED AND INJURED IN THE LARGER CITIES

City.	Population (Census Bureau, est. 1909)	1907 Killed.	1907 Injured.	1908 Killed.	1908 Injured.	1909 Killed.	1909 Injured.	1910 Killed.	1910 Injured.
New York City	4,450,963	[illegible]	122	11	316		559	6	179
Chicago	2,224,491	16	151	12	102	.	118	4	62
Philadelphia	1,515,756	7	248	6	426	9	508	4	105
St. Louis	686,369	7	189	4	270	1	165	.	44
Boston	622,970	3	39	6	190	5	167		35
Baltimore	576,023	..	5	1	10	..	5	.	6
Pittsburg	558,123	10	88	...	30	5	48	6	26
Cleveland	506,938	3	63	12	93		4	.	1
San Francisco	450,000	.		.	11	.	12		9
Buffalo	396,535	....	18	3	11	.	33	1	13
Detroit	381,855	2	46		10	2	46	1	17
Cincinnati	351,212	2	89	1	112	3	86	3	49
Washington	343,003		17		21	.		.	.
Milwaukee	332,495	2	[illegible]	.	70		78	3	112
New Orleans	327,662	.	8		1	. .	.	.	3
Minneapolis	309,378	..	13	.	10	1	24	..	20
Newark, N. J.	308,669	1	129	2	81	1	150	1	15
Los Angeles	306,000	.	55		40		26		......
Seattle	265,000	1	3	.	11	3	10	....	7
Jersey City	253,711	. . .	31	5	34	1	14	1	44
Oakland	250,000	...	9	..		....	8	.	9
Indianapolis	241,826	1	31	1	14	1	35	.	24
Louisville	236,688	. . .	13	.....	10	1	10	1	13
St. Paul	224,189	. .	20	. .	13	...	18	.	12
Providence, R. I.	217,065	.	20	1	21	...	13	.	10
Rochester, N. Y.	196,793	...	12	.	10	. .	5		10
Kansas City, Mo.	191,685	1	46	....	55	4	67	1	25
Toledo, Ohio	174,059	1	5	.	8	2	3	1	2
Denver, Colo.	156,726	....	8	.....	13	.	12	1	6
Columbus, Ohio	155,340	5	36	.....	5	1	19	....	.
Memphis, Tenn.	136,363	.....	1	. . .	3	. .	4	.	2
Worcester, Mass.	135,906	1	6	2	20	1	42	.	6
Omaha, Neb.	134,972	....	25	.....	10	1	17	.	17
New Haven, Conn.	127,827	.....	2	. . .	. .	.	15	. . . .	
Scranton, Pa.	126,575	.	5	1	17	1	29	.	6
St. Joseph, Mo.	125,504	1	23	1	41	1	24	...	11
Syracuse, N. Y.	125,578	....	20	....	14	.....	13	...	6
Tacoma, Wash.	125,000	2	4	1	3	.....	3	....	2
Portland, Ore.	119,607	.....	2	....	3	.....	16	...	13
Paterson, N. J.	116,615	1	29	2	31	1	45	1	14
Atlanta, Ga.	111,825	1	4	....	3	....	...	.	5
Richmond, Va.	109,461	.....	.....	. . .	. . .	1	1	....	
Dayton, Ohio	108,668	....	11	....	14	.....	4	...	2
Fall River, Mass.	106,481	.....	.....	.	12	...	19	. .	1
Nashville, Tenn.	106,476	....	2	. . .	. . .	. .	. .	. .	8
Grand Rapids, Mich.	105,909	. . .	20	1	30	. .	3	.	17
Hartford, Conn.	103,808	. .	18	....	18	.....	11	.	14
Cambridge, Mass.	101,872	.....	.....	.....	17	...	.....	.....	...
Albany, N. Y.	100,730	1	24	....	37	....	31	. .	11
Bridgeport, Conn.	99,913	....	1	....	27	.	21	.	4
Reading, Pa.	97,231	...	17	...	13	. .	17	1	5
Lowell, Mass.	95,125	. .	23	.....	..		18	.	
Camden, N. J.	89,305		16	.	29	4	14	.	6
Wilmington, Del.	88,980	1	14		13	3	9	.	6
Des Moines, Iowa	86,415	1	31	....	41		13		25
Kansas City, Kan.	85,742	1	10	.	17	....	[illegible]	. .	14
Trenton, N. J.	84,180	....	38	1	17	1	58	..	.
New Bedford, Mass.	83,898	..	..	....	3	.....	.....	...	...
Lynn, Mass.	83,865	. . .	3	. . .	11	3	16	. .	4
Springfield, Mass.	82,724	...	21	1	36	1	9	1	2
Troy, N. Y.	77,242	...	. .	2	18	....	16	1	8
Lawrence, Mass.	76,042	.	11	1	.	5	22		
Somerville, Mass.	75,375	...	. .	. . .	. .	..	1	. . .	2
Duluth, Minn.	74,520	. . .	15	...	9	2	10	..	3
Schenectady, N. Y.	73,037	....	4	.	20	.....	8	1	13
Savannah, Ga.	72,446	....	..	. .	. .	......	...	. .	
Yonkers, N. Y.	72,200	.	32		5	.	8		
Norfolk, Va.	71,730	.....	.....	.....	.....	.....	.....	.....	.
Peoria, Ill.	70,383	..	8	. . .	27	1	22	1	17
Hoboken, N. J.	70,351	....	1	1	21		7		4
Utica, N. Y.	69,458	....	18	. .	10	.	5		1
Manchester, N. H.	68,561	..	3		1	1	6		
Elizabeth, N. J.	67,470	....	43	. . .	72	. . .	37		15
San Antonio, Tex.	67,404	.		.	1		.		
Waterbury, Conn.	67,282	2	8		14	.		.	15
Evansville, Ind.	66,948	..	5	.	12	. .	6		7
Salt Lake City	64,558		15		6	2	14	1	4
Wilkes-Barre, Pa.	64,523	1	.	[illegible]	38	1	15	2	8
Erie, Pa.	63,652	.			1	.	4		2
Houston, Tex.	63,625	.			1	.	1		
Harrisburg, Pa.	58,[illegible]30	. .	2	1	71	. .	29	.	
Portland, Me.	57,675	1	2		..	.	2		.
Charleston, S. C.	56,573	.				.	.		
Totals		94	2,458	83	2,860	80	2,935	43	1,455
Totals elsewhere		70	1,791	80	2,600	135	2,156	88	1,337
Grand totals		164	4,249	163	5,460	215	5,091	131	2,792

York City with 179, Milwaukee with 112, Chicago with 62, Cincinnati with 49, St. Louis and Jersey City each with 44, and Boston with 35. The few cities which showed marked increases were Milwaukee, Jersey City, Grand Rapids, Des Moines and Waterbury, Conn.

RESULTS OF RESTRICTIVE ORDINANCES

Trenton, N. J., adopted a prohibitive ordinance following last year's celebration and as a result presents a clean record this year. One solitary injury is reported this year from Cleveland, which adopted a prohibitory ordinance two years ago. Washington also has a prohibitive ordinance and for two years has had a clear record. Baltimore with a prohibitive ordinance reports only six injuries and no fatalities this year.

These records clearly show that prohibitive ordinances are much more effective than restrictive measures, such as were employed in New York, Chicago and several other cities. Reports from hundreds of smaller cities and towns indicate that this year either prohibitive or restrictive measures were enforced. The agitation for more enlightened methods of celebration has been rapidly spreading and the greatly reduced list of casualties this year is the result. May this movement for the restriction of destructive methods and the bringing in of sense and reason be continued until this blot on the record of our fair land is entirely removed!

WHERE THE RESPONSIBILITY RESTS

The responsibility for the vast majority of Fourth of July injuries clearly rests with city governments, since the employment of death-dealing methods of celebration is subject to their regulation. It is, therefore, up to the city governments to decide whether or not the maiming of thousands, the agonizing deaths from lockjaw and the burning to death of little children by fire from fireworks is to be continued. Prohibitory ordinances are most effective and permanent, as shown by the results in Baltimore, Washington, Cleveland and Trenton; and even restrictive ordinances, if enforced, are quite effective, as shown by the results in New York, Boston, Chicago, Toledo and other cities. But the enforcement of restrictive measures is more difficult and requires more constant vigilance on the part of the police. By the sound, it is difficult to know whether an explosion is due to a firecracker 3 inches long or to one 5 inches long, or whether it is due to some other forbidden form of fireworks, while under a prohibitory ordinance any explosion would be recognized at once as a violation of the law. Again, the smaller firecrackers, which have been considered so harmless, caused the clothing to catch fire in many of the 26 instances this year in which persons, mostly girls and young children, were burned to death. Even the "harmless" sparkler caused one of these deaths, which were far more agonizing than if caused by gunshot wounds.

A NEW PATRIOTISM

Better by far than the negative methods of restricting or prohibiting the use of destructive methods of celebration this year was the more general adoption of positive methods of reform. Our national Independence Day is ceasing to be a day of destruction and a new patriotism has been brought forth. From every section of the country, from city, town and hamlet comes the news that, in place of the senseless din of former years, more truly patriotic methods have been employed. The music of bands, the marching of soldiers, the flying of flags and banners, the children's parade, the witnessing of historic floats, and afterward the picnics, the trips to the parks or the visiting of friends—these methods were employed more than ever before. And the result is very evident: The smallest number of lockjaw cases and other deaths is reported this year; there were fewer destroyed eyes, fewer maimed bodies and an astonishing reduction in the number of injuries. Surely, the new methods have been worth while!

Medical News

ALABAMA

Personal.—Dr. James F. Johnston, a member of the staff of the Cunningham Hospital, Ensley, has been commissioned first lieutenant of the Medical Reserve Corps, U. S. Army, and reported for duty in Washington, September 1.——Prof. F. L. Haley, Hoosick Falls, N. Y., has been made professor of physiologic chemistry and bacteriology in the Medical Department of the University of Alabama, Mobile.

Additions to Faculty.—Dr. Rhett Goode, Mobile, dean of the Medical Department of the state university, has announced the following additions to the faculty for 1910 and 1911: Dr. James F. Harrison, professor of chemistry and materia medica; Dr. M. Toulmin Gaines, associate professor of pathology and histology; Dr. William H. Oates, associate professor of therapeutics; Drs. Tisdale and Ivey, instructors in clinical medicine; and Dr. P. D. McGehee, clinical instructor in genitourinary diseases.

Antituberculosis Work.—As a result of the campaign against tuberculosis in Jefferson county, a camp for the reception of patients suffering from this disease has been opened on Red Mountain with twelve tents. The membership of the association now numbers 355. A farm is to be operated in connection with the camp, in which patients may do light work when their condition permits. Dr. Benjamin L. Wyman, Birmingham, is acting president of the association, and Drs. Russell McW. Cunningham, Ensley, and Robert B. Harkness, Birmingham, are members of the board of directors. After conferring with the governor, Dr. W. H. Sanders, Montgomery, president of the State Health Board, is looking for a suitable site for the proposed state tuberculosis sanatorium, for which $10,000 was appropriated recently by the legislature.

ARIZONA

Personal.—Dr. Adrian B. Perkey, Morenci, sailed for Europe August 25, and will study in Vienna.

Plan for Sanatorium.—The board of supervisors met at Phoenix, August 17, and considered plans for the tuberculosis sanatorium to be constructed by the board, near Phoenix, in conjunction with the Associated Charities. Plans for a hospital were adopted to cost $7,000 and to accommodate 28 patients.

ARKANSAS

Personal.—Dr. Bernard H. Gallagher, Pine Bluff, has been elected president, and Dr. Robert P. Woods, Altheimer, secretary of the Jefferson County Board of Health.

New Regulations at Hot Springs.—A rule has been made by the Department of the Interior providing that a physician who has been deprived of the right to practice medicine on the government reservation for "drumming" or other offense, will be required to pass a written examination conducted by the Federal Registration Board of the reservation before he can be restored to good standing.

CALIFORNIA

Hospital Happenings.—On August 15 the Seaside Hospital Association, San Francisco, paid $1,500 of the $3,000 subscribed for its new hospital site. The new hospital is to cost

$10,000.—The Harbor Emergency Hospital, San Francisco, has moved from its old location on the bulkhead at the foot of Mission Street to the new quarters on Clay Street.—Ground for the new Kings County Hospital at Hanford was broken August 11.

Personal.—Dr. H. B. Graham, who recently returned to Berkeley from Austria, has been appointed assistant professor of hygiene in the University of California.—Dr. John T. Jones, Grass Valley, who has been in Europe for a year and a half under treatment for injuries sustained while swimming at Coronado Beach, has sailed from Liverpool for America.—Dr. Fred P. Clark, superintendent of the Stockton State Hospital, has been reelected for another term.—Dr. Frederick P. Gay, of Harvard Medical School, has been appointed head of the department of pathology of the University of California, vice Dr. Alonzo E. Taylor, resigned.—Dr. Thomas W. Huntington, San Francisco, has been appointed chief surgeon of the Western Pacific Railroad.

COLORADO

Personal.—Dr. Elmer A. Elder has succeeded Dr. Joseph E. Peairs, resigned, as city physician of Pueblo.—Dr. A. M. Foster, formerly head of the Eudowood Sanatorium, near Towson, Md., has assumed active charge of Cragmore Sanatorium, near Colorado Springs.

To Better the Health of Pueblo.—A committee has been appointed by the Commerce Club of Pueblo with the object of putting the city on a better sanitary basis. The committee is composed of Drs. Franklin E. Wallace, William H. T. Baker, David W. Collins, Crum Epler and Luke McLean, and plans have already been laid for the inspection of dairies, grocery stores, meat shops and other places where it is likely that unsanitary conditions may be found.

GEORGIA

Higher Entrance Requirements.—It is announced that beginning with the session of 1911-12 the Atlanta School of Medicine will require for admission a four-year high-school education, or the actual equivalent as determined by examination. This requirement is to consist of 14 units as defined by the College Entrance Examining Board. Examinations will be given only by some designated educational authority not interested in the college.

IDAHO

Donates Site for Home.—Dr. Mary E. Johnston, Boise, has donated a block of land at Roosevelt Heights, Boise, as the initial step in the establishment of a home for the old people of the state.

Personal.—At a recent meeting of the State Board of Health Dr. Ralph Falk, Boise, was elected secretary, vice Dr. Jesse L. Conant, Weiser, deceased.—Dr. Glenn E. Shawhan, Boise, has been appointed physician of Ada county, vice Dr. Ralph Falk, resigned.

Infantile Paralysis Epidemic.—The secretary of the State Board of Health has sent out circular letters of inquiry to physicians throughout Idaho asking statistics regarding the alleged prevalence of anterior poliomyelitis in the state. Of the 36 cases reported in Idaho, 7 are said to have occurred in Cottonwood.

ILLINOIS

Personal.—Lieutenant-Colonel Henry Richings, Rockford, surgeon of the Third Brigade, Ill. N. G., has been placed on the retired list.—Dr. Anthony G. Wittman, Blue Island, has passed the civil service examination for assistant physician in the state charitable institutions.

Chicago

Personal.—Dr. William J. Butler has returned from Europe.—Dr. Thomas M. Leahy has passed the state civil service examination for assistant physician in the state charitable institutions.

Sputum Examination.—Improved methods of sputum examination have been adopted recently in the Municipal Laboratory. Sputum shakers of the Boston Board of Health type have been installed and the use of alkaline sodium hypochlorite as digestant has been introduced, resulting in increase in the delicacy of the test and augmentation of the capacity of the laboratory. During the four months prior to the installation, tubercular bacilli were found in 17.5 per cent. of the 1,017 specimens examined, and in the three months following the installation, 27.1 per cent. of tubercular bacilli were found in 506 specimens of sputum.

INDIANA

Transferring Insane Patients.—During the last week five trains transferred 500 insane patients from the Central Insane Hospital, Indianapolis, to the Southeastern Insane Hospital, Madison. This institution comprises a group of thirty-two buildings, overlooking the Ohio River, recently constructed at a cost of $1,500,000. Dr. Edward P. Busse, Evansville, has been selected as superintendent.

Bureau of Health Speakers.—The State Board of Health is about to establish a bureau of speakers on health. These speakers will accompany the tuberculosis exhibits which are to be sent to schoolhouses, and will speak to the schoolchildren on how to live and how to prevent disease. The lectures will be illustrated and photographs of correct living and sleeping apartments and other methods of sanitation will be shown.

Fort Benjamin Harrison.—During September, 15,000 soldiers of the army militia from Illinois, Wisconsin, Michigan, Ohio, Kentucky and Indiana will assemble at Fort Benjamin Harrison, near Indianapolis, for a tour of inspection and duty. The chief medical officer is Colonel L. Merwin Maus, Medical Corps, U. S. Army, chief surgeon of the Department of the Lakes, Chicago, who has announced that prevention of disease by relentless warfare on the housefly will be the chief work of his department.

Health Car Caravan.—A health car caravan is being organized in Indianapolis by the father of a tuberculous child. The caravans will contain twelve vans and two automobiles with accommodation for from forty to fifty patients suffering from tuberculosis. Nurses, cooks, and a physician are to accompany the caravan. The maximum of out-of-door life will be led. For amusement, fishing, hunting, sightseeing and visiting famous battlefields have been planned. The route includes Kentucky, Tennessee, Virginia, the Carolinas, Georgia, Alabama and Mississippi. The caravan will return to Indianapolis in the spring of 1911.

Violation of Pure Food Law.—During the present term of the Federal Court for the District of Indiana, ten individuals or firms are said to have been fined for violation of the pure food law. Among these were The Wells Medicine Company, Lafayette, for selling "Wells' Dime Headache Cure;" G. R. Summers, South Bend, for misbranding "Mrs. Summers' Harmless Headache Remedy;" "The Sure Pop Company," Terre Haute, for misbranding in the label that "Sure Pop cures headache and neuralgia." The case against the Evansville Bottling works is still pending. This company is said to use cocain in "Shelburn's Cola." The common violations of the law in the state are misbranding of the weights of cheese, adulteration of vinegar, cottonseed meal, and whisky, and false labeling in shipments of apricots.

IOWA

Personal.—Dr. Harry J. James, formerly superintendent of the State Sanatorium, Oakdale, has been appointed superintendent of the South Dakota State Sanatorium.—Dr. Herbert S. Miner, superintendent of the State Hospital for Inebriates, Knoxville, has resigned, to take effect in November.—Dr. Charles W. Carr, Denison, has returned from Europe.

Woman's Infirmary Opened.—The new Woman's Infirmary in connection with the State Hospital for the Insane, Mount Pleasant, was recently opened to receive patients. The building has been erected at a cost of $67,500 and has a thoroughly modern equipment, including hydrotherapeutic department, installed at a cost of $3,500. The building will accommodate 70 patients.

KENTUCKY

Attempted Assassination.—Dr. James U. Ridley, Robard, was shot by a negro, August 24. No cause has been advanced for the attempted assassination

Personal.—Dr. Henry E. Tuley and family have returned from a ten weeks' trip abroad.—During the illness of health officer Dr. William V. Neel, of Henderson, his duties as health officer have been assumed by Dr. J. W. Stone, president of the board

Tuberculin Test.—The State Board of Health will probably hold an early meeting to amend its ruling as to the use of the tuberculin test in all dairy cattle furnishing milk for sale in Kentucky, to include cows furnishing milk for manufacture of butter. The board has received an opinion from its attorney in which it is stated that the board has full power to supplement its order of a year ago to include milk used for all purposes.

Personal.—Dr. Ernest B. Bradley, city bacteriologist of Lexington has been elected health officer of Fayette county.——Dr. Henry B. Ritter has retired from the Medical Department of the University of Louisville and has discontinued the practice of obstetrics.——Dr. Thomas C. Evans has abandoned the practice of his specialty, the diseases of the eye, ear, nose and throat, and is devoting his entire attention to his work as dean of the Medical Department of the University of Louisville.

Merger of Colleges.—The Southwestern Homeopathic Medical Hospital and College of Louisville has been merged with the Hahnemann Medical College of Chicago. The Southwestern Homeopathic College was established in 1892 and the present faculty, the majority of whom are graduates of the institution, will make occasional trips to Chicago to lecture in the Hahnemann College. The college has not been self-supporting recently and its annual deficit has been made up by friends and patrons of the institution. The intern staff at the City Hospital will now be made up exclusively of regular graduates of the University of Louisville Medical Department. Every fifth patient admitted to the institution heretofore has been under the homeopathic service.

MARYLAND

Baltimore

Osler in Baltimore.—Dr. William Osler, regius professor of medicine in Oxford University, England, visited Baltimore August 21, as the guest of Dr. Thomas B. Futcher. He returns to England, September 6.

Personal.—Dr. H. Quigg Fletcher, of Johns Hopkins Hospital, has been appointed house physician at the Union Protestant Infirmary.——Dr. G. Milton Linthicum, who has been ill in the Maryland General Hospital for several weeks, has gone to Atlantic City to recuperate.

Medical Illustrator Dies.—Mr. August Horn, for many years connected with the gynecologic department of Johns Hopkins Hospital as an illustrator of medical subjects, died in Nauheim, Germany, August 19, aged 41. His excellent work has appeared in THE JOURNAL many times.

MICHIGAN

School Medical Inspectors in Saginw.—The committee of the board of education which has charge of medical inspection of public schools has decided that four physicians shall be employed, each to have three schools under his jurisdiction which must be visited at least once a week.

Personal.—Dr. Frank W. Smithies, Ann Arbor, has been offered a professorship and the directorship of University Hospital in the Iowa State University.——Dr. G. Carl Huber, Ann Arbor, has been made research professor of embryology in the Wistar Institute, Philadelphia.——Dr. Robert M. Gubbins, Ceresco, fell from the roof of his store, August 23, dislocating a wrist and fracturing the left ulna.

MINNESOTA

Personal.—Dr. Nathan C. Bulkley, formerly of Superior, Wis., has been appointed health commissioner and school inspector of Eveleth.——Dr. Clyde E. Prudden, Duluth, has been placed in charge of the school inspection work of Hibbing.

The New Duluth Dispensary.—Dr. William M. Hart, secretary of the St. Louis County Sanatorium, has been placed in charge of the work connected with the new free dispensary. Many patients suffering from tuberculosis have already appeared for examination and treatment.

MISSISSIPPI

Bulletin on Tuberculosis.—The Mississippi State Board of Health has issued a bulletin relative to the war being waged on tuberculosis, in which it gives information regarding the causation of the disease and urges the cooperation of all citizens in preventing its spread.

Personal.—Dr. Francis M. Sheppard, Richton, has been appointed railroad commissioner of Mississippi.——Dr. Harold B. Wood, of the University of Pennsylvania, has been appointed bacteriologist and director of the laboratory of the Mississippi State Board of Health.——Drs. Walter H. Rowan, Wiggins, and James B. Bullitt, University, have been appointed field agents and special inspectors of hookworm and tuberculosis.

——Dr. Roland W. Hall, Clinton, has been appointed by the State Board of Health local sanitary agent for the investigation and eradication of hookworm.

NEW YORK

Off for Europe.—Dr. and Mrs. George A. Chapman, Glens Falls; Dr. and Mrs. Henry A. Gribbon, Poughkeepsie, and Dr. John H. B. Denton, Freeport, have sailed for Europe.

Hostlers Contract Glanders.—Two hostlers are very ill with glanders at Poughkeepsie. It is believed that they contracted the disease from infected horses, twenty of which were shot. A dozen more are isolated and under inspection.

New York City

Lutheran Hospital Plan.—The Lutherans of New York are working for the erection of a hospital to be used especially for the Lutheran poor. The Lutheran Inner Mission Society has organized a district medical service, composed of 15 medical men located in the fifteen districts into which Manhattan and the Bronx have been divided for this purpose. The physicians respond to calls sent by ministers or church workers to treat cases in Lutheran families who are unable to pay for medical and surgical aid.

Memorial Fund for the Academy of Medicine.—The will of Mrs. Margaret E. Gray provides a bequest of $50,000 to the New York Academy of Medicine to establish the Landon Carter Gray Memorial Fund in memory of her husband, who died about ten years ago. She directs that the income be used to purchase books from time to time and that all such books have inserted a book plate which she has designed for this purpose. The will also leaves $5,000 to Dr. William B. Pritchard and $3,000 to Dr. John J. McPhee.

Congestion in Manhattan.—Stanley D. Asheed, head of the Department of Civic Design of Liverpool, England, in a recent address before the Commission of Congested Population made the statement that the congestion in Manhattan exceeds by two-thirds that of any European city. He suggested the removal of all factories from the restricted areas and the development of more lines of communication, as measures that will attract people from the congested districts, and strongly urged the necessity for making greater efforts towards decentralization.

Work of Crocker Cancer Research Fund to Begin.—The George Crocker Cancer Research Fund of Columbia University has undertaken to make examination of suspected tissues provided that the physician will furnish the information needed for its statistical investigation of the etiology of cancer. It is hoped that the profession will avail itself of this offer as the early diagnosis of cancer is of inestimable value to the patient and to the profession and as, at the same time, the statistics thus obtained will be of great value to those engaged in the research work. The Department of Health has agreed to co-operate with the Department of Pathology of Columbia University, and by the middle of October each collection station of the board will be supplied with jars to be used for specimens of tissue suspected to be cancerous.

Milk Committee Plans Work.—Following the announcement that after this season Nathan Straus will discontinue the pasteurized milk stations in this country owing to the persistent attacks of a New York newspaper on milk pasteurization ventures, the New York Milk Committee is seeking funds for the purpose of undertaking an experiment to determine the nutritive value of raw and pasteurized milk. It asks for $3,000 before the first of October for this work. This committee in its infant milk depots fed a large number of babies during the period of 1908-1909 on raw and pasteurized milk, the milk in each instance coming from the same dairy. They wish to supplement this investigation by a further intensive study of babies under conditions which they can more nearly control and by chemical laboratory study of the nutritive properties of heated milk. Dr. H. S. Sherman, professor of nutrition at Columbia University, has placed at the disposal of the committee the laboratory equipment of that department. Dr. Godfrey R. Pisek will supervise the work and the laboratories of Dr. Charles E. North, chairman of the milk committee's committee on sanitation, bacteriology, and public health have been offered for the bacteriologic and chemical work.

Osteopaths Again Defeated.—In the case of Dr. Charles F. Bandle who applied for a mandamus to compel the Board of Health to grant a burial permit on a death certificate presented by him, the supreme court has refused the mandamus. The decision was accompanied by the following memorandum:

> While the state has wisely allowed the practice of osteopathy, it does not follow that it thereby holds out one, without any practice in surgery or experience in prescribing drugs, as fully qualified to certify the cause of death. Indeed it is not certain that a board of health would be compelled to take the certificate of death of all licensed physicians in the event of an epidemic or the spread of some new and mysterious disease.
>
> Granted that the theoretical education of the osteopath is of a standard equal to that of a doctor of medicine, after he enters on his profession his practice is restricted, so that it does not appear that he can make the tests by examination of blood and tissues by which alone many diseases can be certainly detected.
>
> The sanitary code is discriminatory, but the discrimination is not personal and arbitrary. It is based on a limitation which the osteopath may be said to make for himself, and deprives him of no rights which he ought to exercise consistent with the public safety.

Bequest to Hospital.—By the will of Mrs. Harriet Coles the Presbyterian Hospital benefits to the extent of $7,500, which is to be used for founding a bed in perpetuity, the rector of St. Paul's Episcopal Church at Glen Cove having the right to nominate the use to which the bed shall be put from time to time.

Buffalo

Personal.—Drs. Harry M. Weed, Herriot C. Rooth, John C. Thompson and wife, and Otto S. McKee have gone abroad.——Dr. Edwin A. Bowerman has been appointed lecturer on hygiene in the University of Buffalo Medical Department.——Dr. Matthew D. Mann, emeritus professor of obstetrics and gynecology, will continue his duties as dean of the faculty.

Anterior Poliomyelitis.—The Department of Health has sent out circulars to all physicians stating that with the increase in the number of cases of anterior poliomyelitis or infantile paralysis, the department deems it wise to take precautions to prevent its spread. Immediate report of all suspicious cases must therefore be made to the department from now on. Although such houses will not for the present be placarded, quarantine must be observed.

OHIO

Campaign Against Blindness.—The State Board of Health, on August 22, inaugurated an active campaign against ophthalmia neonatorum. A letter with a sterilized dropper and a quantity of silver solution was sent by the board to every registered physician of the state, with instructions for use.

Personal.—Dr. Charles A. L. Reed, Cincinnati, sailed for Europe, August 18, to attend the International Congress on Gynecology and Obstetrics.——Dr. Dudley P. Allen, Cleveland, for many years visiting surgeon at Lakeside Hospital, has resigned from the staff, and from his chair in the Medical Department of Western Reserve University, has given his library to the Cleveland Medical Library, disposed of his instruments and appliances, retired from practice, and with Mrs. Allen, sailed for Europe, August 9.——Dr. Charles T. Swaney, Niles, has announced that he is about to give up practice, and will take charge of a department of the Massillon Rolling Mill Company.——Dr. Benjamin C. Bernard has been appointed a member of the Alliance Board of Health.——Dr. James Donnelly, Toledo, is reported to be critically ill with typhoid fever at St. Vincent's Hospital.——Dr. Samuel C. Nieman, senior-assistant surgeon at the National Military Home, near Dayton, has resigned, and will practice in Cincinnati.

OREGON

Personal.—Dr. Max F. Clausius, physician of the United States Indian Service at Siletz, is taking a vacation trip through Alaska and British Columbia.——Dr. Charles G. Sabin has been appointed city bacteriologist of Portland, vice Dr. Ralph C. Matson, resigned.

State Society to Meet.—The thirty-sixth annual meeting of the Oregon State Medical Association will be held in Portland, September, 7, 8, 9, under the presidency of Dr. Edward A. Pierce, Portland. At the public meeting addresses will be delivered by Dr. Walter T. Williamson, Portland, on "The Value of Exercise and Rest to the Public Health;" by Dr. Charles J. Smith, Pendleton, on "School Hygiene;" by Dr. Andrew C. Smith, Portland, on "The Value of Pure Food," and by Dr. Calvin S. White, Portland, on "The Relation of Pure Water to Public Health."

Sanatorium Soon to be Opened.—It is announced that the State Tuberculosis Sanatorium, near Salem, will be opened the first week in September, under the charge of Dr. Harvey J. Clements, superintendent and medical director. The present capacity of the sanatorium is 50 patients, which will be apportioned to the various counties in their ratio to population. The sanatorium is located on the west slope of the hill 5 miles southeast of Salem, protected from north and east winds, at an altitude of 100 feet above the sea. The brick building on the site formerly occupied by the Mute School will be used as headquarters and modern cottages and ideal sleeping porches have been constructed.

PENNSYLVANIA

Stamp Sale to Benefit Hospital.—The directors of the Jewish Sanatorium for Consumptives, Eaglesville, expect to sell one million stamps at the time of the Jewish New Year. These will be sent to stores, lodges, societies and individuals, and their sale will assist the movement to erect a children's pavilion.

Milk Adulterators Arrested.—Embalming fluid, having formaldehyde as one of its chief ingredients, has been found by the agents of the State Dairy and Food Commission in milk sold to the trade in Allegheny County. Informations have been laid against 17 dealers charged with adulterating milk and cream. These men have been arrested and await hearing.

Personal.—Dr. Kerwin W. Kinard, Lancaster, has been commissioned as a lieutenant in the medical corps of the United States Army.——Dr. George D. Nutt has purchased the Bishop Darlington property in Williamsport, and the building on the property will be remodeled and a hospital established. Other local surgeons are associated with Dr. Nutt in this enterprise.

Philadelphia

Cornerstone to be Laid. The cornerstone of the new building, known as Bradley Hall, to be erected on the grounds of the Methodist Hospital, will be laid with formal ceremonies on September 10. The structure, planned to harmonize architecturally with the rest of the hospital buildings, will contain modern kitchens, refrigerating plant, dining rooms, etc., on the first floor and suites for superintendent and chief resident, rooms for residents and class rooms on the three upper stories.

Personal.—Drs. William W. Babcock, John G. Clark and John Sibbald have returned from Europe.——Dr. Edward Krumbhaar, intern at the Pennsylvania Hospital, is seriously ill with typhoid fever at that institution.——Dr. Algernon B. Jackson has resigned as assistant surgeon to the Polyclinic Hospital to take the position as surgeon-in-chief to Mercy Hospital, an institution conducted for the indigent sick of the colored race.——Dr. James Wallace, formerly chief of the eye department of the hospital of the University of Pennsylvania, left his home on July 31, and has not been heard from since.

Inspectors Seize Goods.—Chief Inspector Jenkins, of the local U. S. Pure Food and Drug Department, ordered on August 23 the seizure of 1,500 pounds of "frou-frou cakes" manufactured by a company of Amsterdam, Holland, and alleged to contain boric acid. The seizure was made at Pennsylvania Railroad Pier 10, where the goods were awaiting delivery to a jobbing house. The inspectors also ordered the seizure of 114 gallons of crushed pineapples at a warehouse at Front and Lombard Streets. The cans, which are said to have contained filthy and decomposed vegetable substance, were shipped in that condition from Hawaii by the Pearl City Fruit Co. At an ice cream factory on South Swanson Street, 19 cases, containing 1,100 pounds of crushed pineapple, were seized. These were shipped by the Pearl City Fruit Co. and the Pineapple City Fruit Co., of Hawaii.

VIRGINIA

Hospital News.—Dr. J. Allison Hodges, Richmond has purchased a tract of seventeen acres at Westhampton whereon to establish an annex for the Hygiea Hospital for convalescent and rest cure patients.——Work has begun on the annex of the Stonewall Jackson Memorial Hospital, Lexington.

New Medical Association. The Shenandoah Valley Medical Association with a membership including every county of the Seventh Congressional District, was organized August 10, at Winchester, with Dr. Durus D. Carter, Woodstock, president; a vice president from every county of the district, and Dr. Walter Cox, Winchester, secretary-treasurer.

Free Treatment of Hydrophobia. The State Health Department has made arrangement whereby persons exposed to rabies and not in a position to pay for treatment at a reg ular Pasteur institute, will be treated free of cost. Dr. Ennion G. Williams, state health commissioner, has secured a sufficient supply of serum from the Public Health and Marine-Hospital Service to meet the demand.

Personal.—Dr. Edwin M. Sneed, Garrisonville, has been elected secretary, and Drs. Elliot T. Jett, Fairmouth, and William H. H. Tate, Tackett's Mills, have been appointed members of the board of health of Stafford County.——Dr. Paulus A. Irving, Richmond, announces that he will give up practice and move to Prince Edward County on account of the ill health of members of his family.——Dr. George H. Reese, Franklin County, has been appointed a member of the staff of the Central State Hospital, Petersburg.

WISCONSIN

Bubbler Succeeds Fountain.—In accordance with the state law prohibiting public drinking cups in public, private, and parochial schools and other educational establishments, the board of education of Superior is said to have ordered sanitary drinking fountains to be installed in the public schools of the city.

Society Meeting.—The annual meeting of the Southeastern Wisconsin Physicians' Association was held in Racine, August 17, with about one hundred in attendance. Elkhorn was selected as the next place of meeting. Dr. Edward Kinne of that city was elected president, and Dr. Milton V. DeWire, Sharon, secretary-treasurer.

Increase in Faculty.—Marquette Medical College has made the following additions to its staff: department of internal medicine, Drs. Robert Brown and William H. Washburn; department of dermatology, Dr. Robert G. Washburn; department of obstetrics, Dr. Gustave A. Hipke, and department of ophthalmology, Dr. James A. Bach.

Anti-Spit Bullets.—The Wisconsin Antituberculosis Association has provided ammunition for use in its war against expectoration in public places. This ammunition is known as an "anti-spit bullet" and consists of a little slip, one side of which contains an appeal to help eradicate consumption from Wisconsin, and the other side a warning from the health officer regarding spitting in public places, its dangers and penalties.

Work of State Laboratory.—During the past year the State Hygienic Laboratory at the State University, Madison, has examined 804 specimens for diphtheria; 1,048 specimens of sputum for tuberculosis; has made 406 water tests; the Widal test in 497 cases, and 407 miscellaneous examinations for anthrax, glanders, blood, and tuberculosis, and 146 examinations for rabies, and has given the pasteur treatment to 89 individuals.

GENERAL NEWS

Cotton-Seed Oil and Butter.—According to the *Daily Consular Trade Reports* Egypt produces annually about 40,000 barrels of cotton-seed oil, most of which is exported to England or used at home in making soap. The natives, however, have been educated to substitute cotton-seed oil for olive oil and they are large consumers, and 8,000 to 12,000 barrels of the better grades are annually imported from England and the United States. These grades are used exclusively for mixing with olive oil, and it is said that these mixtures are sold as pure olive oil. In Egypt considerable olive oil is also used in making a native butter similar to the Indian product called ghee. This is made by boiling together for a long time cotton-seed oil, mutton tallow, real butter and perhaps one or two other ingredients. It is used largely by the natives instead of butter, and its preserving qualities are remarkable. It is palatable, wholesome and much cheaper than butter.

Public Health Association Meeting.—The thirty-eighth annual meeting of the American Public Health Association, whose membership includes United States, Canada, Mexico and Cuba, will be held in Milwaukee, September 5-9, under the presidency of Dr. Charles O. Probst, Columbus. The meetings will be held in the Milwaukee Auditorium, and the headquarters will be at the Hotel Pfister. The general topics for discussion are "The Relation of the University to Public Health Work," "Methods of Handling State Health Work," "The Inter-Relation of National Organizations Working in the Interests of Health." Section Reports for General Meeting: "The Present Organization and Work for the Protection of Health in the Four Countries Represented in the Association," "Sanitary Engineering Questions," "The Prevention of Mental Defects and Mental Diseases," "The Relation of [illegible] Nurses to Health," and "The Necessity for Terminal Disinfection and Quarantine".

LONDON LETTER

(*From Our Regular Correspondent*)

London, Aug. 20, 1910.

Lowest Birth-Rate and Death-Rate on Record

The decline of the birth-rate is so continuous that many times the "lowest on record" has been reported in The Journal, and this must be done once more. According to the quarterly return the population of the United Kingdom in the middle of 1910 is estimated at 46,469,534, of whom 36,169,150 live in England and Wales. In these countries the birth rate is in the proportion of 26 per 1,000 annually. This is 2.1 below the mean birth-rate of the 10 preceding second quarters and is the lowest recorded since the establishment of civil registration. The death-rate was in the proportion of 12.8 annually per 1,000. This is 2.3 below the mean rate for the last 10 years and is also the lowest on record. Infantile mortality measured by the proportion of deaths under one year to registered births was 91 per 1,000. This is 19 below the average of the ten preceding years and again the lowest on record. The causes of these declining figures have been fully discussed in previous letters.

Exposure of a Quack

One of the worst and most heartless features of quackery is the exploitation of such diseases as tuberculosis and cancer, which are unamenable to drugs. In Great Britain, it is but seldom that the law takes any notice of the most fraudulent promises of cure. Indeed, the government, by levying a stamp duty on all secret remedies, has made itself to a certain extent *particeps criminis*. The following case is happily an exception to the usual immunity of the quack: C. H. Stevens, of Wimbledon, who described himself as "an unregistered lung specialist," was sued by a woman for $50, a sum which he promised in his advertisements to any patient whom he did not cure of consumption. The woman's husband was treated by him and died of pulmonary tuberculosis. Stevens denied any contract to pay $50 in case of failure and said that the advertisements offering this sum did not appear until after the man's death. After evidence showing that he carried on an extensive business at Wimbledon, and had "Consumption and Lung Specialist" on a brass plate and that he offered the widow $5 to withdraw the case he was closely pressed by the judge as to the composition of his "medicine" and its curative merits. After heated protests and much hesitation he said that he studied the curing of consumption under Dr. Stuart, of Somerset Hospital, Cape Town. Fifteen years ago, by accident, he came across a native remedy at Maseru, Basutoland. A native "doctor" showed him the plants from which it was made. Under pressure he declared that he still imported these Basuto plants into Wimbledon, but he could not say when the last consignment arrived. The judge suggested that the railway books could be consulted. Stevens said that he had been making the $50 offer since last September, but had not yet paid it for a case of failure. The reason was that he had cured every patient except one. In giving judgment for $50 in favor of the widow the judge said that the case was one of a class which was of the gravest importance to the public. Quack remedies were constantly put forward by imposters to play on the fears and hopes of despairing sufferers. In this case, there had been intentioned and well-considered fraud. It was a scandalous thing that poor people should be imposed on by a quack preparation of not the slightest use. He ordered the letters and documents in the case to be impounded. This is done with a view to their consideration by the public prosecutor. In the case of another quack preparation for consumption which was taken by a boy up to the time of his death a coroner made similar severe remarks and suggested a criminal prosecution (reported in The Journal) but none followed. The government does not appear to be alive to the criminal nature of these frauds and at present all that can be hoped is that they will be made amenable to the civil law.

Blind Masseurs for Patients Suffering from Beriberi

At the Seamen's Hospital, Greenwich, Mr. J. Cantlie has introduced massage with Swedish movements for the treatment of beriberi. Following the example of the Japanese, the massage is performed by blind operators whose highly developed sense of touch is of great value in handling delicate patients. So far, the treatment has proved successful in restoring the energy of the atrophied muscles. Two Chinamen are under treatment who could not put a foot to the ground. After two treatments by massage they began to gain strength and, a week after treatment was instituted, could move about the ward with comparative freedom.

The Milk Supply of London

In his annual report, Dr. Collingridge, health officer for the City of London, states that the inquiry into the character of the milk arriving in London has gone on since 1902. Of 32 samples examined bacteriologically 14 were fairly clean and pure, 14 unclean, and 4 tuberculous. This was the largest proportion of tuberculous milk found since the beginning of the inquiry. In 3 of the farms whence this milk came the cows were found suffering from tuberculosis of the udder or generalized pulmonary tuberculosis. A large proportion of the samples of milk—90 per cent.—contained dirt. Few precautions were taken to prevent contamination of the milk by dirt and other impurities. This can never be entirely obviated while the old, badly designed churns are in use, but many firms are now adopting an improved pattern designed for the exclusion of aerial and other contamination. From other returns it is evident that an enormous quantity of tuberculous milk is distributed throughout the country and a still larger proportion is contaminated with other pathogenic organisms. Owing to neglect of elementary precautions at dairy farms, supplies more often than not are contaminated by the cows. The recent commission on tuberculosis has shown that a considerable amount of disease, especially in infants, is due to tuberculous milk.

Florence Nightingale

On August 13, Florence Nightingale, the pioneer of scientific nursing and one of the heroines of British history, died in her ninety-first year. She was the daughter of a country gentleman of considerable wealth. Even when a child she showed extremely strong sympathies, quick apprehension and excellent judgment, and at the same time was the consoler and benefactress of all the villagers on her father's estate. She was carefully educated in classics, mathematics, and modern languages. She visited the hospitals in London, Dublin, and Edinburgh, and many country hospitals, as well as naval and military ones. She studied nursing on the continent at Paris under the Soeurs de Charité and at the Institute of Protestant Deaconesses at Kaiserwerth on the Rhine. On returning to England, she was appealed to on behalf of the Home for Sick Governesses, in London, which was languishing for want of support as well as management. She took over its control and devoted to it time, energy, and fortune, and re-established it on a sound basis. Thus unconsciously she spent 10 years in preparing for the great event of her life. When in 1854 the battle of Alma was fought in the Crimea, the reports of the condition of the sick and wounded sent a feeling of horror throughout England. The commonest accessories of a hospital were wanting; the sick had to be attended by the sick. Miss Nightingale wrote to the Secretary of War offering to go out and at the same time her letter was crossed by one from him asking her to go "as the only person in England capable of organizing and superintending a scheme for nursing the wounded soldiers." Within a week she had selected from hundreds of offers received from all parts of the country a staff of 38 nurses, including 10 Anglican sisters and 10 Roman Catholic Sisters of Mercy. On arrival, they found at Scutari 2 hospitals containing 3,000 men under appalling conditions. Neglect, mismanagement and disease rendered the scene one of unparalleled hideousness. The wounded lay on beds placed on the pavement and were bereft of all comforts. There was a scarcity alike of food and medical aid; fever and cholera were rampant. Even the slightly wounded who should have recovered under proper treatment were dying from lack of proper nourishment. Miss Nightingale at once set to work to evolve order out of chaos. Within 10 days she had an impromptu kitchen fitted up and a house near the hospital converted into a laundry, which was sorely needed. To the sick and wounded she was indeed a ministering angel and her services excited unbounded devotion. When the medical officers had retired for the night she made her solitary rounds alone among the sick and dying with a little lamp. As her fragile figure passed by the soldiers' faces softened with gratitude. In spite of delicate health she was known to stand 20 hours on the arrival of fresh detachments of wounded, apportioning quarters, distributing stores, and directing her staff. During the first 7 months of her stay in the Crimea the mortality was 60 per cent. per annum from disease alone, but later this was much reduced. After the war a fund was established as a national commemoration for her services and yielded an income of $225,000. It was devoted to setting up a training school for nurses at St. Thomas' Hospital and to the maintenance and instruction of midwifery nurses at King's College Hospital. But for herself she would have neither public testimonial nor public welcome. Her fame was on every lip and her name a household word among the peoples of the world, but her life ever after was little better than that of a recluse and confirmed invalid. Though physically weak, her mental strength was great and she remained devoted to the cause of nursing. She was the general adviser on nursing organization not only of her own but of foreign governments and was consulted by ministers and generals at the outbreak of all our wars, and expounded important schemes of sanitary and other reforms. She was the means of inspiring more humane and more efficient treatment of the wounded in the American Civil War and in the Franco-German War. The nursing school at St. Thomas' Hospital proved very successful and led to the establishment of the numerous schools which now exist throughout the country. She wrote much and well on nursing. Her book "Notes on Nursing" was so clear and practical that 100,000 copies were sold.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 19, 1910.

Twentieth Congress of Alienists and Neurologists of France and French-Speaking Countries

The above named congress was held in Brussels, August 1 to 7. Three questions were discussed: (1) sleeping sickness; (2) cutaneous lesions in mental and nervous affections, and (3) alcoholism and criminality.

SLEEPING-SICKNESS

Dr. Van Campenhout, professor at the Brussels school of tropical medicine, read a paper on this subject, emphasizing the rôle of the *Glossina palpalis* as an indispensable factor in the propagation of the disease. Transmission by sexual relations conceded by Koch, is impossible. In America, the trypanosome has never been transmitted to American-born women. The numerous Europeans who have returned infected with trypanosomiasis have never caused a single European case of sleeping-sickness.

The diagnosis of sleeping-sickness is easy at the second and the third stages, but not at the first. As Dr. Granjux said in the course of the discussion, it is most important that the diagnosis should be made early, not only because of the greater chances of cure, but also because, in proportion as sleeping-sickness is understood better and recognized earlier, psychic troubles are more and more frequently found present at the outset, constituting, Granjux believes, a "medicolegal" period, during which the patient is liable to various errors of judgment which may involve serious consequences. This being the case, every individual who has sojourned in a region infested by the tsetse fly and who presents symptoms analogous to those of general paralysis should be examined for the trypanosome, whether or not he happens to be syphilitic.

ALCOHOLISM AND CRIMINALITY

This question was the subject of a paper by Dr. A. Ley, head physician at the sanatorium of Fort Jaco, Uccle, and Dr. René Charpentier, head of the clinic of mental diseases at the Paris college of medicine, who first cited numerous statistics showing the influence alcoholism has over criminality.

The statistics of the Ste. Anne Asylum at Paris are particularly instructive. Out of 885 offenses and crimes for which 801 patients were confined in this establishment from 1905 to 1909 inclusive, 370, or 41.8 per cent., were attributable to various forms of alcoholism. In Scotland and Ireland, the number of arrests for inebriety have diminished with the diminution in the number of hours that the public houses are allowed to remain open; and Sunday criminality has diminished markedly since the complete closing of places for the sale of alcoholic drinks has been made compulsory on that day.

The present laws of Belgium and France on the subject of criminal inebriety, the essayist remarked, are inefficacious and insufficiently enforced. When an offense or crime due to alcohol is committed, the accused is subjected to medicolegal examination and adjudged either irresponsible or semiresponsible: in the first case he is put in confinement; in the second there is a diminution of the penalty. In either case, the results are bad, both legally and medically. Legally, the penalty is not sufficiently exemplary; medically, the period of the moral treatment of the criminal is too limited. Special establishments are necessary in which criminal inebriates may be judicially confined. Such institutions exist in many countries and are provided for by the new bill which has passed the French Chamber of Deputies. It was in Switzerland, where there are now twelve such establishments, that asylums for inebriates were first founded. Great Britain, the United States, New South Wales and New Zealand have recognized the uselessness of the temporary confinement of delinquent inebriates in prisons, and have founded special asylums (reformatories) for such criminals, discharge from which is granted only on a solemn promise of total abstinence. Thirty to 50 per cent. of cures are recorded. All those who have had any considerable experience with asylums for inebriates agree in saying that only a course of total abstinence, lasting from six months to two years or more, is capable of effecting cures. The work-cure ought to be methodically applied. Allowing inebriates in asylums to become inactive or lazy should be avoided by all means. The physicians and all the members of the staff of an asylum for inebriates should be total abstainers, for mere temperance does not afford a proper example.

In reviewing the measures of social prophylaxis, Drs. Ley and Charpentier emphasize particularly the rôle of local option, showing how, in the United States, many of the southern states have been able to attain prohibition without undue friction by local option. By examples from the United States, the essayists show that criminality waxes with the sale of alcoholic drinks, and wanes with its suppression. Thus in New Hampshire a period of license following a period of prohibition gave the following figures for the increase in the numbers of those committed to penal institutions:

1902 (last year of non-license)	473
1903 (first year of license)	838
1904 (second year of license)	1,337
1905 (third year of license)	1,637
1906 (fourth year of license)	2,181

Drs. Ley and Charpentier concluded that the broadest and most fertile field of experience for social measures against alcoholism is at present found in the United States of America, where all systems are put in practice: monopoly, high license, restriction of the number of saloons, closing on certain days, concentration in one quarter of the city, local option and prohibition. There is, moreover, a struggle going on there between the saloon interests, which wield a considerable power, and the prohibition party, which is carrying on an enthusiastic and active propaganda.

Louis Farabeuf

Dr. Louis Hubert Farabeuf, former professor of anatomy at the Paris college of medicine and member of the Académie de Médecine, has just died, aged 69. Appointed head demonstrator in anatomy at the Paris college of medicine in 1878, he became, nine years later, professor of anatomy and occupied this chair until 1902, when he retired and was replaced by Poirier. While the latter was not only an anatomist, but a surgeon whose practice increased so as to be somewhat prejudicial to instruction, Farabeuf was devoted exclusively to instruction, for which he had extraordinary gifts, his lessons being of remarkable clearness and definiteness. The same qualities were found in his monograph on the blood-vessels of the perineum and the pelvis, published in 1905 and his "Introduction to the Clinical Study and Practice of Obstetrics," published in collaboration with Dr. Varnier, in 1891, but the book which brought Farabeuf his greatest reputation was his "Précis of Operative Technic," comprising the operative technic of ligatures, amputations and resections, which has had several successive editions since 1872, the last having been published in 1909. This work is a veritable masterpiece of clearness and precision.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, August 11, 1910.

Personal

At the end of the summer semester, Professor Riedel, director of the surgical clinic at Jena, resigned his position. Riedel had to undergo an amputation for arteriosclerotic gangrene six months ago.

Another X-Ray Victim

A victim to *x*-ray cancer like the London physician Cox, who lately died of this disease, is furnished by Prof. Albers Schönberg, the well known *x*-ray investigator at Hamburg. He acquired an ulceration of the skin during his early studies before the injurious action of the Roentgen rays was known. This eventually underwent malignant degeneration and recently necessitated the amputation of his left forearm. Some fingers of the right hand are also crippled. Other *x*-ray investigators have chronic incurable skin affections. Sterility occurs in consequence of exposure to the Roentgen rays more frequently than is generally known.

International Thalassotherapy Congress

The Fifth International Congress for Thalassotherapy will meet at the well known German watering place on the Baltic, Colberg, in Whitsunday week of next year. Dr. Foerster, the director of the Prussian medical bureau, has the presidency of the German committee.

Organization of Rescue Work in Mines

The numerous severe catastrophes that have occurred in the last few years in the mines of various countries have compelled the authorities to give attention to the development of a life-saving service for mines. In Germany for a long time much attention has been given to the manufacture of life-saving apparatus. The management of many mines have trained special rescue crews for their mines and in some mining districts rescue emergency stations have been established. A further development of this organization is now contemplated in one of the largest mining districts of Germany, the Rhenish-Westphalian anthracite coal districts. In this district where already the individual mines possess 7,000 sets of rescue apparatus and 2,500 trained men in the rescue crews it is planned to establish a central station for the mine rescue service. This bureau is to keep in stock the apparatus for rescue of miners, and to supervise the training of the men from all the mines. This supervision is to be carried out by expert officers. In order to keep the training of the crews at its highest efficiency, the officers of the rescue stations are occasionally to take part in the exercises of the rescue crew. A further function of the bureau is the testing and reporting on new forms of apparatus and other branches of rescue work.

The Campaign Against Pulmonary Tuberculosis by the Wage-Earners' Insurance Organizations

According to official statements, 42,000 persons were treated for pulmonary tuberculosis in 1909 by the German invalid insurance societies. In order to determine the results of the treatment of tuberculosis in the public sanatoria, the imperial insurance office instituted investigations as to how many of the persons treated in the sanatoria were able to work five years after their dismissal. It was found that in the period of treatment from 1897 to 1901, at the end of the period 25 per cent. of the men and 32 per cent. of the women had their earning capacity restored. At the end of the period from 1904 to 1908, on the other hand, 41 per cent. of the men and 51 per cent. of the women were still able to work. The results of the treatment have markedly improved in recent years. The statistics also show that even patients in the third stage of tuberculosis (according to the classification of Turban and Gerhardt) are favorably influenced by the public sanatoria; of 3,590 men in the third stage, 1,649, that is, 47 per cent., were able to work on dismissal, and of these 553 have passed into a more favorable stage. Of 9,160 men in the second stage, 85 per cent. were able to work.

Study of Epizootics in German Southwest Africa

Professor Ostertag, the director of the veterinary department of the imperial health office, has been sent out by the imperial colonial office for the study of epizootic diseases in German Southwest Africa. He is to gather information by investigations on the ground respecting the character and the control of animal pestilences, especially that recently observed among sheep. In addition, Professor Ostertag is to make recommendations on the basis of his observations as to the best method of making use of scientific experience regarding animal pestilence by the establishment of appropriate organizations and especially by the development of the existing bacteriologic station.

Health and Vital Statistics of Prussia in 1908

From the report of the medical bureau of the Prussian department of education on the public health for 1908 (which has just appeared) a number of general interesting facts can be learned. The number of births in Prussia was 1,308,283, an absolute increase of 9,902 over the previous year. Of these, 38,884 were stillborn, an increase of 229 over the previous year. The proportion of the living born to 1,000 inhabitants was 32.99, a proportion which is smaller than that of any year previous to 1901. Of 1,000 births in the city, 30.43 were stillborn, but in the country 29.21. Of those born living, 651,426 were males, 617,973 females. The births of male children per 1,000 inhabitants diminished 0.32 over the previous year, that of female 0.15. Of all the births, 16,884 were plural, 16,716 being twins, 167 triplets, and 1 quadruplet. Of 1,000 children born in plural births, 42.31 were stillborn, making 13 more than single births. The number of marriages in 1908 were 311,331, nearly as many in the towns as in the country. (Prussia had a population of 3,293,324 in 1905.)

There were 693,724 deaths in 1908, an increase of 12,775 over the previous year. The excess of living births over the deaths was 575,675, which, with the exception of 1907 and 1906, is more favorable than in previous years. Of 1,000 inhabitants 19.17 male and 17.02 female, or altogether 18.03 persons died, a figure more favorable than in all previous years. The mortality in large cities of over 100,000 inhabitants remains on the average, 16.51 per 1,000 living, below the average of the entire nation (18.03). The highest mortality is shown by the city of Posen (22.24), the lowest by the city of Schöneberg (11.44). Berlin had a death-rate of 15.42.

Miscellany

Military Psychiatry. An interesting article by R. L. Richards, Captain Medical Corps, U. S. Army, on military psychiatry, appears in the *American Journal of Insanity* for July. He reviews the practice in foreign countries as regards the insane in the military and naval services and credits Russia as having been in some measure a pioneer in this matter. That country also gave the first practical demonstration of the necessity and importance of a complete psychiatric service from the firing line to the home hospitals in the late Japanese-Russian war. Most countries give more or less psychiatric instruction to military surgeons, the United States being about the last in the field. Psychiatric instruction is now being afforded to army medical officers in the Government Hospital for the Insane, Washington, D. C., which offers special advantages for this purpose. The most important problems confronting military surgeons in this regard are the special character of the insane patients that will come under their charge, the specially dangerous character of insanity occurring in certain military situations, the peculiar liability to it under the conditions of special stress which the soldier undergoes, and the necessity of proper scrutiny of recruits. The military insane are younger in years and show a higher recovery rate. The special conditions of exhaustion, specific poisons, etc., produce a comparatively simple form of mental disturbance tending to early recovery. A large number of men recover before reaching the home hospital. On account of the nature of military life the insane are potentially dangerous to a large number of people. An insane man in a regiment is a weak point in the line and this is especially true with the complicated organization of armies in modern warfare. Any physical or psychical weakness also comes to the front under such conditions. During the Russo-Japanese war the insane were seen wandering around everywhere in the battle line in spite of the best organization that the world has ever seen (Oserezkowski: *Militarwochenblatt*, 1906, No 140). In one instance a whole regiment was put into a panic which could only be explained by psychic infection from some mental weaklings. There is no way of preventing the presence of some such in a battle. Richards' investigations show that of the military insane received at the Government Hospital for the Insane, 13 per cent. had had previous attacks of insanity; 60 per cent. showed degenerative stigmata and 15 per cent. had had suspicious symptoms in their history. An appreciable proportion of the military offenders of the army are also to be classed among the psychic weaklings. The remedies for the conditions mentioned are simple in principle but somewhat difficult of application. Other countries are more strict in this regard than ours. The standard of mental efficiency fixed by Congress for an enlisted man is simply that he must "speak, read and write the English language" and take out his first citizenship papers. We have not, in this country, the police records, the school reports, etc., which are available in European countries, and we have to depend largely on the three months observation at the recruiting station to determine the fitness of the man for military service. In spite of all care, it is everywhere found impossible to prevent some incompetents passing the scrutiny. The question of establishing the degree of responsibility of the service for mental disability presents unusual difficulties from the fact that the etiology of mental diseases is not by any means usually clear. Hence the difficulty in case of application for pensions. It is especially difficult in the early stages of mental diseases during which the military surgeon has the cases under observation. The duty of the military surgeon in helping to establish the degree of responsibility of a military offender on account of mental defects is also mentioned and a knowledge of the conditions of military life is essential in considering these cases. The military surgeon has the advantage of better knowledge of the previous conduct of the offender under military conditions. The point has been made by a German authority that the legal, rather than the medical, standpoint must be taken since a military offense is relatively more serious and the effect on the regard for authority among the other soldiers is more dangerous than in civil life.

Disposal of Excreta. Reporting his experiments on the disposal of excreta (*Public Health Reports*, Aug. 19, 1910), Dr. C. W. Stiles declares that if night soil containing fly larvæ is taken from surface privy and buried in 6½ inches of sterilized sand, the burial of the material does not insure the death of the insects; on the contrary the latter are able to penetrate the sand and to issue as adult flies. This emphasizes the fact that all fecal material should be rendered harmless, and raises doubt in regard to the popular faith in the dry system of disposal of excreta. Burial in 6½ inches of sand does not prevent hookworm larvæ from coming to the surface, and when placed in a 2 per cent. solution of crude phenol in water live eggs were found after 24 hours, but not at the next observation on the twenty-third day. This mixture killed hookworm embryos and larvæ in a few moments, observation being made under the microscope. Fly larvæ were also killed and flies did not oviposit on the floating fecal material treated in this manner, but on account of certain dangers Stiles does not recommend the use of this solution. Even 2 inches of water with a film of kerosene is exceedingly inhibitory to the development of the eggs of both *Ascaris lumbricoides* and *Necator americanus*. Under about 9 inches of water, with a film of kerosene, hookworm eggs begin to die after 4 days. Some may be found alive up to the twenty-ninth day, but no egg was found in the experiments which had developed to the "tadpole" stage. Stiles states that it would be unsafe from the standpoint of hookworm disease to throw the kerosene treated feces on the ground even after they had fermented for 33 days. If water and kerosene are added to a pail containing fly-blown feces, some of the fly larvæ succeed in crawling through the oil and escaping from the pail; but if the water and kerosene are placed in a tub before use, or before the feces become fly-blown, the feeding and breeding of flies, mosquitoes and other insects in the night soil seems to be eliminated, and thus the spread of filth and bacterial infection from the privy tub to food by means of insects appears to be excluded. The chief objections to the water kerosene method seem to be that if the water is too deep splashing occurs; a tendency to economize may result in the use of too small a receptacle, the wet system calling for a larger receptacle than the dry; the feasibility of applying the method to manure piles in order to prevent the breeding of flies may be doubtful.

The privy is the great sanitary problem of the open country and non sewered villages. As human carriers of bacterial and parasitic infections are not known, it is necessary to impress on the public that all human feces are dangerous. The burial of night soil without first treating it is dangerous and may result in disease. Burning or boiling human excreta is the ideal plan, but is not of universal feasibility. The surface privy is a distinct improvement over none, but is unwarranted in view of present day knowledge. The pail system is the least that can be demanded, but some safeguarding material should be used in the pail. If the dry earth system is used the privy must be made fly-proof. The advantage of the water-kerosene method is that it can be installed with so little trouble and change in present privies. Further studies are required on this system in connection with splashing and minimum time for fermentation. [The use of kerosene on night soil or on manure piles interferes with the usefulness of the material for fertilizer. Iron sulphate solution has been suggested as efficient in the destruction of fly larvæ in their breeding places, and does not prevent the use of the manure for fertilizer.—Ed.]

Some Symptoms of Intussusception.—*Pain* is of great severity and usually paroxysmal. Rarely is it continuous at the start, though it often becomes so during the second and third day. The pain is usually referred to the umbilicus and is most marked during the first two days. In chronic cases it is almost always absent. *Vomiting* is most marked at the onset, but may continue severe throughout the attack. It is not so much a symptom of intussusception as it is of acute intestinal obstruction. The vomiting is projectile and uncontrollable. At first it consists of stomach contents, but soon it becomes greenish from the presence of bile and then, it obstruction to the intestines is complete, it becomes fecal. Fecal vomiting is not common in infancy, only from 10 to 11 per cent. of children under ten years having it. It is a bad sign though not always a fatal one, and rarely seen before the third or fourth day. Vomiting is absent in chronic cases. *Bowel symptoms* are prominent. Characteristic symptoms of acute intussusception are the bloody and mucous stools, present in three-fifths or more of all cases. The discharge of blood frequently follows the attacks of severe colicky pain. In some cases it is not discharged spontaneously and only when an enema is given do we get any evidence of blood. The amount of blood passed each time varies from a mere trace in the mucus to an ounce. Constipation in acute cases is usually complete, neither gas nor feces being passed. There are usually one or two watery stools after the onset. In some cases the opening at the apex of the intussusception may not be completely closed and in these cases there is complete constipation. Tenesmus is present in one third of the cases and especially if the tumor is in the large intestine. Tympanitic distention is seen in one third of the cases and occurs usually on the second or third day, the abdomen being usually soft and relaxed during the first day or two. The distention is especially marked if the lower bowel is involved, whereas if the invagination is high up in the small intestines it may be so slight as to go unnoticed. In cases in which the opening at the apex of the intussusception is not entirely obliterated the distention may not be marked, even though the obstruction is in the large bowel. *The tumor* is one of the most diagnostic symptoms. It may be present as early as a few hours after the onset and in three fourths of all cases it is found on the first day. —H. A. Morganthaler in *the Jour. of Obstet. and Dis. of Women and Children.*

Serodiagnosis of Syphilis in the Insane.—The thirty-first annual report of the Binghamton (N. Y.) State Hospital for the Insane in its pathologic section gives some data of interest in regard to serodiagnosis of syphilis in the insane. A series of cases was studied to determine the value of the precipitate reaction in the spinal fluid. The number of positive reactions in nonsyphilitic cases was so great as to indicate that the precipitate reaction cannot be considered as specific for either paresis or syphilis. Similarly, Noguchi's butyric acid reaction was positive in so many nonparetic cases as to be considered inconclusive, and it is stated that the small quantities of the various solutions used by Noguchi give misleading results. The Noguchi modification of the Wassermann reaction was used in about 50 cases with positive results in all the paretics and other patients with syphilitic history, while all the non-syphilitic cases gave negative reactions. In 20 cases of paresis the tuberculo-opsonic index was studied. One case showed an index above normal; 6 were normal and the average of the 20 was 0.6, which is below normal. This would indicate that paretics have no natural immunity to tuberculosis, which is contrary to the view expressed by an investigator in one of the New York hospitals last year (The Journal, Feb. 13, 1909). Two of the 25 deaths of paretics were due to tuberculosis.

Autotoxemia and Infection.—In a communication to the Royal Society, London, June 23 (*Nature*, June 30), E. C. Hort reported some experiments made to show that the injection of small quantities of distilled water alone would cause in small animals the phenomena of bacterial and protozoan infection, such as fever, loss of weight, and changes in the antitryptic values of the blood serum. He produced fever in rabbits and guinea-pigs by the injection of boiled distilled water, one to sixty centigrams, and by proper spacing of the injections continuous fever could be produced. Hypersensitization was frequently observed. Small single injections were not conclusive as regards loss of weight, but multiple injection always produced it. Multiple injections of simple boiled distilled water always produced marked rise in antitryptic values, strikingly parallel with those produced by diphtheria toxin or living bacteria injections in the same species of animal. From these results he draws the inference that a part, at least, of the disease-complex of infection is the result of a state of true auto-intoxication, however great may be the part played by the bacteria and protozoa. Such auto-intoxications he suggests may be in part directly due to the absorption of derivatives of the infected cells themselves and only indirectly to the absorption of bacterial products.

Neri's Sign of Organic Hemiplegia.—The *Nouvelle Iconographie*, XXIII, 1910, 88, gives an illustrated description of the sign to which V. Neri calls attention. In some cases this sign occurs alone and it may be elicited when the patient is in coma. It consists in the spontaneous bending of the knee as the leg is passively lifted, the patient in the dorsal decubitus. The sound leg can be raised to an angle of 70 degrees without the knee's flexing, while the knee of the paralyzed limb bends between 40 and 50 degrees. If the patient stands erect with folded arms and is then told to stoop forward, keeping the legs stiff, the knee flexes on the paralyzed side, while the sound knee remains stiff. This sign is not pathognomonic of organic hemiplegia but is useful to corroborate other signs.

Pertinent Questions.—Why conserve coal mines and not conserve the life of the coal miner? Why conserve the cotton plant and expend $500,000 to fight the boll weevil and not conserve the people, who are to be clothed with the cotton? Why conserve the life of tree and fight the San José scale, and not conserve the people who eat oranges? Why conserve the life of the forest and forget the life of the forester and of his children? Why protect tree life and plant life and neglect human life? Why protect cattle from Texas fever and not protect people from typhoid and malarial fever? Why protect pigs and forget the children?—*Senator Owen, of Oklahoma.*

Sulphuric Acid Burns.—The spilling of sulphuric acid on the body or the clothes is not a very common accident, but it is well to remember that plenty of water applied immediately will prevent any harm. When spilled on clothes, sulphuric acid decomposes them so that they fall to pieces, but it should be generally known that application of water dilutes the acid and washes it away. Workmen sometimes break receptacles containing sulphuric acid, and malicious persons sometimes use it in the attempt to disfigure faces. If necessary, the hose can be turned on the affected person or he may be unceremoniously thrown into any body of water that is handy.

Marriages

Homer Persell Prowitt, M.D., to Miss Elinor Meyer, both of Washington, Pa., August 22.

Oliver Perry Bigelow, M.D., to Miss Emma K. Wright, both of Independence, Iowa, August 19.

William Edward Ladd, M.D., Boston, to Miss Helen Katherine Barton, of Worcester, Mass., August 18.

Leo Berthold Auerbach, M.D., El Paso, Texas, to Miss Harriet Stribling Clark, of Chicago, August 20.

R. Gainsforth James, M.D., Gaines, Mich., to Miss Edythe May Stiff, of Ann Arbor, at Windsor, Ont., recently.

Deaths

William James, M.D. Harvard Medical School, 1869; eminent as a psychologist; formerly instructor and assistant professor of physiology; instructor in anatomy; assistant professor and professor of philosophy; professor and emeritus professor of psychology in Harvard University; recipient of honorary degrees from many universities of Europe and the United States; Gifford lecturer on Natural Religion in the University of Edinburg from 1899-1901; Hibbert lecturer on philosophy in Oxford University in 1908; author of standard textbooks on psychology; one of the founders of the American Society for Psychical Research; founder of the so-called "pragmatic" school of philosophy; of whose literary characteristics it was said that he wrote "science like romance;" died at his summer home in Chocorua, N. H., August 26, from heart disease, aged 68.

Joseph A. Scroggs, M.D. Rush Medical College, 1874; a member of the American Medical Association; emeritus professor of obstetrics in Drake University, Des Moines, Iowa; at one time a member and president of the State Board of Health and State Board of Medical Examiners; president of the Iowa State Medical Society in 1903; for many years surgeon of Keokuk & Western, and St. Louis, Keokuk & Northwestern Railways; died at his home in Keokuk, August 25, from diabetic gangrene, aged 62.

Abner Wellborn Calhoun, M.D. Jefferson Medical College, 1869; a member of the American Medical Association; pioneer oculist of the south; professor of ophthalmology and diseases of the ear, nose and throat, in the Atlantic College of Physicians and Surgeons; attending surgeon to Grady and Wesley Memorial hospitals and St. Joseph's Infirmary, Atlanta, Ga.; a Confederate veteran; died at his home in Atlanta, August 21, aged 65.

Guilford O. Bicknell, M.D. Vanderbilt University, Nashville, Tenn., 1882; a member of the American Medical Association and founder of the Munroe County Medical Society of Etowah, Tenn.; division surgeon of the Louisville & Nashville Railroad; died suddenly at a hospital in Danville, Va., August 12, aged 51.

John Wells Bulkley, M.D. Berkshire Medical College, Pittsfield, Mass., 1844; a member of the Medical Association of the District of Columbia, and senior member of the consulting staff of Providence Hospital, Washington, D. C.; died at his home, August 23, aged 86.

Francis Collamore, M.D. Dartmouth Medical School, Hanover, N. H., 1847; a member of the Massachusetts Medical Society; said to be the oldest practitioner in Plymouth county; died at his home in Pembroke, Mass., August 18, from cerebral hemorrhage, aged 84.

Elmer Erickson, M.D. College of Physicians and Surgeons, Chicago, 1909; assistant physician at the Elgin State Hospital; died at the Augustana Hospital, Chicago, August 17, from general peritonitis, following an operation for appendicitis, aged 22.

John W. Faucher, M.D. Indiana Medical College, Indianapolis, 1876; surgeon in the army during the Civil War and stationed at the General Hospital, Nashville, Tenn.; died at his home in Sheridan, Ind., August 19, from gastroenteritis, aged 71.

Jerome J. Valede, M.D. Detroit College of Medicine, 1882; a member of the Michigan State Medical Society; founder and president of the bank of Newport, Mich.; died at his home in that place, August 15, from chronic nephritis, aged 51.

Robert Thomas Bartram, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1886; a member of the Iowa State Medical Society; formerly of Albia, Iowa; died at his home in Ellsworth, Kan., August 12, from septicemia, aged 57.

John Morgan McLaughlin, M.D. University of Maryland, Baltimore, 1888; a member of the American Medical Association; of Webster Springs, W. Va.; died at a hospital in Clarksburg, W. Va., August 19, from typhoid fever, aged 50.

Herbert Marcus Goodman, M.D. Rush Medical College, 1909; an interne in Cook County Hospital; died at the home of his father in Chicago, August 19, after an operation for carcinoma of the pharynx, aged 27.

Arthur Benjamin Bevier, M.D. Bellevue Hospital Medical College, 1881; a member of the American Medical Association; died in his office in Ridgway, Pa., August 4, from cerebral hemorrhage, aged 52.

Russell Cleveland Campbell, M.D. Medico-Chirurgical College of Philadelphia, 1909; of New Germantown, Pa., is said to have committed suicide by taking cyanide of potassium, August 18, aged 24.

Clarence Lee Addleman, M.D. University of Pennsylvania, 1875; of Mammoth, Utah; a member of the State Medical Association; died in Greencastle, Pa., May 20, from narcotism, aged 67.

Dayne Hamilton Griffith, M.D. Jefferson Medical College, 1905; member of the staff of the Pittsburg, Pa., Hospital; died at North Bay, Ont., August 20, from acute gastritis, aged 26.

Emily A. Cady-Harris, M.D. Woman's Medical College of the New York Infirmary for Women and Children, 1889; died at her home in Rochester, N. Y., August 12, from diabetes, aged 49.

Henry Franz Koester, M.D. Bellevue Hospital Medical College, 1891; a member of the Medical Society of the State of New York; died at his home in New York City, July 28, aged 47.

Walter S. Graham, M.D. Hahnemann Medical College, Philadelphia, 1884; a member of the Florida Medical Association; died at his home in Miami, June 19, from tuberculosis, aged 52.

William Jefferson Easley, (license, years of practice, Ill.); formerly of Raymond, Ill.; died at the home of his daughter in Decatur, Ill., August 7, from senile debility, aged 82.

William Claude Usher, M.D. Harvard Medical School, 1908; an interne in the Boston Lying-in Hospital; was drowned in the Charles River, August 10, aged 24.

Joseph Brinton Crandall, M.D. Hahnemann Medical College, Chicago, 1878; died at his home in Clinton, Wis., July 4, from cerebral hemorrhage, aged 92.

Dana Bailey Goddard, M.D. University of Vermont, Burlington, 1899; died at his home in Brattleboro, Vt., July 22, from cerebral hemorrhage, aged 36.

George Donald Reid Simpson, M.D. University of Toronto, 1895; formerly of Hamilton, Ont.; died at his home in Toronto, April 8, aged 36.

August Hypolite Borey, M.D. Tulane University of Louisiana, 1905; died at his home in New Orleans, July 14, from appendicitis, aged 26.

Robert M. Gallen, M.D. Illinois Medical College, Chicago, 1904; died at his home in St. Louis, Mo., August 15, from diabetes, aged 34.

James A. Harris, (license, years of practice, Ill., 1878); died at his home in Carriers Mills, August 20, from heart disease, aged 74.

Walter Franklin Atlee, M.D. University of Pennsylvania, 1850; died at his home in Philadelphia, August 18, from pneumonia, aged 81.

James Brooks, M.D. Cleveland Medical College, 1844; died at his home in Ellington, N. Y., August 5, from carcinoma, aged 87.

Hiram Burton (license, Ind., 1897); died at his home near Somerville, Ind., August 17, from chronic nephritis, aged 78.

Pharmacology

HYDRONAPHTHOL

A correspondent having requested information regarding the composition of "Hydronaphthol," the product was investigated in the Association laboratory. The laboratory reports as follows:

> Hydronaphthol is sold by Seabury & Johnson. The label on a trade package of Hydronaphthol gives no clew as to the nature of the product. The statements on the labels do, however, make the claim that Hydronaphthol is an antiseptic of great power, also that it is non-toxic and therefore may be used with impunity; thus the following statements are made:
>
> "A harmless, practically odorless, non-poisonous, non-corrosive antiseptic . . ." . . .
>
> ". . . it is non-poisonous and can be employed with perfect impunity as a preservative . . ."
>
> The substance has the characteristic appearance, odor and taste of naphthol. It responded to all the tests of the United States Pharmacopeia for betanaphthol, with the exception of the melting point, which was found to be 119 C. instead of 122 C., an indication of impurity. It is evident, therefore, that Hydronaphthol is merely a trade-name for betanaphthol. While resublimed betanaphthol is listed at 10 cents an ounce, Hydronaphthol is listed at 75 cents an ounce.

Hydronaphthol thus furnishes one more illustration of the fact that most proprietary medicines for which the most extravagant claims are made are but old and well-known remedies sold under a fancy name at a price far in advance of that charged for the constituent or constituents. The exploiters are extremely positive in their statements regarding the non-toxic character of the preparation. Yet, as a matter of fact, betanaphthol is by no means harmless; it has been absorbed by the diseased skin with injury to the kidney and with fatal results. In some cases injury to the eye has also occurred. These toxic actions should be known to the practitioner. From 3 to 4 gm. (1 dram) applied to the skin has produced death (Stern: *Therap. Monatshefte*, 1900, p. 165.) When a manufacturer advertises a preparation which possesses potentialities for harm, and especially when he puts it out under a name which conceals its identity, it is incumbent on him to warn the customer of possible injurious or inconvenient actions instead of proclaiming that the preparation is harmless.

PROPRIETARIES IN ITALY

The general discontent with the way in which proprietary medicines are being advertised in Italy is voiced by Dr. A. Zambler, in a communication in the *Gazzetta degli Ospedali*. He states that Dr. Silingardi has recently prepared a brief on the subject to call the attention of legislators to it. The subject is one, Zambler remarks, which while of great interest to the medical profession is of far greater interest to the sick and suffering public. The public authorities, he continues, can no longer close their eyes to the matter as the advertising propaganda has become so incessant and pervading. He says that the third edition of the Italian Pharmacopeia includes a notable display of proprietaries and it is the only Pharmacopeia thus distinguished. He does not comment on their value but only remarks that their inclusion in the Pharmacopeia is an effective form of official advertising in favor of the richer manufacturing firms.

He suggests that the authorities should forbid the sale of all proprietaries that fail to obtain a certificate from the national board of health as to their therapeutic value. Zambler comments that the means to dispel the evil are within reach. All that is necessary, he states, is for physicians to agree on the matter and for the authorities to have the good of the public in view rather than the good of commercial private interests, and to have the present sanitary regulations more strictly enforced.

Correspondence

Wanted: Specimens of Nervous System From Fatal Cases of Poliomyelitis

To the Editor:—I should be greatly indebted to you for any assistance that you could render me through the columns of The Journal in enabling us to secure specimens of the nervous systems from fatal cases of epidemic poliomyelitis, a disease which is widely prevalent throughout the United States and Canada at present. We should like to obtain portions of the spinal cord and, by preference, of the lumbar or cervical enlargement removed as soon after death as possible, and preserved in plenty of pure glycerin, Squibb's or Merck's or Kahlbaum's. These specimens are to be used for experimental purposes; they can be sent by express at our expense, or by mail addressed to me at the Rockefeller Institute, Sixty-sixth Street and Avenue A, New York City.

Simon Flexner.

Anglo-American Medical Association of Berlin Employs Permanent Secretary

To the Editor:—For the benefit of those who wish to do medical work in Berlin, the Anglo-American Medical Association has employed a permanent secretary who, on request, will furnish information concerning the medical courses obtainable here, the approximate cost, etc. Letters should be addressed to the secretary of the Anglo-American Medical Association, 105 B Friedrichstrasse, Berlin, Germany.

H. O. Bruggeman, President, Berlin.

Obliterating the Monuments

To the Editor:—To one who has yet a pride in the achievements of American medicine and in the glory of its great names, it is painful to see pass out the educational monuments that kept in professional memory the great men of American medicine and memorialized them before the public.

If medical colleges are to become only annexes of great literary and scientific endowed universities it is not necessary, nor is it kind, that the honored, worthy and great medical names they represent in many instances, and in others have borne, should be obliterated and lost to the rising generation and to posterity. The profession reveres the names yet and none need be ashamed of them though men who love them then wrought in or founded only two-year schools (maybe), where such physics and biologic results only were taught as the students of medicine must needs then have had and anatomy was demonstrated when most of the world was asleep, and when conditions and demands of study were not as they are now.

Chicago still honors the name of Rush. May it never cease to keep that honored American name, the first among the great psychiatrists, though few schools are yet teaching psychiatry. But what school bears the honored name of N. S. Davis? What school has ever honored Dudley of Kentucky? And where is the name of Marion-Sims, borne by a once meritorious medical school of St. Louis, rejoicing in this great name and in medical independence? Merged and silenced into an annex to another institution, the Catholic St. Louis University and the Beaumont.

And where are the Charles A. Pope School of Medicine and the Joseph N. McDowell school? Likewise merged and lost in another university, the Washington University of St. Louis, and where is the "Humboldt Hammer" school? Passed into the College of Physicians and Surgeons of St. Louis and the new regular changed from eclectic simply bears the name "American." Why should it not have been rechristened with an eminent American medical name? It would be well for the profession to have a care for its own if it would have them justly esteemed by others.

There are the names of Holmes, Parker, Bowditch, and others of Boston. There are the Brown Sequards, the Drapers, Dorseys, and hosts of others now dead but great in the annals of medical discovery and service, like the laborious Dunglison and others, like Paul Beck Goddard, who should be honored. Why is there not a memorial medical university, not an annex to a literary institution, but an independent exclusively medical university to Ephraim McDowell, to Nicholas Senn, to Valentine Mott and others like them, now gone to the glory of the skies, but not yet properly glorified by us here below in suitable structures of stone?

If we look for the living to memorialize there are the Mayo Brothers of Minnesota. There are Sajous, Shoemaker, and La Place of Philadelphia, to say nothing of Murphy, Finlay, Gorgas, Flexner, Ochsner, Billings, and many others among us yet in other cities and men abroad who have carved deathless names on Fame's memory tablets, and Osler, now not with us, but who worked like a trojan for Johns Hopkins.

At one time St. Louis, through its independent medical schools named after dead medical worthies, did more than any other city to keep the fame of its medical worthies alive by naming its medical colleges after them.

Why not have a renaissance of great men of medicine in memorial educational monuments to the work they did for the world's welfare, not in St. Louis and Chicago alone but in other cities and sections of the country?

Two St. Louis public schools bear the honored names of Pope and Hodgen. Why not name medical schools after them, also; and Watters, Linton, and others of that good old school? I saw John T. Hodgen in the ampitheater of the St. Louis Medical College more than thirty years ago, when he was teaching physiology there, repeat the demonstrations of Floureus on the cerebelli of pigeons and the school was then independent of Washington University, a two-year school with one previous year of home study with a preceptor its minimum requirement.

I saw practical toxicology demonstrated in such a way at the same school that I could never testify that hydrocyanic acid could take all day to kill a man as was testified to as a fact in the recent Hyde trial at Kansas City. This school had no university laboratory connection at that time either.

C. H. Hughes, M.D., St. Louis.

Registration of Foreign Physicians

To the Editor: I wish to express my approval of the letter on this subject in The Journal, August 6. I am a graduate of a medical school in Boston, but a South African by birth and held citizenship rights there before the war with England. Since my graduation here I endeavored to obtain the right of practicing in my own home, which has been denied me because of the laws existing in all British colonies. I have been given the privilege of taking an English degree, should I choose any of the colleges quoted by the council in London. As a means of obtaining this right, it was suggested that I go to Halifax (Nova Scotia) Medical College, where it would be easier to obtain a degree. This particular college has not received the approval of the Council on Medical Education of the American Medical Association or of the Carnegie Foundation. Nevertheless I was advised to go there by the registrar of the Medical Council of London, and to obtain a degree acceptable toward a certificate from the council in London which would enable me to practice in South Africa. Last year, in the Transvaal, after some agitation, through influential friends, a provision was made, which gave the right to the Transvaal Medical Council to grant certain privileges to South-African born students, desiring to attend and graduate from other than English medical schools.

It seems passing strange and unfair that the choice of the place of one's education should be denied to an inhabitant of a supposedly free and liberally governed country. It restricts the practice of medicine largely to the English, a great many of whom are graduates of colleges of not so good a standing as some American ones. If this information and protest will do any good to change the present state of affairs here and demand reciprocal rights, I shall be quite satisfied to remain here in my adopted country.

James A. Honeij, M.D., Cambridge, Mass.

The Whistle in the Stomach, Who Blew It First? A Question of Priority

To the Editor: The story is different from that told by Benjamin Franklin, but the moral is strikingly similar.

Eleven or twelve years ago I was possessed by the ambition to devise a method by means of which the exact length of the esophagus might be clinically determined. While waiting for inspiration I did the customary thing—I whistled. Like Newton's discovery of the law of gravitation at seeing the apple fall, to me, likewise, came the idea while "wetting my whistle." Since my whistling at the esophagus and my whistling for the esophagus were like "whistling jigs to a milestone," why, thought I, whistling not try to whistle into the esophagus? The result was that I did some more whistling and succeeded in hearing the sound of a whistle issuing from the innermost recesses of the abdominal viscera. To my ear it sounded like the first cry of my first-born.

I gave shape to my thoughts in a paper entitled "The Esophagometer or the Intragastric Whistle; A new Device for Measuring the Esophagus in the Living," which was read at the meeting of the Colorado State Medical Society, June 18-20, 1901, and which was subsequently published in the *New York Medical Journal*, Aug. 31, 1901.

I quote here a few lines referring to the principle on which the device is based and the description of the instrument.

> My method is based on the principle of acoustics, that sound is produced by the vibrations of air, and on the facts that the stomach is a hollow organ containing air, and that the esophagus when not in the act of swallowing is an air-tight organ. Hence, a musical instrument, when introduced into the esophagus, will produce no sound whatsoever throughout the whole of its length, but so soon as it reaches the threshold of the stomach, the cardia, it will emit a sound.
>
> My device consists of a stomach tube provided at its proximal end with a whistle. . . . The whistle is secured in the tube by tying it externally with a piece of catgut or silk. The tube is introduced into the esophagus, and air blown in by means of a pump, Davidson syringe, Politzer bag, the mouth, or what not. So long as the whistle traverses the esophagus the instrument is smothered and no sound is heard; but, so soon as the cardia is reached a distinct whistle is heard. The tube can be pushed forward and backward several times so as to ascertain the exact point at which the whistle becomes audible. The distance between the distal border of the side opening of the tube and the point at the incisor teeth where the whistling sound is first heard represents with precision the distance between the incisor teeth and the cardia.

An illustration of the instrument accompanied the article.

All these years I have been nursing the belief that I am the only and original whistler who first blew a note into the expanse of the stomach, and that to the end of time wherever the muffled sound of the intragastric whistle would be heard, there also the sound of my name would be echoed. But alas, my dream of fame and immortality is now hanging in the balance. There is another man who clamors for the honor and claims the first gastric blast.

Dr. Robert Coleman Kemp, in his treatise on "Diseases of the Stomach and Intestines" (Saunders, Philadelphia, 1910) gives a description and illustration of a stomach whistle which is identical with mine of 1901 vintage. Under the illustration is to be found the modest legened: "Kemp's Stomach Whistle."

The question at issue is: Who of us two whistled first into the stomach, and whether in the subsequent editions of Kemp's excellent treatise the legend under the illustration should be retained or changed.

I paid in full for Dr. Kemp's book and thought it was fully worth the price until I found there the story of the whistle, the moral of which, until proof to the contrary be forthcoming, is that I paid too much for my whistle.

C. D. Spivak, M.D. Denver.

[A proof of the above letter was submitted to Dr. Kemp, who replies:]

To the Editor: Though I exercised considerable care during the preparation of my recent work on "Diseases of the Stomach and Intestines," especially in properly crediting other authors and their investigations, I must frankly confess that I had not seen Dr. Spivak's article or known of its existence, and therefore did not credit him as the "original whistler." The instrument depicted in my book has a specially made thick-walled bulb attachment and the air is forced into the esophagus and immediately aspirated out, passing through the whistle extremity on both occasions. It will whistle in the esophagus, though to a much less marked degree than in the stomach. Dr. Spivak's references to the principles of acoustics are perfectly correct, but esophageal whistling can be readily produced by forced inspiration and aspiration by my unfortunate instrument.

As to changing the legend under the illustration, every aeroplane is not labeled "Wright," or every esophagoscope with the name of the discoverer of the instrument. There are "others." Dr. Spivak, however, should be duly credited.

Unfortunately, as I am on a summer tour and have no access to my own literature, I can only give approximate dates. My whistle was reported in the *Medical Brief*, I believe, early in 1904 in connection with gastrodiaphany and other methods of determining the position of the stomach as a means of comparison; also at an earlier period in the *Medical News*, and was demonstrated previous to this at my clinics at the Manhattan State Hospital. I believe, however, that Dr. Spivak must be the "original whistler" and in the next edition of my book, I shall be pleased to credit him as such. I note with pleasure that he thought my book worth the price until he "ran against" my whistle. I trust that my "amende honorable" will make him hereafter feel that he has not paid too much for his whistle.

Robert Coleman Kemp, M.D., New York.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SIGNIFICANCE OF CYLINDROIDS

To the Editor:—Please give answers to the following: 1. What is the origin of cylindroids in the urine? 2. Have cylindroids any pathologic significance? 3. Have cylindroids coated with granules (urates) any significance? 4. Is there any definite means of distinguishing tailless cylindroids from hyaline casts? A. M.

Answer: 1. Cylindroids proper are believed to be of renal origin and closely related to true casts; formations are sometimes observed in which there is a tube cast at one or each end of a cylindroid, and continuous with it.

2. Cylindroids are present wherever hyaline casts are seen and have essentially the same significance.

3. The coating of the exterior of the cylindroid with urates would probably be due to the deposition of urates after the cylindroid had left the urinary tubules and would indicate merely a tendency to deposit of urates. Cylindroids with granules in the interior are of somewhat graver import than merely hyaline cylindroids.

4. We know of no means of distinguishing them.

COOPERATION OF THE LARYNGOLOGIST AND THE DENTIST

To the Editor:—In the study of the etiology of the morbid conditions within the nose and accessory sinuses one is struck with the part played by malformations of the septum. Ventilation, functional activity and drainage are not always involved, yet the last ten years of study has told us that this is to the rhinologist what the appendix is to the abdominal surgeon. With any degree of deflection an acute rhinitis or influenza infection is much more likely to produce a sequence of chronic troubles.

According to Freeman and Trendelenburg, the common cause of deflection is the high or gothic arch of the hard palate. According to Schaus, this may be a form of faulty development with facial bone involvement. With due credit to Talbot this may be a stigma of degeneracy. It is difficult to arrive at any definite conclusion but a high arch is nevertheless common to these cases as well as in degeneracy as shown by Powell of Chicago. Therefore why should we not subject growing children with the gothic arch and beginning deflection to the dentist for correction of the deformity before development and ossification are firmly established? Is there not a fertile field for cooperation between the rhinologist and the dentist? F. J. Walter, Waterloo, Ia.

Answer.—Cooperation of the laryngologist and dentist is frequently important, for the early correction of the gothic arch of the hard palate will undoubtedly help deflection of the septum just as removal of the adenoids and tonsils will in many cases correct deformities of the teeth. Nevertheless, there is a danger of overestimating the importance of deflection of the septum. We cannot agree with the statement that "With any degree of deflection an acute rhinitis or influenza infection is much more likely to produce a sequence of chronic troubles."

Fifty per cent. of the Caucasian race have deflection or exostosis of the septum, yet it is only in a very limited number of these that the condition gives rise to any trouble. There is no unanimity of opinion among laryngologists as to the cause of deflection of the septum. Many laryngologists believe that it is due to injury of the nose, yet no proof can be advanced for this theory, because there are very few individuals who do not receive more or less severe bumps on the nose at some time during their lives. The theory that deflection is commonly due to overgrowth of the septum in consequence of a catarrhal condition that brings an excessive supply of blood to the part has many arguments in its favor. As a rule, it is not worth while to operate on young children for deflection of the septum because the condition is very apt to return within a year or two, therefore, if in these children a high arch could be corrected by the dentist it might prove beneficial.

The Public Service

U. S. Public Health and Marine-Hospital Service

Changes for the fourteen days ended Aug. 24, 1910.

Pettus, W. J., asst.-surgeon general, granted 1 month and 15 days' leave of absence from Aug. 29, 1910.

Cofer, L. E., asst.-surgeon general, granted 6 days' leave of absence from Aug. 22, 1910.

Mead, F. W., surgeon, granted 30 days' leave of absence from Aug. 23, 1910.

White, J. H., surgeon, granted 1 month's leave of absence from Aug. 17, 1910.

Williams, L. L., surgeon, granted 7 days' leave of absence from Aug. 11, 1910, under paragraph 189, Service Regulations.

Stimpson, W. G., surgeon, leave of absence for 20 days from Aug. 11, 1910, amended to read 6 days from Aug. 11, 1910.

Sprague, E. K., surgeon, granted 1 month's leave of absence from Aug. 28, 1910.

Fox, Carroll, P. A. surgeon, granted 10 days' leave of absence en route to station.

McClintic, Thomas B., P. A. surgeon, granted 7 days' leave of absence from Aug. 15, 1910, under paragraph 191, Service Regulations.

Gwyn, M. K., P. A. surgeon, granted 10 days' leave of absence from Aug. 28, 1910.

Foster, A. D., P. A. surgeon, directed to proceed to New Orleans and report to the medical officer in command for duty and assignment to quarters.

Lanza, A. J., asst-surgeon, granted 7 days' leave of absence from Aug. 14, 1910.

Marshall, E. R., asst.-surgeon, granted 21 days' leave of absence from Sept. 14, 1910.

Krulish, Emil, asst.-surgeon, granted 1 month's leave of absence from Aug. 16, 1910.

Duffy, Benedict J., asst surgeon, directed to report to the medical officer in command at Buffalo, N. Y., for duty Aug. 12, 1910.

Cleaves, F. H., acting asst.-surgeon, granted 14 days' leave of absence from Aug. 7, 1910.

Gleason, C. M., acting asst-surgeon, granted 14 days' leave of absence from Aug. 15, 1910.

MacCallum, Charles, acting asst.-surgeon, granted 30 days' leave of absence from Aug. 12, 1910.

Schuster, B. L., acting asst surgeon, granted 4 days' leave of absence from Sept. 1, 1910.

Wright, F. W., acting asst.-surgeon, granted 12 days' leave of absence from Sept. 1, 1910.

Duffy, Dr. Benedict J., commissioned (recess) an asst. surgeon in the Public Health and Marine-Hospital Service, Aug. 5, 1910.

Wickes, Henry W., P. A. surgeon, commissioned a surgeon (recess) to rank as such from Aug. 3, 1910.

Book Notices

Age Incidence, Sex, and Comparative Frequency in Disease. By James Grant Andrew, Bachelor of Medicine and Master of Surgery. Cloth. Price, $1.20 net. Pp. 139. New York: Paul B. Hoeber, 69 E. 59th St., 1909.

This book represents a comparative study and tabulation of over 42,000 cases from a single institution, covering diseases of all the different systems, classifying them by sex and the decennial age periods, and giving the results in number of cases and percentages. It represents an enormous amount of work, but its value in many instances may be open to question, on account of the small number of cases available. For instance, in a total of less than 400 bladder affections, only two cases of enuresis are recorded, and deductions from such a small number could not be of much value. This holds with reference to the vast majority of affections. In cancer about 1,600 cases are recorded, and in sarcoma 300, including all the different varieties. Here the figures may be of more value. The finding in this series of cases of carcinoma is that between 50 and 60 is the period of greatest frequency, and in regard to sarcoma that there is practically no difference between the decennial periods. Ovarian affections are found most frequently between 20 and 30. Other findings do not differ materially from those already stated. A brief definition is given of each disease, and some general deductions are made aside from the figures. The book will be of interest for reference by workers in any particular disease or branch of medicine.

The Development of Public Charities and Correction in the State of Indiana. Paper. Pp. 132, with illustrations. Indianapolis: Board of State Charities, State House. 1792-1910.

Indiana is recognized as being well in the forefront of the states in the conduct of its penal, correctional, and eleemosynary institutions. This pamphlet of 132 pages on the history, development, aims, and purposes, together with statistics of the work of the seventeen charitable and correctional institutions in the state, makes an interesting document. Each of the institutions is described and illustrated with halftone pictures, the plans of many of the institutions being given. A history of the legislation creating each one, its purpose and the manner of conducting it, is given, and the results of child-saving work, of the truancy law, the indeterminate sentence law, county and township charities, the work among the insane, the epileptic and the feeble-minded, are all set out in statistical and graphic manner. The pamphlet has a table of contents and an index and is an interesting contribution to sociologic work.

Twenty-first Annual Report of the Director of the Psychiatric Institute, 1908-1909. To the State Commission in Lunacy, State of New York [Adolf Meyer, Director, Pathological Institute, Ward's Island, New York]. Paper. Pp. 131. 1910.

This report gives a synopsis of the courses of instruction and observation laid out at the Psychiatric Institute for the benefit of the physicians of the other state institutions, covering periods of one week to three months. It also describes the efforts to establish standards so that the information might be used for statistical purposes, and gives a report of the clinical work, with descriptions or histories of cases of the various clinical classifications, the histologic findings in the brain and cord of those cases available for such examination, whose histories are given, and of other specimens sent for examination from other states, with an analysis of the cases by groups and subgroups. The whole report makes an interesting and valuable study for reference by the alienist or psychiatrist.

Monographs on Medical and Allied Subjects. Published by the Rockefeller Institute for Medical Research No. 1 Issued June 30, 1910. Paper. Pp. 130, with illustrations. New York: 66th St. and Ave. A. 1910.

This is the first of a series of monographs on medical and allied subjects to be issued at irregular intervals by Rockefeller Institute for Medical Research. It contains five papers, profusely illustrated with microphotographs and other plates, one of them colored. Some of the papers are on tumors and experiments by Flexner and Jobling in transplanting tumors in the rat, mouse, and monkey; and one is on some experiments by Maud L. Menten with radium bromid on carcinoma in the rat. The whole representing work done in the Rockefeller Institute.

Congenital Dislocation of the Hip. By J. Jackson Clarke, F.R.C.S., Senior Surgeon to the Hampstead and North-West London Hospital. Cloth. Price, $1.50 net. Pp. 92, with 55 illustrations. New York: Paul B. Hoeber, 69 East 59th St., 1910.

The author began his work in 1903 after Lorenz's visit to London, and he reports 40 cases. Except for the report of these cases the book contains little that might not have been heard and observed at a clinical lecture by Lorenz eight years ago, with such additions as a surgeon, who had operated on only a few cases and had not yet "found himself," might be expected to set down when writing a book. In a word the book contains nothing new of any value and much that is ancient, unnecessary and misleading.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Economic Value of Health

In the twenty-first annual report of the State Board of Health of Florida, the president of the board in his letter of transmissal to the governor emphasizes the value of the State Board of Health and its work to the people of the state, as a business asset. The contrast between present and previous conditions is admirably drawn. The fact that the president of the board is a layman adds interest to the letter.

"It is a well known fact that prior to the great epidemic of yellow fever in 1888 the increase in the state's population from immigration was almost inappreciable compared with the gain since the period mentioned. It is within the memory of even our younger people that as each summer came there was talk of yellow fever, its probability of occurrence and the point where it would first make its appearance. This periodic agitation of a subject which vitally interested not only the physical life of the citizen, but his business existence as well, brought about conditions which yearly disturbed home comfort and retarded the coming of people into the state, besides restricting the investment of capital, so necessary to develop many important industries and avenues of commerce which held out flattering returns. People were scary, and naturally so in placing their money where health conditions were so uncertain and where an epidemic of yellow fever depressed values to a degree that it would take years of exemption to recover from. Then again, the diversity of opinion as to management when disasters of this character did occur and the inconvenience and annoyance to travel and commerce which arose on each county line, demoralized both the citizen and business, so that, at almost every path and by-road in the state, the traveller, whether from an infected portion of the state or not, was harassed by guards, who in the majority of instances were ignorant of the essential requirements of their positions, and who rendered really no practical service in restricting the spread of a contagion, but did inflict, by their orders and insistence on them, many indignities on women and children, and, in several instances, serious impairment to health.

"Compare the conditions existing in the state in 1888 with an epidemic of yellow fever in Jacksonville, and the conditions which prevailed in 1905 with an epidemic of the same disease in Pensacola, Fla. In the former instance, panic prevailed: every man's hand was raised against his neighbor of adjoining counties, under a false supposition of protection against an unseen enemy; commerce was strangled and stagnation of business consequently followed. In 1905—in the latter instance without a ten mile area around Pensacola, travel within the state was undisturbed. Business followed its usual methods and there was no panic, no excitement, no hysteria of even those most skeptical of the ability of the State Board of Health to cope with the situation and confine the disease to one point in the state, where it had unfortunately gained entrance, which occurred, however, through no lack of careful supervision or attention. Even when a case of yellow fever occurred in Tampa by direct importation from New Orleans, at a period in the history of that epidemic when the disease was not known to exist in New Orleans, there was no uneasiness felt at Tampa, and there was not for one minute a suspension of travel or commercial relations with the other portions of the state

"Is it unreasonable, therefore, to argue or to maintain that the part played in the wonderful development of Florida since 1888 has been due very largely to a confidence in the safety of living in the state, which confidence has been inspired by the work which the State Board of Health has done along health lines and which it is still earnestly engaged in? Would people come to the state from the west, northwest, northeast, and middle west, buy property, institute new industries, and settle permanently among us, if they did not feel that their lives were being guarded against disease, and their accumulations of property interests were being protected against needless fright and senseless panic? I do not say nor pretend to assert that the State Board of Health has been the only factor in the strides which Florida has made towards financial development in the past twenty years, but I do maintain without fear of successful contradiction, that the board has contributed a large share to the success which the state now enjoys, and it will be recognized in the future, if not already so considered, as an investment on the part of the people which should be allowed the greatest latitude of administration."

"Antivivisection Mush"

A recent criticism of the Bureau of Animal Industry at Washington is commented on as follows by the Natchez (Miss.) *News*, under the above heading:

"Sentimental antivivisectionists of Washington are raising a howl because they have discovered that the Bureau of Animal Industry and other government institutions in the capital have done some vivisection work on dogs and threaten prosecution; they also threaten to have a law passed prohibiting vivisection under any circumstances in the District of Columbia, it being permissible now for medical or scientific purposes. The great trouble with many self styled reformers is that they make themselves ridiculous. Whoever will make the least effort can learn that much of the progress of modern medicine and biologic science is due to vivisection; some of the most important discoveries are due to wilful destruction of lower life.

"Theoretically, the humblest insect is entitled to life and the pursuit of happiness as the greatest human genius; but it must be carefully remembered that man has reached his high stage only on account of his fitness to survive, and on account of the fact that to gain his own ends he regards all other forms of life as subservient to his purpose. Animals are killed for their flesh and vivisection is practiced because in that manner only can many processes of life, of health or of disease, be determined. That unnecessary cruelty should be forbidden is admitted by all, but from the human point of view there is no cruelty in vivisection, if by practicing it on a dog or on a guinea-pig, something of importance can be learned. And a new discovery is of the utmost importance, whether its applicability be immediate or in the distant future. Every scientific discovery sooner or later will demonstrate its utility to mankind. From a purely doctrinal point of view it is cruelty to the dog to submit him to vivisection, but his feelings in the matter should be consulted no more than the feelings of animals are consulted when they are slaughtered for food.

"Such reformers as the antivivisectionists can find much suffering among human beings to exercise their kindness and charity on. Even in civilized countries human beings suffer pain, hunger, humiliation and other misfortunes that cry for relief and for whom relief could be found; nearly all the suffering caused in vivisection is caused for the benefit of mankind, and man is and should be the first consideration of man."

State Boards of Registration

COMING EXAMINATIONS

Iowa: Capitol Building, Des Moines, September 12-14. Sec., Dr. Guilford H. Sumner, State House.

Massachusetts: State House, Boston, September 13-15. Sec., Dr. Edwin B. Harvey.

Missouri: Capitol Building, Jefferson City, September 20-22. Sec., Dr. Frank B. Hiller.

New York: Albany, September 27-30. Chief of Examinations Division, Dr. Charles F. Wheelock.

Georgia May Reports

Dr. I. H. Goss, secretary of the Georgia Board of Medical Examiners, reports the written examinations held at Atlanta, May 4-7 and at Augusta, May 2-3, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 80.

At the examination held at Atlanta, the total number of candidates examined was 113 of whom 108 passed and 5 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Howard University	(1909)	84
Atlanta College of Physicians and Surgeons	(1910)	80, 81, 81.5, 82, 82.5, 83, 83, 84, 84, 84, 84, 84, 84, 84.5, 84.5, 85, 85, 85, 85.5, 85.5, 86, 86, 86, 86, 86, 86.5, 87, 87, 87.5, 87.5, 87.5, 87.5, 88, 88, 88, 88, 88, 88, 88, 88, 88, 88, 88.5, 88.5, 89, 89, 89.5, 89.5, 90.5, 91, 92.5, 95, 95.5.
Atlanta School of Medicine	(1910)	80, 82, 83.5, 84, 84, 84, 84, 84, 85, 85, 85, 85, 85, 85.5, 85.5, 86, 86, 86, 87, 87, 87, 87, 87, 87, 88.5, 89, 90, 90, 90, 91, 91, 91, 91.5, 92.5, 95.
Albany Medical College	(1899)	93.5
Leonard School of Medicine	(1908)	81.5
University of Tennessee	(1908) 86; (1910)	92.
University of the South	(1909)	83.
Meharry Medical College	(1906) 82; (1908) 85, 87; (1910)	80, 81, 83, 83, 85.5, 86, 86, 89, 89.5, 89.5.
Medical College of Virginia	(1869)	87.

FAILED		
Leonard School of Medicine	(1905)	76.
Chattanooga Medical College	(1910)	78.
Meharry Medical College	(1910)	77, 79.
Knoxville Medical College	(1908)	74.5

At the examination held at Augusta, the total number of candidates examined was 14 all of whom passed. The following colleges were represented:

PASSED College.	Year Grad.	Per Cent.
University of Georgia	(1910)	84, 84.5, 84.5, 85, 86.5, 86.5, 87, 87.5, 88, 90, 90.5, 92, 92.
Medical College of South Carolina	(1906)	88.

LICENSED THROUGH RECIPROCITY SINCE MAY 1, 1910

College.	Year Grad.	Reciprocity with.
University of Missouri	(1895)	Virginia
University of Pennsylvania	(1887)	Florida
Memphis Hospital Medical College	(1910)	Tennessee
University of Nashville	(1908) (1910)	Tennessee
Meharry Medical College	(1909) (1910)	Tennessee
University of Virginia	(1907)	Virginia

The following questions were asked:

ANATOMY

1. Name bones of tarsus. What bones form internal malleolus? External? What bones comprise the pelvis? Name divisions of vertebral column, and give distinguishing characteristics of cervical vertebra. 2. What muscles aid in mastication? In deglutition? Give origin, nerve and arterial supply of masseter muscles. What muscles compose quadriceps extensor femoris? Give origin and insertion of quadriceps extensor femoris. 3. Name divisions of alimentary canal. Name principal glands found in small intestine. What is average size of stomach? Give blood supply. Name abdominal viscera wholly covered by peritoneum? Partially covered? 4. Name and illustrate by diagram the regions of abdomen; where in the topography of abdomen is vermiform appendix. Describe briefly Poupart's ligament. 5. Give origin of left common carotid artery. Name branches of left external carotid. Name twelve pair nerves of special sense. Give origin and cranial exit of pneumogastric nerve. Name the three most important branches.

PHYSIOLOGY

1. Define reflex action and give example. 2. Describe the functions of the kidneys. 3. Give the normal constituents of the urine. 4. What is meant by digestion? 5. Name the secretions of the alimentary canal, their reactions and functions.

CHEMISTRY

1. Give test for albumin and sugar in urine. 2. Describe chemical test for blood. 3. Is organic material admixed to water always deleterious, and when is it? 4. Define an alkaloid, and name three principal ones used in medicine. 5. How are solutions, suspected to contain arsenic, to be tested?

MATERIA MEDICA AND THERAPEUTICS

1. Ergot: Its physiologic action. Its principal uses. 2. Cocain hydrochlorid: Its physiologic action. Its principal uses. 3. Chloroform: Define it. When is it indicated as an anesthetic? 4. Ether: Define it. State the conditions that render it preferable as anesthetic. 5. Define a mydriatic, also a myotic. Give examples of each with dose for local application in each case.

PRACTICE OF MEDICINE

Influenza: Definition. Etiology. Bacteriology. Symptoms. Types of the disease. 1. Respiratory. 2. Nervous form. 3. Gastro-intestinal form. 4. Febrile form. Diagnosis. Treatment. Jaundice: Definition. 1. Obstructive jaundice, causes of. General symptoms of obstructive jaundice. 2. Toxemic jaundice. Causes. Treatment in each group. Leukocytosis: In what diseases does it occur and in what diseases is it absent. Appendicitis: Give the symptoms of. Colic: Renal and hepatic, make a differential diagnosis between.

SURGERY

1. Define abscess? Aneurism? With what condition may aneurism be confounded? Make briefly a diagnosis of coma from injury, apoplexy, uremia, opium poisoning, and alcoholic intoxication. 2. Define peritonitis. State two or more ways in which the peritoneum may be invaded by bacteria. What are the contraindica

tions respectively to the use of the three principal anesthetics — nitrous oxid, ether, chloroform. 3. What is dislocation? Fracture? Give differential diagnosis between fracture and dislocation Describe Colles' fracture. Outline treatment of same 4 What is hemorrhage? How would you arrest epistaxis. Describe operation for ligation of subclavian artery in its third portion. What arteries require ligating in amputation, at middle third of leg? 5 Describe complete indirect inguinal hernia. Give symptoms of strangulation, methods of reduction, and operation if strangulation exists. Describe an approved operation for the radical cure of oblique inguinal hernia.

GYNECOLOGY

1. Give causes and treatment of uterine hemorrhage. 2. Under what conditions would you prefer vaginal to abdominal hysterectomy 3. Describe technic of vaginal hysterectomy 4. Give differential diagnosis between fluids in abdominal cavity and ovarian cysts. 5. Describe ectopic pregnancy, varieties, and operation for same.

OBSTETRICS

1. Would the coincidence of diabetes with pregnancy have a harmful effect on the latter? What would you do for such patient? 2. Give treatment of a subinvoluted uterus. 3. Differentiate between putrid and true puerperal infection and give treatment of each. 4. How would you distinguish between an epileptic and an eclamptic convulsion? 5. What are the indications for the use of forceps?

PATHOLOGY

1. Give the pathology in simple lobar pneumonia 2. Give the pathology of pellagra with etiology 3 Give the pathology in hookworm disease. 4. Describe the pathologic conditions in meningitis. 5. (a) How is fibrous tissue formed? (b) What tumors are composed largely of fibrous tissue, and in what part of the body do they usually occur?

Kansas June Report

Dr. F. P. Hatfield, former secretary of the Kansas Board of Medical Registration and Examination, reports the written examination held at Kansas City, June 14-16, 1910. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 65 of whom 54 passed and 11 failed. Twenty-three reciprocal licenses have been issued since January 1, 1910. The following colleges were represented:

PASSED

College.	Year Grad.	Per Cent.
Howard University, Washington, D C.	(1907)	81.
Northwestern University Medical School	(1910)	78, 84.
Kansas Medical College,	(1910)	80, 81, 81, 81, 82, 82, 83, 83, 85, 86, 86, 86
University of Kansas,	(1910)	80, 80, 80, 80, 81, 81, 82, 83, 83, 83, 84, 84, 85, 85, 86, 87, 87, 87.
University Medical College, Kansas City,	(1910)	75, 77, 78, 80, 81, 81, 81, 82, 84, 85, 85, 87.
Kansas City Hahnemann Medical College	(1910)	82, 85, 85.
Eclectic Medical University, Kansas City	(1910)	83.
Barnes Medical College	(1910)	76, 78.
St. Louis College of Physicians and Surgeons	(1909)	75.
Columbia University, College of Physicians and Surgeons	(1910)	84.
Bellevue Hospital Medical College	(1883)	82.

FAILED

College.	Year Grad.	Per Cent.
University of Kansas	(1900)	72.
Central Medical College, St. Joseph	(1896)	61
Eclectic Medical University, Kansas City	(1910)	67, 71.
University Medical College, Kansas City	(1910)	68, 73.
Ensworth Medical College, St. Joseph	(1909)	42.
St. Louis University	(1907)	60
Kansas City Hahnemann Medical College	(1910)	67
Bellevue Hospital Medical College	(1878)	71.
Eclectic Medical College, Cincinnati	(1910)	58

LICENSED THROUGH RECIPROCITY

College.	Year Grad.	Reciprocity with.
Hering Medical College, Chicago	(1906)	Illinois
Keokuk Medical College, College of Physicians and Surgeons	(1903)	Iowa
Iowa College of Physicians and Surgeons	(1884)	Iowa
Central College of Physicians and Surgeons, Indianapolis	(1902)	Nebraska
University of Louisville, (1895) Kentucky;	(1896)	Illinois
Baltimore Medical College	(1899)	West Virginia
College of Physicians and Surgeons, Baltimore. (1908) West Virginia;	(1909)	Oklahoma
University of Michigan, Department of Medicine and Surgery	(1892)	Iowa
Barnes Medical College	(1903)	Illinois
Eclectic Medical University, Kansas City	(5, 1910)	Arkansas
University Medical College, Kansas City	(3, 1910)	Arkansas
American Medical College, St Louis	(1879)	Ohio
Eclectic Medical College, Cincinnati	(1881)	Indiana
Chattanooga Medical College	(1906)	West Virginia
Trinity Medical College, Toronto, Ontario	(1897)	Ontario

Medicolegal

Patient May Not Testify in Injury Case to What Physicians Told Him, But May Describe Tests and Treatment to Recover Damages for Pain Caused by Same—Duty of Injured Person

The Court of Appeals of Kentucky says, in Louisville & Nashville Railroad Co. vs. Lynch (126 S. W. R., 362), a personal injury case brought by the latter party, that it was violative of one of the fundamental principles or rules governing the introduction of evidence to permit the plaintiff to testify as to what his physicians had told him. If he wanted the benefit of their testimony, he was entitled to have it either in the shape of direct evidence, given by the physicians before the jury, or he might have taken their depositions. By pursuing either of these methods he could have obtained the benefit of the physicians' investigation of his case and their testimony as to the nature and extent of his injury; but in no event was he entitled to have given to the jury, as substantive evidence, what the physicians said to him relative thereto.

While, however, it was not proper for the plaintiff to testify to what the physicians told him concerning his case, he would necessarily have to describe somewhat in detail the various tests to which he was subjected by them in their efforts to determine the extent of his injury and the probable chance of his recovery, and if this treatment or examination, made necessary in order to enable them to intelligently treat him, caused him pain and suffering, the court sees no good reason why he might not have the jury consider this as going to make up a part of the pain and suffering caused by the injury. If, through the negligence of the defendant railroad company, he was injured, then he was entitled to recover for all pain and suffering which he endured as the direct and proximate result of such injury; and, so long as the physicians employed possessed that degree of skill and proficiency in their profession usually possessed by the average practitioners in their locality, the defendant company, if primary liable, was answerable for any pain and suffering produced by them in their efforts to locate the injury and the extent thereof, even though the methods employed were not the most approved or the tests applied not the latest. He must use all reasonable means to effect his recovery, and must submit to such examination as was necessary to enable his physicians to locate the trouble and know how to treat it, and, as any pain produced by this examination was directly traceable to the negligence through the injury, it could not be dissociated from it. It not infrequently happens that the negligent or wrongful act producing the injury is followed by no immediate pain or suffering; but the treatment of the injury is attended with great pain, as in the case of gunshot wounds. When shot, the victim feels only a slight stinging sensation; but when the surgeon probes the wound to ascertain the course of the bullet, in order to determine what to do, great pain is frequently produced, all of which is directly traceable to the wrongful or negligent act the shooting. Of course, the defendant would not be liable for suffering produced by the tortious or wrongful act of a physician not engaged in an honest effort to ascertain the seat of the patient's trouble with a view of bettering his condition if possible.

The court concludes that it was entirely proper for the plaintiff to describe the various treatments to which he was subjected so far as it was necessary for him to do so in order to properly bring before the jury the effects of such treatment on him as to producing pain, etc. Beyond this he should not be permitted to testify concerning the treatment, but the minute descriptions of the various tests to which he was subjected and the treatment which he underwent must be left to the physicians who applied and administered same. They might go into detail in order to demonstrate, if possible, to the jury, the nature and extent of the plaintiff's injury, and the possibility or probability of his recovery.

Cases in which it was simply held that the defendant was not liable for any tortious or wrongful act of the physician where it had exercised reasonable care to select one of average skill and ability in his profession did not militate against the position taken in this case that, the pain and suffering produced being only such as naturally flowed from the treatment regarded as necessary, it was proper for the jury to consider same.

When Ordering of Physical Examination is not Authorized

The First Appellate Division of the Supreme Court of New York says that the case, Smyth vs. Lichtenstein (122 N. Y. S., 74), was brought to recover damages for alleged indignities and assault, and that the burden of the complaint consisted of the indignities to which the plaintiff alleged she was subjected. The defendant procured an order of court requiring the plaintiff to submit to a physical examination as an adverse witness. No necessity for a physical examination was shown. It was apparent from the moving papers that the purpose of the defendant was, not to obtain evidence of the physical injuries alleged to have been suffered as the result of his assault, but to inquire into the previous history and physical condition of the plaintiff. If an examination for such purpose could ever be permitted, the affidavits on which it was asked were insufficient in this case. The order for the examination in this case did not come fairly within the intent of section 273 of the New York Code of Civil Procedure, which provides that in actions to recover damages for personal injuries the defendant is entitled to an order requiring the plaintiff to submit to a physical examination by one or more physicians or surgeons to be designated by the court or judge, where the defendant shall present to the court or judge satisfactory evidence that he is ignorant of the nature and extent of the injuries complained of. But a dissenting opinion of two members of the court suggests that a court has no right to refuse to enforce this mandatory provision because it thinks that the purpose of the defendant is not to obtain evidence of physical injuries alleged to have been suffered as the result of an assault, but to inquire into the previous history and physical condition of the plaintiff.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 20

1 *The Influence of the Use of the Automobile on the Upper Air Passages. D. B. Delevan, New York
2 First Aid to the Insane, and Psychopathic Wards. A. W. Ferris, New York
3 *Is Mercury A Specific in Pulmonary Tuberculosis? W. N. Beggs, Denver
4 Hyperchlorhydria and Abdominal and Pelvic Surgery. J. H. Carstens, Detroit
5 *Is Koch's Bacillus the Cause of Cancer? T. G. McConkey, San Francisco.
6 The Pathology of Multiple Adenomata of the Rectum. J. M. Lynch, New York

1. **Influence of the Use of the Automobile on the Upper Air Passages.**—Delevan claims that theoretically respiratory diseases should be much increased by motoring, but that practically they are not. However, acute catarrhal states of the ears and air passages and advanced tuberculosis with fever, should contraindicate motoring, which properly used in suitable cases is a valuable therapeutic agent. We need good roads, well paved streets free from dust, and enforcement of laws against smoke and fumes, such as are found in all European cities.

3. **Mercury in Tuberculosis.**—Beggs does not consider mercury a specific for pulmonary tuberculosis. It is valuable in certain cases, especially when there has been a specific taint. In most cases improvement is subjective with very slow improvement in the physical signs. When syphilis is not present, he believes that its value is due to the tonic effects of the drug, its beneficial effect on digestion or the psychic effect of the treatment.

5. **Koch's Bacillus Cause of Cancer.**—McConkey states his belief that the tubercle bacillus is the cause of cancer. It causes normal tissue cells to take on the habit of proliferation and supplies the missing factor in the etiology of cancer. In the young or robust this cell proliferation is checked by the defensive reaction of the body, and the tubercle is formed by encapsulation. But if the defense reaction is delayed or prevented, as in later life, encapsulation not taking place, the proliferation of cells goes on to the formation of a new growth. The habit of growth in the cells replaces the habit of work.

New York Medical Journal

August 20

7 Lessons for the Athlete in the Jeffries-Johnson Battle. G. F. Lydston, Chicago
8 Atony of the Stomach. J. W. Weinstein, New York
9 *Existing Theories and the Presentation of a New Theory of the Etiology of Achylia Gastrica. G. E. Barnes, Herkimer, N. Y.
10 *Blood-Pressure and Uranalysis in Chronic Nephritis. H. B. Mills, Philadelphia.
11 Ophthalmic Studies in Chronic Interstitial Nephritis. L. C. Peter, Philadelphia.
12 Resistance of the Spirochæta Lymphatica to Antiformin. F. Froescher, Pittsburg.
13 Vincent's Angina. A. M. MacWhinnie, Seattle, Wash
14 Vitiligo with a History of Heredity. E. H. Marsh, Brooklyn.
15 Dioxydi-amido-arsenobenzol or "606;" Ehrlich's Newest Remedy for Syphilis. S. J. Meltzer, New York.

9. **Achylia Gastrica.**—In Barnes' opinion, the so-called primary form of atrophy or achylia gastrica cannot be idiopathic, inherited, congenital or result from a congenital predisposition. He believes that achylia gastrica is caused by a lesion of the secretory axons of the vagus nerves, a theory which best explains, he thinks, all the chemical and microscopic conditions and all the symptoms of the disease.

10. **Blood-Pressure and Urinalyses in Chronic Nephritis.**—The objects of Mills' paper are: To call attention to the frequency and importance of the relationship existing between urea elimination and blood-pressure; to urge the more frequent microscopic examination of the urine in the absence of albumin; to make the urea estimation a regular procedure in urinalyses; to urge the more universal employment of the blood-pressure test in the diagnosis and treatment of disease, especially the various toxemias; to stimulate comparative studies with the view and in the hope that, on being able to determine the real value of the blood pressure test, both singly and relatively, we may thus secure an aid to the earlier diagnosis of conditions present than would be possible by the most careful physical examination and urinalysis.

Boston Medical and Surgical Journal

August 18

16 The Experimental Basis for Vaccine Therapy. T. Smith, Boston.
17 *Importance of Determining the Potency of Digitalis Preparations. J. H. Pratt, Boston.
18 *The Therapeutic Use of Ascitic Fluid: A Preliminary Communication. T. Leary, and R. W. Hastings, Boston.
19 Medical Social Service. W. R. Woodbury, Boston.
20 The Meteorologic and Hygienic Aspects of the Floods in France in 1910. G. Hinsdale, Hot Springs, Va.

17. **Digitalis Preparations.**—Pratt examined many specimens of digitalis—both leaves and powder—and found that most of them, at least the leaves, were only slightly active or inert. He advises that only the powder, carefully tested, be used, as that is the form in which the drug retains the greatest physiologic activity.

18. **Therapeutic Use of Ascitic Fluid.**—Leary and Hastings state that they have had excellent results in the treatment of intractable cases of marasmus in infants by means of ascitic fluid, one ounce being injected daily for a period of varying duration. Twelve such cases are reported.

Lancet-Clinic, Cincinnati

August 6

21 A Medical Course in the Practice and Theory of Life Insurance Examination as Taught in the University of Louisville. W. E. Grant, Louisville
22 Preparation, Technic and Postoperative Treatment of Emergency Cases. L. G. Bowers, Dayton, O.

Kentucky Medical Journal, Bowling Green

August 1

23 Pellagra in Perryville. H. M. Pittman, Perryville.
24 A Kentucky "Lunger's" Idea of the "Bugs." H. C. Caseldine, Albuquerque, New Mex.
25 Management of Some Communicable Diseases. R. L. Ford, Livermore
26 Infant Foods and Infant Feeding. W. A. McKenney, Falmouth
27 Diagnostic Value of Abdominal Pain. A. L. Beckett, Foster.
28 The Tongue. C. Graham, Henderson.

29 Partial Inversion of the Uterus. L. G. Contri, Milton.
30 Osteomyelitis. J. R. Crittenden, Gordonville.
31 Puerperal Eclampsia. J. J. Wakefield, Bloomfield.
32 Justifiable Abortions. W. L. Hetzer, New Haven.

Illinois Medical Journal, Springfield

August

33 Pellagra: With Special Reference to Etiology and Diagnosis. G. W. Webster, Chicago.
34 *Diabetic Older Dieta. S. T. Robinson, Edwardsville.
35 Borderline Psychoneuroses. E. L. Crouch, Jacksonville.
36 *Prevention and Treatment of Insanity. E. Cohn, Anna.
37 *Study of Mental Disorders. H. D. Singer, Kankakee.
38 Insanity. S. Dods, Cairo.
39 The Nursing Spirit. W. C. Graves.
40 Splenectomy in Relation to Union in Fractures. A. B. Kanavel, Chicago.
41 Fractures of the Mandible. T. L. Gilmer, Chicago.
42 Hydrotherapy in Acute Diseases. S. Baruch, New York.

34. Abstracted in THE JOURNAL, May 28, 1910, p. 1808.

36, 37. Abstracted in THE JOURNAL, June 4, 1910, p. 1893.

Archives of Internal Medicine, Chicago

August

43 *The Control of Typhoid Fever in City and Country. W. R. Stokes, and W. F. Hachtel, Baltimore.
44 *The Type of Infantilism in Uncinariasis. I. I. Lemann, New Orleans.
45 *Trophoneurotic Changes in Bones and Joints in Leprosy. F. Harbitz, Christiania, Norway.
46 Serotherapy in Purpura Hemorrhagica. F. M. Class, New York.
47 *Hodgkin's Disease and Certain Allied Conditions. H. T. Karsner, Philadelphia.
48 *Auscultatory Blood-Pressure Determinations. J. C. Gittings, Philadelphia.
49 Specificity of the Noguchi Modification of the Wassermann Reaction. D. J. Kaliski, New York.
50 *Experimental Conditions of Low Blood-Pressure of Non-Traumatic Origin. R. M. Pearce and A. B. Eisenbrey, New York.

43. **Control of Typhoid.**—The modification of Hess' medium employed by Stokes and Hachtel consists in the addition of 6 instead of 4.5 gm. of agar, and also adding 1 per cent. of lactose and 5 per cent. of glycerin. The larger quantity of agar is added, since glycerin always increases the fluidity of a medium. A most important point is to color the medium by means of a 1 per cent. solution of azolitmin powder dissolved in boiling water after the reaction has been corrected to the neutral point. This medium is then used as a plate culture for water, feces, oysters, blood-cultures and urine. In plating out stools and urine, much time is saved, as the B. alkaligenes forms a typical blue colony, while that of *B. typhosus* is red. Both of these colonies show the typical concentric zone. The colon bacillus is almost always small, concentrated, and forms a superficial moist red colony which bears no resemblance whatever to the much larger, spreading typhoid colony.

44. **Infantilism in Uncinariasis.**—Lemann reports in detail the exact study of the grade of development in a case of hookworm disease and, by contrasting it with other types of infantilism, endeavors to fix its classification. He says that the infantilism of uncinariasis has much in common with infantilism from certain other causes. On the other hand, there are some forms of arrested development with which it stands in strong contrast and with which it is likely to be confused. Such types are, for example, the achondroplastic dwarf, the mongolian idiot, the rachitic dwarf. From the achondroplastic dwarf Lemann's patient is readily distinguished by the absence of the characteristic lack of proportion between the lengths of the extremities and that of the trunk. Besides, there is no trident hand, no bowing of the long bones, no decentralization of the umbilicus, no prognathism, as there usually is in achondroplasia. The genitalia share in the retardation, while in achondroplasia they correspond in size and development to the true stage of the individual. The skiagraphs of the hookworm dwarf show none of the cartilage changes in the achondroplastic.

The hookworm dwarf has equally as little in common with the rachitic dwarf. In rickets the bone shadow is paler than normal and the medullary canal is larger, making the cancellous tissue smaller. Hence, there is a bending and bowing of the long bones. The ends of the long bones are enlarged and there is irregular cartilaginous development of the epiphyses. In addition, there is an unduly large skull, squared and frequently "bossed." None of these features are present in the hookworm dwarf. But there is a masked cretin, the dysthyroid or hypothyroid infantile (type Brissaud) who may have had a much closer resemblance to the hookworm patient, Lemann says. In both there is a simple retardation of the development in general, involving not only the skeleton, but the genitals and the secondary sexual characteristics; in both there may be a dry skin with dry, harsh, scanty hair. But even the masked cretin, fairly intelligent, though he may be, has usually enough of the characteristics of the cretin, namely, the round full face with the thick lips, small nose and the thick skin, to distinguish him from the patient of the type described by Lemann.

45. **Bones and Joints in Leprosy.** The material reported by Harbitz was obtained from patients who had suffered from leprosy for from 15 to 67 years, during most of which time they had been under observation in leprosy hospitals. There is an atrophy of the bones of the hands and feet which may proceed to such a degree that certain bones finally entirely disappear. The atrophy principally affects the most distal bones, the phalanges, metacarpals and metatarsals; it is little pronounced in the tarsus and carpus. The bones may atrophy in their entirety, though sometimes more so in the shaft, and become thin and brittle, but their shape is preserved. This variety resembles the so-called atrophy of disuse, though the bones, generally, are somewhat decreased in size. In the more characteristic form, the atrophy is concentric and chiefly involves the most peripheral parts of the phalanges, metacarpal and metatarsal bones. The distal heads of the metacarpal and metatarsal bones usually disappear, while at their base the bones preserve their usual width and thickness. The surface is generally smooth. The shortening of the metacarpal and metatarsal bones may be very considerable and most pronounced either in those on the outside or those on the inside. It may be so marked that the length is only half the normal one, or even less. The phalanges atrophy in a similar manner, and become very thin, pointed anteriorly and porous. Finally, only disconnected remnants are left, which ultimately may be entirely absorbed so that the toes become shapeless lumps without any bony framework.

In the joints various changes are also seen, on the whole, resembling those of arthritis deformans. Especially in the joints of the tarsus there is a form of chronic inflammation of the joint capsules with the picture of pronounced proliferating synovitis and serous effusion; at the same time, the articular ends show changes, such as atrophy of cartilage and bone, or proliferative alterations in the form of nodular projections, osteophytes, etc. The osseous substance, as a whole, in most cases, is the seat of marked osteoporosis. The tarsal bones become brittle and often are squeezed together to form thin plates of bone. Similar signs of chronic joint disease are seen in atrophic, leprous hands, but less frequently and less prominently. The question arises whether this peculiar bone atrophy is specific, and directly due to leprous neuritis, or if it can be satisfactorily explained in some other manner. Harbitz believes that there is no good reason for doubting that this bone atrophy is really of neuropathic origin, and thinks that everything seems to point to leprous interstitial neuritis as the cause.

47. **Hodgkin's Disease and Certain Allied Conditions.** The review of the clinical histories of a number of cases lead Karsner to conclude that Hodgkin's disease is a distinct pathologic entity, which may produce or be accompanied by high-grade anemia, usually of the secondary type, occasionally of pernicious type. The presence of histo-eosinophilia is not of great diagnostic significance, and surgical removal and competent examination of the involved lymph nodes may lead to an accurate diagnosis. Although tuberculosis of the lymph nodes and Hodgkin's disease may occur coincidently, tuberculous lymphadenitis may present a histologic picture somewhat confusing with that of Hodgkin's disease. The giant cells of this form of tuberculosis differ from those of Hodgkin's disease, in that the former show relatively solid nuclei, and the latter distinctly vesicular nuclei. Pending the discovery of the essential nature of the disease, it may be said

that Hodgkin's disease, a chronic granulomatous inflammatory process, may undergo transformation with assumption of malignant characters.

49. **Auscultatory Blood-Pressure Determinations.**—In 61 cases examined by Gittings the auscultatory maximum averaged 16.7 mm. higher than that determined by palpation. In 2 cases the reverse occurred, the palpatory maximum being higher than the auscultatory. In 1 case the difference was only 2 mm. and in the other 27 mm. In 41 cases diastole, as determined by auscultation, averaged 15.5 mm. lower than that determined by the visual method. In 5 cases diastole by auscultation averaged 7.7 mm. higher than that by the visual method. In 2 cases the results were equal. In 1 case diastole could not be determined by auscultation. In 11 cases diastole could not be determined by inspection. The maximum pressure being higher by the auscultatory method and the minimum being lower, it follows that the blood-pressure is greater in the auscultatory than in the visual method.

50. **Experimental Conditions of Low Blood-Pressure.**—The study of experimental conditions of low blood-pressure by Pearce and Eisenbrey has been limited, for the most part, to conditions of shock due to traumatism, thermic influences or exposure, and aside from the pharmacologic investigations of the mode of action of certain substances, such as arsenic, but few attempts to study experimentally low blood-pressure due to toxic agents have been made. The authors found that anaphylactic shock and peptone intoxication are characterized by conditions of low blood-pressure very similar to those seen in shock and collapse, and as they are produced without trauma or other factors usually concerned in the etiology of surgical shock, are of interest in the study of conditions of shock occurring in medical as contracted with surgical practice. Both conditions are characterized by a fall in blood-pressure to a level of 20 to 30 mm. Hg. which is prolonged in anaphylactic shock, but tends to relatively rapid recovery in peptone intoxication. In both conditions there is extreme congestion of the large venous trunks of the splanchnic area with a coincident medullary anemia. The respiration is not altered, except in so far as it is affected by the anemia of the medullary centers; the heart shows no initial changes, the low pulse pressure being due apparently to the small amount of blood passing through it. Physiologic studies having for their object the determination of the mechanism by which the low pressure is caused, demonstrate that the condition is essentially a peripheral vasomotor paralysis. Pharmacologic studies indicate that the effect is on the nerve-endings rather than on the muscle. With independent cerebral transfusion the recovery from low pressure is more rapid than in the intact animal. This is true, also, when an animal is transfused by carotid anastomosis, and recovery is especially satisfactory when the transfusion is accompanied by simultaneous bleeding from the femoral vein.

Indications for treatment, therefore, appear to be (1) relief of splanchnic congestion, and (2) increase of volume of blood to the heart and medulla. Cardiac stimulants alone, or salt solution or adrenalin alone, cannot bring about a permanent improvement. According to the results, the treatment of this condition, which, for want of a better name, may be called toxic shock, is not essentially different from that employed in traumatic shock.

American Journal of Surgery, New York

August

51 Plea for Conservatism in Some Gynecologic Conditions. J. P. Glynn, Brooklyn.
52 Hemorrhoids. J. M. Lynch, New York.
53 Fractures of the Spine. C. Sawyer, Marion, Ohio.
54 Local Anesthesia. A. E. Hertzler, Kansas City.
55 The Open Air Treatment of Burns. D. St. John, Hackensack, N. J.
56 Rapid Synchronous Double Amputations. Eight Cases with Seven Recoveries. Cuddeback, Port Jervis, N. Y.
57 Cholelithiasis in a Patient Twenty-one years of Age. A. J. Schenings, New York.

American Medicine, New York

July

58 *Sterilization for the Criminal Unfit. F. W. Robertson, New York City.
59 The Valley of the Shadow of Death—Significance of Mortality Statistics. G. M. Gould, Ithaca, N. Y.
60 Recent War Maneuvres in Massachusetts from a Medical Officer's Standpoint. C. J. Colles, New York City.
61 Hypertrichosis or Hirsutis. A. C. Geyser, New York.

58. Robertson urgently advocates the performance of vasectomy on such individuals as are deemed unfit to propogate.

American Journal of Medical Sciences, Philadelphia

August

62 *Trichinosis. W. G. Thompson, New York.
63 *An Epidemic of Trichinosis. H. Albert, Iowa City.
64 Intestinal Diverticula. J. A. Hartwell and R. L. Cecil, New York.
65 *Skin Rashes in Typhoid. J. Phillips, Cleveland.
66 Extensive Sarcoma of the Heart Involving the Bundle of His. C. F. Martin and O. Klotz, Montreal.
67 *Rheumatic Fever and the Erythema Group of Skin Diseases. O. M. Schloss, New York.
68 Acquired Hemolytic Ictero-Anemia. W. M. Barton, Washington, D. C.
69 *Typhoid Bacillus-Carriers: Their Relation to Public Health. J. P. Simonds, Indianapolis.
70 *Chronic Nephritides due to Acute Systemic Infection. H. Stern, New York.
71 Pernicious Anemia. A. McPhedran, Toronto.
72 Diagnostic Puncture in Tuberculous Abscess. J. K. Young, Philadelphia.
73 Primary Tumor of the Velum: Marked Compression of the Fourth Ventricle. H. Brooks, New York.

62. **Trichinosis.**—According to Thompson, there should be no difficulty in determining promptly a correct diagnosis of trichinosis based on the observation of the following symptoms:

1. Acute onset, usually with vomiting and abdominal cramps.
2. A high grade eosinophilia, invariably present; usually above 30 per cent. and frequently much higher—even above 80 per cent.
3. A high grade of temperature often reaching 104 F. or more, and lasting, in lessening degree, for from 2 to 6 weeks.
4. Puffiness of the eyelids and face, with pains in the eyes occurring in one-fourth of the cases.
5. Dyspnea and diaphragmatic breathing occurring without cyanosis in about one-fourth of the cases.
6. The generalized muscle pains, cramps, soreness, and prostration, causing sometimes deceptive apparent immobility.
7. The sudden occurrence of symmetrical circumscribed corneal hemorrhages in a patient whose blood vessels are not degenerated, should also give rise to a suspicion of trichinosis.

63. **An Epidemic of Trichinosis.**—The infection in the cases reported by Albert occurred from eating boiled ham in a club and in a restaurant. The ham in all cases was obtained from the same packing house, and represented meat which had been inspected. Ten of the cases occurred among students at one boarding club, 3 were young women students who, in company with 3 others, partook of ham sandwiches at a local restaurant, and 1 was a young man (not a student) who obtained ham at the same place. Most of the cases were diagnosed as trichinosis very soon after the beginning of the symptoms. The occurrence of so many cases among the members of the boarding house, the eating of boiled ham, the finding of trichinæ in the ham, together with the characteristic symptoms, made the diagnosis comparatively easy. Some of the cases were considered typhoid, one as rheumatism, and one as disease of the eyes, until the diagnosis became very evident, as determined by an examination of the blood. In no case was a positive Widal reaction obtained. A study of the epidemic reveals two features of special significance—the thermal death point in trichinæ, and the value of eosinophilia in the diagnosis of trichinosis. A temperature of from 170 to 200 F., maintained for from 1 to 6 or more hours, depending on the size of the ham, no doubt destroys the trichinæ in the vast majority of cases. Eosinophilia occurs in practically every case of trichinæ infection, varying ordinarily from 10 to 60 per cent. The highest percentage reported is 86. Eosinophilia makes its appearance with the beginning of the acute muscular symptoms from the seventh to the twelfth day after infection. It is at its highest at the height of the acute muscular symptoms, which is, ordinarily, during the second or third week after infection. After this time it gradually disappears, so that at the end of the second or third month there is usually no increase in the number of these cells. The total leukocyte count is usually, but not invariably, increased in trichinæ infection. The number of neutrophiles is relatively, and sometimes absolutely, diminished during the period of eosinophilia.

65. **Skin Rashes in Typhoid.**—Phillips' observations are based on a review of the literature, and on a study of 1,230 cases of typhoid. Herpes was observed in 12 cases. In 8 it

appeared on the lips during the first week of the disease. In the other 4 cases the herpetic eruption appeared late in the course of typhoid and in various regions of the body. Urticaria was present in 21 cases. In some the urticarial eruption developed as a few scattered wheals on the chest or abdomen, preceding the appearance of rose spots; in other cases it appeared later in the disease. A miliary eruption of sudamina was a very frequent occurrence in the third or fourth week of typhoid, when sweating is profuse. Extensive desquamation of the skin was noted in 83 patients; 7 showed erythema; in 1 it was of the type of erythema multiforme; in 6 purpura was noted; in 4 patients a pemphigoid eruption was present. Two cases of erysipelas occurred in this series; there were 12 cases of bedsores. Under the heading of septic conditions of the skin there were noted in this series 45 cases of furunculosis, 2 of carbuncle, 5 of onychia, 9 of abscess, 1 case of impetigo, and 1 of infected sebaceous cyst of the head. Striæ patellares were noted in 2 cases, one in a woman, aged 42 years, who, when 15 years old, had been afflicted with a severe, prolonged typhoid.

67. **Rheumatic Fever and Erythema.** The cases recorded by Schloss, examples of the erythema group of skin diseases, occurred in rheumatic subjects or in association with rheumatic fever:

1. Rheumatic fever, purpura; urticaria, angioneurotic edema; erythema simplex; recovery.
2. Rheumatic fever; erythema nodosum; purpura, urticaria; erythema exudativum; intestinal hemorrhage; pericarditis; death on the twenty-first day of the disease.
3. Follicular tonsillitis; erythema multiforme; urticaria; colic; recovery.
4. Tonsillitis; urticaria; erythema nodosum; period of improvement with the occurrance of angioneurotic edema; sudden onset of pericarditis; death.

69. **Typhoid Bacillus-Carriers.**—Simonds believes that there is ample evidence for considering the danger of the spread of typhoid fever by chronic bacillus-carriers as worthy of the attention of health officers; and that epidemics caused by bacillus-carriers are characterized by the occurrence of small groups of cases at intervals of a few months in the immediate vicinity of the carrier, or in the territory supplied by some food product handled by him. The most practical way of reducing the danger to the public from these individuals is by excluding them from work that brings them in contact with food products.

70. **Chronic Nephritides.**—The records of the last 200 cases of chronic nephritis that have come under Stern's observation, give the history of one or more acute infectious diseases at some period during the life of the patients in 192 instances. Among these an acute renal involvement had been positively set up in at least 121 cases. Moreover, the histories following the attack of the infectious disease in 56 or 58 of the remaining cases strongly point to the occurrence of an acute nephritic process. (Among these should be included 4 cases of tuberculosis, 5 of syphilis and 1 of chronic malaria.) Ignoring, however, all the unconfirmed instances, it was found that renal involvement had existed in 62.5 per cent. of the patients who had been acutely infected. The frequency of renal involvement after the various infectious diseases was as follows: Scarlet fever, 38 cases; diphtheria, 35; influenza, 16; pneumonia, 12; measles, 12; typhoid, 6; rheumatic fever, 1; and erysipelas, 1. Of the 200 quoted instances of chronic nephritis, 156 occurred in men and 44 in women. The age of the youngest individual was 8, of the eldest, 64 years. The 121 cases of chronic nephritis furnishing a positive history of acute renal involvement during or after an infectious disease, had ensued in 97 men and 24 women. The ages varied between 8 and 49 years. The time which had elapsed since the occurrence of the acute nephritic state amounted to from 10 months to 26 years. Stern believes we are justified in assuming that kidneys, acutely infected at one time, are thereafter possessed of a lowered degree of resistance in many, and of a diminished functional activity in some of the instances.

Journal of Cutaneous Diseases, New York

July

74 Sporotrichosis in Man. J. N. Hyde and D. J. Davis, Chicago.
75 Therapeutic Use of Refrigeration, Particularly with Solid Carbon Dioxid. W. A. Pusey, Chicago.

New York State Journal of Medicine, New York

August

76 Vertigo—Something of its Varied Origin and Significance. J. E. Sheppard, Brooklyn.
77 *New Methods of Test Meal and Feces Examinations. Their Significance in Clinical Work. A. Bassler, New York.
78 Neurasthenia. F. H. Greene, Poughkeepsie.
79 Exaggerated Fear of the Hospital and Operations. A. H. Traver, Albany.
80 Abnormalities of the Nose and Throat in Relation to Catarrhal Deafness and Tinnitus. H. Hays, New York.
81 *Stretching of the Sciatic Nerve. E. M. Foote, New York
82 Laryngeal Tuberculosis. A. H. Lavigne, Saranac Lake.
83 Suppurative Appendicitis with Complete Sloughing of Appendix and Fecal Discharge Through Wound for Ten Weeks. G. F. Blauvelt, Nyack.
84 Stuttering. E. W. Scripture, New York.
85 Gas Poisoning. R. W. Van Dyke, Malone.

77. Abstracted in The Journal, March 5, 1910, p. 815.

81. **Stretching the Sciatic Nerve.**—Instead of the usual longitudinal incision, Foote recommends a transverse incision made at the lower edge of the gluteus muscle, and only two inches in length. Division of the deep fascia which is here very thin exposes the transverse lower edge of the gluteus, and the longitudinal outer edge of the biceps muscle. In the angle made by them, the sciatic is readily exposed by a little blunt dissection and brought into view on the finger. The nerve should be stretched by repeated steady pulls on it, until it is plainly elongated. The force exerted should never exceed 50 pounds. An easy way to estimate this is for the surgeon to stand on a small platform scales, while making the traction on the nerve.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

August

86 Cancer of the Uterus. I. Levin, New York.
87 What May we not Tell the Community Regarding Cancer? E. C. Savidge, New York.
88 *Postoperative Treatment of Abdominal Section for Pelvic Disease: Special Reference to Early Rising and the Use of Eserin. B. H. Wells, New York.
89 *Present Status of Obstetric Education in Europe and America. E. B. Cragin, J. C. Edgar, New York; C. M. Green, Boston; E. P. Davis, B. C. Hirst, Philadelphia; J. W. Williams, Baltimore, and J. C. Webster, Chicago.
90 Cardiac Lesion Complicating Pregnancy and Labor. E. Sothoron, Washington, D. C.
91 Intussusception. H. J. Morganthaler, Brooklyn.
92 Etappen Treatment of Bow-legs and Knock-knees. C. R. Kepplar, New York.
93 Club-Foot and Manipulative Treatment of the Congenital Type. R. G. Moore, New York City.
94 The Complications and Sequelæ of Diphtheria in Children. J. S. Wall, Washington, D. C.
95 Tolerance of Quinin by Young Children with Malarial Diseases. S. S. Adams, Washington, D. C.
96 Fissure in Ano in Children. M. L. Bodkin, Brooklyn
97 Cholesteatoma: Case in which the Disease Itself Had Done Almost a Complete Radical Mastoid Operation. J. A. MacIsaac, New York.

88, 89. Abstracted in The Journal, June 11, 1910, p. 1994.

Journal Michigan State Medical Society, Battle Creek

August

98 *Occurrence of *Bacillus Fusiformis* in Membranous Affections of the Throat—Vincent's Angina. M. I. Holm, Lansing
99 *Transitory Insanity and Its Abuses. C. W. Hitchcock, Detroit.
100 Thrombophlebitis, Its Relation to Phlegmasia Alba Dolens. M. E. Roberts, Hancock.
101 Present Status of Thyroid Surgery. H. D. Purdum, Baltimore
102 Subphrenic Abscess. F. B. Walker, Detroit

98. **Vincent's Angina.**—The cases of Vincent's angina reported by Holm were gathered during 1908 and occurred among 265 cases of suspected diphtheria, examined at the laboratory of the Michigan State Board of Health. In all the cases separate examinations were made from swabs and cultures on fresh Loeffler serum. In most of the cases which had been diagnosed as diphtheria on clinical grounds, 2 or more swabs were examined. In no case, however, examined for diagnosis, has a negative finding been followed by a positive. *B. diphtheriæ* was recorded whenever present, regardless of the relative number; other organisms were not recorded, except when proportionately numerous, and then only the predominating organism was mentioned. *B. fusiformis* was recorded only when found by direct smear from the swab to be more numerous than any other.

The total number of cases examined for diagnosis was 265; showing *B. diphtheriæ*, 118; *B. fusiformis*, 73. These 73 cases occurred in 33 males and 40 females. The lowest age given was 2 years and the highest 45, the average being 11.8 years. A membrane was described in all but 4 cases, involving both tonsils 38, one tonsil 31, and extending to adjacent structures 15. The color of the membrane was given as gray or grayish 41, yellow 9, white 8, grayish yellow 5, greenish yellow 1 and creamy 2. The highest temperature given was 103.6 F., the lowest 98.5 F., the average being about 100.5 F. The clinical diagnosis was given as diphtheria 28, suspicious or questionable 20, tonsillitis 17, Vincent's angina 5, and scarlet fever 1. The cultural results showed streptococci 29, staphylococci 20, *B. diphtheriæ* 14, *M. catarrhalis* 8, pneumococci 1, Hofmann's bacilli 1.

In the entire series of 265 cases, diphtheria was diagnosed on clinical grounds in 99. The bacteriologic examination of these 99 cases showed *B. diphtheriæ* present in 64 cases, absent in 35 cases. Among the 73 cases showing *B. fusiformis*, diphtheria was diagnosed clinically 28 times. The bacteriologic examination of these 28 cases showed *B. diphtheriæ* present in 1, absent in 27. This gives a percentage in the clinical diagnosis of diphtheria in the presence of *B. fusiformis* of 96.4. The cultural results in this series of cases indicate that streptococci and staphylococci are the most usual in cases of Vincent's angina. It should be further noted that in over three-fourths of the cases of pseudodiphtheria, the direct smears from the membrane showed a predominance of *B. fusiformis*.

99. Abstracted in The Journal, Oct. 9, 1909, pp. 1222, 1224.

Annals of Ophthalmology, St. Louis

July

103 The Pathogeny and Semiology of Pupillary Troubles. Ch. Lafon, Paris, France.
104 Medical Advertising in Remote Times. S. H. Brown, Philadelphia.
105 Sudden Obstruction of the Retinal Circulation. D. F. Harbridge, Philadelphia.
106 Atrophy of the Iris of an Unusual Form. H. G. Goldberg, Philadelphia.
107 Modification of the Scissors Operation for Slitting the Lower Canaliculus. J. W. Charles, St. Louis.
108 Congenital Defect of Abduction Associated with Retraction of the Eyeball. S. H. Brown, Philadelphia.
109 A Modification of the Red-Green Glass Slides of the Ophthalmometer. P. Fridenberg, New York.

West Virginia Medical Journal, Wheeling

August

110 Removal of the Prostate. E. O. Smith, Cincinnati.
111 The Law in Relation to the Physician. A. M. Cunningham, Elkins.
112 Penalty of Death. C. H. Maxwell, Morgantown.
113 Trachoma. T. W. Moore, Huntington.
114 Sexual Excesses. L. B. Rupert, Nuttallsburg.

Annals of Surgery, Philadelphia

August

115 *Benign Bone Cysts, Ostitis Fibrosa, Giant-Cell Sarcoma and Bone Aneurism, of the Long Pipe Bones. J. C. Bloodgood, Baltimore.
116 Neoplasms and Other Tumors Involving the Maxillary Bones. S. L. McCurdy, Pittsburg.
117 Fracture of the Head and Neck of the Radius. R. Hammond, Providence, R. I.
118 Backward Dislocation of the Upper End of the Ulna. J. P. Warbasse, Brooklyn.
119 *Autoplastic Transplantation of Bone. H. H. Janeway, New York.
120 Spontaneous Forward Dislocation of Wrist-Joint. A. C. Stokes, Omaha, Neb.
121 Cystoscopic Examination in Renal Tuberculosis. B. S. Barringer, New York.
122 Cystic Disease of the Breast. W. J. Taylor, Philadelphia.

115. Abstracted in The Journal, July 2, 1910, p. 45.

119. **Autoplastic Transplantation of Bone.** For the cure of a recurrent tumor, Janeway resected a portion of the ulna five and one-half inches long, which ran through the center of the growth. A fragment of bone of the same length and three-eighths of an inch wide and one-eighth of an inch thick was chiselled off from the crest of the tibia, together with its adherent periosteum. This was then placed between the two extremities of the ulna remaining and fastened in place with silver wire. The periosteum of the implanted fragment was also sutured to the periosteum of the remaining portions of the ulna. The wound was closed, with the exception of a small drain at each end. In two months' time the patient could freely use the arm for washing clothes at a tub.

New Orleans Medical and Surgical Journal

August

123 The Stools in Infancy. J. L. Morse, Boston.
124 Disease in the Tropics (concluded). C. Wellman, Oakland, Calif.
125 Value of Transfusion in Pellagra. G. J. Winthrop and H. P. Cole, Mobile.
126 Diagnosis of Syphilis by the Method of Complement-Fixation. F. B. Gurd, New Orleans.
127 Anesthesia for Throat Surgery. A. M. Caine, New Orleans.
128 Relation of Patient Anesthetized to the Anesthetic: 1,000 Cases. L. Levy, New Orleans.
129 Etherization. J. C. Bloom, New Orleans.

Denver Medical Times and Utah Medical Journal

August

130 Lichen Planus. A. L. Stubbs, La Junta, Colo.
131 Practical Anesthesia. F. W. Kenney, Denver.
132 The Race Question in America and Criminal Sociology. J. M. Delbeese, Denver.
133 Puerperal Fever. E. I. Rich, Ogden, Utah.
134 Nose and Throat Conditions of Interest to the General Practitioner. R. R. Hampton, Salt Lake City.

Interstate Medical Journal, St. Louis

August

135 A Modern Conception of the Psychoneuroses. E. Jones, Toronto.
136 *Secondary Gastric Manisfestations in Chronic Appendicitis. J. S. Myer, St. Louis.
137 *Treatment of Typhoid. R. W. Wilcox, New York.
138 Operability of Gastric Cancer with a Palpable Tumor. A. E. Taussig, St. Louis.
139 Functional Disorders of the Bladder in the Female Simulating Cystitis. A. Stein, New York.
140 Ephraim McDowell: The Father of Abdominal Surgery. G. Gellhorn, St. Louis.

136. **Chronic Appendicitis.** Stress is laid by Myer on the following points in arriving at a diagnosis of chronic appendicitis with gastric phenomena: A careful history should be taken with special reference to the previous existence of acute abdominal attacks, perhaps so far back as childhood. Primary gastric diseases should be excluded through a determination of the motility of the stomach, careful and, if necessary, repeated examination of the stomach contents, bearing in mind that there may be coexisting lesions in the stomach and appendix, and that in a small percentage of cases the acidity may be greatly increased, simulating ulcer, may be diminished, arousing fears of carcinoma, but, as a rule, is found within normal limits. In a differential diagnosis careful examination of the feces for blood, and of the urine, and examinations of the blood itself, will often throw light on obscure cases. Pure gastric neuroses, the expression of a neuropathic tendency, though less common than usually supposed, must be excluded, not forgetting, however, that organic lesions may be encountered in neurotic individuals. Especial care must be taken in cases of habitus enteroptoticus (Stiller) not to misinterpret the physical signs often elicited in these cases in both the epigastric and right iliac regions. Through the careful physical examination, other organs, especially the abdominal, must be excluded as a causative factor, not forgetting again that two lesions, such as gallstones and appendicitis, are not uncommon in the same individual. Lastly, there must be a most careful examination of the right iliac region for positive findings, bearing in mind that in exceptional cases of chronic appendicitis no local signs can be elicited. In the examination of the appendix region one or more of the following signs may be present: (a) Local pain on pressure over McBurney's point; (b) pain radiating toward the epigastrium on pressure over the cecum without, perhaps, any pain at the point of pressure; (c) epigastric distress and nausea on pressure in the appendix region; (d) Meltzer's sign, which consists in pain produced through the elevation of the right leg of the patient while exerting pressure over McBurney's point; (e) pressure in the left iliac region or other portions of the lower abdomen may cause pain to radiate to the right iliac region; (f) spasticity of the cecum, (g) borborygmus in the cecal region on manipulation; (h) exceptionally, in very slender individuals the palpation of the thickened appendix; (i) pain and infiltration on right side occasionally elicited through rectal examination.

137. **Typhoid.**—The plan which has yielded the best results in Wilcox's hands has been the administration of the compound solution of chlorin, U. S. P., in doses of 1 dram every 3 or 4 hours, diluted in at least 2 ounces of water. This can

be given, he states, until all fetor of discharges is lost and until the temperature becomes normal. Wilcox says that with the use of this method (1) chlorin can safely be administered without fear of digestive or other disturbance until bacterial activity in the alimentary tract is markedly inhibited; (2) that under its use the tongue becomes cleaner and appetite and digestion improve, the fever is lower and the stools are devoid of odor save that due to the chlorin; (3) the general health, intellectual processes and nervous conditions improve; (4) the duration of the disease is shortened and the patient usually proceeds to a rapid, full recovery.

Bulletin American Academy of Medicine, Easton, Pa.

August

141 *Providing Situations for, and Otherwise Assisting Homeless Mothers and Their Infants. M. R. Mason, New York.
142 *The Care of Infants Apart From Their Mothers. C. P. Putnam, Boston.
143 *Care of Infants Who Must Be Separated From Their Mothers Because of Some Special Need on the Part of the Child. E. L. Coolidge, New York.
144 *The District Nurses' Contribution to the Reduction of Infant Mortality. L. D. Wald, New York.
145 *The Economic Value of Family Physician Refracting. L. Connor, Detroit.

141 to 144. Abstracted in The Journal, Dec. 18, 1909, pp. 2125, 2126.

145. Abstracted in The Journal, April 16, 1910, p. 1333.

Journal Medical Society of New Jersey, Orange

August

146 Osteopathy. N. L. Wilson, Elizabeth.
147 *Empyema. I. H. Hance, Lakewood.
148 *Early Recognition and Diagnosis of Organic Disease of the Nervous System. W. M. Leszynsky, New York.
149 Preventable Infantile Diarrhea. T. W. Rebout, Stirling.

147, 148. Abstracted in The Journal, Aug. 6, 1910, pp. 525, 526.

Gulf States Journal of Medicine and Surgery and Journal of the Southern Medical Association, Mobile

August

150 *Treatment of Wounds. A. Jacoby, New Orleans.
151 Treatment of Fistulous Tracts, Sinuses and Abscess Cavities by Bismuth-Vaselin Injections. C. R. Andrews, Atlanta.
152 Factors in Shortening the Convalescence of Surgical Patients. H. P. Cole, Mobile.
153 *Dermoid Ovarian Cysts of Unusual Size. E. N. Liell, Jacksonville, Fla.
154 Treatment of Pyosalpinx. R. C. Turck, Jacksonville, Fla.
155 Conservatism in Operation on the Uterine Appendages. L. A. Suggs, Fort Worth, Tex.
156 Surgical Drainage. L. Sexton, New Orleans.
157 Endo-Aneurysmorrhaphy of Popliteal Restorative Types. A. P. Crain, Shreveport.
158 Appendicitis in the Negro. S. T. Barnett, Atlanta.
159 Treatment of Capsular Cataract. W. S. Sims, Jackson, Miss.
160 *Varicocele: Points in Technic of the Operation. J. H. Johns, Atlanta.
161 Surgical Tuberculosis: Special Reference to the Use of Tuberculin in Diagnosis and Treatment. R. T. Taylor, Baltimore.
162 *Traumatic Myositis Ossificans, Limited to a Single Group of Muscles. Operation. Recovery. I. Cohn, New Orleans.
163 Gunshot Wounds of the Intestine. J. D. Bloom, New Orleans.

150. The Treatment of Wounds.—Preparatory work of all wounds, Jacoby says, should be similar, and any processes which may suit the personal preference of the surgeon will be equally satisfactory. After suturing the incised wound, he feels that an application of iodin is of value, and that a dressing of balsam of Peru in castor oil will aid in the removal of the gauze and give freedom from pain when the first dressing is applied. The lacerated wound should be swabbed with iodin and then followed by an application of balsam of Peru in castor oil, the dressing to be changed not oftener than every 4 days. The granulating wound requires nothing but a dry piece of gauze, which should not be removed, but left to act as a scab or graft. The surface covered with the gauze should be wiped off with peroxid of hydrogen and dry gauze reapplied. The dressing may be applied under such circumstances as frequently as one wishes, but Jacoby advises that it be done not oftener than once in 4 days, as it inflicts unnecessary traumatism and removes tissue growth. The clean operative wound should be examined in 48 hours and again 2 days later. An infected operative wound should be opened freely, and all gangrenous tissue excised, swabbed with iodin, and packed with balsam of Peru in castor oil dressing. The wound should be dressed daily until the infection is controlled and thereafter every 4 or 5 days. The balsam of Peru in castor oil is 1 to 4 and the iodin used is the strong tincture. In abscess cavities Jacoby uses iodin irrigations, 1 dram to 2 quarts of hot water. The abscess cavity may be packed with the balsam of Peru in castor oil and left alone for 4 or 5 days. For the past year Jacoby has been trying an application of 50 per cent. in alcohol in infected cases with excellent results, but the alcohol solution must be applied daily or the dressing encased in rubber tissue. He believes that it is the ideal dressing in such cases and also in operations on the toes, where infection is liable to occur. It will also serve as an excellent pack in abscess and bone felon cases.

153. Dermoid Ovarian Cysts of Unusual Size.—The cases of dermoid ovarian cysts reported by Liell are of interest, not alone because of their enormous size—weighing, respectively, 42, 39 and 32 pounds; but in connection with the singular fact that all 3 were of the left ovary.

160. Varicocele.—The technic used by Johns is as follows: After resecting the veins by the "Bennett-Howse" method, a clamp is applied to the scrotum in such a manner as to allow the removal of the redundant portion. Twelve or fourteen silkworm-gut sutures are then introduced through the holes in the clamp, using long, slender, trocar-pointed needles. The ends of these sutures are then gathered into two bundles and clamped with hemostats. An incision is then made through the skin, with a sharp scalpel, about one-eighth of an inch from the clamp, the remaining tissues being cut through with strong scissors curved on the flat. The subcutaneous tissues, consisting of dartos and cremasteric fascia, are then sutured with a No. 0 plain catgut continuous suture, using a small round-pointed fishhook or fistula needle. The first turns of a surgeon's knot are then made in the silkworm gut, and drawn tight. The clamp is then removed, and after waiting a few minutes for the hemorrhage, which always follows removal of the clamp, to cease, the skin edges are brought together with a No. 0 plain catgut continuous suture on a long, straight needle. The silkworm-gut sutures are then adjusted and the knots completed. The reason for waiting to complete the knots is that they may be loosened and any bleeding points, which promise to give trouble, caught and tied. This is rarely necessary, but is very easily done, if need be, as the buried hemostatic suture prevents wide gaping of the wound even if all the silkworm-gut sutures are untied.

162. Traumatic Myositis Ossificans.—Following a severe blow on the thigh by a heavy piece of timber, Cohn's patient noticed a hard mass in the "fleshy part" of the thigh. Palpation disclosed a hard mass occupying the anterior and outer aspect of the lower two-thirds of the thigh. A feeling of crepitation was elicited on superficial palpation. The mass was not adherent to the skin. At the operation the mass could easily be felt in the belly of the quadriceps extensor, and covered the anterior aspect of the femur for about 6 inches; the lower limit could be felt about 2 inches above the patella, the outer border extending well beyond the limit of the femur. The mass was closely adherent to the periosteum. Recovery was complete and uneventful.

Albany Medical Annals

August

164 Functions of a County Medical Society. A. MacFarlane, Albany.
165 Fracture of the Lower Jaw. L. Blatner, Albany.
166 Faraday: His Life and Work. W. G. Tucker, Albany.

St. Paul Medical Journal

August

167 Polar Anemia. L. Smit, Bergen, Norway.
168 Pharmacology of the Salicylates. E. Klaveness, Sioux Falls, S. D.
169 The United States Pharmacopeia. P. Berohart, Sioux Falls, S. D.

Montreal Medical Journal

August

170 Canadian Effort Against Tuberculosis. J. G. Adami, Montreal.
171 *Condition of the Lymphatic Glands as Factor in Diagnosis of Tuberculosis of the Hip and Lower Spine. A. M. Forbes, Montreal.

172 Use of Differential Pressure in the Treatment of Empyema. E. M. Von Eberts, Montreal.
173 Reflex Nasal Neuroses. C. M. Stewart, Toronto.
174 Pelvimetry and Abdominal Palpation. H. M. Little, Montreal.
175 Beaumont and Alexis St. Martin. E. Monahan, Montreal.
176 Tachycardia. J. A. Baird. Hemmingford, Quebec, Canada.
177 Human Trypanosomiasis. J. L. Todd, Montreal.
178 Neurasthenic Conditions Referable to the Nose and Throat. W. H. Jamieson, Montreal.
179 *Banana Flour and Plantain Meal for Children Suffering from Diarrhea. A. E. Vipond, Montreal.

171. **The Condition of the Lymphatic Glands.**—In November, 1909, Forbes observed that the deep lymphatic glands in the iliac and inguinal regions were more likely to be enlarged in disease of the spine than in hip disease. He says that in early cases of hip disease it is most unusual to see a bilateral or even an unilateral enlargement of the lymph glands, whereas in lumbar Pott's disease and in tuberculous lesions adjacent to the lumbar region, such a unilateral enlargement is common, and a bilateral enlargement not uncommon in his experience. Five cases are reported illustrating the difficulties of the diagnosis between tuberculosis of the lower vertebræ and hip disease, and suggesting the possibility of the condition of the lymphatic system being a factor in the diagnosis. In all these cases the diagnosis of hip disease had been made.

172. **Differential Pressure in Empyema.**—Von Eberts believes that the widest field for the application of differential pressure is found in the treatment of empyema, where by its means and by the application of a suitable dressing after thoracotomy, the period of the disability may be very greatly curtailed. At the time of operation and at subsequent dressings positive differential pressure is especially suitable, as with a portable apparatus not only hospital patients, but also patients operated on in private homes, may enjoy the benefit of this method of treatment. Following thoracotomy an empyemic cavity remains exposed to atmospheric pressure. In extensive cases the whole lung may be collapsed and may lie in close apposition with the mediastinum. Further, the mediastinum and pericardium are not infrequently displaced toward the sound lung. Under such conditions, each inspiratory act results in the deflection of the mediastinal septum and collapsed lung toward the sound side in response to the negative tension produced on that side during inspiration.

With the use of differential pressure and the application of air-tight dressing, such as the one which von Eberts has devised, not only is the mediastinal deflection reduced, and the cavity thereby diminished in size, but the air within the abscess cavity becomes negative in tension during inspiration and, in consequence, the mediastinum and pericardium tend to be further deflected toward the cavity and the collapsed lung to expand in the same direction. An immediate result of such a method of treatment is the prompt relief of the cyanosis. Apart from the curtailment of the period of disability, the absence of odor and of pain and discomfort of prolonged dressings, the earlier restoration of the collapsed lung to its normal respiration activity may remove to a large extent the danger of a subsequent tuberculous infection.

179. **Banana Flour and Plantain Meal as a Food.**—Vipond describes the good results he has obtained from the use of banana flour and plantain meal in cases of diarrhea in infants. He says it is a nourishing and valuable food and one that is easily digested, but not an ideal infant food as the starch percentage is high and the fat percentage is low; however it will tide over a critical period. The dextrose and starch in banana flour vary according to the method used in preparing the flour. It has remarkable astringent qualities, he states, as has also the plantain meal, a nice white flour, more palatable, but more difficult to obtain and more expensive.

Buffalo Medical Journal

August

180 The Prevention and Cure of Disease by the Inclined Desk Leaf or Drawing Table. G. M. Gould, Ithaca, N. Y.
181 Conference of Ophthalmologists with Organization Officials of Michigan on Family Physician Refracting. L. Connor, Detroit.
182 *Treatment of Surgical Tuberculosis by Vaccines. J. A. MacLeod and N. K. MacLeod, Buffalo.

182. Abstracted in The Journal, Feb. 26, 1910, p. 734.

Archives of Diagnosis, New York

July

183 Diagnostic Errors by Bismuth Paste Injections. E. G. Beck, Chicago.
184 *The Dull-Flat Percussion Note: Its Significance in Early Pulmonary Tuberculosis. B. Abrahams, New York.
185 Diagnosis of Bronchial Asthma. T. F. Reilly, New York.
186 An Accurate Method of Estimating the Height of the Liquid in Hydrothorax. J. H. Barach, Pittsburg.
187 Diagnosis of Uncinariasis Infection: Especially Examination of Feces for Eggs of Intestinal Parasites. C. C. Bass, New Orleans.
188 *Recognition of Diplomelliturla. H. Stern, New York.
189 The Movable Cecum: Its Demonstration by the Roentgen Rays. G. Schwartz, Vienna, Germany.
190 Color Reaction of Human Feces with Corrosive Sublimate—Acetate Solution: Its Relation to Biliary and Intestinal Function. M. Schott, Cleveland, O.

184. **The Dull-Flat Percussion Note.**—The percussion note described by Abrahams has been and is variously described as "diminished resonance," "relative dulness," "impaired resonance," "wood like sound," etc., all graphic, says Abrahams, but none to the point. Technically, the dull-flat note is shorter in duration and higher in pitch; its acoustic qualities stand between dulness and flatness, or it is a note which is duller than dull. Abrahams emphasizes the fact that some areas of the lung normally possess dulness on percussion. Those areas are (1) the right apex and a finger's breadth under the right clavicle; (2) the intracapsular space, say from the seventh cervical to the fourth or fifth dorsal vertebra, and (3) in some instances the lower third of the base of the right lung. In the presence of an early infiltration, either of these areas drops its normal dulness and assumes the dull flat resonance. This change in tone is unmistakable on light percussion. The dull flat note is also of value in ascertaining the progress of the tuberculous process in any part of the lung. Take, for example, the left apex. Under normal conditions the percussion note of the left apex is pulmonary or vesicular. In the presence of an infiltration the vesicular resonance will change into dulness. Dulness indicates incipiency. By watching the modifying degrees of the dulness in that apex and the eventual change of that note into the dull flat, one can predict with accuracy the progress that the tuberculous deposit is making. It is evident that whereas lung areas which yield vesicular resonance on percussion may be said to be considerably advanced in tuberculosis when they yield the dull flat note, areas which are normally characterized by dulness on percussion may be said to be in the incipient stage when they are possessed of the dull-flat sound.

188. **Diplomelliturla.**—By diplomelliturla Stern understands the contemporaneous or alternate occurrence of diabetic and non-diabetic glycosuria in the same individual. It is the result of two concurrent or intercurrent affections of dissimilar character having the one symptom, glycosuria, in common. The recognition of diplomelliturla depends on the alternate prominence of one set of symptoms, including the respective glycosuria.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 6

1 The Ethics of Insanity. T. D. Greenlees.
2 Rheumatoid Arthritis. C. J. MacAlister.
3 Cats as Plague Preventers. A. Buchanan.
4 Vicious Circles Associated with Disorders of the Urinary Organs. J. B. Hurry.
5 Treatment of Small-Pox in Red Light and in the Dark. C. H. Wetzen.
6 Recovery from Apparent Arteriosclerosis. W. M. Crofton.

Lancet, London

August 6

7 *Status Lymphaticus in Its Relations to the Use of Anesthetics in Surgery. D. W. Buxton.
8 Removal of the Appendix in the "Quiet" Period. W. H. Battle.
9 Preventive and Administrative Measures for the Control of Tuberculosis in New York City. H. M. Biggs.
10 Incidence of Tuberculosis in Children, with Special Reference to School Attendance. J. E. Squire.
11 Bilharziosis and How to Prevent It. J. F. Allen.
12 *Heart Puncture. J. W. Milne.
13 Serodiagnosis of Hydatid Disease: Fixation of the Complement. K. Lebenstein.

7. The Status Lymphaticus.—So far as our knowledge goes at present, Buxton believes we are compelled to admit that the case against anesthetics as the cause of death in status lymphaticus, is not proved. Their danger is probably the same as that incurred by any feeble child or adolescent and not more. The diagnosis of a case of lymphatism would not be a contra-indication to operation or the use of an anesthetic; it should, however, compel us to take special care in the direction of building up the physique of the patient before operation, when this is possible. These cases are not to be undertaken in a light-hearted way, they need the utmost care, experience and special attention, and no one, says Buxton, who values his peace of mind, should embark on the anesthetization in a case of lymphatism without adequate knowledge and skill and more than common experience.

12. Heart Puncture.—A girl aged 20 was healthy till the age of 18—two years ago—when she had rheumatic fever and lay ill for 3 months. The heart was damaged and she ever after had a mitral bruit, systolic in time, but with no dilatation and no anasarca. Six months ago she had a recurrence which left the heart still more damaged, and the apex beat was now always in the nipple line and one inch below. She had no evidences of failure till she was taken ill again with a cold and rheumatic pains. In addition to her cardia condition there was well-marked hypostatic engorgement of both lung bases, chiefly on the right side. On May 23, there was dilatation of the heart one inch beyond the nipple to the left, and one inch beyond the right border of the sternum to the right. Milne perceived that heart failure was imminent, and that nothing but a reduction in the volume of the blood could avert death. He therefore proceeded to open the left median basilic vein but no blood flowed. He then opened the right median basilic with a like result. He cut deeper on the left into the brachial artery above its division into the ulnar and radial arteries, and only a feeble trickle of dark blood flowed. During all these manipulations the patient felt no pain, but lay half unconscious, with dilated pupils, cold sweats, cyanosed color and stertorous respiration, while the heart was getting more and more distended and Milne could feel no pulse in the temporals.

Milne then selected the fifth intercostal space, close to the left border of the sternum, as being in the circumstances likely to lie over the right auricle, since the distention had been more and more to the left. Having frozen the spot with ethylchlorid, he inserted a trocar and cannula of about the size of a No. 3 catheter vertically into the heart. Blood immediately flowed of about the color of porter and thick in consistency, and the cannula oscillated with the heart beats through an angle of about 25 degrees, inclining from the original vertical position to this extent to the right. The blood came in jets only when the cannula was vertical—that is, when its point was pulled to the right. Milne drew off 20 ounces and then withdrew the cannula and closed the puncture by acupressure. Almost suddenly the patient revived becoming quite clear and collected; she expressed herself as having felt no pain and as being quite relieved. A small probang was passed down the trachea and took up a lot of mucus. The patient was left in a different state altogether, with no cyanosis to speak of, and the venesections showing blood through their dressings. The pulse at the temporals was fair, the lips were pink, and the pupils normal, and when the sweat was wiped off no more appeared. This was at 3.30 p. m., the puncture having been made at 3.20 p. m. She remained clear and free from pain and distress till 7.20 p. m., when she died. Puncture of the heart thus prolonged life, in Milne's opinion, for four hours after the circulation was so feeble as not only not to make the opened veins bleed, but even the brachial artery was unable to show pressure at all.

Medical Press and Circular, London

August 3

14 Principles of Treatment of Pulmonary Emphysema. W. Ewart.
15 *Evolution of the British Medical Association and Its Work H. T. Butlin
16 *Recent Progress in Medical Science. J. M. Bruce.
17 *An Unrecognized Form of Malaria. G. LeMoine.
18 Radium Treatment of Cancer. L. Wickham.

17. Unrecognized Forms of Malaria.—One of the forms of malaria described by LeMoine is malaria nostras, which he has encountered in the north of France. It is characterized by continuous fever without any marked rise of temperature. It may last for weeks, resembling tuberculosis or mucous fever far more than intermittent fever. LeMoine insists strongly on the presence of signs of consolidation of the right apex in malaria, especially in the latent form. The state of congestion is frequently met and naturally leads one to suspect tuberculosis, it persists for long periods in sufferers from malaria who have returned from the colonies, and is also seen in a milder and less persistent form in malaria nostras.

Medical men practicing in the district of Armentieres long since called attention to a form of malaria in which the symptoms affect a dyspeptic form. The victims gradually lose their appetite and complain of a feeling of oppression after meals, belching and evening vomiting. There are true symptoms of dyspepsia, but no treatment is of benefit unless associated with the administration of quinin. In these cases the liver can usually be felt below the ribs, and the spleen can be outlined on percussion. The patients may never have had an acute attack, yet for many years they have been impregnated with the malarial poison. Country practitioners often see patients who have almost constant fever with a tendency to persist for several weeks.

Clinical Journal, London

July 27

19 Sigmoiditis and Proctitis. F. C. Wallis.
20 *Migraine. G. Rankin.
21 Practical Points in the Management of Difficult Labor. H. R. Andrews.

20. Migraine.—The following prescriptions have often proved useful in Rankin's practice: (a) chlorid of ammonium, 15 gr.; phenacetin, 10 gr.; codein, 1-3 gr. (to be dispensed either in the form of a powder or of two cachets); (b) antipyrin, 10 gr.; salicylate of soda, 10 gr.; tincture of gelsemium, mxv.; spirits of chloroform, mxx.; water to one ounce; (c) heroin, 1-12 gr.; dilute hydrobromic acid mxxx; citrate of caffein, 5 gr.; compound tincture of cardamom, mxx; chloroform water to one ounce. In the case of all of them directions should be given for a dose to be taken every two hours for three doses; and every four hours thereafter until the pain is relieved. In women when the migrainous attacks recur only at the menstrual times, the use, for a week before each period, of a mixture of chloral hydrate, 10 gr., and bromid of sodium, 20 gr., given 3 times a day, is often successful, he states, in suppressing the attack or in diminishing its severity. When the temporal artery on the affected temple is prominent and throbbing, steady pressure over it may succeed in affording temporary relief.

Journal of Tropical Medicine and Hygiene, London

July 15

22 The Transmission in Nature of *Trypanosoma Gambiense*. G. C. Low.
23 The Spread of Cancer Among the Descendants of the Liberated Africans or Creoles of Sierra Leone. W. Renner.
24 Porocephaliasis in Man. L. W. Sambon.

British Journal of Children's Diseases, London

July

25 Infant Mortality. C. P. LaPage
26 *Vincent's Angina. J. D. Rolleston
27 *Bruits Heard Over the Manubrium Sterni in Children. J. E. H. Sawyer.

26. Vincent's Angina.—Vincent's angina according to Rolleston is an uncommon disease, occurring in 0.9 per cent. of all cases of sore throat, and in 4.9 per cent. of cases of nondiphtheritic angina. During a five years' period of observation in a hospital population of all ages, the affection was confined to children between 2 and 16 years. No instances of contagion were observed. Its incidence was greatest in spring, least in autumn. It was not found to show any predilection for weakly children or for cases of oral sepsis. There is nothing characteristic in its prodromal symptoms. Rolleston holds that there are not two distinct varieties of Vincent's angina. The ulcerative is merely a later stage of the membranous form. Constitutional symptoms are slight or absent, but the local affection is more pronounced than in diphtheria. Association with other diseases is uncommon. The prognosis is favorable and complications are infrequent and usually insignificant. Treatment consists in the local application of tincture of iodin or methylene-blue powder. Internal medication is usually unnecessary.

27. **Bruits over Manubrium Sterni.**—The objects of Sawyer's paper are (1) to point out that bruits are very frequently heard on auscultation over the upper part of the sternum in children when the head is bent back so that the face is horizontal, and (2) to endeavor to show how these bruits are produced. Very frequently the bruit is audible on both sides of the neck, and sometimes only on the right side; so it is difficult to conceive that if the bruit were produced in the left innominate vein it could be conducted not only backward to the left, but also along the left innominate vein to the right innominate vein, and then upward into the right side of the neck. It seems, therefore, most probable that the bruit arises in one or both internal juglar veins and is conducted downward to the sternum. Granting that the bruits arise in the internal jugular veins it is easy to understand how they are produced. Bending the head backward puts these veins on the stretch, and causes them to be compressed against the transverse processes of the lower cervical vertbræ. The stretching of the vein and its compression must diminish the size of its lumen over a certain portion and therefore a condition is produced in the vein which is likely to give rise to a bruit. That the bruit is produced in this way Sawyer claims is also supported by the fact that when the chin is directed to one side a bruit often appears over the side which is on the stretch. The venous hum over the sternum in children with the head thrown back, appears, from these observations, to be a normal condition in the great majority of cases, and should be considered to be of no importance unless accompanied by physical signs of compression.

Practitioner, London

August

28 Congenital Hematocolpos, Hematometra and Hematosalpinx: Case Requiring Laparotomy. A. H. N. Lewers.
29 The Present Position of Cesarean Section in Obstetrics. T. G. Stevens.
30 The Relief of Pain in Tuberculous Disease of the Larynx. W. G. Howarth.
31 Postoperative Shock: Its Prevention and Treatment. H. H. Brown.
32 Mucous Polypus of the Nose and Its Treatment. D. McKenzie.
33 Esophageal Diverticula. W. Robinson.
34 Treatment and Prevention of Cubitus Varus and Valgus. A. MacLennan.
35 Examination of Cerebrospinal Fluid in General Practice. J. T. Collins.
36 The Increasing Difficulty of the Diphtheria Carrier. A. D. Edwards.
37 The Etiology and Pathology of Infantile Paralysis. F. Hernaman-Johnson.
38 The Element of Time in Midwifery Practice. J. D. Slight.
39 The *Vis Medendi* of Shakespeare. T. H. Mitchell.

Journal of Obstetrics and Gynecology of the British Empire, London

July

40 *After-Results of Abdominal Operations on the Pelvic Organs Based on a Series of 1,000 Operations. A. E. Giles.
41 *The Life History of Fibromyomata of the Uterus. A. J. Wallace.
42 *B. Coli* Infection of Urinary Tract Complicating Pregnancy. J. N. Burnett.

40. **After-results of Abdominal Operations.**—With regard to general health after abdominal operations, Giles found that 90 per cent. of the patients were better than they were before operation, 72 per cent. being in quite good health. About 6 per cent. were either worse or at least no better, in many cases from causes quite independent of the operation; and a further 4 per cent. had been much better for a time, and had suffered lately from ill-health due to local or general causes. The period of invalidism after abdominal operations amounted to about 3 months in 60 per cent. of the cases; of the remaining 40 per cent., about 25 per cent. (10 per cent. of the whole) cease to be invalids by the end of the first year while 75 per cent. (30 per cent. of the whole) remain either invalids or semi-invalids. The age of the patient has a marked influence; the younger the patient, other things being equal, the quicker the convalescence. The severity of the operation does not appear to have any direct relation to the rapidity of the convalescence.

The memory appears to be affected in about 25 per cent. after abdominal operations; further deterioration of memory appears to be directly proportioned to the duration of the operation.

Sixty four patients out of the 770 required further abdominal operations. About 3 per cent. of the secondary operations were necessitated by direct sequelæ of the operation, and of these the cases of inflammatory disease of the appendages supplied the largest proportion; 6 were necessitated by recurrence of uterine displacements; and 34 operations were required for conditions independent of the first operation. The risk of subsequent independent conditions requiring operation is greatest after unilateral salpingo-oöphorectomies, where it amounted to 9.5 per cent. The chances of pregnancy following unilateral salpingo-oöphorectomy and conservative operations on the uterus are good; as 33 per cent. of married women under 40 among these patients became pregnant afterward; 73 of the uncompleted pregnancies went to full term; there were 8 extrauterine pregnancies, and 7 were pregnant when last seen. Of 60 labors 55 were normal, and 5 had complications that had no reference to the operation; the chances of labor being normal after these operations are, therefore, just as good as in the case with patients who have had no such operations.

Eighty-eight per cent. of the patients had no trouble at all afterward with the scar; 77 per cent. had stitch abscesses, and 3.6 per cent. developed hernia of the scar. The tendency to both complications is markedly greater after operations for inflammatory disease of the appendages; 90 to 93 per cent. of the "clean" cases had no subsequent trouble. The tendency to stitch abscess is diminished by modern improved methods, and particularly by the use of sterilized rubber gloves during operations.

41. **Life History of Fibromyomata of Uterus.**—Wallace relates the histories of 10 cases of "fibroids" of the uterus observed over periods of time varying from 3½ to 28 years. Five patients were single and nulliparous, 1 a barren widow, 1 had had an abortion prior to the appearance of the tumor, 1 had had one child, and 2 had had several children. In one case the main tumor was an interstitial one throughout, but there were two small growths which were either subperitoneal or were covered only by a thin muscular layer. In 4 cases the primary form was interstitial; in the formal form all of these became sessile subperitoneal. In 2 cases there have been throughout multiple interstitial or subserous growths. Thus in 5 cases the initial interstitial form was gradually replaced by the subserous.

In one case the precise variety is a matter of doubt. Growth of the tumor to the maximum was observed in 4 cases. Incomplete shrinking occurred in 8 out of 10 cases. In 1 case disappearance occurred before the menopause had taken place, but the latter must undoubtedly have commenced to exercise an influence, since menstruation, although profuse, had become irregular. Valvular disease existed in 3 cases; dilatation and hypertrophy of the left heart in 4. High pulse tension occurred only in 2 cases, in both of which it was associated with cardiac disease, and in both renal disease was absent. In one case the high pulse tension preceded the appearance of the fibroid, and coincided with the enlargement of the thyroid gland; it was temporary, and probably had no connection with either. Of 10 patients, 2 had fairly good health up to the time of the menopause, and two moderately good. The other 6 had either poor or indifferent health. After the menopause the health was good in 4, but of these 1 had lost the tumor. Another who has also lost the tumor enjoys good health, but she has not yet attained the menopause. Of the remaining 5, 1 died after a long period of ill-health and suffering, 1 is still troubled by abdominal pain; 1 leads a life of invalidism, another of semi-invalidism; while the last obtains such enjoyment from life as a sightless old age can offer.

Wallace believes that this constitutes a serious indictment of the application of palliative treatment to cases of uterine fibromyomata. From the clinical side, 9 of the cases related illustrate the trials and discomforts endured by the lifelong possessors of these tumors. Viewed from this standpoint alone, palliative treatment appears inapplicable to cases in which fibroids cause symptoms and the condition of the patient's general health justifies operation.

Indian Medical Gazette, Calcutta

July

43 Sclerectomy. F. P. Maynard.
44 Simple Trephining in the Operative Treatment of Glaucoma. R. H. Elliot.
45 Extraction of Cataract in the Capsule. H. Smith.
46 Smith's Operation for Cataract: Two New Instruments. W. J. Wanless.
47 Tuberculosis of the Lung in the Hughli Jail and the Hughli Police. D. G. Crawford.

Annales de l'Institut Pasteur, Paris

June, XXIV, No. 6, pp. 433-527

48 The Neutral Sugar of Crude Cane Sugar. (Recherches sur le sucre neutre des sucres bruts de canne.) E. Dubourg.
49 Serodiagnosis and Variability of Microbes According to Medium on which They are Cultivated. J. Bordet and Sleeswyk.
50 Influence of Boric Acid on Diastasic Action. H. Agulhon
51 Research on Infection of Guinea-Pig with Microbe of Preisz-Nocard. L. Panisset.

Annales de Médecine et Chirurgie Infantiles, Paris

July 15, XIV, No. 14, pp. 437-464

52 Out-Door Schools. (Les cures d'air: les écoles de plein air.) P. Vigne.
53 Pseudo-Membranous Sore Throat. (Le diagnostic des angines à fausses membranes.) Wicart.
54 *Bloodless Reduction of Congenital Dislocation of the Hip Joint. ("Mon experience" du traitement de la luxation congénitale de la hanche par la méthode non sanglante.) P. Redard.

54. **Bloodless Reduction of Congenital Dislocation of the Hip Joint.** Redard in his experience with 800 cases found that bloodless methods gave uniformly better results, his later series showing from 85 to 90 per cent. of perfect functional results for unilateral dislocation and 30 per cent. for the bilateral. He commences treatment as soon as the dislocation is recognized and the child is beginning to keep itself clean. After the age of 7 the results are dubious and 10 is the extreme limit for bloodless measures. There is no uniform technic; he aims to immobilize the limb in the position in which the joint seems most solid, and varies the duration of the immobilization according to the degree of stability; five or six months is the usual limit.

Bulletin de l'Académie de Médecine, Paris

July 19, LXXIV, No. 28, pp. 81-107

55 Ultimate Prognosis of Dislocation of the Shoulder. (Du pronostic éloigné des luxations de l'épaule.) Le Dentu.
56 Migration of Calculi Through Walls of Kidney Pelvis and Ureter. (De la migration des calculs du bassinet et de l'uretère par effraction des parois.) T. Tuffier and Le Dentu.
57 Further Experimental Research on Variola Vaccinia. Kelsch and others.
58 Cholera in Europe Since 1904. A. Chantemesse and F. Borel.
59 Electrocardiograms and Graphic Registration of the Heart Sounds. (Les électrocardiogrammes et l'enregistrement des bruits de cœur.) G. Weiss and L. Bull.

Presse Médicale, Paris

July 30, XVIII, No. 61, pp. 585-592

60 Accident Insurance and the Preceding Condition. (Sur la question de l'état antérieur.) L. Imbert.
61 Modified Technic for Preparing Certain Drugs. (Une nouvelle forme galénique de préparations pharmaceutiques.) E. Perrot.

Semaine Médicale, Paris

August 3, XXX, No. 31, pp. 361-372

62 *Salt in Treatment of Eclampsia. (Chloruration et éclampsie.) A. Le Play.

62. **Salt in Pregnancy Nephritis and Eclampsia.**—The danger of intravenous injection of salt solution in eclampsia has been recently suggested by Sippel but Le Play gives the details of 8 cases of pregnancy nephritis and 2 of eclampsia in which from 5 to 13 gm. (80 to 200 grains) were given systematically every other day and apparently with the best therapeutic results. The aim was to induce a flow of fluid into the alimentary canal, thus reducing the blood pressure and at the same time washing out into the digestive tract a quantity of toxic products which could then be harmlessly eliminated. There was no untoward by-effect in any case and the general condition seemed to improve.

Archiv für Kinderheilkunde, Stuttgart

LIII, Nos. 4-6, pp. 241-481. Last indexed June 18, p. 2099

63 Study of Human Milk, Especially the Secretion of Fat in the Milk. (Ueber einige Fragen der Frauenmilchsecretion, insbesondere über die Secretion des Milchfettes.) S. Engel.
64 The Biologic Properties of Colostral and Mastitic Milk. (Die biologischen Eigenschaften der Colostral und Mastitismilch.) M. Sassenhagen.
65 *Blood Pressure in Children. (Der Blutdruck im Kindesalter.) Mme. P. Wolfensohn Kriss.
66 *Research on Allergy of the Skin. (Zum Studium der cutanen Allergien.) H. Schmidt.
67 *Intestinal Polyposis in a Child. P. Schneider.
68 *Vasomotor Neuroses Affecting the Extremities in Children. (Ueber Akroasphyxie im Kindesalter.) E. Kartje.
69 Congenital Muscular Atony. (Zur Kenntnis der Myatonia congenita Oppenheim.) L. Pollak.
70 *Lime Metabolism in Rachitis. (Zur Bedeutung des Kalkes in der Pathologie der Rachitis.) J. A. Schabad.

65. **Blood Pressure in Children.**—This is the complete report of research of which a preliminary report was recently published and summarized in The Journal, July 9, page 173.

66. **Skin "Allergies."**—The peculiar hypersensitiveness of the skin in certain infectious diseases is the basis of the tuberculin skin test, and Schmidt has been applying this phenomenon in study of other varieties of allergies, as this specific hypersensitiveness is called, using meat extracts, etc., with the Pirquet technic in 100 cases of various diseases.

67. **Intestinal Polyposis in Children.**—Schneider reports an extreme case of multiple production of polypi in the intestines of a girl of 8. Some cases are known which show a family tendency; Braun has reported the disease in a brother and sister of 19 and 22. The latter developed cancer, and the mother and an uncle died of rectal carcinoma. In Schneider's and in Vajdas' cases whooping cough had preceded the onset of severe symptoms from the polyposis. Unless the polypi are discovered in the rectum or cause prolapse and if there are only symptoms of severe colitis, the edema, anemia and scanty urine suggest kidney disturbance. The polypi keep coming faster and faster and neither medical or surgical measures seem to be able to cure the tendency to the polypous proliferation.

68. **Acro-asphyxia in Children.**—Kartje has encountered 4 cases of an evident vasomotor neurosis in children between 6 and 12, all at St. Petersburg, and knows of 2 similar cases in Russian literature. The hands and feet are cyanotic, the cyanosis being more pronounced in cold weather, and as the child stands and after long walks. The cyanotic parts sweat to an unusual extent and are hypesthetic while electric tests elicit exaggerated responses on the part of the nerves. Bed rest and measures to stimulate the circulation and tone up the nervous system are in order; good results were obtained, he states, with the constant current, the positive electrode being applied to the brachial plexus, the negative to the back of the neck and the current applied for 3 or 5 minutes.

70. **Importance of Lime in Rachitis.**—Schabad reports further research in this line, detailing here the results of metabolic findings in experimental rachitis and comparing them with those obtained by others, and also the results of clinical tests, etc., the proportion between the lime eliminated in the urine and in the stool by healthy children and in rachitis. He states that the lime in progressive rachitis is eliminated exclusively in the stool which disproves the "acid" theory.

Beiträge zur klinischen Chirurgie, Tübingen

June, LXVIII, No. 2, pp. 379-603

71 *Mishaps with Hemostasis by the Momburg Belt Constriction. (Ueber künstliche Blutleere der unteren Körperhälfte nach Momburg.) W. Burk.
72 *Freeing the Constricted Nerve in Treatment of Radial Paralysis After Fracture of the Humerus. (Neurolyse bei den durch Humerusfrakturen bedingten Radialisparesen.) H. Els.
73 Experimental Research on Tendon Transplantation. (Die homoplastische Sehnentransplantation im Tierexperiment.) F. Rehn.
74 Series of Three Bacteriologic Tests During Laparotomy. (Die Dreitupferprobe.) O. Ebert.
75 *Congenital Scoliosis. P. Kayser.
76 Treatment of Coxa Vara. H. Laubmann.

77 Periostitis with Albuminous Effusion. (Zur Periostitis albuminosa Ollier.) F. Scheidler.
78 Perforation and Necrosis of the Gall-Bladder. E. Härtig.
79 Torsion of Great Omentum. (Torsion des grossen Netzes.) H. Finsterer.
80 *Acute Perforation of Gastric and Duodenal Ulcers. (Magen und Duodenalgeschwüren.) H. Finsterer.
81 *Further Surgical Experiences with Differential Pressure. (Ueber Ueberdrucknarkose.) M. Tiegel.

71. **Hemostasis by the Momburg Belt Constriction.**—Burk reports three cases in which the Momburg belt constriction was applied but the experiences were not encouraging. Momburg's technic was strictly followed and in two cases no special influence on the respiration was observed or notable fluctuation in the blood pressure. In the third case the patient was a seamstress of 29, operated on for removal of a vulvar fibroma. The pulse and respiration were good during the operation and after removal of the tubing, but an hour later the pulse became imperceptible. It revived under saline infusion with a few drops of a solution of the active principle of the suprarenal gland and was at 160, persisting small and thready and varying from 140 to 160 for 24 hours. The operation had been done under veronal-scopolamin-morphin-ether general anesthesia. The heart remained very weak and severe enteritis developed but there was no rigidity of the abdominal wall, probably from injury of the innervation from the Momburg belt technic. The patient succumbed the next day with signs of diffuse peritonitis, and autopsy revealed patches of gangrene in the small intestine with resulting peritonitis. The circular strips of suffusion in the walls of the loops of the small intestine were unmistakable signs of direct strangulation from the constricting tubing. He explains the severe injury of the intestine in this case, while nothing of the kind was observed in the 34 other cases on record in which this Momburg technic has been applied, as owing to the fact that the patient was very thin and debilitated. This mishap warns against the use of this technic for very thin persons or when there is an ulcerated or chronic inflammatory condition of the intestine. Another possible danger is an ischemic paralysis of the distal end of the spinal cord, which Pagenstecher observed in one case.

72. **Releasing Constricted Nerve after Fracture of the Radius.**—Els reports most encouraging results from neurolysis to release the nerve from an unfavorable position or from secondary cicatricial callous growth. No harm seems to have resulted from the operation. His patients were three young men, a young woman and a boy of 8. He gives the details of each case.

73. **Congenital Scoliosis.**—Kayser has been able to find only between 50 and 60 cases of congenital scoliosis on record and he gives an illustrated description of another case. His patient was a girl of 9 of healthy parents and healthy herself except for the cervico-dorsal scoliosis. Until the spine was examined with the Roentgen rays the slight deformity had been attributed to cervical ribs.

80. **Acute Perforation of Gastric and Duodenal Ulcer.**—Finsterer reviews the experiences at the surgical clinic at Graz with 18 cases of perforation of gastric or duodenal ulcer in the last ten years and emphasizes that the fate of the patients rests in the hands of the physician who sees the case first, as salvation lies exclusively in an early operation. Even if 12 or 24 hours have elapsed, operative treatment should be tried, he asserts, as a few cases are on record of recovery even after an operation as late as the seventy-second hour in extensive peritonitis. He advocates copious rinsing with warm salt solution, aspirating it out again with the [illegible] aspirator as the safest and best method of treatment after the operation.

81. **Differential Pressure.**—Tiegel gives an illustrated description of the simple apparatus with which he induces positive pressure in the lungs in the course of operations on the chest. He has applied it in 8 cases. He also reports experimental and clinical research which has shown that a small amount of oxygen given during the positive pressure is able to keep the subject in good condition even when the lung is collapsed. A very slight degree of positive pressure in the intrabronchial air does not injure the lung, he says, nor the conditions in regard to the circulation, while it aids in preventing severe postoperative atony of the stomach. He warns that the tanks should be tested before using the gas; once he had a tank of carbonic acid gas sent by the dealers by mistake. He regards his demonstration of the fact that respiration of pure oxygen under a minimal pressure (1 cm. water) is sufficient to supply the need of oxygen, as an important progress. The arterialization of the blood is more extensive with it even than with ordinary repiration. The lung does not have to be inflated much when the pure oxygen is used, and thus injury from the pressure is avoided.

Berliner klinische Wochenschrift

July 25, XLVII, No. 30, pp. 1397-1440

82 *The Hand as an Obstetric Instrument. (Die "Hand" als Instrument des Geburtshelfers.) W. Liepmann.
83 Ehrlich's "606." (Anwendung des Ehrlich-Hata'schen Syphilismittels in neutraler Suspension.) L. Michaelis.
84 Inherited Syphilis and the Wassermann Reaction. P. Mulzer and W. Michaelis.
85 Experimental Syphilis of the Testicle in the Rabbit After Inoculation with Congenital Syphilitic Material. M. Koch.
86 Determination of Tubercle Bacilli in Disseminated Miliary Lupus of the Face and Acnitis. G. Arndt.
87 Action of Serum on Ether Hemolysis. G. Fischer.
88 Hemolytic Red Blood Corpuscles. (Hämolytisch wirkende Erythrocyten und Darstellung von Immunhämolysinen im Reagenzglase.) G. Fischer.
89 Favorable Prospects for Operative Treatment of Extradural Spinal Suppuration. (Fall von extraduraler Spinaleiterung.) E. A. Oppenheim.
90 Obesity in the Young. (Fettleibigkeit im Jugendalter.) H. Stern (New York).
91 Turgosphygmography or Sphygmography? F. Fleischer.
92 Protecting Devices for Roentgen Ray Work. F. Davidsohn.

82. **The Hand in Obstetrics.**—Liepmann discusses the indications for the use of the hand as an instrument to aid delivery and the various manual maneuvers, lauding Hofmeier's in combination with the Walcher position as particularly serviceable with contracted pelvis. In placenta prævia he advocates Strassmann's method of making external version on the breech and then with two fingers drawing the foot down through the cervix, declaring that this is far simpler and less dangerous than the combined Braxton-Hicks version or the use of the inflatable bag. He knows of an instance in which the forceps introducing the bag perforated the vault of the vagina. At the same time he warns against using the hand to dilate the cervix in case of placenta prævia; trained judgment is required to select the cases in which this can be done. In conclusion he describes what he thinks is a new maneuver to guide the head exclusively with the hand through the pelvic passage to safe delivery. The anesthetized patient lying across the bed, the right hand is placed on the fundus of the uterus to aid in expression and the left hand, gloved, is introduced into the vagina, where it serves to dilate the vagina, then to dilate the os, then to rotate the head and finally to extract it. When the hand is deep in the vagina, the fingers are spread, thus dilating the vagina, and making it possible to grasp the head as one grasps a ball. By a combination of pressure from without, turbinal rotation and cautious extraction, the head is finally worked past the perineum. It is astonishing, he exclaims, how firmly and safely it is possible thus to grasp the head, taking it in the hand like a tenpin ball. In a case described, the woman, a iv para, had a temperature of 103 F., pulse 110, the internal os being dilated about the size of one's palm, the head impacted in the pelvic outlet. The consultants advised the inflatable bag, then an attempt at forceps and in case this failed, perforation. While the instruments were being made ready, Liepmann delivered the child in less than five minutes. Even if this maneuver does not succeed it at least provides much better conditions for applying forceps, and is useful when there is reason to fear that the forceps will slip on account of the smallness of the head, in premature deliveries and at twin births. The largest child he has thus delivered weighed 3,000 gm. and was 50 cm. in length. The article is illustrated.

Deutsches Archiv für klinische Medizin, Leipsic

XCIX, Nos. 5-6, pp. 431-636. Last indexed August 27, p. 800

93 Morphology of Blood Production in Pernicious Anemia. (Morphologie der Blutbereitung bei perniziöser Anämie.) K. Ziegler.
94 Differential Diagnosis Between Eventration and Hernia of the Diaphragm. M. Otten and E. Schefold.
95 *Pathologic Electrocardiograms. A. Pribram and R. H. Kahn.
96 *Further Research on Hemophilia. H. Sahli.

97 *Encephalitis After Whooping Cough. (Ueber Encephalitis nach Keuchhusten.) A. v. Domarus.
98 The Viscosity of the Blood and its Flow in the Arterial System. (Die Viskosität des Blutes und seine Strömung im Arteriensystem.) R. Thoma.

95. **Pathologic Electrocardiograms.**—Pribram and Kahn analyze the findings in 300 electrocardiograms taken of various patients with different forms of heart disease. Seven large tables give 129 electrocardiograms for study of the details.

96. **Nature and Treatment of Hemophilia.**—Sahli has continued his research on 4 typical hemophiliacs and also on 2 new ones, striving to obtain better insight into the nature of hemophilia and to explain the phenomena observed by various authors. His assumption is that hemophilia is an anomaly of the cellular elements of the blood and of certain other cells, especially in the walls of the vessels, entailing defective production of thrombokinase. This latter factor is evident when the bleeding continues although the coagulating property of the blood after much loss of blood may be normal or above. The practical lessons from this work are that the hemophilia may be constitutionally influenced by repeated injection of fresh human blood serum for the purpose of thrombokinase enrichment by the intermediate link of antikinase production. Another way is by repeated withdrawal of small amounts of blood by puncture of a vein with a fine cannula, for the similar purpose of thrombokinase enrichment, by means of the physiologic reaction that follows. Experience has shown that there is no danger of hemorrhage in a hemophiliac if the vein is punctured with a fine cannula, permitting harmless withdrawal of blood and the consequent physiologic reaction. An ordinary venesection might prove dangerous. Two of his patients are brothers and another is their uncle and two other uncles died of hemorrhage.

97. **Encephalitis after Whooping Cough.**—In the case reported, a healthy boy of 6 was convalescing from a moderate attack of whooping cough when febrile general symptoms developed soon accompanied by right hemiplegia and loss of voice. The paralysis gradually subsided but months later there are traces of the cerebral hemiplegia. In 5 similar cases on record autopsy revealed a hemorrhagic encephalitis, such as is the rule with influenzal encephalitis.

Deutsche medizinische Wochenschrift, Berlin

July 28, XXXVI, No. 30, pp. 1393-1432

99 *Experiences with Ehrlich's "606." (Erfahrungen und Erwägungen mit dem neuen Ehrlich-Hataschen Mittel bei syphilitischen und metasyphilitischen Erkrankungen.) G. Treupel.
100 *Technic for Injection of Ehrlich's "606." (Ueber die Technik der Injektion des Dioxy-diamido-arsenobenzol.) W. Wechselmann and C. Lange.
101 *Operative Treatment of Cerebral Hemorrhage. (Vorschlag zur operativen Behandlung des Hirnschlags [Hirnblutung].) F. Franke.
102 Research on Trypanosomes in Africa. (Trypanosomenbefunde am Tanganyka und andere Beobachtungen.) Kleine.
103 Paroxysmal Tachycardia with Exophthalmic Goiter. L. Bamberger.
104 Sick Breast-Fed Infants and Mixed Feeding. (Ueber kranke Brustkinder und vom Allaitement mixte.) H. Risel.
105 Fracture of the Astragalus. (Bruch des Processus posterior tali.) Grunert.
106 Double Private Residence for Two Physicians with Common Waiting and Operating Rooms. (Doppelwohnhaus für zwei Aerzte.) H. Gruber.

99 and 100. Commented on editorially in The Journal, Aug. 13, 1910, page 601.

101. **Operative Treatment of Apoplectic Stroke.**—Franke advocates operative intervention in case of acute cerebral hemorrhage, before irreparable changes have been induced from compression by the extravasated blood. The brain seems to be able to stand without serious injury considerable compression if the strain is not kept up too long and if the blood is evacuated before the brain tissue has softened under its direct influence and its toxic action. In a recent case, the autopsy findings when compared with the course of the syndrome impressed him with the conviction that operative treatment after the first shock would in all probability have saved the patient. Puncture of the brain or trephining would have released the blood, especially if a fine metal cannula with holes in the side had been slipped in over the needle and left in the opening for permanent drainage. He trephined in the case reported but not until two weeks had elapsed after the hemorrhage; irreparable harm had already been done and the patient soon succumbed. He makes the trephine opening with the Gigli wire saw and remarks that the dangers of puncture and trephining are negligible in comparison with those which cerebral hemorrhage entails. Minute examination and observation are necessary to locate the site of the hemorrhage; the most apparently insignificant signs must be watched for and noted, for example, slight paresis of the facial muscles, mouth breathing, behavior of the abdominal and cremaster reflexes, which are diminished or abolished on the paralyzed side, the Babinski reflex on the side involved, slight tension of the extremities during passive movements on the sound side, conjugated deviation of the eyes toward the side involved or a history of some preceding slight apoplectic attack and determination of the site of the hemorrhage at that time. He urges that a surgeon should be called in during the first few hours after a serious apoplectic stroke so that the physician and the surgeon can study the case together, locate the hemorrhage and discuss whether the condition permits of operative intervention or is not serious enough to demand it. The puncture could then be done at once in the home; if this fails to give relief, trephining might follow. He does not think that a cautious removal to a hospital would essentially increase the dangers for the patient. By this means the blood could be removed from the brain within 2, 3 or 5 hours, this period of time being allowed to elapse to permit revival from shock and reduce the danger of serious after-hemorrhage. The practitioner generally is the one who first sees patients with cerebral hemorrhage, and to him Franke appeals to help place cerebral hemorrhage on the same plane of successful treatment as perforation of a viscus, stab wounds of the heart and acute peritonitis.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, CV, Nos. 3-4, pp. 261-444

107 Operative Treatment of Congenital Megacolon. (Zur operativen Behandlung der Hirschsprungschen Krankheit.) A. Biermans.
108 Multiple Cholangitic Abscesses in the Liver Cured by Drainage of the Gall Bladder. (Heilung multipler cholangitischer Leberabszesse durch Drainage der Gallenblase, nebst Bemerkungen über die Drainage der Gallenwege. Cholecystodochostomie.) F. Franke.
109 The Murphy Button Applied to the Large Intestine. 13 Cases. (Ueber die Anwendung des Murphyknopfes am Dickdarm.) R. Mühsam.
110 Primary Cancer of the Appendix. (Zur Frage der primären Wurmfortsatzcarcinome.) T. Voeckler.
111 Hard Traumatic Edema of Dorsum of Hand. (Ueber das harte traumatische Handrückenödem.) F. Schlichting.
112 Pathogenesis of Foreign Body Appendicitis. (Kasuistik und Pathogenese der Fremdkörper-Appendicitis.) W. Lossen.
113 Plastic Operation to Close Defects in the Ureter in Women. (Ueber plastischen Ersatz von Ureterdefekten beim Weibe.) J. v. Stubenrauch.
114 Volvulus of the Small Intestine as Tardy Consequence of Appendicitis. (Ueber Dünndarmvolvulus als Spätfolge von Appendicitis.) E. Haim.
115 Diagnosis and Treatment of Early Stage of Acute Appendicitis. E. Sonnenburg.
116 *Thyroid Treatment to Promote Healing of Wounds. (Schilddrüse und Wundheilung.) A. Siegmund.
117 Indirect Fractures of the Shaft of the Fibula. Grunert.
118 Hip-Joint Dislocation in Younger Children Resulting from Inflammation. H. Ziegner.
119 Diagnosis by Auscultation of Adhesions between Large Abdominal Tumors and the Anterior Wall of the Abdomen. (Diagnose der Verwachsungen grosser Bauchtumoren mit der vorderen Bauchwand mittelst der Auskultation.) V. Piazza-Martini.

116. **Organotherapy in Surgical Prophylaxis.**—Siegmund declares that the technic of the surgeons cannot be perfected much further and yet the outcome of operations is still a matter of chance in a great degree. This is owing to the individual conditions of tolerance and resistance in the different cases, just as one person contracts typhoid while others equally exposed escape. Two recent cases in his experience suggest that this individual tolerance and resistance may be due to the individual functioning of the ductless glands, the thyroid in particular. In one of the cases a woman of 34 had displayed from childhood a tendency to suppuration on the slightest excuse. Like a hemophiliac's hemorrhages,

she produced pus on the least provocation, and naturally there was extensive suppuration after an injury of the arm from broken glass. In the other case the reverse was observed; the woman of 43 suffered from distressing subjective symptoms of sclerosis of the middle ear and was also nearly blind. In order to relieve the tormenting roaring sounds he made a seton in the back of her neck, having cured another patient by this means of incessant vertigo and headache, chronic through years, and the cure has been complete for several years to date. But in the present case there was no suppuration in the seton although he tended it carefully every day. In both cases the outcome of the surgical intervention was not as the surgeon willed but as Nature willed. The only way in which the surgeon can obtain his purpose is by following the trail blazed by Nature, and Siegmund thinks this can be done by organotherapy. The way to do this was suggested by a third case in which a wound on the head of a small child suppurated interminably until he noticed that the other, older children in the family showed signs of thyroid insufficiency. Notwithstanding that the youngest was robust and lively, he reasoned that a family tendency to defective thyroid functioning might be the cause of the persisting suppuration, and this assumption was sustained by the rapid healing of the wound under thyroid treatment. His other 2 patients also presented signs of thyroid insufficiency and he believes that thyroid treatment is also indicated for them. Prophylactic thyroid treatment in puerperal sepsis has many arguments in its favor, he explains, and calls attention to the fact that the thyroid may have brief periods of disturbed functioning when at other times it does its work normally. Siegmund regards this as a virgin field rich in promise. Each ductless gland evidently produces a number of substances in its internal secretion, each of which has a different action, the lack of one or more entailing myxedema, exaggerated pus production, etc., as the case may be. The more of these substances we can isolate and use, the more scientific the organotherapy, but even with the thyroid preparations already at our disposal it is possible to solve many of the present questions in respect to constitutional predisposition, suppuration and granulation of wounds, production of protecting substances in the blood, phagocytosis, therapeutic hyperemia, etc.

Fortschritte der Medizin, Leipsic

July 14, XXVIII, No. 28, pp. 865-896

120 Hernias. F. Kayser.
121 *Regulatory Albuminuria. F. C. R. Eschle.

121. **Regulatory Albuminuria.**—Eschle applies this term to the albuminuria liable to be observed after excessive physical exercise, with suppuration elsewhere in the body and after chilling, a transient elimination of albumin for which the kidney is merely the outlet without being responsible for its production. This regulatory albuminuria is also liable to be observed, he says, with diarrhea, with anemia in the young and with amyloid degeneration, the loss of fluids leaving an excess of albumin in the blood which is then thrown off through the kidneys. The albuminuria in these cases is often attributed to kidney disease, but the normal amounts of urine and lack of uremic brain symptoms speak against this. It is a grave mistake, he declares, to treat an anemic young patient as for a tuberculous kidney disease when quite other measures are needed. The kidneys rarely seem to suffer from the task of eliminating the extra amounts of albumin with these regulatory processes unless the albuminuria is intense and long continued, as in diabetes.

Medizinische Klinik, Berlin

July 31, VI, No. 31, pp. 1199-1244 and Supplement

122 *Neuropathology of the Eyes in Psychoses. V. Kafka.
123 *Surgical Orthopedic Treatment of Infantile Spinal Paralysis. (Behandlung der spinalen Kinderlähmung.) F. Wette.
124 Kefir in Infant Feeding. (Weiteres über Kefirmilch als Säuglingsnahrung.) K. Dresler.
125 Elastic Massage. A. Schnée. Commenced in No. 30.
126 Perforation Outward of Gall-Stones. (Beitrag zur Selbstheilung bei Gallensteinen.) P. Fischer.
127 *Hyperemia in Internal Medicine. (Physikalische Therapie in der internen Medizin.) Weidenbaum.
128 Operative Treatment of Paralysis of the Biceps. (Die Möglichkeiten in der operativen Behandlung der Lähmung des Musculus biceps brachii.) K. Lengfellner and F. Frohse.
129 Influence of Potassium Iodid on Wassermann Reaction. (Einfluss der Jodkalibehandlung auf die Wassermannsche Reaktion.) E. Bizzozero.
130 Pathology of the Teeth and the General Practitioner. (Was muss der praktische Arzt von den Zahnkrankheiten wissen?) Williger.

122. **Neuropathology of the Eyes in Psychoses.**—In the first case described the visual field became restricted according to the hemianopsia type in the course of a hysterical disturbance with hallucinations, and yet the hemianopsia was merely functional. It could be influenced by suggestion but always returned to the former type. In the second case total rigidity of the pupils was observed in a young drunken man, the intoxication having been induced by a small amount of alcohol after emotional stress. This transient rigidity of the pupils was also observed during the alcohol intoxication of an imbecile young man.

123. **Surgical-Orthopedic Treatment of Infantile Spinal Paralysis.**—Wette remarks that the results of treatment are better the simpler the method of correction used and the greater the attention that is paid to the after-treatment. In some cases it is necessary to wear the correcting apparatus for years after the operation to ensure a permanent and complete cure. Fixation is always necessary for at least three months.

127. **Hyperemia in Internal Diseases.**—Weidenbaum has been applying constriction or suction hyperemia as a routine measure in treatment of gall-stone and liver troubles, sciatica, leg ulcer and asthma during the last five years, and has been much gratified with the good effects obtained. In more than 100 cases of gall-stone and catarrhal liver enlargement, the application of a large suction bell over the liver region gave almost immediate relief, the pains and the swelling of the liver rapidly subsiding. The effect is very striking in gall-stone colic, the whole attack being aborted by the action of the large cupping glass, so that now he always applies the suction bell or hot air box before giving morphin even in the severest attacks from gall-stones or kidney stones; it frequently renders the sedative unnecessary. In some cases the pain increases under the suction bell, and the temperature rises; when this occurs the trouble is invariably empyema of the gall-bladder, and this differentiates the condition at once. The superheated air box answers the same purpose as the cupping bell and is preferable for nervous patients or when the skin is sensitive. With kidney-stone colic and sciatica the suction bell gives the greatest relief, the bell being pressed firmly down over the kidney or the sciatic foramen. In a number of cases of diabetic polyneuritis in which the pains had resisted all other measures, they subsided under a constricting band. Great care is necessary to keep changing the position of the band, moving it up or down and constantly instructing the patient to warn of the slightest sensation of discomfort, as otherwise decubitus might develop under the band. Notwithstanding this grave danger, he asserts that the great service rendered by the band in some cases justifies its use. In a typical case of this kind a woman of 54 with arteriosclerosis, advanced diabetes and cardiac insufficiency, had suffered for six months from severe polyneuritis and diabetic xanthoma. The incessant pains and sleeplessness and the medicines she had been taking during this time, as she was constantly under the care of eminent authorities in metabolic disturbances, had reduced the patient to such an extent that she was unable to leave her bed. At once on application of the constricting band the pain subsided and she had a good night's sleep, the first in months. By the fifth week the polyneuritis had disappeared and with it the xanthoma. A recurrence a year later disappeared again in the same way under the same measures. The xanthoma had been most pronounced on the back in this case and its subsidence confirms Bier's claim that the hyperemic treatment stimulates blood production in remote parts. The hot air box may be preferable for diabetic gangrene; he has had good results from its use for this purpose, as also for old rebellious leg ulcers. An extensive leg ulcer on a patient with a mild form of diabetes had resisted all treatment for years, but healed in 5 weeks under superheated air treatment. When only a single limb is to be treated, he applies the hot air

box now for all cases of diabetic neuritis and neuralgia. The suction bells have also proved effectual in relieving respiratory disturbances. Several large cupping glasses applied between the shoulder blades gave relief at once in cases of bronchial asthma, emphysema of the lung and dyspnea from cardiac insufficiency; and essential improvement followed systematically continuing this treatment. In a case of uremia it proved possible by this means to check effectually the dyspnea and convulsions.

Mitteilungen aus den Grenzgebieten der Med. und Chir., Jena

XXI, No. 5, pp. 729-930. Last indexed June 25, p. 2151

131 Lymphocytosis of the Blood with Exophthalmic and Other Goiter. (Ueber Lymphocytose des Blutes bei Basedow und Struma.) M. Kappis.
132 *Peptic Ulcer in the Esophagus. M. Kappis.
133 *The Question of Surgical Treatment of Exophthalmic Goiter. (Zur Frage der chirurgischen Behandlung des Morbus Basedowii.) H. Leischner and O. Marburg.
134 *Syphilis of the Spine and Base of the Skull. (Zur Kenntnis der Syphilis der Wirbelsäule und der Basis cranii.) K. Petren.
135 Treatment of Disease in the Lower Large Intestine. (Zur Behandlung der Erkrankungen des unteren Dickdarmes.) E. Rosenberg.
136 *Latent Stenosis of the Pylorus. R. Dahl.
137 *Unilateral Suppurative Hematogenous Nephritis and its Treatment. E. W. Baum.
138 Cartilaginous Tumors on the Bronchi. (Klinische Bedeutung der Bronchialekchondrosen.) Blecher.
139 *Operative Treatment in Benign Gastric Disease. (Zur Chirurgie der gutartigen Magenerkrankungen.) V. Lieblein.
140 The Cooling of the Inspired Air with the Drop Technic of Administering Ether; Its Importance and Prevention. (Ueber die Abkühlung der Inspirationsluft bei der Aethertropfnarkose, ihre Bedeutung und ihre Verhütung.) M. Hoffmann.
141 Traumatic Polyuria. E. Schümann.
142 Appendicitis as Factor in Inflammation in the Biliary Apparatus and in Cholelithiasis. (Appendicitis in der Genese der Entzündung der Gallenwege und der Cholelithiasis.) Weber.

132. **Peptic Ulcer in the Esophagus.** Kappis reports a personal case and compares it with fourteen on record in which the peptic ulcer was confirmed by autopsy. None of the cases had been correctly diagnosed which is not surprising as in only five cases were there any symptoms on the part of the esophagus, pains or difficulty in swallowing and in three of these gastric disturbances predominated. Regurgitated gastric juice or islands of gastric mucosa aberrant in the esophagus and secreting a peptic juice seem to have cooperated in some of the cases. Regurgitation of the gastric juice into the esophagus was favored by stenosis at the pylorus or duodenum or by hour-glass stomach in seven cases and in most of them the cardia was much enlarged. In eight of the fifteen cases there were coexistent gastric or duodenal ulcers. Dietetic measures should be instituted on suspicion of peptic ulcer in the esophagus or direct endoscopic local treatment. The most effectual measure, however, is prompt gastrostomy which rests the esophagus and gives it a chance to heal, thus warding off impending hemorrhage or perforation. An important point, however, is that peptic ulcer of the esophagus is generally secondary to some lesion elsewhere and removal of the primary cause is essential.

133. **Operative Treatment of Exophthalmic Goiter.**—Leischner and Marburg discuss this question on the basis of forty-five cases in which an operation was done in the university clinic at Vienna in charge of von Eiselsberg. Persistent large thymus was responsible for one of the five fatalities, the status thymicus being accompanied by severe degeneration of the heart. Pneumonia in a tuberculous and much debilitated woman of 46 proved fatal in another case and recurring apoplexy in another. The fifth fatality was in a case of advanced heart disease, compression from the enlarged thyroid compelling operative treatment as a last resort. Among the cured patients were some with persisting thymus which is thus seen to be not a contraindication for operative treatment, unless complicated with heart disease or cachexia. Removal of half of the goiter is the preferred technic; the arteries are not ligated unless the patient is much debilitated. The conclusions are that operative treatment is indicated with compression and for social motives but only relatively indicated with cachexia increasing refractory to treatment or subjective disturbances becoming unbearable.

134. **Syphilitic Disease of the Spine and Base of the Skull.**—In Petren's first case the syphilis induced caries of the second cervical vertebra and likewise a recurring meningeal affection mostly localized in the vicinity of the syphilitic bone process. In two other cases the localization of the bone process was about the same, as also in forty two cases he found on record. It seems evident that the cervical vertebræ afford a predisposition for the localization of syphilis. In seventeen of the cases a complete cure was realized by appropriate measures against the syphilis. In the thirteen fatal cases there had been scarcely any attempt at specific treatment. It was noticed in some of the cases that the pains and tenderness were predominantly or exclusively on one side which may possibly help to differentiate this affection from rheumatic disturbances. The Roentgen rays first suggested the possibility of caries of the base of the skull, and then certain neurologic phenomena in some of the cases.

136. **Latent Stenosis of the Pylorus.**—A similar article by this author was summarized in The Journal, May 21, 1910, p. 1732.

137. **Unilateral Suppurating Nephritis.**—Baum applied nephrotomy in the 3 cases of acute hematogenous nephritis described. Recovery was not only prompt and complete but functional tests of the kidneys nearly a year later showed practically complete recuperation. The chief danger of conservative surgical treatment is that the bacteriuria is left and it may prove a source of infection. In one of his cases the other kidney became involved and presented a transient syndrome indicating brief mild infection. Hessert, however, has reported a case in which even nephrectomy did not protect the remaining kidney from secondary infection.

139. **Surgery of Non-Malignant Stomach Disease.**—Lieblein has operated in 15 cases in the last 5 years including 3 of perforation. His experience teaches that gastroenterostomy is still the best method of treatment in cases of open gastric ulcer when there is no suspicion of cancer. Careful and prolonged internal treatment is required after the operation, sometimes a long interval elapsing before the clinical cure. The ulcers at the pylorus, even those of a callous or penetrating character, indicate gastroenterostomy rather than resection, but the tendency to cancerous degeneration displayed by ulcers in the lesser curvature or rear wall of the stomach imposes more radical measures, transverse resection of the stomach or typical pylorectomy. Cancerous degeneration followed in 2 of his cases of this kind, and in future he will be more radical in operating. The callous and penetrating ulcers generally had caused symptoms for years, and the comparative harmlessness of operative treatment in this class of cases and the good results justify, he thinks, an earlier resort to surgery.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

July, XXXII, No. 1, pp. 1-12

143 Treatment of Extensive Uterine Prolapse by Abdominal Total Hysterectomy, Ventrofixation of Vaginal Vault and Colporrhaphy. O. Küstner.
144 Treatment of Cleft Pelvis with Total Exstrophy of the Bladder in Woman of 34. (Fall von Spaltbecken mit Ectopia vesicalis totalis.) L. Mohr.
145 *Allowing Patients to Get Up Early After Laparotomies. (Frühaufstehen Operierter und Thrombophlebitis.) F. Schweninger.
146 Cause of Development of Amniotic Bands. (Zur Kenntnis der Entstehungsursachen amniotischer Stränge.) F. Haas.
147 Velamental Attachment of Umbilical Cord. (Zur Klinik der Insertio velamentosa funiculi umbilicalis.) M. Fetzer.
148 *Tearing of the Uterus after Cesarean Section. (Zerreissungen der Gebärmutter nach Kaiserschnitt.) A. Dahlmann.
149 Two Cases of Axial Torsion of the Uterus. (Achsendrehung des Uterus.) J. Olow.

145. **Prevention of Postoperative Thrombophlebitis.**—Schweninger states that 22 cases of femoral thrombophlebitis were encountered in the total 1,315 patients operated on between 1905 and 1909 at the Munich policlinic for women's diseases, and study of these cases emphasizes the importance of toning up the system before undertaking any serious operation. Even at the best, a major operation, he remarks, must be regarded as a serious trauma and a grave danger for which the organism must be prepared. Flabby tissues should be toned up if possible beforehand, and for this it is not enough to send the patient to the country to follow her own inclinations in many cases the trouble in question is the conse-

[illegible] of an [illegible] mode of life. The patient should be [illegible] massage and hydrotherapy should be applied systematically under the physician's direction. The [illegible] should be [illegible] to the patient's general condition, [illegible] stimulating [illegible] [illegible] Under all circumstances it must be borne in mind, he adds, that standing still [illegible] is the most [illegible] position for the [illegible] and should be avoided [illegible].

148. **Rupture of the Cicatrix after Cesarean Section.**—[illegible] reports [illegible] cases of this accident and [illegible] from the literature. In 27 of the cases the [illegible] was [illegible] In 20 of the [illegible] cases in which the [illegible] is mentioned, the mothers [illegible]

Monatsschrift für Kinderheilkunde, Leipsic

[illegible]

- 149 *Rachitis. [illegible] A. [illegible]
- 150 [illegible] Masern. [illegible]
- 151 *Experiences with "Albumin Milk" in Infant Feeding. (Erfahrungen [illegible] Eiweissmilch.) W. [illegible]
- 152 [illegible] Infant Feeding. [illegible] Säuglings. [illegible]
- 153 [illegible] of Twins after Infectious Diseases. ([illegible] an Zwillingen.) A. [illegible]
- 154 Treatment of [illegible] in Infants. [illegible]
- 155 Influence of Heat on the Temperature of Infants. (Einfluss der Wärme auf die Temperatur der Säuglinge.) G. [illegible]

149. **Rachitis.**—[illegible] regards rachitis as a congenital [illegible] nutritional anomaly whose most prominent symptom is the changes in the bones and cartilages. There is [illegible] a general nutritional disturbance affecting the bones and [illegible] on the part of the nervous system. [illegible]

151. **Albumin-Milk in Infant Feeding.**—The formula for [illegible]

Münchener medizinische Wochenschrift

[illegible]

- 156 [illegible]
- 157 [illegible]
- 158 [illegible]
- 159 *[illegible]
- 160 [illegible]
- 161 [illegible]
- 162 [illegible]

159. **Germ Carriers and Epidemic Meningitis.**—[illegible] bacteriologic examination [illegible] meningitis [illegible] the year before. It was found that nearly 2 per cent. of the [illegible] healthy men examined there harbored the germs, and they were found in 2.48 per cent. of [illegible] examined a second time. From these findings in 11,[illegible] healthy persons it seems evident that the germ is ubiquitous both during and outside of epidemics. Study of the epidemic there and of epidemics elsewhere seems to demonstrate that the epidemics die out spontaneously, regardless of what measures may be taken against them beyond the indispensable institutional isolation of the sick and general hygienic measures. It seems hopeless, the authors say, to attempt to control the disease on the same principles as typhoid and cholera are controlled, the conditions being so different.

Virchows Archiv, Berlin

[illegible]

- 164 Cause of Death after Intravenous Injection of Alien Serum. (Todesursache nach intravenöser Injektion von artfremdem Blutserum.) L. Loeb, A. [illegible] and L. [illegible]
- 165 [illegible] Staining of the [illegible]. [illegible] Zaretzky.
- 166 [illegible] of the Liver. [illegible] K. [illegible]
- 167 Conditions Regulating Thrombi and Necrosis of the Liver after Intravenous Injection of [illegible]. (Zur Analyse der [illegible] Thromben und Lebernekrosen nach intravenöser Injektion von [illegible].) L. Loeb and M. K. Meyers.
- 168 [illegible] Determination of Acidosis. C. H. [illegible]
- 169 [illegible] of the Tendons. ([illegible].) M. [illegible]
- 170 [illegible] W. Kerl.

Wiener klinische Wochenschrift, Vienna

[illegible]

- 171 *By-Effects with Ehrlich's "606." ([illegible] Nebenerscheinungen nach Anwendung von Ehrlich-Hata [illegible].) K. [illegible] and F. Sobotka.
- 172 The Meiostagmin Reaction with Cancer. (Zum Studium der Meiostagminreaktion bei bösartigen Geschwülsten.) [illegible]
- 173 Determination of Intensity of Putrefaction Processes in the Intestines. (Studien über Darmfäulnis.) A. [illegible]
- 174 *Simple Method of Estimating and Recording Deformities. (Ein einfaches [illegible] Verfahren [illegible] Darstellung von Deformitäten.) [illegible]
- 175 [illegible] Tablets [illegible] Croup and Tetany. W. [illegible]

171. **By-Effects with Ehrlich's "606."**—[illegible] and Sobotka report the occurrence of a set of symptoms in 3 out of 14 patients being treated with Ehrlich's new remedy for syphilis. These unexpected by-effects were retention of urine for from half a day to over 8 days, abolition of the knee-jerk and of other [illegible] reflexes and extreme rectal tenesmus with [illegible] constipation. The syndrome occurred in a more or less pronounced form in these 3 patients with moderate doses, suggesting that the symptoms might have been alarming if the dose had been a little larger, as they indicated a paralysis or inhibition of certain nervous elements. The syndrome resembled that observed in some cases after [illegible] of [illegible], and impurities in the drug may have been responsible for it. The experiences related are from the dermatologic clinic at Prague in charge of Kreibich. In other respects the experiences confirmed the claims made for the new remedy by Ehrlich and others. And notwithstanding the untoward by-effects observed in 3 out of the 14 cases, the [illegible] does not [illegible] to abandon the use of the remedy but [illegible] it to the cases in which the ordinary [illegible] are contraindicated for any reason or have failed [illegible]. It can also be used in cases in which the [illegible] or malignant character of the disease, threatening serious functional disturbances or disfigurement as from extensive local lesions of malignant syphilis, compel urgent measures, the patient being always duly informed as to the [illegible] and [illegible] of the new method of treatment.

174. **Simple Method of Estimating and Recording Deformities.**—The lack of a simple method for recording the extent and the changes in scoliosis and other deformities has long been felt by orthopedists. [illegible] has found a [illegible] a reliable means of [illegible] the progress of the patient under treatment and of impressing the parents and those [illegible] with the necessity for treatment or its continuance. The patient stands against a wall and the shadows of a number of horizontal lines are thrown on his body by a [illegible]

graph is taken. On a plane surface the stripes are even and straight but on the body they assume fantastic curves, bringing into prominence any deviation from symmetry. He has the camera mounted on a frame on a level with the patient's head; the light throwing the shadow of the lines is mounted on the same frame near the floor, each pivoting so that the axial center lines from each meet at the center of the area to be photographed.

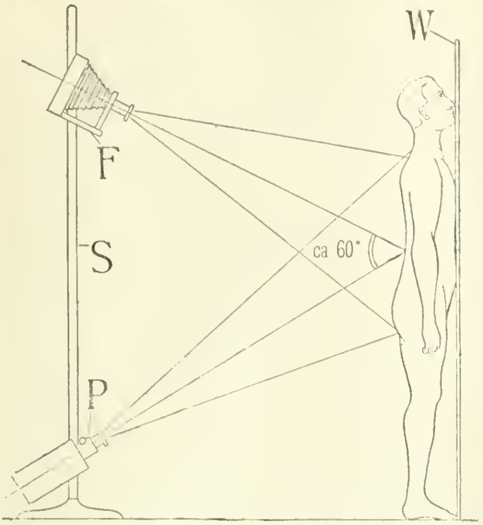


Fig. 1.—W, wall; F, camera; P, light, with lines on slide; S, Standard on which the camera and lantern pivot.

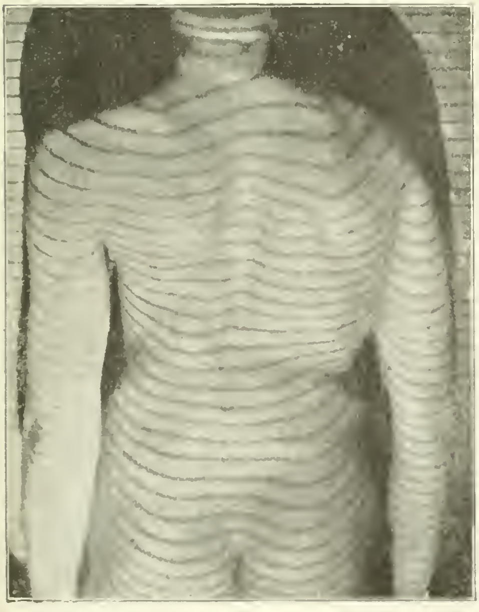


Fig. 2.—Lines thrown on patient's back.

Zeitschrift für Urologie, Berlin

July 11, No. [illegible], pp. 481-560

176 Concrements in Male Urethra and Bladder. (Einige Konkretionen der unteren Harnwege.) C. Adrian.
177 Implantation of the Ureters in the Rectum. (Zur Technik der Ureterenüberpflanzung in den Mastdarm.) S. R. Mirotworzeff.
178 *Trabeculæ in Bladder Wall as Early Sign of Tabes. (Die Balkenblase als Frühsymptom bei Tabes dorsalis.) R. Frohnstein.
179 Sterilization and Drying of Catheters. (Sterile und trockene Katheter.) W. H. Dreuw.
180 Occurrence of Urinary Concrements in Finland. (Vorkommen von Harnsteinen in Finnland.) G. Renvall.

178. **Hypertrophy of Bladder Trabeculæ as Early Sign of Tabes.**—Frohnstein examined the bladders of 20 patients at Moscow with unmistakable or suspected tabes and found that the walls of the organ showed signs of excessive muscular effort in every case of tabes. Sometimes this was the first sign of the disease, the course later confirming its specific character. As the bladder has to make more of an effort to void its contents on account of the encroaching spinal cord disease, the walls develop ridges like beams. These beams in tabes are delicate but regular and are found on both the side walls and fundus. The sensory paralysis of the bladder mucosa weakens the impulse to empty the bladder; urine accumulates and dilates the bladder and the walls hypertrophy from the compensating extra muscular effort required.

Zentralblatt für Gynäkologie, Leipsic

July 30, XXXIV, No. 31, pp. 1009-1040

181 Experimental Anaphylactic Research on Exophthalmic Goiter. (Experimentelles zum Wesen der Basedowkrankheit.) G. Wolfsohn.

Zentralblatt für Gynäkologie, Leipsic

July 30, XXXIV, No. 31, pp. 1041-1072

182 *Circular of Instructions for Parturients. (Ein Flugblatt für Wöchnerinnen.) J. Reich.
183 Danger of Rupture of Uterus after Cervical Section. (Zur Frage von der Uterusrupturgefahr nach dem cervikalen Uterusschnitt.) J. Olow.
184 Origin of Mucocellular Ovarian Fibrosarcoma. (Zur Histogenese der sogenannten Krukenberg'schen Eierstocksgeschwülste.) K. Ulesko-Stroganoff.

182. **Circular for Parturients.**—Reich reproduces the circular which is handed to each woman on leaving the maternity after childbirth. It gives from 6 to 8 paragraphs of directions "For the Mother" and "For the Baby," commencing with the statement that the "confinement" lasts from 4 to 6 weeks, not merely the few days the woman is in the hospital. It adds that during these weeks the woman is especially liable to take cold, to bleed, to contract diseases and to have the womb get out of place. At the least sign of a chill, passage of pure blood or abdominal pain she must apply for medical aid without delay. The most dangerous consequences are liable to follow resumption of conjugal intercourse before the end of the fourth to sixth week.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 24, XXXI, No. 88, pp. 921-936

185 Extraperitoneal Treatment of Fistulas. (I nuovi metodi extraperitoneali nella cura delle fistole.) F. Bindi.
186 Advantages of Venesection for Certain Climacteric Disturbances. (Utilita del salasso in alcuni disturbi della menopausa.) G. Giovanni.

Policlinico, Rome

July 24, XVII, No. 30, pp. 931-962

187 Experimental Research on Anaphylaxis from Cellular Endotoxins. G. Breccia.
188 *Masked Tuberculosis. (Le tubercolosi larvate.) G. Jona.

188. **Masked Tuberculosis.**—Jona discusses the various forms of what he calls "masked" tuberculosis, the healed and latent forms, the complicating and the obscure and especially the form with jaundice which nothing but tuberculosis can explain. The form in which tuberculous infection of the glands simulates a febrile pseudoleukemia is not so rare as the scorbutic form; he has encountered a number of examples of each. In a case of the latter reported by Senator there was nothing during life to suggest the tuberculous nature of the scorbutus and autopsy alone showed that the tuberculosis was not only the predisposing but the essential factor in the scorbutus. Several similar cases have been

reported since. Jona has had 4 patients in his charge with tuberculosis inducing jaundice. This syndrome developed in a child of 8 with irregular fever, headache and great prostration for a month with increasing jaundice and diarrhea, but autopsy showed the liver and bile passages in comparatively normal condition and the latter unobstructed. In another case the jaundice developed during the last week of an acute miliary tuberculosis. In another case the jaundice persisted for two years and the liver was much enlarged. Autopsy disclosed tuberculous cheesy glands and amyloid liver but the lungs were nearly intact. There had been no suspicion of tuberculosis in this case, all the signs pointing to the liver. This tuberculous jaundice is the result of great destruction of red corpuscles by the toxins, the hemolysis being evident in the gorged phagocytes crowding the liver and spleen. Even a concomitant cirrhosis of the liver is not necessarily responsible for the jaundice.

Riforma Medica, Naples

July 4, XXVI, No. 27, pp. 729-756

189 The Gastric Flora in Normal and Pathologic Conditions. G. Floritо.
190 Favorable Experiences with Vein Anesthesia in 16 Cases. (Sull' anestesia per via endovenosa secondo Bier.) C. Mantelli.
191 Relations between Pseudoleukemia and Glandular Tuberculosis. V. Gaudiani.

July 11, No. 28, pp. 757-784

192 Cerebellar Syndrome and Disturbances in Speech of Malarial Origin. G. Rummo.
193 Anatomic Diagnosis of Congenital Endocarditic Pulmonary Stenosis. G. Pollaci.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXXI, No. 7, pp. 657-784

194 *Case of Congenital Myxedema with Improvement under Thyroid Treatment. (Infantilt medfødt myxødem:myxidioti.) C. Døderlein.
195 *Chemical Examination of Urine in Diabetes. C. Geelmuyden.
196 *Review of 113 Cases of Mammary Cancer. (Bidrag til mamma-carcinomernes statistik.) N. Paus.
197 Importance of Experimental Pathology for Study of General Biologic Phenomena. M. Haaland.

194. **Congenital Myxedema.**—Døderlein's case is a striking example of the peculiar, far-reaching importance of the thyroid for the physical and mental growth and development, and the lack of both with lack of thyroid functioning. The child was born with typical pure myxedema and at the age of 4 looked still like a 10-months babe, being a pronounced idiot. No traces of the thyroid could be discovered on palpation. Thyroid treatment was then commenced and in 3 months the child was transformed under its influence. It had grown 10 cm. in height and has developed normally since, and is now lively and healthy.

195. **Chemical Examination of the Urine in Diabetes.** Geelmuyden emphasizes the importance of estimating the degree of auto-intoxication in diabetes by examining the urine, and reiterates that the tests for acetone and oxybutyric acid are too complicated for general use. The proportion of ammonia, however, is readily determined, and is a reliable index of the acidosis and thus a faithful guide to treatment.

196. **Mammary Cancer.**—Paus analyzes the experiences of 16 years with cancer of the breast, a total of 113 cases; 37 non-malignant mammary tumors were also encountered during this period. In the 113 cancer cases, 68.8 per cent. of the women were married and from 14 to 21.9 per cent. had had over 6 children. In 2 cases the tumor was first observed during lactation and in another case during a pregnancy. The ultimate outcome is known in 70 cases and 20.3 per cent. of these patients have been free from recurrence for over 5 years since the removal of the cancer; 31.4 per cent. for over 3 years. The recurrence was local in 60.4 per cent. of the 53 recurring cases, 27 in the first, 1 in the second and 4 in the third year. Rheumatoid pains after the third year were the first signs of metastasis in one case but with nothing to suggest their malignant origin for another year. Only one of the patients was a man. He was a laboring man of 31, who first noticed the lump in his chest at the age of 15. It gradually increased to the size of an egg but caused no symptoms until a contusion of the chest started it to rapid growth and it was found inoperable 3 months later. The prognosis of mammary scirrhus is better than that of carcinoma. Paus' advice is to remove every tumor in the breast at once, whether malignant or not. "Rather no breast than a cancer breast," he quotes. He tabulates his material from various standpoints and compares it with that of others.

Ugeskrift for Læger, Copenhagen

July 21, LXXII, No. 29, pp. 859-884

198 *Cancer of the Throat. (Kliniske Bidrag til Strubekræftens Patologi.) E. Schmiegelow. Commenced in No. 28.

198. **Cancer of the Throat.**—Schmiegelow entreats the general practitioner to appreciate the fact that there are very few organs in the body from which cancer—diagnosed in time—can be removed with as good prospects of a complete cure as from the throat. He has encountered 48 cases of primary endolaryngeal cancer, the patients all male but 8, and all were over 40 except one woman in the twenties and one man and one woman in the thirties. The growth was in the vocal cords in the majority, and hoarseness was the first symptom to call attention to the throat in 37 cases. As a rule the hoarseness developed gradually but in a few cases it came on acutely with a catarrhal laryngitis and after a series of remissions became chronic. Even in the laryngoscope the picture may be apparently that of an ordinary chronic catarrhal affection. A tuberculous infiltration of the vocal cord may also deceptively simulate cancer. He has had several such cases in which no signs of tuberculosis could be detected elsewhere and the tuberculous nature of the process was distinguished only by microscopic examination of an excised scrap of the tumor. In 25 of his cases the cancer was differentiated in this way; in the others the disease was at a stage beyond all doubt. The excised scrap must be taken deep enough to be truly characteristic. In 2 there was both a cancer and a benign growth in the same throat. Seven of the 20 patients whose laryngeal cancer was removed by thyrotomy from 1 to 10 years ago are still living; another died of tuberculosis 4 years after the operation; another of gastric cancer after 8 years, and another of rectal cancer after 17 years. The proportion of permanent cures without local metastasis was thus 50 per cent. in the thyrotomy cases; 20 per cent. of the 5 cancers removed by the endolaryngeal route, and 20 per cent. of the 5 removed by total resection of the larynx. Thyrotomy may be regarded as an efficient means of curing cancer in the larynx if diagnosed early. The endolaryngeal route exposes too much to local recurrences later. In one of his cases the local recurrence did not develop until after an interval of 7 years, and the man is still living, 3 years later, but the growth is now inoperable. Age is no contraindication to thyrotomy. One of his patients was a man of 71 who is still in good health 4½ years after the thyrotomy.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Mentally Deficient Children: Their Treatment and Training. By G. E. Shuttleworth, B.A., M.D., Medical Examiner of Defective Children to the Willesden Education Committee, and formerly to the School Board for London, etc., and W. A. Potts, B.A., M.D., Consulting Medical Officer, National Association for the Feeble-Minded, etc. Cloth. Price $2 net. Pp. 236, with Illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

The Harvey Lectures. Delivered under the auspices of the Harvey Society of New York 1908-09. By Prof. A. Calmette, Prof. W. G. MacCallum, Prof. Graham Lusk, Prof. W. Falta, Dr. John F. Anderson, Dr. M. J. Rosenau, Prof. A. B. MacCallum, Prof. J. B. Leathes, Prof. Philip Hanson Hiss, Jr., Dr. C. B. Davenport. Cloth. Price, $2. Philadelphia and London: J. B. Lippincott Co., 1910.

The Sanitary Privy: Its Purpose and Construction. By Ch. Wardell Stiles, Ph.D., Professor of Zoology, Hygienic Laboratory. Public Health Bull. 37, U. S. P. H. and M. H. S. Treasury Dept. Paper. Pp. 24, with 12 illustrations. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Michael Servetus: His Life and Teachings. By Carl Theophilus Odhner, Professor of Church History, Academy of the New Church, Bryn Athyn, Pa. Cloth. Price 50 cents. Pp. 96, with Illustrations. Philadelphia: J. B. Lippincott Co., 1910.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. LV, NO. 11 CHICAGO, ILLINOIS SEPTEMBER 10, 1910

LICHEN PLANUS SCLEROSUS ET ATROPHICUS (HALLOPEAU)

A REPORT OF SIX CASES (FIVE NEW) WITH A REVIEW OF THE LITERATURE *

OLIVER S. ORMSBY, M.D.
CHICAGO

The literature of this subject betrays some confusion as to what is meant by the term "lichen planus sclerosus et atrophicus."

Hallopeau first described this condition, named it "lichen planus atrophicus," and later added the word "sclerosus" to the title. Crocker added the word "morpheaeus" on account of the resemblance in certain instances to morphea. That the disease resembles morphea to a marked degree is evidenced in the cases of Stowers, Allen, Schamburg, and others. These patients, when exhibited before dermatologic societies, were considered by some to be instances of lichen planus sclerosus et atrophicus, while others classed them as morphea.

There are some cases recorded under this title that appear to be of the ordinary lichen planus type, exhibiting subsequent atrophy of papules, leaving white atrophic spots. These are not examples of the type to be described here.

In 1887 Hallopeau[1] described the first case, and subsequently added three, one in 1889,[2] another in 1896,[3] and a fourth in 1898.[4] The histopathology of Hallopeau's first case was studied and reported by Darier; and subsequent observers have confirmed the original clinical and histologic descriptions of these two authors.

In 1892 Darier[5] fully described a similar case of his own.

In 1900 Crocker[6] transcribed notes taken by himself of a case presented by Morrant Baker before the London Dermatological Society, in 1882. In a chronologic order other recorded cases are the following: 1891, Brault[7] and Pawlow;[8] 1895, Gaucher, Barbe and Balli,[9] and Schwimmer[10]; 1896, Stowers,[11] Vinrace[12]; 1898, Vollmer[13]; 1899, Orbeck[14]; 1900, Zarubin[15]; 1903, Reiss,[16] and Wechselmann[17]; 1905, Allen[18]; 1906, von Zumbusch[19]; 1907, Montgomery and Ormsby,[20] Schamberg[21]; 1909, Hoffman,[22] Riecke,[23] Millian,[24] and Csillag.[25] The majority of the above cases are typical; the exceptions will be discussed later.

SYMPTOM-COMPLEX

The symptom-complex constituting the disorder as originally outlined by Hallopeau and confirmed by numerous observations since, includes the following:

The major portion of patients have been women varying in age from 30 to 63 years. They have usually been of nervous temperament. No other important fact has been demonstrated relative to the etiology. The sites of predilection are the upper portions of the trunk, about the breasts, over the clavicles, extending over the shoulders and downward over the upper part of the back, also the neck, axillæ, and forearms. Lesions also have been noted over the abdomen, on the thighs, about the vulva; and coincident lesions were noted by Hallopeau on the buccal mucosa, and in one case in this report, on the vaginal mucosa. The temple was affected in one of the atypical cases. (Dubreuilh and Petges).[26]

The characteristic lesion is an irregular, often polygonal, flat-topped, white papule. In the case of Morrant Baker, some conical papules were noted. The white

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Hallopeau: Lichen Planus Atrophicus, Union méd., 1887; abstract by Thibierge, Ann. de dermat. et de syph., 1887, Series 2, viii, 790.

[2] Hallopeau: Lichen Planus Sclerosus, Ann. de dermat. et de syph., 1889, Series 2, x, 447.

[3] Hallopeau: Lichen Planus Atrophicus: a New Case, Ann. de dermat. et de syph., 1896, Series 3, vii, 57.

[4] Hallopeau: Lichen Planus Sclerosus; a New Case, Ann. de dermat. et de syph., 1898, Series 3, ix, 358.

[5] Darier: Lichen Planus Sclerosus, Ann. de dermat. et de syph., 1892, Series 3, iii, 833.

[6] Crocker: Lichen Planus: Its Variations, Relations and Imitations, British Jour. Dermat., 1900, xii, 421.

[7] Brault, F.: Un cas de lichen plan symmétrique à forme scléreuse amplifiée, Ann. de dermat. et de syph., 1894, Series 3, v, 834.

[8] Pawlow, T.: Ein Seltener Fall von Lichen scleroticus ruber atrophicus, abstr. in Arch. f. Dermat. u. Syph., 1895, xxxii, 423.

[9] Gaucher, Barbe et Balli: Lichen plan atrophique pigmenté, Ann. de dermat. et de syph., 1895, Series 3, vi, 302.

[10] Schwimmer, E.: Lichen ruber planus atrophicans, Arch. f. Dermat. u. Syph., 1895, xxxiii, 451.

[11] Stowers: Tr. Third Internat. Cong. of Dermat., 1896, p. 906.

[12] Vinrace: Tr. Third Internat. Cong. of Dermat., 1896, p. 906.

[13] Vollmer, E.: Ein Fall von Lichen planus ruber mit linearer Hautatrophie, Dermat. Ztschr., 1898, v, 32.

[14] Orbeck, W.: Lichen atrophicus und Vitiligo, Arch. f. Dermat. u. Syph., 1899, l, 393.

[15] Zarubin: Lichen atrophicus, Arch. f. Dermat. u. Syph., 1900, li, 306.

[16] Reiss, W.: Über atrophische Formen des Lichen planus, Arch. f. Dermat. u. Syph., 1903, lxviii, 137.

[17] Wechselmann: Lichen ruber atrophicans, Arch. f. Dermat. u. Syph., 1903, lxviii, 446; Ueber Lichen atrophicus und andere makulose atrophien der Haut, Arch. f. Dermat. u. Syph., 1904, cxxi, 233; Atrophoderma Erythematosa maculosa (Lichen planus atrophicus), Dermat. Ztschr., 1904, xi, 28.

[18] Allen: A Case of Lichen Planus Atrophicus, Jour. Cutan. Dis., 1905, xxiii, 266.

[19] Zumbusch, von: Lichen Albus, Arch. f. Dermat. u. Syph., 1906, lxxxii, 339.

[20] Montgomery and Ormsby: White Spot Disease (Morphea Guttata) and Lichen Planus Sclerosus et Atrophicus, Jour. Cutan. Dis., 1907, xxv, 1.

[21] Schamberg: Lichen Atrophicus, Jour. Cutan. Dis., 1907, p. 578.

[22] Hoffman, E.: Ueber einen mehrere Jahre hindurch beobachteten Fall von Lichen Sclerosus, Ikon. Dermat., 1909, Fasc. iv, Tab. xxvii xxxv.

[23] Riecke, E.: Zur Kenntnis der Weissfleckenkrankheit, Arch. f. Dermat. u. Syph., 1909, xcix, 181.

[24] Millian, M. V.: Lichen plan atrophique ou mieux leucodermie atrophique ponctuée, Bull. de la Soc. française de dermat. et de syph., 1909, No. 7, p. 279.

[25] Csillag, J.: Dermatitis Lichenoides Chronica Atrophicans (Lichen Albus von Zumbusch), Ikon. Dermat., 1909, No. 4, Tab. xxx xxxv, p. 147.

[26] Dubreuilh and Petges: Lichen planus atrophicus, Ann. de dermat. et de syph., 1907, Series 4, viii, 715. (A complete clinical report of a case with abstracts of seven other cases and a discussion of additional ones.)

color of lesions is striking and has been compared with that of ivory and mother-of-pearl. At times a distinct yellowish tinge is noted. The papules, as a rule, are firm to the touch, neither elevated nor depressed, but slight elevation may be present. They bend with the skin and when grouped may become wrinkled. As a rule, no areola is present, but at times a rosy or moderately pigmented zone surrounds the papule. They may be discrete or grouped and most cases present both types. When grouped to form plaques, the outline of the individual papules forming the plaques can be determined.

Each papule has on its shining, smooth surface from one to several (sometimes as many as twenty (Darier)) black or dark horny, comedo-like plugs, or minute pit-like depressions, which show the former site of the horny plugs. These elements are situated at the pilo-sebaceous or sweat-pore orifices, and are most important from the viewpoint of diagnosis. The wall of the pit-like depressions is of the same nature as the horny plug. The plaques vary in size up to several centimeters in diameter. They show on their surface the outlines of the primary papules containing the horny plugs, or exhibit minute depressions; and the whole plaque shows the peculiar shining white surface characteristic of the primary lesions. A linear arrangement of the papules is at times noted, similar to that seen in ordinary lichen ruber planus. There is, as a rule, no clinical sign of inflammation. The mode of development, as described by one of Hallopeau's patients, is as follows:

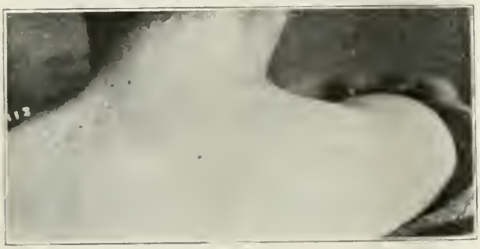


Fig. 1. Case 1.—Lichen planus sclerosus et atrophicus, showing discrete whitish papules and plaques with black horny points on the surface. Courtesy of *Jour. Cutan. Dis.*

> A black, horny point, surrounded by a bright red areola, is first noted. New and similar points occur which, after some months, unite; then the horny plug falls and the plaque becomes white.

My observations have not been similar, as I have seen new lesions developing, and the earliest manifestation consists of a minute white papule at the beginning, with either a dark spine or a pit on the surface.

The lesions, both papules and plaques, are persistent, but after a variable time, either from treatment or spontaneously, they undergo resolution and leave a delicate, smooth, white, soft, atrophic area of the size and shape of the original lesion, whether it be a discrete papule or a larger plaque. In one patient seen two years after complete involution of the lesions the atrophic scars were still present. The subjective sensations vary. Itching is the rule, but it is usually moderate in grade. A pulling or drawing sensation is described by some patients, while in others no subjective sensations are present.

HISTOPATHOLOGY

The changes described originally by Darier in Hallopeau's case have been confirmed by many observers. The most important change noted is a sclerosis of the papillary and subpapillary layer of the corium. In general the resemblance in the histologic architecture between this condition and ordinary lichen planus is marked. The stratum corneum is thickened, as is also the stratum granulosum in most instances, while the rete is atrophied. The wavy line between the rete and the corium is straightened or obliterated. The entire upper portion of the corium shows marked collagenous hypertrophy. The collagen bundles are condensed and show less of the interlacing characteristics than usual. Very few connective tissue nuclei are present. The elastin is reduced in amount. A cellular infiltration is present, deeply in the corium, and moderately also about the vessels, glands and follicles. Horny plugs are described in the sweat-pores, extending into the ducts, and the latter show a condition of hyperkeratosis. Similar horny plugs have been described in connection with the pilo-sebaceous orifices.

From ordinary lichen planus this condition is distinguished by the presence of marked sclerosis in the upper part of the corium, and by deeper situation of the inflammatory process.

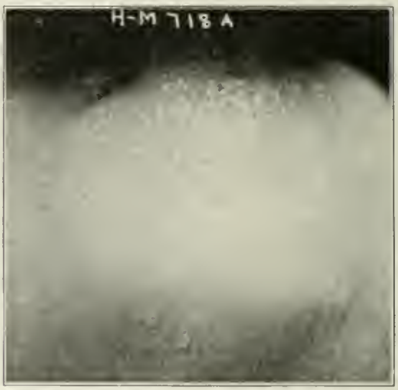


Fig. 2; Case 1.—Lichen planus sclerosus et atrophicus. Showing one plaque shown in Figure 1. Courtesy of *Jour. Cutan. Dis.*

DIAGNOSIS

The important point in differential diagnosis is to distinguish this disorder from morphea guttata or circumscribed scleroderma. Vitiligo and nevus anemicus[27] would cause no confusion. The so-called "white-spot disease" should be mentioned, but as the cases of this disorder are most, if not all, examples of circumscribed scleroderma, no further comment is necessary. The irregular or angular, flat, shining, white papule, having on its surface dark, horny plugs or minute depressions, is characteristic of lichen planus sclerosus. Circumscribed scleroderma is not characterized by papules, and the horny plugs or punctate depressions are absent. These facts hold true for the most minute spots, as well as for large plaques. Lichen ruber planus with atrophy is distinguished by the presence of the ordinary red papules, and usually by severe itching, the latter, in the disorder under consideration, being slight or absent. There are no white papules, but merely atrophic white areas, which are secondary to a former inflammatory process.

---

[27] Stein, R.: Ueber Naevus anaemicus, Arch. f. Dermat. u. Syph., 1910, ci, 311. The author refers to the previously recorded cases of Vorner in 1906 and Fischer in 1909.

SUMMARY OF RECORDED CASES

The majority of cases mentioned earlier in this article are pure examples of the Hallopeau type. A few only will be briefly discussed.

Von Zumbusch's case of "lichen albus" is classed here as belonging to the Hallopeau type.

Csillag's case of dermatitis lichenoides chronica atrophicans probably belongs here, as does also Millian's case of lichen planus atrophicus, for which he thought the best title would be "leukoderma with punctate atrophy."

Riecke's case of provisional "white-spot disease" practicaly fulfils the requirements of this group. On the other hand, the case of Dubreuilh and Petges (lichen planus atrophicus), that of Gaucher, Barbe and Balli (lichen planus atrophicus et pigmentosus), and that of Wechselmann, of atrophodermia erythematosa maculosa (lichen planus atrophicus), and Pringle's case (annular and atrophic lichen planus), are examples of lichen ruber planus associated with cutaneous atrophy.

The case of von Zumbusch, described by him as a new disorder and termed "lichen albus," clearly belongs to this group. The clinical picture and histologic findings were later reviewed by Hallopeau,[28] who believed that it should be classed as a case of lichen planus sclerosus.

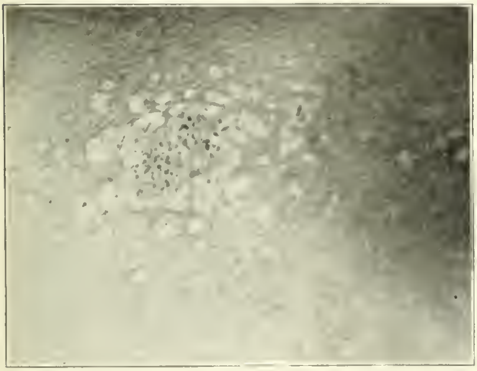


Fig. 3.; Case 1.—Lichen planus sclerosus et atrophicus. Showing a higher magnification of one area shown in Figures 1 and 2.

Under the title "dermatitis lichenoides chronica atrophicus" Csillag describes a case which he classes as analogous with von Zumbusch's lichen albus. The clinical description of the lesions in this patient correspond in many particulars to those found in the cases of the subject under discussion, and is, therefore, placed provisionally in this group. Pale red mixed with chalky-white small areas and large plaques are described, on the surface of which are horny plugs connected with the pilo-sebaceous openings. The plate used for illustration is less characteristic than the written description.

Millian describes a case under the title "lichen planus atrophicus," or, better, "leukoderma with punctate atrophy," in which pin-head to pea-sized white lesions occurred. These were circular, shining, depressed, and showed a central punctate opening, as though they had been pricked with a pin. The large plaques were white, waxy and scaling. The earliest lesions did not present the punctate depressions. There were no subjective symptoms aside from some drawing sensations, and no ordinary lichen planus papules.

In the discussion of this case Darier stated that the disorder could be classed in one of four categories: lichen planus sclerosus, white-spot disease, "scleroderma *en carte de visite*" of Unna, or lichen albus. It appears, therefore, reasonable to place it in the group under discussion.

The most interesting report of all recent ones is that of Riecke. He gives a careful clinical and histologic analysis of a case, critically surveys the literature on the subject and finally places his case provisionally with two others—those of Westburg[29] and Johnston and Sherwell[30]—under the title of "white-spot disease." On account of the very close resemblance to lichen planus sclerosus of his clinical and histologic description, as well as the plate used for illustration of the case, a brief abstract follows:

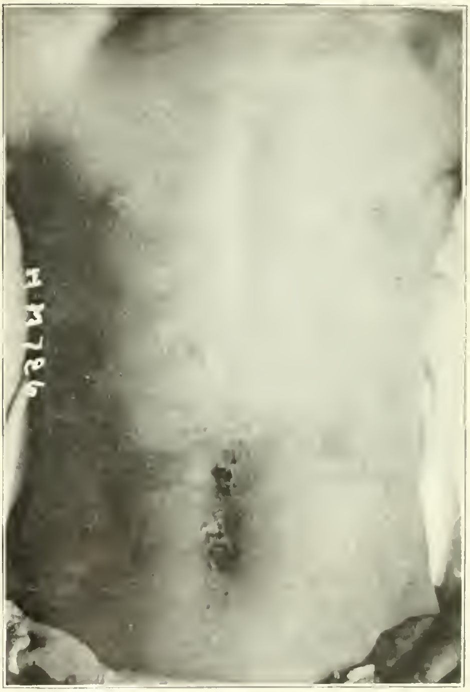


Fig. 4.—Lichen ruber planus with associated subsequent atrophic whitish areas. Shown for comparison with lichen planus sclerosus.

> The patient was a woman, 50 years of age. The cutaneous disorder began ten years before with a lesion the size of a silver quarter over the pit of the stomach, preceded by itching. The lesions had extended rapidly during the previous year. On examination the following was noted: The lesions were located chiefly on the abdomen from the pit of the stomach to the inguinal folds with a few on the outer surface of the thighs. They were sago-grain to lentil-sized, well defined, round, oval, irregular, and polygonal in shape, with many closely set and confluent plaques, largely on a level with the cutaneous surface. The smaller were slightly elevated, but,

---

[28] Hallopeau: The Nature of Lichen Albus of von Zumbusch, Bull. de la Soc. Française d. dermat., 1907-08, p. 106.

[29] Westburg: Monatsh. f. prakt. Dermat., 1901, xxxiii, p. 355.

[30] Johnston and Sherwell, Jour. Cutan. Dis., 1903, xxi, 302.

on the whole, they were neither elevated nor depressed. They were not palpable and presented a markedly white luster. Each had a central punctate depression resembling a comedo. The smaller were smooth and showed no sign of inflammation. In the center of an older area some color, red or reddish-brown, was noted. In some areas a thin brownish-red crust covered the lesion, but, as a rule, this was surrounded by an alabaster-white ring. In some of the areas was a white lesion surrounded by a red halo. By confluence nail-sized plaques were formed.

Histologically, the stratum corneum was thickened; the rete thinner than normal, and the wavy line between the epidermis and the corium was largely obliterated. The connective tissue of the corium was increased in amount and presented few nuclei in its bundles. A cellular infiltration was noted deeply and at the periphery of the area. Vacuoles and lacunæ were noted between the corium and epidermis, which the author deemed an important finding. The elastin that was present was normal. Horny masses were present in the hair follicles, extending as far as the sebaceous gland opening.

The case of lichen planus atrophicus described by Dubreuilh and Petges is not of the type under discussion. The lesions were situated chiefly on the forehead, in the scalp, and later in the mouth. During the course of the disease the question of diagnosis was uncertain for some time. Lupus erythematosus, syphilis and scleroderma en plaque were considered. Finally, after the mouth lesions were discovered, the diagnosis above named was made. The case apparently was one of anomalous lichen planus associated with cutaneous atrophy.

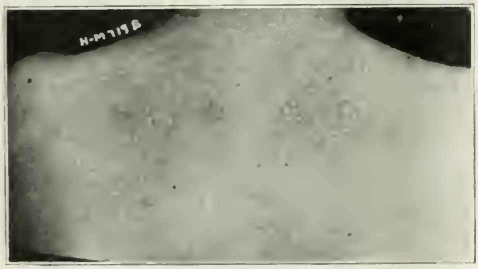


Fig. 5.—Morphea guttata resembling lichen planus sclerosus et atrophicus. Back view of a patient who had diffuse scleroderma of the lower limbs. Reported in *Jour. Cutan. Dis.*, 1907

The case of lichen planus atrophicus et pigmentosus of Gaucher, Barbe and Balli does not belong to this group. This patient exhibited highly-colored pruritic papules and plaques associated with marked hyperpigmentation, and, finally, atrophy. When the case was discussed before the French Dermatologic Society, Darier, who was familiar with the Hallopeau type, was of the opinion that the case was not one of lichen planus sclerosus.

Wechselmann, in 1903, reported a case under the title "lichen planus atrophicus." This case was further described with detailed histologic study, in 1904, under the title "atrophoderma erythematosa maculosa (lichen planus atrophicus)." The patient was a man, 35 years of age, with cutaneous lesions situated on the forehead, in front of the left ear, over the mastoid region, in the hairy scalp, and on the back to the left of the spinous processes near the junction of the first thoracic vertebra. In the last-named region, bluish-red, umbilicated, ordinary lichen planus papules were described. In the regions about the temple, ear, and scalp, erythematous and papular lesions, forming patches, occurred, which later underwent atrophy. The histology is that of lichen planus with atrophy. No white papules were described, and the case clinically, as well as histologically, is not properly of the Hallopeau-type, but appears rather to belong to the group in which atrophy was a sequence.

Pringle[31] exhibited a case of annular and atrophic lichen planus before the London Dermatologic Society in May, 1901. This was an example of ordinary lichen planus with atrophy.

Figure 4 illustrates a case of lichen ruber planus associated with circumscribed atrophic white areas. The case is cited merely for comparison.

The six cases recorded here occurred in the practice of Dr. James Nevins Hyde, the late Dr. Frank Hugh Montgomery and myself. Case 1 is reproduced from a report[32] made in 1907, for the reason that a microscopic study was made in that case. In the five new ones only clinical observations are available.

CASE REPORTS

Case 1.—Patient consulted me at the West Side Hospital (dermatologic clinic), in January, 1906. "The patient, a woman, aged 56, was born and reared in Germany, but has lived in Chicago for thirteen years. She has had seven pregnancies, three of which terminated prematurely. In two others, the infants lived only a few hours, and the remaining two are represented now by two healthy children, aged 23 and 25 years respectively. She gives a history of having suffered many times during her life with a vague febrile disorder she called 'malaria.' She is very heavy, somewhat pallid, but fairly well nourished, and is excessively nervous.

"The present skin disorder began about eight months ago, she states, as small white and black spots, which have gradually increased in number. The lesions are now situated chiefly over the back part of the shoulders, but extend toward the neck and also a short distance down the back. A few spots are scattered over the upper part of the chest down to the margin of the mammæ, and there are a few lesions on the upper and external aspect of the arm.

"The primary lesion is apparently a slightly elevated, angular, polygonal or irregularly-shaped, white papule, which on attaining the size of a millet-seed shows on its surface one or several small, elevated, black, comedo-like points, or minute depressions, where the black points formerly existed. A lesion of the size of a split pea usually contains five or six such points or depressions. The papules vary in size from that of a pin-head to that of a split pea. A few very minute, angular, white papules are present. Some of the lesions are surrounded by a narrow, pinkish areola; others by a brownish discoloration; while many present no color changes at the border.

"Over the back part of each shoulder is a patch formed by the coalescence of papules which, however, do not completely lose their identity. One of these patches measures about two inches in diameter, is irregular in outline, slightly elevated, white in color except for the black points and depressions which dot its surface, rough to the touch, and presents a somewhat wrinkled appearance (Figs. 1, 2 and 3). Over the upper part of the chest the lesions are discrete, irregularly disseminated and abundant. Over the clavicles a somewhat linear arrangement is apparent; while in other areas there is some grouping of the lesions. Here and there atrophic, slightly depressed lesions are present, which are of the shape and color of these just described.

During the two months in which she has been under observation, there have been displayed at times a very few small, red or brown-tinged papules, which were indistinguishable from the lesions of ordinary lichen planus, but their transformation into white papules could not be traced. During this period the patient has had very simple treatment, and the only change noted is the disappearance of most of the small, elevated black points, their places now being occupied by the depressions. She complains of no subjective sensations except, as the patient describes it, that of 'pulling.' There are no lesions in the mouth or about the wrists.

---

[31] Pringle: A Case of Annular and Atrophic Lichen Planus, Brit. Jour. Dermat., 1901, iii, 215.

[32] Jour. Cutan. Dis., xxv, 1.

"*Histology.*—A biopsy was performed, removing a split pea-sized lesion from the posterior aspect of the left shoulder. This lesion was typical and exhibited on its surface six small dots or depressions, from which the comedone-like plugs had been removed. The tissue was fixed and hardened in alcohol, embedded in paraffin, and stained in various ways. A series of sections in which two hair follicles occurred were studied. A lanugo hair was present in each follicle. The most marked changes are in and about these follicles. As a whole, collagen and elastin are abundantly present, except in the areas of cellular infiltration, where both are either lessened or absent. Aside from the special areas to be described, the collagen appears condensed and contains fewer connective tissue nuclei than normal. Blood-vessels are few and are represented by strings of cells running horizontally across the field or radiating in various ways from the hair follicles. No vessels can be demonstrated in the papillary layer. In these sections three distinct and fairly well defined masses of cellular infiltration are present, in addition to that surrounding the follicles. They are situated in the lower part of the corium, about parallel with the base of the follicles, but not in connection with these structures. Beside these deposits, some small areas and some single cells are irregularly distributed about the corium. The infiltration is composed of connective tissue cells, lymphocytes, or small plasma cells, and mast cells. The latter are unusually abundant and occur not only in these special areas, but also irregularly throughout the corium. They are of various shapes, some large with their granules extending far from the nucleus. The changes in the epidermis occur chiefly about the follicular openings. The line between the epidermis and the corium is fairly well defined, its wavy character being only in places obliterated. The rete Malpighii consists of about eight rows of cells, in which there is some increase in the pigment. The stratum granulosum is composed of two rows of elongated, flattened cells containing fine granules of keratohyaline material. The stratum lucidum is not demonstrable, and the stratum corneum is thickened. The mouths of the two follicles, above mentioned, are widely dilated, and in the section present the appearance of a deep v-shaped opening, extending from the surface into the follicle. In places in the different sections a part of this large opening is occupied by a horny material similar to the stratum corneum. The lanugo hair can be demonstrated in the center of this opening, extending down to the base of the follicle. No sweat-ducts or pores occur in the sections, making it impossible to determine a connection between these structures and the clinical pits or depressions. The coil glands present are unaffected. In one place is a circumscribed area of cellular infiltration in the corium between a coil gland below and the epidermis above, but it seems to have no relation to the gland or its duct. From the involvement of the pilo-sebaceous apparatus in such a pathologic process it would seem that this is the seat of the original comedone-like plug, and, later, the pit or depression. The pathological process is more deeply situated than in ordinary lichen planus and the marked involvement of the follicles is not usual in the common variety."

Case 2.—A private patient of Dr. Hyde's, seen Oct. 15, 1906, and under observation for about two and a half years, was 49 years of age, weighed 176 pounds, and was not robust. The family history revealed no important facts. For years the patient had been nervous and slept poorly. She had suffered from variola at 5 years of age and had in addition the usual diseases incident to childhood. For twenty years she suffered from pruritus each summer, chiefly on the lower limbs. The cutaneous disorder began five years before, on the wrists and thighs. Six months before new lesions occurred about the vulva, accompanied by severe itching, and it was this that induced the patient to seek relief.

An examination on Oct. 15, 1906, showed, on the flexor surfaces of each wrist, many dense, white, irregular papules, varying in size, also some larger plaques. The former were poppy-seed to pea-sized; the latter somewhat larger than a coffee-bean. The inner faces of the thighs showed several round, oval or irregular areas, sharply defined, white or pale red, with a slightly depressed and atrophic center, the border being narrow and irregular, and consisting of small, dense, white, irregular papules. The surface of these lesions was shining and showed punctate depressions. A few scattered lesions were present over the abdomen, about the groins, and over the legs and arms. Some traumatic lesions were also present in these latter areas. On the mucous membrane of the vagina, especially about the clitoris, was a characteristic lichen planus infiltration.

Six months later the patient developed diabetes mellitus, which was still present when she was last seen. In April, 1909, there was a marked recurrence of the pruritus vulvæ, at which time typical lesions of lichen planus sclerosus in various stages of involution were present. A period of radiotherapeutic treatment was given in April and May, since which time the patient remained comfortable.

Case 3.—The patient consulted my late colleague, Dr. Montgomery, May 31, 1907, from whose notes the following is taken:

The patient, Mrs. M. B., aged 33, had been a delicate, nervous child, but had had no serious illness except scarlet fever from which she had made a good recovery. After finishing a high-school course, she studied and later practiced law five years Ten years before, while studying, she noticed the first signs of the present skin disorder, which appeared as small white spots over the posterior surface of the shoulders. They were white in the beginning and had never been productive of any subjective sensations. They persisted with little or no change except to become somewhat more depressed. Six or eight months before this visit she noticed new areas coming on the back of the neck in the median line extending into the occiput. About one month later lesions began to appear over the breasts and on either thigh. After another month a small area appeared on the anterior surface of the neck (left side), and for about a month lesions appeared on the anterior surface of both wrists. On examination, an irregular triangular area on the back of the neck was typical of lichen planus sclerosus et atrophicus. Not only were the normal lines and folds of the skin exaggerated, but quite typical sclerotic lichen planus papules were visible. A number of these showed characteristic black points. The older lesions on the shoulders exhibited slightly depressed atrophic areas covered with parchment like epidermis. They were white, but had a slightly dirty yellowish tinge. On the anterior surface of the neck were a few papules, some with black points, and some showing atrophic areas. Two irregular areas about 2½ inches in diameter were situated on the outer surface of either hip, made up of minute atrophic points, some of which were distinctly angular in outline. On the anterior surface of each wrist were three or four pin head-sized and smaller, whitish papules. Some of them had the appearance of being beneath the skin. These had been there about a month. Just above

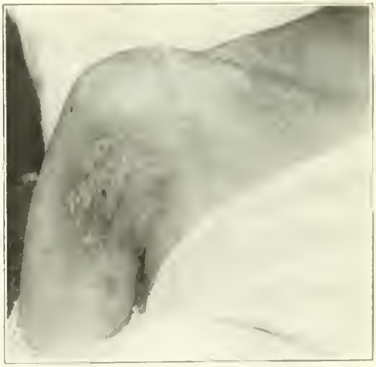


Fig. 6.—Morphea guttata closely resembling lichen planus sclerosus et atrophicus (front view).

each nipple was an irregular area about $1\frac{1}{2}$ inches in diameter made up of quite closely aggregated, clear, white, very slight depressed (?) atrophic points. In this plaque individual lesions retained their identity. No depression or change in texture could be detected with the finger. The patient and her husband (a physician) were positive that there had been no preceding changes of a different character, and that the patches enlarged simply by the appearance of new white points of the same character. Dermographism was marked and had been present for about a year. A report after seven months indicated no change in the existing, and no appearance of new, lesions.

Case 4.—The patient, a woman aged 67, consulted Dr. Montgomery Oct. 16, 1907. No notes were made concerning the family history. Her general health was fair. She passed the climacteric period at the age of 45. She was of a markedly neurotic disposition. Her skin showed evidences of senility, being thin, atrophic, with patches of hyperpigmentation, and areas of keratosis. The cutaneous disorder was of five years' duration, and had been treated in Hanover, Germany. The patient had also consulted Professor Lassar, of Berlin.

The lesions were situated on the front and back of each shoulder and on the neck with a few outlying papules over the chest. The greater number of lesions were irregular white papules, level with the skin, on the surface of which were minute black points. There were also several typical atrophic areas where lesions had undergone resolution. Slight telangiectasia was noted in the region of some lesions, which varied in size from 2 to 4 mm. Early in the history of the disorder itching was quite marked; later it became less and at the time of the examination was present only to a slight degree. Six months after the first examination there was not much change in most of the lesions. The area on the right shoulder had increased in size. At this time a general examination revealed an interstitial nephritis, with albumin and casts in the urine and blood pressure of 230. In addition to topical applications, radiotherapy was employed. In March, 1910, I again examined the patient, when only the relics of the lichen planus sclerosus lesions remained. The last consultation was made with reference to the facial hyperpigmentations.

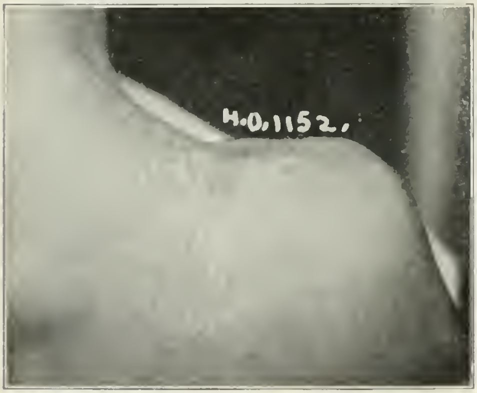


Fig. 7.—Morphea guttata. Same patient as represented in Figure 6 (back view).

Case 5.—The patient consulted me, Aug. 11, 1909. This patient was a refined, rather delicate woman, 42 years of age. Aside from her nervous temperament, no facts of importance relative to the family or past history were obtained. The cutaneous disorder was of fourteen months' duration. It began on the right side over the region of the clavicle, with six to eight pinhead-sized whitish papules. New lesions gradually developed over the shoulder and upper part of the back, and over the opposite clavicle, shoulder, and back, and a few sparsely distributed over the abdomen. On examination, individual, discrete, irregular, flat-topped, hard white papules, each presenting two to five dark, horny elevations on its surface, and in some only pit-like depressions, were noted in all the described areas. In addition, several dime-sized areas, especially over the shoulders, displayed characteristic grouping of the papules. In these areas individual papules could be detected. The surface was whitish, except where dotted with horny plugs or dark minute pit-like depressions. Radiotherapy was employed during September, 1909. In December, the lesions had largely undergone resolution. In April, 1910, two new plaques developed. In this patient no areola was ever present and no lesions suggesting lichen ruber planus. There was no vascular element in the case, and no mucous membrane involvement. The lesions were sclerotic and whitish from the minutest earliest to the older, forming plaques, each showing characteristic dark points.

Case 6.—The patient first appeared at the dermatologic clinic of Rush Medical College, where she was seen by Dr. Anthony, through whose courtesy I saw her. This patient was the youngest of the group, being 30 years of age. She was seen first on Aug. 17, 1909. She was a telephone operator, highly nervous, had suffered for a long period with severe headaches, and frequent attacks of palpitation of the heart. She was not robust. Her hands and feet were habitually cold. The urine was normal, though she was annoyed by frequent urination. She was practically neurasthenic.

The cutaneous disorder was of one and a half years' duration, and was nearly a replica of Case 5 of this series. The lesions were situated over the clavicles on each side, and extended from over the shoulders to the upper part of the back. The same white sclerosed papules, discrete and grouped, all containing dark horny spines or minute horny depressions, were present. There were no red papules, none of the lesions had an areola, and there were no mucous membrane lesions.

This patient was demonstrated with Case 5 at a meeting of the Chicago Dermatological Society in December, 1909, at which several members of the American Dermatological Association were present.

In February, 1910, radiotherapy was used, with beneficial results.

SUMMARY OF THE SIX CASES HERE RECORDED

All the patients were women, aged 30, 33, 42, 51, 51 and 63 years, respectively. All were neurotic. One had neurasthenia; another had marked, peculiar psychic phenomena; diabetes was present in one; interstitial nephritis in a second. The duration of the cutaneous disease was eight months, fourteen months, eighteen months, five years, five years and ten years, respectively.

The site of most extensive involvement in five of the patients was the region over the clavicles, shoulders, neck and upper part of the back. In one the wrists, flexor surface, thighs, abdomen, groins, were chiefly affected, with a few lesions appearing on the legs and arms. The essential lesions in all cases were whitish, discrete, round, oval, irregular, or polygonal, flat-topped papules; similar lesions forming whitish plaques, all having dark, horny spines, or punctate depressions. The lesions were either level with the surrounding cutaneous surface or very slightly elevated. In all the terminal result was a white depressed, delicate scarring or production of atrophic areas of the size and shape of the preceding lesion, whether papule or plaque.

In two patients a few usual reddish lichen ruber planus papules were present, but they were never observed undergoing transformation into the white lesions. The latter were from the beginning white papules.

In one patient coincident mucous membrane involvement with ordinary lichen planus was noted. In Hallopeau's case this occurred in the mouth. In one of my cases the vagina was involved. In five cases subjective sensations were slight or absent; in one they were marked, but the pruritus could not be attributed to the disorder under discussion.

That the disease may be persistent is evidenced by its long duration in some of the patients who still exhibit active lesions.

In five cases in which radiotherapy was used it proved to be a valuable therapeutic measure.

The group as a whole corresponds clinically with the Hallopeau type of lichen planus sclerosus, and in the one case where a histological study was made it corresponded with Darier's observations in Hallopeau's case, and also with his own.

CONCLUSIONS

From the brief summary detailed above it appears logical to group the six cases under one title. They do not differ from one another more than the members of any group of six different patients suffering with any single dermatosis. In the question of differential diagnosis only three cutaneous disorders capable of producing whitish lesions on the skin need be considered, viz.: localized or circumscribed scleroderma (Fig. 5), lichen ruber planus of usual type associated with or followed by atrophy, and the so-called "white-spot disease." Such disorders as vitiligo, syphilis, lupus erythematosus, naevus anaemicus, and lepra are readily excluded. Lichen planus of the usual type associated with atrophy is excluded by the fact that the primary lesion in these cases is never reddish, as in its whole career it is a whitish sclerotic papule. That these cases are probably of the same nature and simply a special form of lichen planus is strongly suggested by the association in certain cases with mucous membrane involvement of the lichen planus type; also by the fact that some papules of the ordinary form at times concur, and, finally, by the fact that the lesions themselves, both as to size, shape and arrangement, are similar, the striking difference existing only in the color and presence of characteristic dark, horny spines and keratotic punctiform depressions. The so-called "white-spot disease," as a rule, if not always, is an anomalous localized scleroderma. In certain cases of circumscribed scleroderma the resemblance is striking (Figs. 6 and 7). Here again the initial papule is the important factor. In the case of circumscribed scleroderma above referred to papulation is simulated by the line of cleavage in the skin, but on careful observation the difference can be noted, and in scleroderma involvement of the sweat-pore and pilo-sebaceous follicles is wanting. Finally, in a retrospect of the entire subject the identity of lichen planus sclerosus appears established, but the separate existence of a "white-spot disease" requires further study.

106 State Street.

Imprisonment of a Physician for Extortion. Our German exchanges state that a certain sickness insurance society refused to pay the account rendered by a local physician on the ground of the statute of time limitations. He warned the company that unless they paid the account he would bring the matter to the attention of the local medical council and the company would be boycotted. The government experts, the *königl. Medizinalkollegium*, declared the charges too high and the company thereupon sued the physician for attempted extortion, and he was condemned by the local court to a week's imprisonment. The editorial comment in one exchange is merely a warning to physicians to proceed always with extreme conscientiousness and prudence in attempting to collect what is due them.

REPORT OF A CASE OF INTUSSUSCEPTION

A. L. SHARBER, M.D.
NASHVILLE, TENN.

In presenting the following case of intussusception which came under my care, I wish to call attention to its most unusual phases, which were of great interest to me and to those of my colleagues who saw the operations.

Patient.—On April 1, 1910, I was called to see I. H., white, aged 21, a dairyman, single, with family history as follows: Mother living and widow; father died at age of 81, of senility; one brother living, married and in good health. Two sisters living, one married, one single, both enjoying good health. No history of tuberculosis, cancer, rheumatism, heart, kidney or nervous trouble. The patient used no tobacco or spirits; drank coffee three times a day; at times drank quantities of tea. Habits regular, except constipation. He had had most diseases of childhood; had never had diphtheria, scarlet or typhoid fever, pneumonia, kidney or heart trouble. Genitourinary examination was negative. He had had chronic indigestion with acute exacerbations, which would last two or three days, with slight pain at times in the epigastrium, accompanied by nausea and some vomiting.

Present Illness.—When, on April 1, 1910, I saw patient for the first time his pulse, temperature and respiration were practically normal. He complained of some pain in the epigastrium and nausea, and there was slight vomiting of bile-colored matter. His tongue was coated. I ordered 3 gr. of calomel, followed next morning with magnesium sulphate. I withheld all food. The patient had two bowel actions in afternoon and night, and following morning was comfortable and ate breakfast. I learned from the attendants that the magnesium sulphate was not given. A comfortable day and night followed. On Sunday forenoon, April 3, I received a message saying that the patient was suffering with pain in stomach and was vomiting. I saw patient about 1 o'clock the same day and found that he was vomiting incessantly. There was continuous pain in the upper part of the abdomen. I had him wash his stomach out with a solution of bicarbonate of soda and left orders for an enema, which was given and returned with slight result. The nausea was somewhat relieved, but vomiting soon set up again, and the pain was continuous. The abdomen at this time was soft, with no distention and no evidence of tumor present. I saw patient again at 7 o'clock that night and found the symptoms greatly exaggerated. There was still no distention, but I felt a tumor below and to the right of umbilicus, with a dulness that extended almost across the lower half of abdomen. I gave an enema, with no result; then gave one half grain of morphin and advised sending the patient to a hospital. I told the family that I believed an operation to be imperative, but would do what I could to relieve obstruction before resorting to operation. This was done. During the night the patient was given lap[illegible]my enemas, enemas of alum, etc., but with no result.

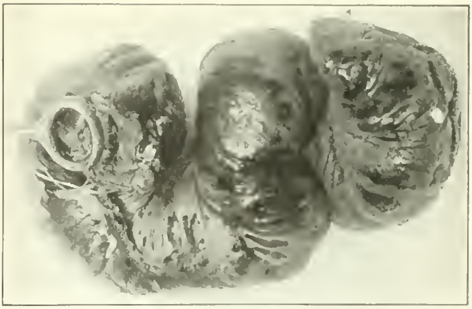


Fig. 1.—Intussusception first; section of ileum 3 feet long, removed April 4, 1910. Forceps at neck of intussusception

He passed some blood and mucus (just before operation, slight) and in the early morning vomited some fecal matter.

First Operation.—The patient was prepared and operated on April 4. I made a median incision below the umbilicus which extended above and to the left of that point, and found an invaginated small intestine which I supposed to be the upper part of the ileum. I resected the intussuscepted intestine, which was more or less gangrenous, taking out three feet. I did an end-to-end approximation and closed the abdomen in the usual way, leaving drain in.

The patient suffered very little shock and was put to bed in Fowler's position and given Murphy enteroclyses. He rested well. During the first forty-eight hours the pulse was frequent, as rapid as 120 per minute at times; temperature from 99 to 101; but on the third day, while the temperature was still slightly elevated, the pulse returned to normal. On the second day the patient had some nausea and vomiting. His stomach was lavaged, which relieved the vomiting entirely, and nausea did not return until the third day, at which time lavage was repeated and his stomach symptoms were relieved entirely. His kidneys acted freely, and on the fourth day, April 7, he had a voluntary bowel movement. His condition and recovery were entirely satisfactory until April 14, at which time he had some nausea, but did not vomit until next day. At this time he had been taking nourishment by mouth for five days. The vomiting was somewhat relieved by lavage, but his condition grew worse and we decided on another operation that morning at 8 o'clock. This was April 15.

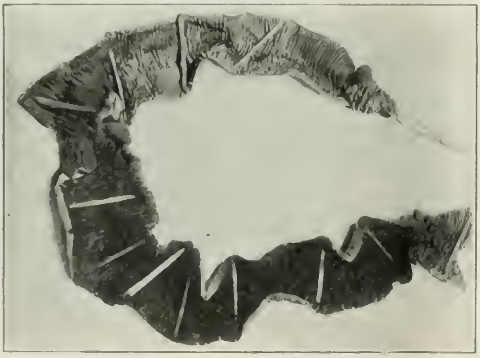


Fig. 2.—Intussusception second; section of jejunum 4½ feet long, removed April 24, 1910. Forceps at point where neck of intussusception was, before intestine was opened.

Second Operation.—Incision was made in median line above umbilicus, and I found that I had to extend this into upper part of old incision in order to reach the obstructed parts. I found an adhesive band about eighteen inches from the resected portion of the bowel. The omentum was adherent to several structures, but doing no harm. The resected portion was free from adhesions and perfectly healed. I freed the adhesive band, sutured over the raw surfaces, and closed the abdomen.

With little or no shock from this second operation the patient was again put to bed in Fowler's position with Murphy drip. Condition was satisfactory, except for nausea and vomiting which were relieved, as before, by lavage. On April 17, the third day after second operation, he was given magnesium sulphate through stomach tube which resulted in three or four stools. On the fifth day he was taking nourishment, and on the eighth, light diet. On April 23, the ninth day after second operation, he had slight nausea and refused nourishment. He complained of some pain in abdomen in forenoon, but later on in the afternoon the pain became severe and continuous. There was persistent vomiting and early shock. I also found a tumor in left upper quadrant of the abdomen with dullness, extreme tenderness and very slight distention.

Third Operation.—We operated at 1.30 o'clock a. m. April 24. I made an incision in the left semilunar line and delivered the invaginated intestine, which was very congested and edematous, almost as much so as the first resected portion. I resected about 4½ or 5 feet of jejunum and found a tumor of the adenopapillomatous variety at the neck of and termination of the invagination; also two or three small ones projecting from the lumen of the intestine. The tumors were examined by Dr. Newton Evans, who reported their nature to be as stated. These tumors were almost large enough to obstruct the lumen. As before, I made an end-to-end approximation and closed the incision with a drain the lower end.

Postoperative History.—After operation patient was put to bed with foot of bed elevated and was given hypodermoclyses, with slight stimulation, strychnin, digitalin and adrenalin; also Murphy drip. The patient suffered considerable shock after this, the third major operation he had undergone within three weeks. He made an uneventful recovery. There was slight infection, though the wounds healed kindly. On May 16 he was up and walking about the hospital.

After the specimen had been removed and placed in saline solution slight peristalsis of portions was observed for several minutes.

The interesting points of the case are the following:

1.—Age of patient, 21 years.
2.—History of indigestion for two or three years.

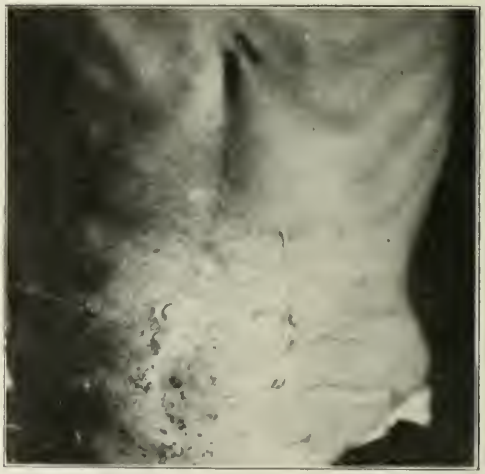


Fig. 3.—Abdomen after wounds had healed, with median and lateral scars.

3.—Onset of attacks.
4.—Early diagnosis.
5.—Early surgical interference.
6.—Recurrent attacks.
7.—Rapid recovery from each operation.
8.—At times active peristalsis.
9.—Large quantities of liquids administered by enteroclysis retained over great length of time.

The enteroclyses were as follows: After the first operation, 1½ pints of saline solution, every four hours for four days, all retained. After the second operation, 1½ pints of saline solution, and 1½ ounces of a predigested food, every four hours for two days, all retained but part of one. After the third operation, 1½ pints of saline solution, 1½ ounces of the alcoholic predigested food, every four hours for two days; part of one returned. The quantity was then diminished to 4 ounces of saline solution and 1 ounce of the peptonized food, every four hours for twenty days; all retained. The reason for the long-continued enteroclyses was that patient refused to take proper nourishment and liquids.

110 Eighth Avenue North.

THE DIAGNOSIS OF LEPROSY*

ISADORE DYER, Ph.B., M.D.
Professor on Diseases of the Skin, Medical Department, Tulane University of Louisiana; Consulting Leprologist to the Louisiana Leper Home, etc.

AND

RALPH HOPKINS, M.D.
Lecturer on Diseases of the Skin, Medical Department, Tulane University of Louisiana; Visiting Physician to the Louisiana Leper Home

NEW ORLEANS

Long association with the Louisiana Leper Home has given us an opportunity for the observation of leprosy, and we hope that this, together with the importance of correct and early diagnosis, in countries where leprosy is likely to occur, will justify the present discussion of this subject. We are not submitting any new points in diagnosis but rather argue the need of a practical presentation of the matter for the general profession, especially in our own country, where every now and then a notable case proves an ignorance of essential points which should be known. More than this, the reports of imported cases of leprosy in our seaport cities have shown conclusively either that the national quarantine against leprosy is a farce in its enforcement, or that the quarantine officials are ignorant of the symptoms of the disease. In New York chiefly numerous cases have been presented which have more or less recently been admitted to this country without hindrance.

As a matter of fact, the increasing number of lepers in New York has grown by importation, as the disease so far is not held endemic there.

The trouble in diagnosis lies more with atypical cases, with incipient tubercular cases and with those anesthetic cases which present no longer active skin manifestations. Another source of confusion in diagnosis lies in the changes that appear in lesions during the periodic occurrence of exacerbations accompanied by lepra fever.

Like syphilis, leprosy has often been divided into stages and types, but, as in syphilis the value of such diagrammatic classification of leprosy is greatly impaired by the fact that the types are often mixed and that the lesions that should be present in one stage are often found in another. Generally the type depends on the habitat of the bacillary cause, the anesthetic or trophic being due to nervous injury by the bacilli, the tubercular or nodular being due to the presence of the bacilli in the skin, and the mixed type being a combination of the anesthetic and tubercular forms. It is not unusual in the course of years to see a change in the type. The tubercular type in a mixed case may disappear, leaving only the anesthetic, and a purely anesthetic case may after years develop tubercles, forming the mixed type, which may in turn evolve a trophic type, having no tubercles in evidence.

The usual sequence of the lesions after the prodromal period is that the first manifestation in almost every case is in macules which usually initiate all types, usually varying in their location accordingly. Much rarer is the bullous eruption which occurs in this same early stage. Tubercles usually appear later than macules and may be independent of them; the ulceration and cicatrization of the skin occur ordinarily only in the terminal stage, though the perforating ulcer, which is a sinus leading to necrotic bone, may be found early, and in mutilating types the erosions following bullous leprosy may form true ulcers before any macules or tubercles present themselves.

The macular eruptions do not always present the same characteristics. They vary from the size of a dollar, or smaller, to a patch large enough to cover an entire anatomic region; the pigment may be almost uniformly distributed throughout the patch, as it is in chloasma, or it may disappear in the center, leaving a ring of pigment surrounding an area of skin lighter in color than the normal; somewhat the same arrangement that ringworm of the general surface assumes, except that the atrophy of pigment in the center is marked and may, at the same time, involve the deeper skin. Scales are unusual in both types and occur usually only as a result of inflammation in the area or as the evidence of trophic disturbances.

The first type, the uniformly pigmented macule, depends largely for its characteristics on the amount of infiltration provoked by the presence of the bacilli. It may be simply a brown stain, level with the surface of the skin, with an irregularly shaped border not always marginated, or a patch so elevated that the term macule becomes a misnomer. On the other hand, there may be multitudinous macules, with symmetrically bilateral distribution on the trunk and extremities alike, entirely free of bacilli and having all the characteristics of a true erythema.

This form of macule is particularly common in anesthetic leprosy in which the early involvement of the nerve trunks of the extremities points to the toxic influence of the leprous deposits along the nerves. This is particularly argued in the facts that such eruptions of macules are evanescent and that the lesions themselves are highly colored, bright red, and are often apt to be hyperesthetic and not anesthetic as are the more deeply pigmented and infiltrated lesions.

In the second form the margin is well defined and the brown color becomes a purplish red. Between these two extremes are the variations in shade made possible by the varying degrees of inflammatory infiltration. The favorite location is the buttocks, though the face, trunk and limbs may also be involved, and these macules are often the sites of later tubercles or nodules, especially when found on the face. Though these may not be necessarily symmetrical when they first appear, later these macules become so as the eruption fully develops. During the periods of lepra fever the macules may become intensely inflamed and painful, and though the fever does not usually occur severely during the incipient period, we have had at the Louisiana Leper Home instances in which the whole macular areas, numbering four or five as large as the palm of a child's hand, have ulcerated. Ulceration in the incipient stage is indeed rare, and can be explained only by the lepra fever, which is evidently a manifestation in greater or less degree of fulmination of deposits of lepra organism, or else the acute reaction associated with new fields of invasion.

In the circinate type the patch of lepra macules usually grows in size after it first appears, spreading from the outer border of the ring, which preserves a well-defined margin; and it is more often associated with the anesthetic than the tubercular form. The inner margin of the ring is not liable to show as well-defined a border as the outer, and as the lesion grows larger in area the paler center grows also, keeping the pigmented ring nearly constant in relative breadth. The degree of infiltration in this type of macule is not as variable as in the first type, usually remaining slight, and the color varies with the depth of infiltration. This, too, is found almost always as a light brown, aptly described as *café au lait*, which is the characteristic color of all of the macules that present the least amount of infiltration. A reddish tinge is added to the brown of the border in those cases with more marked infiltration, the resultant color being a red-brown, which is again intensified during the lepra fever. This circinate type may occur on any part of the body, but the hands and head are not as liable to this as to the form in which the macule presents a uniformly pigmented area, appearing *en plaque*. The areas of especial predilection are the shoulders, legs, thighs, buttocks and forearms, in the order named. It is not infrequent to find confluent lesions of this type forming grotesque ribbons of irregular borders and outlines, extending along the whole of an extremity or showing symmetric figures over the back.

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The bullous eruption, which is very rarely seen, occurs associated with this early stage, or precedes the macule if it occurs at all. The bullæ contain serum at first, but become pustular in a short time. They are not larger than a small marble, and occur most frequently on the hands and feet. The clinical diagnosis is frequently difficult without other evidences of the disease. The bullæ have a predilection for the areas over the knuckles of the fingers and will repeatedly appear in the same site, establishing scar areas with encircling pigment, which is characteristic. Often these lesions lead to ulceration and even trophic changes in many cases misleading to a diagnosis of neuritis and not infrequently escaping the suspicion of leprosy for months or years, in the hands of neurologists. Several cases have finally come to a diagnosis of leprosy when the skin evidences of macules or tubercles elsewhere have developed.

On the feet the bullæ seldom appear so early, and when they do come they are found on the plantar surface, usually going on to actual ulceration, trophic in character.

Late leprosy will develop bullæ as evidences of trophic changes and here the destruction of skin and deeper tissues is the rule, finally causing the destructive, amputative deformities found in nerve leprosy and the loss of terminal or intermediate phalanges of the digits of fingers and toes.

The tubercles in leprosy have their favorite location on the face, involving especially the lower part of the forehead, the ears, the nose, the chin, the cheeks, in the order named. The hands and other parts are less frequently involved.

They may begin in the patches of a macular eruption or they may develop in normal skin. When sufficiently developed tubercular or nodular leprosy is essentially a bilateral, symmetrical disease. In some cases individual tubercles cannot be distinguished, but the whole skin of the face is greatly infiltrated, thickened and discolored, the surface remaining smooth, or, more often, cut by furrows sometimes a quarter of an inch deep in the natural lines of cleavage, or in the folds of the forehead, cheeks or chin. This furrowed type is especially marked on the cheeks and forehead and gives the leonine expression to the countenance more strikingly than the other varieties. In other cases the tubercles preserve their integrity, studding the face in their favorite areas of distribution with nodules varying in size from a pea to a marble. The color is usually a dusky reddish-brown, or may be waxy white in those cases in which the lesions are scattered and which are usually the most malignant. Each individual nodule is rounded at the base and spherical in contour, much as if peas or marbles had been stuck in the skin.

The eyebrows and beard may fall in this type, but as the scalp is not usually affected its hair may be preserved in its integrity until very late in the disease or to its termination.

Periodically in the course of the disease there may occur an outbreak of tubercles, evanescent in character, highly inflammatory and very painful. These occur during the course of the lepra fever before mentioned, which may last from one to five or six weeks, or even longer. These tubercles are deep-seated and dull red in color, not showing the brown pigment of the chronic type. They fade away with the subsidence of the fever and sometimes one crop will disappear to be replaced by another before the temperature returns to normal. The inflammation in this type is sometimes so intense that vesicles and bullæ develop on the tops of the tubercles, and some may even undergo suppuration with the formation of abscesses. Their distribution over the body is far more general than that of the permanent tubercles, as they occur not only on the face and hands but also on the trunk and on both the flexor and extensor surfaces of the extremities. The type of fever referred to as lepra fever is not the fever usually described as one of the prodromal symptoms of leprosy, but is an irregular elevation of temperature ranging from 100 to 104 F., and associated either with marked changes in the macules or tubercles present before the occurrence of the fever, or with the formation of such tubercles as have just been described. These tubercles may be especially recognized by their tendency to uniformity in size and their usual lenticular shape as if a flat bean were embedded in the skin.

The lepra fever has two distinguishing symptoms, the rise in temperature and the development of tubercles different in many characteristics from the lesions found as the usual evidences of leprosy. In the tubercular and mixed cases it occurs at varying intervals of time and is of varying duration, while in the pure anesthetic and trophic cases, as there are no tubercles, the skin evidences are lacking. Though there may be periodic rises of temperature, they are often associated with the suppuration which is the result of nerve disturbances and which is more liable to affect the bones and joints than the skin; in consequence the cardinal point in the diagnosis of lepra fever is lacking.

The inflammatory evidences in the tubercles accompanied by a general rise of temperature occur in almost every case of tubercular or mixed leprosy, though the symptoms are sometimes of so slight a character as almost to escape observation. The temperature may vary from so slight a rise above the normal as to occasion merely a feeling of malaise, to a grave febrile condition. The range of temperature is from 99 to 105 or 106, and two cases have been observed in which the result was fatal. The attack is often ushered in with a chill, and the duration is very variable—from a few days to several weeks or even months. Some patients have been known to have as many as three or four attacks during one year. The chief features of the temperature chart are the remittent character of the fever, and the sudden great rises and fall of temperature. The chart of a well marked case very closely resembles that of septicemia.

The occurrence of marked inflammatory symptoms in old tubercles, infiltrated patches, macules, or in areas of skin which apparently were previously healthy, is coincident with the rise of temperature and is characterized by swelling, redness, pain and, rarely, suppuration. The occurrence is most frequent in old tubercles and least frequent in areas of skin which previously were not involved. The duration of the inflammatory nodules is short, but one crop is followed by another as long as the fever lasts. The location is most frequently on those parts of the body that are involved by the chronic characteristic nodules of leprosy, the face, neck, hands, and also the arms and legs. The distribution seems, like that of the chronic lesions, to prefer those parts of the body in which the temperature is lowest. The trunk is less frequently involved, and we have seen no cases involving the scalp. The number of lesions found at one time is very variable and they are disseminated with an irregular, bilateral symmetry. They vary from the size of a split pea to that of a hen's egg. The elevation above the surrounding skin is well marked and the nodules are of a globular contour, usually rounded in outline and distinctly limited in area. The color is uniformly red—a brighter and more brilliant hue than the dusky purplish red of the stationary tubercles, from which they can be differentiated not only by their inflammatory character but also by their rapid development, their evanescent character and an occasional tendency to suppurate and occur on parts of the body not usually affected by permanent bacillary deposits. Unless suppuration occurs the nodules are quite firm to touch and most resemble those found in erythema nodosum. It has been a matter of observation that often after attacks of lepra fever there has been improvement in the old tubercle and in the general condition, which seems to argue that during these attacks some bacillary product is formed which not only causes the elevation of temperature but also either directly affects the life or growth of the organisms, or indirectly, through the elevation of temperature, produces a condition unfavorable to the germ life.

In support of the latter view may be mentioned an observation made by Dr. F. B. Gurd, of the Department of Pathology of Tulane, in which the pus from an abscess caused by the suppuration of an inflamed tubercle was found to contain no organism except the bacillus of Hansen. These bacilli were found to be incapable of cultivation under the same conditions in which other Hansen bacilli had been found to flourish.

It is also interesting to note that during the administration of a series of hot baths, in which an effort was made to maintain an elevation of temperature of 104 for several hours, two tubercular cases developed lepra fever. If we may be permitted a little speculation, the great improvement derived from elevation of temperature, even in advanced cases of leprosy, may be explained on the hypothesis that the lepra bacillus does not thrive at high temperatures. The location of the chronic tubercles is very suggestive of this, as is also the improvement noted after erysipelas, lepra fever, and artificial elevation of temperature by means of hot baths. It seems possible that the products of the disintegration of dead bacilli provoke a general rise of temperature as well as the local heat of inflammation, and that the febrile condition thus produced reacts on bacilli in other locations, which, in turn, in their disintegration, liberate fever-producing toxins. It is conceivable that such a process should continue until all the less viable bacilli become destroyed, when the temperature returns to normal and old lesions show considerable improvement.

With the exception of the tubercle associated with the lepra fever the nodules of leprosy seem to have a marked preference for the exposed parts of the head. The scalp is almost always free, while the ears are, on the contrary, almost always involved. They become enormously enlarged either by the presence of tubercles, in the lobes especially, or by a diffuse infiltration, both of which cause a marked discoloration. It is not unusual to find, even in terminal cases, tubercles present massed over the entire face and ulcerating, the limit of the most aggravated part of the eruption clearly marked by a line around the neck about where the shirt-band rests. On the trunk and arms and legs the macular eruption is far more common than the tubercular, though nodules may occasionally be found over a macular patch or even on a part of the skin presenting no other lesions. The tubercles never mass over the entire body as they do over the face. The most common condition on the hands is the thickening of the skin and pigmentation, with tubercles more sparsely scattered than on the face, the color being a dusky brown. The infiltration and swelling of the hands so affect the skin as often to cause a papery consistency like thin parchment.

The ulcers of leprosy are of two kinds, the perforating and the purely cutaneous. The latter occur most frequently on the face and on the legs. On the face they are usually superficial, but those around the mouth are liable to cause considerable destruction, and when the ulceration has healed the shrinking resulting from cicatrization will reduce the mouth to about one-third its normal size. The ulceration of the face occurs only in the terminal stage when the tubercles have become large and thickly aggregated, and it is found only in the tubercular and mixed types, the trophic form, or nerve leprosy showing in the face only by the infiltration of the whole mask of the face, with thinning of the epidermis, leaving the skin glossy and pigmented. The ears in this form are often flabby and pendulous; ectropion causes a stare, which is a peculiarity of this disease. The cause of the breaking down of the nodular masses seems to be due more to a disturbance of circulation in the skin than to the bacilli present, and this seems true also of the ulcers of the leg, where the circulatory balance is easily disturbed by gravity.

The perforating ulcer is associated only with the anesthetic form and is found only on the hands and feet, and more often on the ball of the foot than elsewhere. It is a surgical condition, being a sinus leading to necrotic bone. The horny layer of the skin is much hypertrophied when the ulcer is on the foot and the condition is painless.

A strong confirmatory symptom of leprosy is the anesthesia found in all types. In the tubercular type it is confined to the lesions, but in the anesthetic it spreads over the area of distribution of the nerve affected. The sense of pain and temperature are lost before the sense of touch, and in the anesthetic type the nerves most frequently involved first are the ulnars. The loss of sensibility begins usually in the tip of the little finger and spreads gradually to the adjacent fingers and up to the forearm. Other nerves become involved later on and the anesthesia may become general. In this instance there is always either marked thickening of the ulnar nerve or distinct nodes along the nerve. The left side is more often the first to be affected.

The mutilation in the anesthetic or nerve type is almost confined to the hands and feet, usually being limited to a loss of the fingers and toes, and is due to trophic changes caused by nerve destruction. The atrophy may be manifested by the "claw-hand," in which the flexor tendons and muscles shrink more than the extensor, drawing the fingers up and preventing extension, or it may affect the bones, causing either necrosis or a gradual degeneration and absorption.

When necrosis occurs, a perforating ulcer is established and persists until the fragment of dead bone, sometimes an entire phalanx, is discharged. The ulcer then heals, leaving the finger or toe shortened by the loss of bone. When necrosis with suppuration does not cause the loss of bone in mass, a slower process of absorption goes on, and the flexed fingers become shrunken masses of flesh with atrophied nails at their extremities.

The curious condition of an amputation at the joints by constricting circular atrophy, just as in the disease known as "ainhum," is often observed and fingers and toes are often lost in this painless way. A band of fibrous tissue forms around some part of the digit and gradually constricts the underlying tissues. The band is usually about one quarter to one-half inch in breadth, and as it grows tighter the tendons and bones under it atrophy until the finger is left hanging by a fibrous band, which can easily be cut off with a pair of scissors; or, if left to itself, the finger will fall away, the patient often being unconscious when the loss occurs.

The suppuration attending the necrosis of bone may extend to joints involving the articulations at the wrists and ankles and occasioning a condition like tuberculous or septic arthritis.

Considerable attention has been directed to leprosy in the United States and recent cases have enforced the belief that not enough emphasis has been placed on the training of government physicians with regard to this disease. The notoriety attaching to the Early case alone, which excited the qualified criticism of at least two distinguished foreign leprologists, may be cited in point.

The United States has specific immigration laws which require the deportation of lepers; yet in 1908 several patients with advanced leprosy were shown in New York at the International Dermatological Congress, and some of these cases were in recently imported foreigners.

Within the past three years Dr. Dyer has seen two lepers from Central and South America, who reached New Orleans by way of New York. These cases were well enough marked to have been recognized by any health officer who had even a meager idea of the disease.

It is highly important that the cardinal symptoms of leprosy should be learned by the officers of the public health so that importation of leprosy may stop. It does not require any more legislation, but more education of port physicians.

The salient points of diagnosis in leprosy consist in the recognition of the stamp of the disease, which is always suggested by the dusky hue, the swollen skin, the overhanging eyebrows and the raucous voice. The hands, too, have a thinned epidermis and an altered color which is different from that in any other disease. The presence of tubercles in the skin of the face, at the lips and about the nose, with others, in the pendulous parts of the ears—all these should make a case suspicious.

The differential diagnosis of leprosy, clinically, is at all times simple. There are only two conditions which at all resemble tubercular leprosy, iodism and disseminated tuberculosis cutis. The first named condition is seldom seen in the areas common to leprosy and the nodules of iodism are highly inflammatory and ready to break down.

With tuberculosis of the skin, the lesions are numerous, small and deep-seated, under the epidermis as a rule. They are dirty white in color and seldom assume a reddened hue. Moreover, this condition on the face is unusual and when it does occur, the lesions are more apt to occur bilaterally and symmetrically, in numbers, on the cheeks and wings of the nose than elsewhere.

We would finally make the point that all physicians should report any cases of leprosy coming under their observation so that the actual occurrence of this disease in the United States may be studied and the statistics derived may be of some value in establishing an institution for the care of leprosy under government control and expense.

124 Baronne Street.

ABSTRACT OF DISCUSSION

Dr. A. Ravogli, Cincinnati: It would be somewhat difficult to measure the value of fever as a diagnostic factor in these cases. The fever is usually present in the early stage of the disease, but we seldom see cases of leprosy in their development. We usually see them when they begin to suffer from neuralgic pains or during the eruptive stage. It is extremely difficult to establish the diagnosis of leprosy in the second stage, when the eruption which we call the leprides are developing, as they can easily be mistaken for various kinds of eruptions. The only characteristic symptom is when they show the toxic erythema—large, reddish patches on the arms or in other regions which usually are accompanied by severe neuralgic pains when the nerves have become involved. In the later stages, when the tubercles form, the disease is more readily recognized. I have seen cases where there was scarcely any eruption—merely spots of cloasma or vitiligo and neuralgic pains. Then the hands begin to be paralyzed and take on that peculiar appearance, hand-drop. In one case only a large leproma developed on the knee and another on the foot, causing ulcer which involved the joint and the bones. I firmly believe that with a little experience and attention it will not be difficult to establish the diagnosis of this disease, which should be stamped out. This is being done with brilliant results in Norway. In the United States we have about 278 cases, some in North and South Dakota from Iceland, some in Minnesota from Sweden and Norway, some in Louisiana from the Bahama Islands, some in San Francisco from the Orient, and other scattered cases here and there. It is important, I think, that the United States Government should take up this question. We had a case in one of the hospitals in Cincinnati, in which the diagnosis of leprosy was fairly positive. The patient was a negro soldier who had spent four years in Cuba, and when we asked the health officer of the city what to do with him, we were told to let him go. I think it is dangerous that these patients should be allowed to remain in localities where they will be in free communication with other people.

Dr. Marcus Haase, Memphis, Tenn.: I would not have had the opportunity of seeing a case of leprosy had it not been for this lepra fever. I would like to ask Dr. Dyer what percentage of these patients have this fever after the disease is fully developed?

Dr. S. T. Darling, Ancon Hospital, Canal Zone: The subject of leprosy is a very important one in the United States at this time when soldiers who have served in the Philippines and where employees from the Canal Zone are returning to take up permanent residences in various parts of the country. In the Canal Zone we have had no case of leprosy among Americans, and but one in a European. Our quarantine officers have been alert and active in the detection of the cases passing through their hands. We find that the diagnosis of the nodular form of the disease is easy. In fact, several of our cases have been detected by district sanitary inspectors, who are laymen. The anesthetic type of the disease presents greater difficulties. In these cases it is important and necessary in the examination to strip the patient and look for the presence of the characteristic annular areas of anesthesia and discoloration of the skin on the back, breast, abdomen and buttocks. These cases frequently present circular ulcers on the feet between the second and third toes. We have at times removed parts of the enlarged ulnar nerve for diagnosis and failed to detect bacilli. The *x*-ray as a diagnostic aid has been used by Dr. A. B. Herrick, Ancon Hospital, for, in association with trophic ulcers of the feet in the anesthetic type there is a definite atrophy of the phalanges near the ulcer, which is well shown in radiographs. I believe Scheube has called attention to the fever of leprosy, but I do not think it is of much importance in the diagnosis of cases of leprosy of the anesthetic type.

Dr. William Litterer, Nashville, Tenn.: I was greatly interested in Dr. Dyer's explanation of the fever in leprosy. I think he is correct when he states that it is due to some form of intoxication. This intoxication is in all probability due to the toxins, or disintegrated products of the lepra bacillus. It seems that the patient gets better several days after the fever. This would indicate that the liberated lepra toxins would cause an increase in the opsonic power of the blood, similar to that seen as a result of tuberculin administration. While I do not know whether or not it is feasible, I would suggest taking an emulsion of the lepra bacilli after their growth on a proper medium and injecting the bacilli as a means of treatment.

Dr. I. Dyer, New Orleans: I again wish to make the statement that my paper was not an academic presentation of the subject, but rather a discussion of its salient features, because of the evident ignorance of the disease in our own country. Drs. Duval and Gurd, the pathologists of Tulane College, intend to present to the Society for the Study of Tropical Medicine a culture of the lepra bacilli which they have successfully carried on since last December, and we have already considered the elaboration of a vaccine. We hope, before another year has gone by, to have something to report in that line. In my paper, I purposely omitted any discussion of the subject of the laboratory diagnosis of leprosy. The discussion of anomalous types of the disease is largely covered in the portion of my paper which I omitted in reading. With us, and in all countries where the disease is fairly virgin, the anesthetic type is much more difficult to recognize than the tubercular. Such cases have been mistaken for syringomyelia by neurologists.

With reference to lepra fever, we have considered only that fever which occurs after the disease is well defined, and not that observed in the prodromal stage. In most of the cases of skin leprosy, which we have termed the tubercular type, this fever is often observed after the disease is well developed. As these cases have improved—and fully 90 per cent. of our cases have undergone a high degree of amelioration—the fever has always been associated with the improvement. In Louisiana, leprosy has been recognized and demonstrated since 1778.

THE SIGNIFICANCE OF EDEMA OF THE SOFT PALATE

LEWIS S. SOMERS, M.D.
PHILADELPHIA

Not infrequently an apparently trivial symptom may be the expression of a serious affection, and if it is unheeded and the opportunity for active treatment allowed to pass it may lead to a fatal termination before its true significance has been appreciated. Such a symptom is edema of the soft palate, and especially the uvula. When observed its possible gravity must be seriously considered. Edema of the soft palate chiefly involves the uvula, but may affect the faucial pillars, especially the posterior, or even the lateral pharyngeal wall. The uvular swelling may be slight, appearing as a glistening drop at its tip, or may be so massive that the faucial isthmus is occluded and breathing becomes impeded. The most frequent and at the same time trivial type is found in those who use the voice excessively, such as professional speakers, or improperly, even for a short time, such as impromptu orators. This is illustrated by the following case:

Case 1.—A. G., male, aged 32 years, had excellent general health, but granular pharyngitis caused him to clear his throat frequently. He had been speaking every evening for a month at political meetings with no discomfort, when, after a long speech in the open air, he felt as if a foreign body was in the throat and was obliged to swallow constantly. Examination showed a bead-like swelling on the tip of the uvula, above which the mucosa was inflamed.

Such a case is an acute traumatic uvulitis and is purely local. No serious significance can be attached to it except that edema of any portion of the upper air-passages, it matters not how slight, carries with it the possibility of extension to the larynx, with all the seriousness that it implies.

Associated with general affections, as rheumatism, grip, etc., or with local conditions, as peritonsillar abscess, acute uvulitis is not infrequent, and in some cases of grip the brunt of the inflammation may be borne by the soft palate, with more or less swelling of the uvula.

Again, edema may occur as the result of direct traumatism, such as is caused by operations in this region and the application of the cautery to the tonsil, or it may occur in association with ulcerative processes of the mouth and pharynx, while sometimes it is seen as part of acute pharyngitis. In some individuals there exists a marked vulnerability to attacks of acute inflammation of the uvula with edema, so that on the slightest provocation pain and edema develop, causing difficulty in deglutition and possibly dyspnea.

Severe inflammation of the adjacent tissues is frequently attended with edema, especially in peritonsillar abscess, when serious symptoms may result from the enormously swollen uvula, and also from the glottic edema which may be associated with it. In peritonsillar abscess of any duration, edema of the adjacent tissues is a part of the morbid process and, in severe cases with much pus, an active factor in its production is blocking of the intercellular spaces with leukocytes, the blood channels being dilated, so that the escape of fluid into the tissues becomes conspicuous. An exaggerated case of this type, in which the edema was limited to the uvula, is the following:

Case 2.—A man of 43, an abstainer from alcohol, in perfect general health, would have a peritonsillar abscess at intervals of one or two years; and at the time the edema occurred, the tonsillitis had lasted three days, when I first saw him. The right tonsil was involved and the most striking object on examining the throat, was the enormous uvula, filling up the space between the tonsils and causing great difficulty in swallowing. It resembled a nasal polyp; when it was incised, considerable fluid escaped, giving great relief. The edema disappeared after the evacuation of the peritonsillar pus collection, which was accomplished at the same time.

In some cases edema is a prodromal symptom of acute articular rheumatism, occurring as a symptom between attacks or seen in conjunction with gout. True gout in this relation is uncommon in this country, but is more frequent abroad and may show as an acute faucitis with edema of the uvula, which disappears as a gouty inflammation suddenly develops elsewhere. In such cases, described by Lermoyez[1] as acute pharyngeal gout, the edema is prominent and, as a prodromal symptom of a grave disorder, demands the most particular care. There is a sudden onset of faucial inflammation and fever, and the patient complains greatly of sore throat, but the pain is in excess of the objective symptoms, as the inflammation is limited.

---

[1] Lermoyez: Ann. d. mal. de l'oreille, May, 1902.

The most conspicuous symptom, however, is uvular edema. There is never exudation, as in some other forms of tonsillitis, and after lasting for two or three days the symptoms disappear, to be replaced by an attack of gout elsewhere. Such pharyngeal symptoms, but less severe, may precede an attack of rheumatism, lumbago, sciatica, etc., and it will often be found that edema of the uvula is present, although frequently not observed by the physician, as it disappears in a few hours on development of frank rheumatism.

It has seemed to me that these cases may be divided into two fairly well-defined classes; those in which the organisms concerned in the throat affection possess excessive power of producing toxins and which are clinically characterized by edema in the throat and disturbance of the general metabolism, while in the other class the toxin production is limited and the organisms are characterized by local exudation. The arthritic diathesis at times seems to play a prominent rôle and, when a predisposed individual is exposed to chilling or dampness, pharyngitis or faucitis with edema is apt to ensue promptly, to be followed by an outbreak of so-called rheumatism. In another group of cases the throat manifestations are more mild, but characterized by the edematous uvula. There is fulness, increased during deglutition, the muscles feel rigid and the mucous membrane is inflamed. The edema, however, is not of sufficient intensity to cause serious symptoms, but is significant as a local expression of a general impairment of metabolism. The following patient shows this condition:

Case 3.—The patient, a man aged 25 years, runs an elevator and is continually in a draught. He had two attacks of sore throat the previous year in which the uvula only was involved; it was so swollen that he could not swallow food. Each attack was followed by rheumatism involving the knee, shoulder and ankle joints. The present attack began with a sore throat which caused little annoyance for a week, when the uvula suddenly became swollen and prevented the patient from eating. Examination showed it to be purplish-red, edematous, with congested blood vessels ramifying over the surface; and its tip, lying on the base of the tongue, produced a constant desire to swallow. Six hours later this entirely disappeared, the shoulder and knee joint became inflamed and the patient suffered for several weeks with rheumatism, but had no further edema of the uvula.

In severe types of faucitis, as erysipelas or septic infections, edema of the uvula is nearly always an accompaniment and is most serious, as it signifies a grave type of infection with tissue destruction, while the imminent danger of glottic edema is always present. In erysipelas, either as an extension from the dermal surface or, more rarely, arising as a primary pharyngeal infection, the swelling is so great that even a small degree of edema has a most grave significance and its development seriously aggravates the dyspnea and general prostration. In chronic specific affections, as tuberculosis and syphilis, the development of uvular edema may occur late and is significant of destructive local lesions with grave general debility.

As an indication of serious organic changes in the kidneys, edema of the uvula should arouse suspicion, as it may be the only symptom of approaching uremia, although edema of the larynx is more frequently observed as a symptom in this respect. Edema of the uvula is rare in acute nephritis, but occurs in cases of scarlet fever, in which the edematous uvula represents both the presence of the local infection and the subsequent toxic nephritis. F. Berine[2] reports an instructive case in a man of 35. There was an indefinite acute febrile attack with albuminuria, and the soft palate became edematous. The pharyngeal condition rapidly disappeared under treatment directed to the renal affection. While not frequent in chronic nephritis, except as a terminal symptom, it may be the first evidence of a general hydremia, the result of venous stasis, or may be part of a so-called nephritis pharyngitis, in which the mucous membrane shows atrophic disturbances with hemorrhagic streaks over the soft palate and posterior pharyngeal wall. In these cases it will be found that the local affection is the expression of a toxemia and, with but few exceptions, the kidneys are the underlying cause or, what is practically the same, there is high arterial tension with arteriosclerosis, and these organic changes show themselves both in the cardiac and renal structures. It may also be a prominent symptom of uremia in chronic nephritis, and then presents the most grave aspects, as the following case shows:

Case 4.—The patient, E. K., a man aged 38, a machinist, used alcohol to excess for many years. When first seen at my clinic at the Stetson Hospital, he complained of dyspnea and dysphagia; the uvula was swollen, almost filling the faucial space and the larynx could not be seen. No history was obtained, as the patient was intoxicated, but there was no evidence of laryngeal involvement and the uvula was freely incised with considerable relief. As he lived close at hand, he was sent home and told to return if he had any difficulty with breathing, or if the improvement did not continue. Two hours later he was admitted to the hospital with great dyspnea and his wife stated that he had been constantly drunk for the past three weeks. He was weak, pale and sweating; could only whisper and could not lie down. The urine showed albumin, granular and hyaline casts and the condition was readily recognized as uremia. Under active treatment the uvula edema disappeared, but the general condition became worse; the patient developed wild delirium and died on the third day. In this instance the fatal termination was from the toxemia and not from the edema, as the latter entirely disappeared before death.

While edema here does not produce a lethal issue, it always presents a serious aspect on account of the danger of laryngeal involvement, and this is especially true in that group of vasomotor cases which are angioneurotic in character. Such cases represent a local manifestation of a general condition, intestinal toxemia at times being the underlying factor. An instance of this kind is reported by Gardier,[3] in which edema occurred two hours after a meal, relief being obtained by active purgation. The swelling of the uvula in angioneurotic edema may be enormous, with great difficulty in swallowing and symptoms of suffocation, but active treatment gives prompt relief from the terrifying symptoms. For a time it may be the only symptom and cause great concern, or it may appear in conjunction with wheals on the dermal surface, while in several cases which I observed, it disappeared on the outbreak of localized swelling of the skin. A similar case was reported by Ballinger,[4] in which edema of the pharynx suddenly appeared in a nervous young woman suffering from hay-fever, then rapidly disappeared, to be replaced by an attack of urticaria. Likewise, Hinsdale[5] reported a case in which the body was covered with urticaria, the uvula was edematous and allowed the entrance of air only, with difficulty, but there was no swelling of the laryngeal tissues. Such conditions may occur in digestive disorders or following operation with considerable traumatism, and may also be associated with intranasal changes such as acute inflammation with pus formation. Acute nasopharyngeal inflammation may be its cause when its gravity is dependent on the degree of infection.

---

[2] Berine, F.: Rev. de méd., Paris, November, 1899.

[3] Gardier: Echo méd. du nord, Aug. 8, 1897.

[4] Ballinger: Jour. Laryngol., Rhinol. and Otol., May, 1896.

[5] Hinsdale: Philadelphia Polyclin., 1898, vii, No. 31.

So far as drugs are concerned in the production of edema, it can be appreciated that corrosive poisons, when swallowed, may produce it, but other than this the presence of edema would hardly suggest such a factor, although Price-Brown[6] saw a case in which, following the application of 10 per cent. cocain to the nasal chambers, edema of the uvula rapidly ensued several times, spontaneously disappearing a few hours later. In a case recorded by Ward[7] edema followed a large dose of scopolamin. Many miscellaneous causes may play a part in its development, but in the majority of cases traumatism, either direct or indirect, is a most important factor. The former is illustrated by the edema caused by swallowing corrosive poisons, or by acids and burns, but in such cases it presents little significance, as the effect of the poison is of greater import elsewhere and its only significance is in indicating other grave conditions. In this connection a case is reported by Foster,[8] in which a man of 54 years drank scalding coffee; there was severe pain localized to the soft palate and the voice was lost. Examination revealed the arches and tonsils concealed by the greatly distended uvula; there was no edema of the larynx, and cure was obtained in a short time.

Edema of the tip of the uvula, resembling a drop of fluid, is frequently found and causes little concern. Nocturnal mouth-breathing is a not infrequent factor, while the hawking of many individuals with postnasal catarrh, in their efforts to remove inspissated secretion, is also a traumatic cause. Reardon[9] reports a case of edema caused by attempts to dislodge crusts from nasal suppuration. Vomiting may act in the same manner; Shurly[10] reports such a case, in which vomiting produced great intumescence of the uvula.

The question arises as to why the uvula should present edema in such a number of conditions, some only local and of little import, while others, such as those associated with renal lesions, present the most grave significance. Two factors are especially concerned in the mechanism, one already mentioned, that of traumatism, and the second, the structure of the uvula. At this portion of the palate the mucous membrane is thicker and less compact than that of other parts, especially so at its tip, so that it tends to favor the production of serous exudation here rather than at other points. In addition, edema occurs where the submucosa is well developed, and such is the case here to an unusual degree, as the bulk of the uvula is composed of areolar tissue with a loose-meshed arrangement of the cells, so that even slight congestion may be accompanied with a rapid development of edema. The size of the uvula plays some part in this respect, as, when large and broad, it is more apt to show edema than when thin or short, the latter form usually showing a drop on the tip, while the broad uvula presents a passive type with serous exudation in the deeper layers.

The symptoms vary from slight tickling or scratching to a feeling as if a foreign body was present and producing suffocation. Where edema is slight the subjective symptoms may be absent, while there may be considerable dropsy unnoticed by the patient on account of the severity of the local conditions producing it, such as a peritonsillar abscess. In many cases the condition is most harassing because of the constant attempts to clear the throat and on account of the irritation of the tongue and epiglottis by the enlarged uvula; nausea and vomiting may be produced, while a hacking cough is frequent. The voice becomes hoarse and this hoarseness is enhanced in severe cases by excessive mucous secretion. All the symptoms are aggravated by the recumbent posture, and if the edema is extensive it is impossible for the patient to lie down without attacks of suffocation.

The appearance depends on the amount of serous exudation and, while in the majority of cases its original form remains preserved, yet, when the edema is excessive, it loses its outline and may become corrugated, or appear as a semitransparent ovoid mass. Finally the color may be significant of the proximate etiologic factor, for when the edema is the result of passive congestion the uvula is gray or blue-gray, like a translucent grape, while the inflammatory type, indicative of local changes, is characterized by a red hue increasing in intensity as the intumescence becomes augmented, until, in excessive infiltration, the vascular stasis is productive of a purple color. The color alone, however, is of little value, as the edema can never be mistaken, but the important factor is its grave significance in some cases and the necessity in all cases of ascertaining the underlying factors concerned in its production.

3554 North Broad Street.

ULTIMATE RESULTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS WITH MERCURY SUCCINIMID

H. J. HARTZ, M.D.
PHILADELPHIA

The treatment of pulmonary tuberculosis with mercury has been highly extolled in the past few years by Dr. Barton Lisle Wright, of the United States Navy. The results obtained seemed so remarkably successful that a series of cases were selected and were placed under the mercury treatment.

A variety of cases were selected in an endeavor to ascertain in which type the treatment gave the best results. The classification of the different stages of the disease is the same as the one adopted by the National Association for the Study and Prevention of Tuberculosis.

The treatment consisted in the administration of a sterile solution of mercury succinimid in 1/5 gr. doses every second day, as advocated by the originator of this method of treatment. The hypodermatic injections were given into different portions of the body, including the buttocks, loose tissues of back and abdomen, and into the deltoid muscle. An attempt was made to administer the mercury intravenously and several injections were given into the median basilic vein. The intravenous route, however, was soon abandoned, as it proved unsatisfactory since it required some preparation of the part and carried with it the element of danger of a possible thrombus formation.

---

[6] Price-Brown: Diseases of Nose and Throat, F. A. Davis Co., Philadelphia, 1900.

[7] Ward: Philadelphia Med. Jour., Nov. 12, 1898.

[8] Foster: West. Med. Jour., October, 1898.

[9] Reardon: Boston Med. and Surg. Jour., May 17, 1898.

[10] Shurly: Diseases of Nose and Throat, D. Appleton & Co., New York, 1900.

The injections into the deltoid muscle seemed to have been preferred by most of the patients for the following reasons:

1. The part was easily exposed and easily sterilized.
2. The patient did not suffer any discomfort from sitting, as was often the case when the injections were given into the buttocks.
3. The patient could sleep and turn from side to side without suffering from the painful swelling which would often result at the site of the injection.

Twenty cases in all were selected, there being ten men and ten women in the series. The enumeration of the patients is in the order of the number of the injections that each had received. The hygienic and dietetic treatment of the patient was not changed during the period in which the mercury was administered. The patients were given the regulation amount of milk and eggs and were encouraged to spend more of their time in the open air. The examination of the sputum was performed in all cases, the urine and feces of many of the patients were also examined for tubercle bacilli, and blood-cultures were made in over one-half of the cases. Only those patients were selected who showed undoubted signs and symptoms of the disease, who had been for a long time under observation and whose cases were in the majority of instances of a chronic, non-active and generally favorable type.

The range of ages of the men was 20 to 55 years; average 41 years; the range of ages of the women was 18 to 62 years; average, 38.4 years.

The types of cases included in the series were as follows:

Incipient—arrested or stationary	2
Incipient—slowly progressive	2
Moderately advanced—had improved under hospital treatment	2
Moderately advanced—apparently cured	2
Moderately advanced—stationary or arrested	6
Moderately advanced—showing slow deterioration of general condition	1
Miliary—bed patients, progressive	2
Advanced—bed patients, progressive	2
Laryngeal—moderate advancement in lungs	1

According to activity of disease the cases may be classified as follows:

Arrested, stationary and apparently cured,	10 cases	50 per cent.
Improved under general treatment,	3 cases	15 per cent.
Active with local or constitutional sympoms,	7 cases	35 per cent.

In view of the very striking ultimate results it has not seemed necessary to attempt to describe the course of the patients' condition during the treatment. In a general way it may be said that some showed temporary improvement in their condition, but it could not be very definitely attributed to the mercury, as it differed in no way from that in the non-treated cases. All the patients were receiving the general hygienic and dietetic treatment at the same time. Eventually, however, all the patients began to deteriorate, almost in direct proportion to the number of injections that each had received. From a careful study of the cases during the course of treatment it was observed that mercury had no specific effect on the course of the disease, and showed no tendency toward checking the local involvement in the lungs. Several patients (Cases 1, 3, 5 and 6) showed temporary improvement in their general condition, but it was probably due to the therapeutic action of the mercury on the associated anemia. These patients, however, shortly afterwards began to fail in health, and the deterioration was more rapid than in those who had not received the mercury. The quiescent lesions in the lungs became active, infiltration into the healthier tissues of the lungs occurred, cough and profuse expectoration and marked constitutional symptoms became progressively worse, thereby causing grave nutritional disorders, until the patient finally succumbed to the disease. A predisposition to hemorrhage manifested itself in several cases (Nos. 1, 3 and 7), particularly in the fibroid type, and it was the immediate cause of death in two (Cases 1 and 7). Salivation and pains in the bones developed in three of the cases (Nos. 3, 4 and 15), and treatment had to be abandoned on this account. Two of the patients, who received thirty injections each, had a positive history of a syphilitic infection during their earlier life (Cases 2 and 3), and the mercurial injections in these two patients were borne with greater impunity; one of the patients (Case 3) was alive fourteen months after the last injection with slight changes in his general condition, but occasionally was confined to bed on account of hemoptysis, or for a transient pleuritic affection. The only other patient (Case 4) who is alive, of the group that received six or more injections, is now suffering from a pyopneumothorax and has had several aspirations performed. For the past two months this patient has lost rapidly in weight, is very weak, and death with her is only a matter of weeks.

ENUMERATION OF PATIENTS ACCORDING TO NUMBER OF INJECTIONS AND ULTIMATE RESULT ONE YEAR AFTER TREATMENT

Case	Injectious,	Result	Case.	Injections,	Result.
1. D. F.	30	Dead	11.—E. D.	10	Dead
2.—N. B.	30	Dead	12.—M. F.	8	Dead
3.—J. M.	30	Living	13.—T. M.	8	Dead
4.—M. M.	22	Living	14.—F. B.	6	Dead
5. M. N.	15	Dead	15.—W. H.	4	Dead
6. M. D.	15	Dead	16.—J. J. K.	4	Living
7.—J. O'D.	12	Dead	17.—R. H.	4	Living
8. R. S.	10	Dead	18.—M. R.	3	Living
9.—J. H.	10	Dead	19.—M. C.	2	Living
10.—J. K.	10	Dead	20.—A. S.	2	Living

One year after the treatment had been discontinued the following results were noted in the patients who had received the mercury injections. Of the fourteen patients who received six or more injections twelve died from two weeks to six months after the last injection. Of the remaining two (Cases 3 and 4) of the fourteen patients who are alive, one (Case 3) has had repeated hemorrhages and is occasionally confined to bed, the other (Case 4) has had several aspirations because of pyopneumothorax, and is rapidly failing in health. This enormous percentage of deaths, namely, 85.7 per cent., among those patients who received six or more injections, can be attributed only to the use of mercury, simply from the fact that the expectation of life in many of the cases chosen was very favorable indeed. In fact, on account of the age of the patients and the chronic arrested type of the disease, they were the kind of patients who live long and have a favorable prognosis. Further, it may be noted that of the six patients who received four injections or less, five are alive and only one (Case 15) died, giving a mortality of only 16.6 per cent. as compared with the mortality of 85.7 per cent. of those who received a greater number of injections. Of the patients who had received the fewest injections, 83.4 per cent. are alive, while only 14.3 per cent. are alive of those who had received a greater number of injections.

To sum up, of the fourteen patients who received six or more injections, twelve, or 85.7 per cent., died, and two, or 14.3 per cent., lived. Of those who received four injections or less, one, or 16.6 per cent., died, and five, or 83.4 per cent., lived.

CONCLUSION

From the above results the only deduction that can be drawn is that mercury, as recommended, has utterly failed as a specific agent in the treatment of pulmonary tuberculosis, and is positively injurious and detrimental to one afflicted with tuberculosis.

I am greatly indebted to Dr. A. P. Francine and Dr. H. R. M. Landis for the many suggestions offered in the preparation of this paper.

REPORT OF CASES

Case 1.—Thirty injections.

D. F., a white man, aged 20, single, bookbinder, came under observation Sept. 20, 1908; died Aug. 25, 1909.

Type: Incipient, active.

The patient was well developed, well nourished and of medium stature. Infiltrations in both upper lobes were slowly progressive.

Result: The patient improved for five weeks, then began to fail in health rapidly, had several hemorrhages and died six months after last injection.

Reason for discontinuing treatment: poor health, hemoptysis.

Case 2.—Thirty injections.

N. B., a white woman, aged 34, married, housewife, came under observation Oct. 30, 1908; died March 3, 1909.

Type: Moderate advancement, stationary.

The patient was a frail woman of medium stature and showed several resulting lesions of a previous syphilitic infection.

Result: She did not improve, but failed in health and died three months after last injection.

Reason for discontinuing treatment: Failing health.

Case 3.—Thirty injections.

J. M., a white man, aged 45, married, a laborer, came under observation July 3, 1908, and was alive April 1, 1910.

Type: Moderate advancement, stationary.

The patient was large, well developed and fairly well nourished, with a history of a previous syphilitic infection.

Result: He improved for several weeks; a few months later hemorrhages developed which confined him to bed. One year after injections the patient is alive, but much weaker.

Reason for discontinuing treatment: Patient began to show signs of salivation.

Case 4.—Twenty-two injections.

M. M., a white woman, aged 34, married, housewife, came under observation Dec. 17, 1906, and was alive April 1, 1910.

Type: Moderate advancement, stationary or arrested.

The patient was well developed, well nourished and of short stature, with no constitutional symptoms.

Result: There was no apparent improvement. The patient is alive one year after last injection in a very much weakened condition, and is suffering from pyopneumothorax.

Reason for discontinuing treatment: Salivation.

Case 5.—Fifteen injections.

M. N., a white woman, aged 34, widow, housewife, came under observation Nov. 12, 1908; died Jan. 18, 1909.

Type: Advanced, progressive.

The patient was of medium stature, of fair development and nutrition.

Result: There was slight improvement for two weeks, then she failed rapidly in health and died one week after last injection.

Reason for discontinuing treatment: Patient very weak.

Case 6.—Fifteen injections.

M. D., a white woman, aged 47, widow, housewife, came under observation Aug. 26, 1908; died March 29, 1909.

Type. Moderately advanced, progressive.

The patient was of small stature, of fair development and poor nutrition.

Result: She showed slight improvement for two weeks, but died two months after last injection.

Reason for discontinuing treatment: Patient refused injections.

Case 7.—Twelve injections.

J. O'D., a white man, aged 48, single, a laborer, came under observation April 9, 1909; died March 14, 1909.

Type: Moderately advanced, progressive.

The patient was large, of good development, good nutrition and with no constitutional symptoms.

Result: There was no change in condition during treatment. Four weeks after last injection the patient had several severe hemorrhages and died two weeks later.

Reason for discontinuing treatment: Patient refused injections.

Case 8.—Ten injections.

R. S., a white woman, aged 32, married, housewife, came under observation Dec. 16, 1908; died Jan. 8, 1909

Type: Miliary progressive.

The patient was of large stature, good development, good nutrition.

Result: The first two injections were followed by a drop in temperature from 104 to 98 F. The patient failed rapidly in health, and died two days after last injection.

Reason for discontinuing treatment: Death.

Case 9.—Ten injections.

J. H., a white man, aged 40, single, a laborer, came under observation Oct. 14, 1908; died May 8, 1909.

Type: Moderately advanced, improved on hospital regime.

The patient was of good development and good nutrition.

Result: There was no improvement. The patient progressively failed in health and died four months after last injection.

Reason for discontinuing treatment: Patient refused injections; felt worse.

Case 10.—Ten injections.

J. K., a white man, aged 31, single, a laborer, came under observation Oct. 23, 1908; died July 31, 1909.

Type: Incipient, slowly progressive.

The patient was of good development, good nutrition and apparently in robust health.

Result: There was no change; four weeks later the patient began to show signs of slow deterioration and died six months after receiving last injection.

Reason for discontinuing treatment: Hard painful swelling.

Case 11.—Ten injections.

E. D., a white girl, aged 18, single, a bookbinder, came under observation Oct. 19, 1908; died Jan. 5, 1909.

Type: Miliary, progressive.

The patient was of small stature, frail development and fair nutrition.

Result: There was no improvement. The patient failed rapidly in health, and died three weeks after last injection.

Reason for discontinuing treatment: Rapidly failing health.

Case 12.—Eight injections.

M. F., a white woman, aged 24, single, a factory girl, came under observation June 5, 1908; died Jan. 6, 1909.

Type: Moderately advanced, improved under hospital regime.

Result: The patient became worse under mercury injections, and died two weeks after last injection.

Reason for discontinuing treatment: She asserted that she felt worse; refused injections.

Case 13.—Eight injections.

T. M., a white man, aged 38, single, a fireman, came under observation June 20, 1908; died Dec. 27, 1908.

Type: Advanced, progressive.

The patient was of medium stature, fair development, poor nutrition and asthenic.

Result: The patient became worse and died one week after last injection.

Reason for discontinuing treatment: Death.

Case 14.—Six injections.

F. B., a white man, aged 55, widower, laborer, came under observation Oct. 26, 1908; died Feb. 15, 1909.

Type: Moderate advancement, stationary.

The patient was of small stature, poor development and fair nutrition.

Result: There was no improvement. The patient died six weeks after last injection.

Reason for discontinuing treatment: Patient refused injections.

Case 15.—Four injections.

W. H., a white man, aged 43, widower, plumber, came under observation Dec. 10, 1908; died May 7, 1909.

Type: Laryngeal, moderate advancement in lungs.

The patient was a well-developed adult and of fair nutrition.

Result: He became salivated after four injections, complained of pain in bones, and died four months later.

Reason for discontinuing treatment: Salivation.

Case 16.—Four injections.

R. H., a white woman, aged 46, widow, housewife, came under observation Sept. 15, 1908, and was alive April 1, 1910.

Type: Incipient, arrested.

The patient was of good development and good nutrition.

Result: There was no change, and she is practically in same condition one year later.

Reason for discontinuing treatment: Painful swelling.

Case 17.—Four injections.

J. J. K., a white man, aged 49, a single laborer, came under observation Dec. 7, 1907 and was alive Dec. 10, 1909.

Type: Moderate advancement, apparently cured.

The patient was of large stature, of good development and good nutrition.

Result: There was no change in condition; one year later the condition is same as when treatment was discontinued.

Reason for discontinuing treatment: Patient refused injections.

Case 18.—Three injections.

M. R., a white woman aged 62, single, engaged in housework, came under observation April 1, 1907, and was alive April 1, 1910.

Type: Moderate advancement, apparent cure.

The patient was of frail development and fair nutrition.

Result: There was no change and the patient is alive one year later in same condition.

Reason for discontinuing treatment: Patient refused injections.

Case 19.—Two injections.

M. C., a white woman, aged 53, single, engaged in housework, came under observation Feb. 16, 1907, and was alive April 1, 1910.

Type: Moderately advanced, stationary.

The patient was a well-developed adult woman of good stature and fair nutrition.

Result: There was no change, and the patient is alive in practically same condition as a year ago.

Reason for discontinuing treatment: Patient refused injections.

Case 20.—Two injections.

A. S., a white man, aged 39, a single laborer, came under observation Oct. 11, 1908, and was alive April 1, 1910.

Type: Incipient, arrested.

The patient was of good development and fair nutrition.

Result: There was no change in condition, and the patient is alive one year later in same state of health.

Reason for discontinuing treatment: Patient refused injections.

1002 Jackson street.

Pannus in Trachoma.—The distinguishing features of pannus are innumerable small blood vessels tortuous in their course, running down through the cornea. It may involve only the upper part or all of the cornea. If much of the cornea is involved, or if the disease is not early arrested, there will be changes in the corneal epithelium, resulting in haziness of the tissue which is rarely entirely absorbed after the disease has been arrested. The younger the subject the better will be the chances for complete absorption of the exudate.—C. L. Wylie, in *Journal of Ophthalmology and Oto-Laryngology*.

PLASTIC SURGERY OF THE PELVIC STRUCTURES*

HENRY O. MARCY, M.D.
BOSTON

As the members of this Section know, this is not the first time that I have addressed it on the subject chosen. I seek this opportunity because, I confess in advance, I am greatly disappointed in the results obtained by surgeons in various parts of the country. Patients come to me from widely scattered localities, having been operated on by surgeons of repute and of ability beyond question. Of course, it should be borne in mind that the cases thus seen are exceptional. If the experiences teach anything, the criticism applies to the method, rather than the operator.

REPORTS OF CASES

In illustration of this I shall cite three recent cases in young, healthy women.

Case 1.—Mrs. B., aged 29, underwent instrumental delivery of a large child. An extensive laceration of the perineum, not involving the rectum, resulted. Six weeks after the delivery she was operated on by two of the leading surgeons of her city. On her admission to my hospital there was a marked cystocele, the cervix protruding through the vulva, with a pronounced rectocele. The posterior wall of the vagina had been cut away, leaving only a thin band of cicatricial tissue covering the rectum. The uterus was enlarged. There was a deep, double laceration of the cervix, with eversion.

A large, elliptical portion of the thickened anterior vaginal wall was excised and the anterior pelvic floor coapted by a line of deep, double buried tendon continuous sutures. The anterior vaginal wound was also closed by a single line of buried tendon sutures. The everted, lacerated cervical wounds were resected and closed with continuous tendon sutures. The perineal dissection was of course very difficult, but lateral flaps were secured by a deep dissection on either side, exposing the transversi, which were coapted and held in place by a double continuous buried suture. The posterior vaginal flaps were coapted by a single line of running buried sutures. An iodoform wool tampon in the vagina was the only dressing. The convalescence was easy and uneventful, and the restoration to the normal condition complete.

At the time of discharge from the hospital it would have been difficult to determine that the patient had ever been pregnant.

Case 2.—The patient was a woman, aged 22. Conditions were so nearly like those in Case 1 that they do not require recapitulation.

Case 3.—The patient was operated on a little more than a year ago by a leading surgeon in one of our Boston hospitals, and as in previous cases there was complete prolapse of the cervical portion of the uterus, with a marked cystocele and rectocele. Although in good general health the patient had been a great sufferer and a complete invalid for the entire year. Here also the posterior wall of the vagina had been dissected away, leaving very little covering to the rectum, but the pronounced feature was a constant purulent discharge from the vulva on both sides. This had been attributed to suppuration of the Bartholin glands. Much to my surprise the dissection revealed a long stay suture of silkworm gut, leaving a suppurating sinus throughout the entire tract where it had been buried.

These cases coming to me within a few weeks have impelled me to call the attention of the profession again to what I consider still a very common fault in technic. I must conclude that the basic principles of the operation are still in a measure misunderstood. A simple definition of the term "plastic repair" of any of the pelvic structures would be to restore them to their normal anatomic relationships. The time at my disposal permits only the briefest reference to the anatomy and function of these most important structures.

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The transversi muscles, interdigitating and blending with the great levator group, with the associated fascia, are the recognized supports of the pelvic floor. Their central juxtaposition forms the much-discussed perineal body.

REPAIR OF PELVIC FLOOR

The reunion and restoration of these sundered structures is the object sought by the surgeon. To reunite them they must be anatomically exposed. They must be retained in juxtaposition in aseptic condition and reunion or restoration necessarily follows. As I have long insisted, the dissection should be made by a free separation of about the posterior third of the vagina, quite to the crest of the rectocele, and sufficiently wide laterally to expose freely the torn retracted structures. This means a wound that, to one first seeing it, would seem unnecessarily large, but unless the dissection is wide and complete it is very difficult, often impossible, to obtain free access to the important structures thus widely and for a long time separated.

So far as possible, I deprecate the invention of new instruments unless they may be devised to accomplish an important purpose.

In the separation of the vaginal muscle from the rectum the cicatricial structures are often difficult of dissection. The cutting edge of the knife I use is at an angle of 45 degrees with the line of the handle. When the parts are held tense with the fingers in the rectum, the use of this knife facilitates dissection, especially of the retracted cicatricial attachment of the transversi muscles. I consider the needle important and have found no reason to change it in any material respect, since it was presented to the profession by me twenty-five years ago. It is strong, of convenient length, set in a handle with a marked curve and a modified Hagedorn point. The eye is of some importance, since the slot on either side catches and holds the suture, preventing it from slipping.

Two fingers of the left hand retained in the rectum during the operation aid materially in suturing. After a little experience it is easy to coapt and hold in retention the sundered structures with three or four strong double tendon continuous sutures. Light running sutures, best applied with the Hagedorn full curved needle easily coapt the less important structures, covering in the deep layer of sutures, while they themselves remain buried. If, for any reason it may seem desirable, it is perfectly easy to reform a hymen. The external wound is sealed with iodoform collodion, which, although it may loosen in two or three days, I consider a valuable protection from vaginal infection.

When the perineal rupture is complete, involving the sphincter and the bowel, the operation is almost as simple and easy. The vagina and rectal structures are carefully dissected. The rectum and sphincter are coapted, with a light line of double tendon sutures, the only care requisite being that they should be placed in aseptic structures. This slightly inverts the mucous membrane of the intestine. It is important to rejoin the sphincter fibers, as pointed out by Emmet many years ago. I sometimes use an independent suture of the sphincter muscle in order to secure a more firm coaptation. The posterior wall of the vagina is closed in a similar way, reducing the factors of the problem to those of an uncomplicated perineal laceration. The structures are sometimes so attenuated and the rectum so contracted that a successful operation requires patience, a careful dissection and a delicate technic but I do not now recall a single case in which I have not had a complete restoration anatomically, with complete restoration of function. In the rectum I use a large drainage-tube, with a cravat attachment of iodoform gauze, to be left for some days.

VESICOVAGINAL FISTULA

Almost every surgeon, even of to-day, is familiar with the monumental labors of my late great master, Marion Sims. The corner stone of his reputation was based on his cure of vesicovaginal fistula. As we review his operation from the standpoint of modern surgery and experience, we understand that his success was based on two factors. The first was his extraordinary skill in the careful dissection of the wound. I know of no operator to-day who excels, or perhaps, even equals the facile skill and dexterity attained by Sims. The second factor to which he attributed his crowning success was the use of silver wire sutures. These were applied with a skill which I have never seen equaled. Of course we now recognize that it was an aseptic suture, most difficult to apply and almost equally difficult to remove.

As I look back over the experience of those early years, I almost shudder over the worry and anxiety which I had in the imitation of the methods of this great man. I expected only to follow him afar off and never hoped to duplicate his great skill. As I now recall his experience, his first cure of vesicovaginal fistula was effected only after thirteen failures. Even to the end, his successes were the exception. The method which for a good many years I have employed first occurred to me after a considerable series of easy cures in cases in which I had closed wounds in the bladder from a variety of causes, from within the abdominal cavity. These were invariably simple in technic and perfect in result. A double continuous suture easily closed the wound with perfect coaptation, care being taken, of course, not to penetrate the mucous membrane of the bladder. Following this a retained catheter easily kept the bladder wall in a state of rest.

Profiting by this experience I made a wide dissection of the bladder from the vaginal wall and closed the bladder wound by a fine double tendon suture, which of course became buried. I then closed the vaginal wound as described in the operation for cystocele. The object of this extensive dissection was to obtain complete rest of the bladder wound during the process of repair, which is impossible when the vaginal attachment has been permitted to remain and the suture is taken through both the bladder and vaginal muscle.

Fortunately vesicovaginal fistula is far less common than formerly, and in the cases in which there has been a large destruction of the structures, the surgeon's skill and resources will be taxed to the utmost, but in every case of vesicovaginal fistula operated on as described I have had complete and seemingly easy cure.

HERNIA OF THE BLADDER

Hernia of the bladder, unfortunately, is often unrecognized and classed, in a general way, with cystocele. It is caused by the rupture of a portion of the strong fascia which goes to make up the pelvic floor. It may not be always easy to differentiate it from cystocele.

and differs from it chiefly in that in the latter the whole anterior pelvic fascia is relaxed instead of presenting a more severe lesion of it.

Its cure is equally easy and satisfactory. As in cystocele, it is generally wise to remove a certain amount of the anterior vaginal wall. Then it becomes necessary to make the lateral dissection sufficiently free to expose the strong pelvic fascia and intra-fold it by a carefully applied, medium-sized double tendon suture. Indeed, the operation differs so little, except in the recognition of its anatomic cause, that the surgical procedures are not unlike those for the cure of cystocele.

HEMORRHOIDS

Viewed from the standpoint of discomfort and suffering, the marked changes often seen in the hemorrhoidal structures hardly belong to the province of so-called minor surgery.

I consider the most important contributions to the technic of hemorrhoidal operations are those of Mr. Whitehead, now recognized and described in all textbooks. My modification of the operation consists in a free dissection, exposing the outer rim of the sphincter muscle and suturing the hemorrhoidal plexus of vessels just within its borders. This line of sutures is covered and buried by a careful rejoining with the finest of sutures.

Suturing at the base, before division, occludes the vessels and prevents hemorrhage. The delicate anal structures, carefully coapted and retained in an aseptic condition, unite primarily without suppuration, and when the sphincter muscle has been paralyzed by careful dilatation, these tissues are easily kept at rest with very little suffering. Here, too, I usually seal with iodoform collodion since the protection of the structures by it for even a day or two is important. Of course the rectum has been carefully cleansed and the large tube with the cravat of iodoform gauze applied. The three factors necessary for success are the following: first, the making of a free, skilful anatomic dissection; second, a careful reuniting of the weakened injured structures by the use of buried absorbable sutures, preferably kangaroo tendon, and, third, the making and maintaining of an aseptic wound.

I recognize more fully than my readers the almost dictatorial brevity of the description of this treatment of the above group of pelvic lesions. Any one of them might properly demand a detailed description covering the space given to the entire group. Some might consider that I have given undue importance to the personal factor of individuality in the description, but I am sure that any good surgeon, after a little practice, can do these operations equally well, or better.

I have long since ceased to tabulate in a numerical way these operations, since little is gained by enumerating the multiplied experience of years.

A distinguished English surgeon sometime since was present at an operation and made pertinent inquiry as to the percentage of failures. I referred him to the matron of my hospital, who replied with something of surprise: "Not one, Doctor, since I have been here." "But how long have you been with Dr. Marcy?" She replied: "More than twenty years." This statement may not be strictly true, but it is essentially so, and the credit belongs, at least in equal share, to the faithful, devoted service of my enthusiastic nurses.

180 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

Dr. D. T. Gilman, Columbus, O.: Dr. Marcy is probably the pioneer in the use of this absorbable suture and he is entitled to great credit for it. He gets results undoubtedly, but I cannot get the same results from an absorbable suture that he does. Dr. Marcy's method of introducing a couple of fingers into the rectum does not appeal to me. He has doubtless acquired an automatic asepsis from long practice that I would not have, and others would not have. I formerly used a knife for denudation, but I have practically abandoned it and have gone back to the scissors. If I have a good pair of scissors I do not need to have the fingers in the rectum; I simply put the tissues on the stretch.

Dr. W. H. Gilbert, Evansville, Ind.: Dr. Marcy's technic, as we all know, is a technic unsurpassed. His results have the same uniform excellence. We all know that in the after treatment of perineorrhaphy it is extremely difficult to keep the region aseptic. I think the plan of sealing the parts with collodion is a most excellent one. Personally, I have ceased to use douches after perineorrhaphy. The technic I follow is absolutely dry. I use dry sponges, seal the parts with collodion and exercise the most rigid care in the after technic. Three times a day the perineum is thoroughly cleansed by bichlorid solution, and a bichlorid pack of dry gauze adjusted. I don't believe it is possible in the region of the perineum to secure absolute asepsis no matter how careful a technic is followed and no matter how carefully you wall off the perineum with towels, or how carefully the buried sutures are inserted. I have abandoned the routine use of buried catgut or kangaroo sutures in all parts of the perineum. I get the best results from non-absorbable sutures in the skin covering of the perineum and absorbable sutures in the muscles, fascia and vagina.

Eight weeks ago in a case of complete laceration there was operation immediately after delivery with non-union. Two weeks afterward a second operation was done by the same surgeon, which was a failure. The last operation was done by myself ten days ago. The line of laceration of the rectum was closed with catgut sutures with the knot on the inside of the perineum without any of the catgut being in the rectum. It is impossible to put absorbable sutures in the rectum and not have infection. Two deep sutures of silk worm gut were inserted with the needle devised by Dr. Marcy. The one point necessary in the securing of good results is that alluded to by Dr. Marcy, viz., the excellent care given by the nurse, with rigid asepsis in the after treatment. We all achieve better results in the hospitals because of the aseptic technic more readily maintained. On the other hand, if the sutures are placed without proper care and regard for rigid asepsis and the wound not sealed with collodion it is almost impossible to escape infection of the perineum from purulent discharge from the uterus if it be infected. In many cases of old chronic endometritis complicating lacerations of the cervix and perineum, mixed cultures may be obtained at any time. It is very difficult here, especially when the cervix is torn at the same time, not to have more or less infection, but the end results are uniformly good.

Dr. C. Lester Hall, Kansas City, Mo.: I offer, with all due respect to Dr. Marcy, an improvement on the collodion dressing. I believe that if we will use instead an application of sub-iodid of bismuth, which with water makes a paste and a thorough protection of the parts, we will not have the infections so much dreaded. It is a preparation that can be easily applied and reapplied by the nurse after douching, is not readily removed by a douche and furnishes an impermeable dressing. It is not irritating, as collodion may be.

Dr. George Erety Shoemaker, Philadelphia: I want to express my appreciation of improvement in personal results since learning to use the buried continuous suture in perineal work and abandoning in nearly all cases the silkworm gut suture used for so many years. If the mucous membrane of the posterior wall of the vagina is preserved, none cut away, it forms an apron clear out to the edge of the wound. All discharges from the uterus and vagina are carried over and emptied outside, so to speak, lessening the chances of infection. Unlike Dr. Marcy, I prefer to keep all fingers clean for use in the wound. Carefully palpating the two edges of the recti, bring them together by continuous suture, then follow on down toward the surface, uniting the fascia and more superficial muscles that have been separated. Thus one gets perfect restoration and healing in practically every case. The patient has so much more comfort from not having to have the sutures removed afterward.

Dr. Frank A. Glasgow, St. Louis: I am surprised to hear the gentlemen speak of suppurations being so common, and also to have them decry the use of catgut. There has been much written about the repair of the perineum tending to confuse men and to make them think the operation far more difficult than it really is. Dr. Shoemaker anticipated what I wished to say, that he would preserve the posterior wall of the vagina. I do not think I have done a perineorrhaphy for twenty years in which I have removed the posterior wall of the vagina. It is an old operation, the same as Tait's, and one which I inherited from men before him, in which we simply raise up the posterior wall, extending the denudation up on either side of the vagina, up to the crest of the rectocele and then uniting the lateral parts. Under this procedure suppuration is the rarest thing in the world. There is no necessity for it, and I use chromicized catgut. Formerly I used the mattress sutures through from one side of the vagina and back again. Then when Tait taught us how to bury catgut I used that method and do not have suppuration. If a stream of water is used over the denudation down over the perineum carrying anything which should escape from the rectum downward suppuration will not occur and buried catgut may be used. There is no easier operation in gynecology than just this repair of the perineum, and every practitioner ought to be able to do it. Many men do not make a perineum. They simply denude a little and bring the skin together. You should raise up the posterior wall, extend the denudation high up into the vagina and on either side and bring the lateral walls together by buried sutures. You will thus have a good perineum and no suppuration.

Dr. H. O. Marcy, Boston: A man works best with the instruments with which he is most familiar. The two fingers in the rectum help not only in the use of the knife but in the application of the suture, making a double shoemaker's stitch. When one becomes a little used to the method one will not mind the loss of those two fingers for other purposes. I am glad to have the value of the nursing emphasized. It is a large factor after we are through with our surgical work.

The late Dr. Jenks of Detroit was the first, so far as I know, to preserve the posterior vaginal mucous membrane as he called it. I was the student of Sims and Emmet, and delighted to try to imitate the dexterity with which they used the scissors. I have seen continuous backward and forward dissection with a pair of scissors as a girl would pare an apple without the infraction of the entire process. But I found that Dr. Jenks was not removing the mucous membrane but dissecting the posterior vaginal wall. That is very thin in most instances. Near the original lesion of the parts it breaks easily. That is why I like the knife. With scissors we are apt to cut buttonholes. It is important that one make a dissection of the posterior wall of the vagina and leave it intact. It is also important that one make use of modern aseptic methods. There must be a clean vagina, a clean uterus. In most instances one curettes, sews up the laceration of the cervix and then applies the iodoform dressing in the vagina. What I like best is to use it on a wool tampon. After this is completed it is an easy matter to seal the wound with collodion, and it remains for two or three days. The vagina is literally packed with iodoform wool and that is left alone for three or four days. That is the end generally of all the treatment. The rectum is almost always packed in the same way.

No one has referred to operation for complete laceration of the anterior or posterior vaginal wall. In the old days we were all greatly troubled by vesico-vaginal fistulas. My old master, Sims, taught me the use of silver wire, and we all had great agony over it. When I operated within the abdominal cavity for bladder injury I found that I obtained recovery without difficulty. Then it occurred to me that the reason we failed in vesico-vaginal fistula was that we had a cross pull of the complex structures. Therefore, I separated the attachment of the vagina to the bladder, freshened the wound and then closed the bladder wall with a double continuous fine tendon suture, not unduly compressing the tissues. That, of course, is buried because the vaginal wall is closed over it, and in every single instance I have had just as easy recovery as I did when operating from within the abdominal cavity. If I could say nothing else, I should like to emphasize this point, that I believe this to be a very great advantage in my technic. It is comparatively immaterial how one applies the sutures. With coaptation, retention, and aseptic rest, good results will follow. With wounds treated in this way in my own hospital in several thousand cases there have been not 2 per cent. of failures in the last fifteen years.

PATHOLOGIC RELATIONSHIP OF ULCER AND CARCINOMA OF THE ALIMENTARY CANAL *

LOUIS BLANCHARD WILSON, M.D.
Pathologist and Director of Laboratories
AND
BYRD CHARLES WILLIS, M.D.
Assistant Pathologist, St. Mary's Hospital
ROCHESTER, MINN.

INTRODUCTORY

Any line of investigation which promises assistance in combating the spread of cancer is worth while. For, discounting to the utmost government census figures everywhere, there yet remains the facts, first, that cancer is increasing materially in relation to the total number of deaths from all causes, and, second, that it is increasing materially in relation to the total number of living. Speaking broadly, it is probably increasing more rapidly than any other of our diseases. And this increase is greatest in the most prosperous nations and in the most prosperous classes within such nations. Further, it attacks individuals at their highest productive period. It attacks particularly the primary organs of perpetuation of the individual, i. e., the reproductive apparatus. In the male approximately two-thirds and in the female one-fourth of all cancers develop in the alimentary canal, while one-half of all cancers of the female are in the reproductive organs.

It seems to us that in our consuming interest in the initial excitant or ultimate cause of cancer, there is a possibility of our losing sight of the importance of the study of the tissue conditions of the affected individual. When the relationship of bacteria to infectious disease was first brought to the attention of the scientific world for a long time the specific germ was the chief object of study. Experience soon taught us, however, that in combating infectious diseases it is even more important that we familiarize ourselves with those conditions of the body by which nature combats disease. We are apt to forget that if we knew to-day the primary irritant in carcinoma as well as we know the leprosy bacillus we might still be almost as helpless as we now are in controlling the disease. We would still be under the necessity of investigating most carefully the anatomic and physiologic condition of the tissues which permit the primary excitant, whatever its nature, to become effective.

CLINICAL EVIDENCE

From the purely clinical standpoint, probably the most salient points which present themselves in relation to tissue susceptibility to carcinoma are the following:

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

1. Carcinomata of the reproductive organs in the female—one-half of all cancers in this sex—occur principally at the age when the reproductive organs have begun their regressive changes.

2. Carcinomata of the alimentary canal—two-thirds of all cancers in the male—follow in the great majority of cases chronic non-cancerous irritation.

ANATOMIC EVIDENCE

When once removed from the body, tumors of the alimentary canal are of relatively easy study, because of the comparatively simple anatomic relationships; the thin walls with well-defined laminæ and simple glands. The lips, mouth and anus are, of course, exceptions to this. When we examine carcinomata of the alimentary canal we find them in a great majority of cases developing on epithelial tissue which has been displaced either by ulcerative changes or by diverticula. An ulcer of the mucous membrane of the alimentary canal shows within its base usually only granulation tissue, all of the tubular glands having been destroyed. At the margin of the ulcer is an overhanging border consisting of hyperplastic mucosa. Where this hyperplastic area meets the eroded base is a ring in which are found islets of tubular epithelium which have been cut off from their connection with the outer world by bands of scar tissue.

The center of the ulcer, filled with granulation tissue, is almost always on a level with that of the normal base of the mucosa, within which is the ring containing segregated epithelium. The tendency of such islets of segregated epithelium is toward destruction by the cutting off of their blood-supply by scar tissue. In a careful study of these cell inclusions, however, we frequently find that many of the islets instead of degenerating show more or less proliferation of their cells. This is evidenced by their apparently increased number in a cross-section, by their mitotic figures and their dividing nuclei. Such inclusions are of frequent occurrence around the borders of all ulcers of the stomach, duodenum, gall-bladder, appendix and large intestine. It is probable that the proliferation of the epithelium within such inclusions is frequently stopped by the cutting off of the blood-supply, and that degeneration results. When, however, we study many lesions of this type, particularly within the stomach, we find that certain groups of epithelium show not only proliferation of their cell contents, but that the proliferating cells are infiltrating the surrounding tissues, that this is a true passage of the epithelium into the previously formed scar tissue. That the picture is not due to the presence of remains of included epithelium which has been only partially cut off from its normal site there can be no doubt in the mind of one who studies the sections with proper care. The epithelial cells which are insinuating themselves between the bands of fibrous tissue are not old degenerating cells, but are cells which are proliferating, as is shown by their staining reactions and their dividing chromatin. It is noteworthy that this proliferation is usually most marked in the portion of the epithelium-bearing ring which is farthest removed from the center of the ulcer with its scant nutrition. More than 70 per cent of all of our cancers of the stomach gave satisfactory gross and microscopic evidence of previous ulceration and isolation of epithelium, while the evidence is equally clear in our cancers of the gall-bladder. We have seen at no point within the alimentary canal any evidence that surface irritation, however prolonged, has anything to do with providing conditions suitable for the development of carcinoma. It seems to be a *sine qua non* that the portions of epithelium shall be displaced from their normal relationship, and this does not occur where superficial irritation alone is concerned, but only in ulcers and diverticula.

The relationship of small diverticula of the alimentary canal to carcinoma has not been fully appreciated, partly because the presence of the diverticula themselves have been but recently called to our attention. When Drs. Mayo, Giffin and Wilson placed on record our five cases of diverticulitis of the sigmoid three years ago, there were on record only eighteen previous cases. One of these presented a carcinoma of a diverticulum. The number of cases of diverticulitis has increased during the subsequent three years until there are now on record nearly one hundred cases. We have added five new ones to our list. In these five two are cases in which the operation was made primarily for well advanced carcinoma and diverticula were found in the base of the carcinoma. The epithelium within small diverticula is frequently quite as completely occluded from connection with the interior of the viscus as is that lying at the base of an ulcer of the stomach. Here, as in the isolated islets of epithelium within the stomach, the tendency of the segregated cells is to degeneration from reduced nutrition. They do, however, occasionally proliferate greatly and, as we have shown in three of our nine cases, they may also infiltrate and thus form carcinoma. When one goes over a number of cases of carcinoma of the sigmoid one is struck with the patch-like or ring-like character of all of the lesions, except those of the most advanced type. This is exactly the sort of tumor which one would expect to find developing on isolated epithelium within diverticula, and the two tumors whose origin, as we have demonstrated, has been on diverticula, are of exactly this type. In order to show the presence of diverticula in carcinomata of the sigmoid which have advanced to any extent, it is necessary to use the utmost care in examining the specimen while it is still fresh.

Sometimes with fresh specimens this can be done by very gently probing from the inner side of the tumor, or better still, by carefully slicing off the tumor from the serous surface and parallel thereto, and examining underneath each slice as it is removed. We are satisfied from our experience that many cases of carcinoma of the sigmoid and rectum have had their origin on diverticula which have been overlooked at operation, even when they were still undestroyed by the tumor.

In the last 5,000 appendices which have been removed at our clinic we have discovered twenty-two primary carcinomas. In reviewing these recently, Drs. MacCarty and McGrath have noted that all of these tumors have occurred in the tips of appendices which had been previously obliterated. This obliteration in all cases extended well proximal to the tumor, and showed the formation of scar tissue at some point proximal to the tip in greater quantities than in the tip itself. The glandular epithelium of the tip of the organ has been separated from the lumen of the caecum. Such epithelium is frequently found to show hyperplasia or adenomatous proliferation. In the twenty-two cases which we have found, however, there is much more than this, viz., an infiltration of the deeper layers of the appendix, resulting in unmistakable primary carcinoma.

In the tough fibrous stroma of the border of the lips it is difficult to make out microscopically any evidence of flat cell inclusions. The lips of practically all adults have been so frequently subjected to traumatic scars, ulcers, etc., as the result of nutritional disturbances that it would seem probable that such inclusions of the epithelium are frequently present. Carcinomas of the lip, however, usually come to the clinic so late that all microscopic evidence of their previous benign ulceration has disappeared, though the clinical histories recite such evidence in an unmistakable manner.

Within the mouth the relationship of ulcerating leukoplakia to subsequent carcinoma is established on a very firm clinical basis, though here, as in carcinoma of the lip, the patients most frequently come to operation at a period when all microscopic evidence has been swallowed up in the advance of the secondary disease.

To summarize, then, the results of our studies, we may say that in the alimentary canal, whatever may be the essential irritant—micro-organisms, ferment or what not—the fact remains that in a very high percentage of the cases there is microscopic evidence backing up clinical evidence that the carcinomata have developed on epithelial cells which have been previously isolated from their normal surroundings, either by the formation of diverticula or by being cut off by scar tissue in ulcer bases. This statement has in it neither support nor contradiction for any hypothesis as to the character of the essential irritant in carcinoma. Just as we must have tissue cut off from sufficient blood-borne oxygen in a punctured wound in order to permit development of the tetanus bacillus, so it seems that in the alimentary canal we must have tissue which is cut off from its relationship with the outside world in order to have the development within it of whatever may be the essential irritant of carcinoma. Whether this isolation of epithelium is a primary necessity for the formation of carcinomata throughout the body is another question. Certain it is that a similar condition exists in the female breast which is undergoing regression. Certain it is that similar conditions exist in the uterus, with its partially shed epithelium, with its frequent erosions, and with its regressing mucosa. Certain it is that a similar condition exists in the prostate as the result of inflammatory changes segregating islands of epithelium. Within the kidney true carcinomas are frequently associated with the ulcerated process secondary to nephrolithiasis, while the so-called "hypernephromata," on the other hand, are apparently the result of the proliferation of tissue which has failed to become connected embryologically with the portion of the tubular epithelium which is in direct relation with the renal pelvis. Indeed, as we look over the whole field of carcinomata we must agree with Adami that these tumors are the result of the development on either postnatally or prenatally displaced cells which exhibit a tendency to revert to the embryonic type.

The clinical bearing of all of this is in teaching the importance of the recognition and cure of those disease processes which, however benign in themselves, tend to isolate epithelium. There can be no question but that chronic ulcers of the mouth should be promptly cared for. Ulcers of the stomach should receive the most minute attention. The obliterating appendix, however innocent its look, should invariably be removed when found. Diverticula of any portion of the large intestine should be treated by complete removal rather than by a drainage of the abscesses which may be formed about their extremities. The greatest difficulty of course is in the early diagnosis, but that is without the province of this paper.

PATHOLOGIC MATERIAL STUDIED

167 cancers of lip.
46 cancers of mouth and tongue.
2 cancers of esophagus.
189 cancers of stomach.
15 cancers of gall bladder.
22 cancers of appendix.
20 cancers of cecum.
42 cancers of remainder of colon.
67 cancers of rectum.

570

SUMMARY

Of the cases of cancer of lip 30 per cent. gave evidence of previous isolation of epithelium.

Of the cases of cancer of stomach 67 per cent. gave such evidence.

Of the cases of cancer of gall-bladder 33 per cent. gave such evidence.

Of the cases of cancer of appendix 100 per cent. gave such evidence.

Of the cases of cancer of cecum 10 per cent. gave such evidence.

Of the cases of cancer of colon 40 per cent. gave such evidence.

Of the cases of cancer of rectum 3 per cent. gave such evidence.

CONCLUSIONS

1. The relationship to cancer of simple chronic irritation of the unbroken free surface of the mucosa of the alimentary canal, as indicated by clinical data, is not readily demonstrable pathologically.

2. Scar tissue at the bases of ulcers, obliterations of the lumina of appendices, and diverticula segregate portions of mucous epithelium from the neighboring epithelium and from the lumen of the alimentary canal.

3. These portions of segregated mucous epithelium tend (a) to degenerate from pressure and diminished blood-supply, or (b) to proliferate and infiltrate the surrounding tissues, thus forming cancer.

4. These islands of segregated epithelium probably should be regarded as points of least resistance only, and requiring the presence of other factors for the production of carcinomata.

ABSTRACT OF DISCUSSION

Dr. H. E. Robertson, Minneapolis: We are all helpless in the presence of cancer. Sometimes we believe that malignant growths are preceded by absolutely normal structures; this morning we have had another view presented. Dr. Wilson's contribution is of great value in showing specimens which demonstrate at least one phase of the problem. The activities of epithelial cells may be grouped under two classes: first, that of function, such as secretion or absorption, and second, that of manipulation or proliferation. When for some reason or other the functional activity is checked, all the inherent capacity of the cell may be directed toward wild, uncontrolled proliferation. Such a process might be supposed to be working in ulcers and inflammatory conditions which in all probability precede many carcinomatous tumors of the gastro-intestinal tract. The functional activity is inhibited because of inflammation, and some of the cells continue to multiply unchecked by any normal balance. I do not believe that Dr. Wilson would, for a moment claim that all cancers arise from ulcers or preceding inflammatory lesions nor would he give the impression that all ulcers of the digestive tract gave rise to carcinoma. His paper emphasizes what we have been taught for many years, namely, that some ulcers of the gastro-intestinal tract may show cancer arising on the old margins.

Dr. J. N. Hall, Denver: I wish to speak about the diagnosis of certain conditions requiring gastro-enterostomy for pyloric obstruction, and I base my remarks on a series of 71 cases in which ulcer has been found blocking the pylorus. In these cases, the patients were operated on by Drs. Freeman, Perkins, Craig, Lyman, Fleming and other Colorado surgeons. During the same time a diagnosis of peptic ulcer was made in 81 other cases, and a very probable diagnosis in 23 cases, 175 cases in all, indicating that 40 per cent. of my cases of ulcer seemed to me and to surgeons doing much of this work, to need gastro-enterostomy. I exclude here all cases of ulcer operated on for perforation or in which resection was done because of the probability of cancer, and all gastro-enterostomies done for cancer, congenital pyloric stenosis, etc. So far as I know, there is no exact parallel for the state of affairs which exists as to this diagnosis. Many physicians recognize the gastric ulcer which blocks the pylorus, whether it be by producing spasm, by its thickening effect on the mucosa, or by the production of scar tissue. But for every clinician who frequently sees these cases there are ten who practically never call on the surgeon for help in treatment. These men either do not recognize the condition or do not recognize the fact that surgical intervention is demanded. Yet many surgeons diagnose these cases and operate without either the professional assistance or the normal support of the internist. It is a strange fact that the surgeon in many of these medical cases makes a better diagnosis than the physician. A surgeon of one of the oldest and most famous hospitals in America told me a few weeks ago, when I inquired as to the treatment of pyloric obstruction, that he was ashamed to tell me how limited his experience was, since the medical men of that institution practically never referred such cases. Yet in that city another surgeon at another hospital does much of this work. There is much ground for criticism of the profession in that so much stomach work is done by so many men, but a small proportion of whom recognize the frequency of this condition, its ease of diagnosis, in most cases, the almost certainty of relief by surgical help, and above all the overwhelming evidence that the end of these patients is slow starvation or eventually cancer. From Rochester we learn that 71 per cent. of resections for cancer showed origin in an ulcer, and 68 per cent. of the resections for ulcer showed cancerous changes. Yet under the diagnosis of dilated stomach, atonic dyspepsia, gastralgia, gastrodynia, nervous prostration, etc., these patients go on toward starvation or cancer, or both. In 11 of my cases the ulcer had evidently existed for from 18 to 30 years.

While the medical men discuss the fine points of differential diagnosis, some good surgeon, or a medical man who stands daily by the operating table and sees what the living pathology of the abdomen reveals in the cases he refers to the surgeon, often intervenes and by timely operation restores the patient to health.

We found associations for the study of cancer, but allow patients with ulcer of the pylorus, the very mother of cancer, go on under treatment by alkalies, bismuth and pepsin, the latest diet, etc. knowing all the time that cancer of this region kills more people than any other form, that it is curable by operation under favorable conditions and by operation alone. I go so far as to say that I am convinced that pyloric ulcer is so likely to lead to cicatricial stenosis, if it ever does heal, or to cancer if it does not, that I personally would not submit to any but surgical treatment for such a condition, nor do I recommend prolonged medical treatment to my patients. And yet such is the conservatism in certain quarters that if a patient with dilated stomach escapes from the internist and is cured by the surgeon, the internist will almost say, as did the arrogant Viennese professor of 50 years ago when one of his patients to whom he had given a fatal prognosis recovered under a new line of treatment at the hands of one not a university professor: "You must have been treated wrongly."

Dr. Frank Wilbur Foxworthy, Indianapolis: I am an internist and I want to know the relationship between ulcer and cancer in relation to time; how much time elapses from the ulcer stage? I have under my care an old woman with ulcer near the pylorus of five years standing. She was on an albuminous diet for 6 weeks and then left the hospital free from symptoms for 13 months and she now weighs 168 pounds. Am I to believe that she is in danger of developing cancer or to suffer from the thoughts of expecting it the rest of her life?

Dr. D. C. Walt, Little Rock, Ark.: I should like to emphasize a point which I think might be of interest to physicians as well as to surgeons and showing that we should know our limits. I have had an epithelioma, and I feel that I have been benefited both by the general management of my case as well as by the use of the *x*-ray which was applied by a Chicago physician. I feel that I am fresher to-day than I was ten years ago, and I do not attribute it all to the *x*-ray. Every cell organism, every animal organism is dependent on a general law, for its building process; it is a matter of waste and repair, of supply and demand. When we wait until the cell is dead, whether it is from abscess of the liver or in the tubule of the kidney, or carcinoma, the cell is dead and dead forever. We as animals, have attempted to interfere with Nature's method of living. Think of the results produced by our notions which interfere with Nature's laws of waste and repair. When the child is born, the mother places a napkin on it, making a barrier to elimination. When the child becomes older he is harnessed more securely and by the time he is matured he thinks he is living within Nature's law. One man develops arteriosclerosis, another carcinoma, another tuberculosis, all coming under the disturbances of waste and repair. We must recognize sympathetic nerves and their power to control the physical conditions, when properly influenced by the electromagnetic power.

Dr. Charles G. Stockton, Buffalo, N. Y.: I feel that I ought not to allow the remarks made by Dr. Hall to go without some reply. It seems to me that his attitude toward the physician and the internist in the matter of treatment of acute ulcer as well as of chronic ulcer is wrong. I have no doubt at all that we do sometimes find cancer growing on the seat of a chronic ulcer; this certainly does occur, but not so often as one would infer from Dr. Hall's remarks. I have studied peptic ulcer carefully for years and I have had recurring cases under observation for many years and they did not develop into cancer. Furthermore, it is unnecessary in the majority of these cases of ulcer of the pylorus to resort to surgical treatment except in cases having definite and positive indications. It is unfortunate that so much importance should be attached to the scar tissue; it is unfortunate that anyone should take the position that when there is a scar as the result of a gastric ulcer, the case should go to the surgeon, because it often results in the subsequent ill health of the patient. If the cases were selected by discriminating men, if only skilful surgeons operated in such cases, we then might go further and advise operation oftener. But I have seen so many evil results from the employment of surgical methods on this part of the economy that the statements made by Dr. Hall seems to me misleading.

Dr. Richard Weil, New York: It seems to me somewhat questionable to interpret every instance of epithelial segregation or inversion as evidence of a tendency to carcinomatous degeneration. The presence of granulation tissue seems, as a rule, to carry with it a stimulus to this very sort of atypical epithelial proliferation. Consequently it is not a rare concomitant of chronic inflammatory processes in various parts of the body. Fisher and others have been able to produce similar results by means of chemical irritants, such as scarlet red, but they have not nevertheless produced true cancers. Occasionally, of course, cancer may originate in this fashion, but to assert on the basis of these microscopic changes that the majority of ulcers show a tendency to carcinomatous degeneration is an altogether different matter.

Dr. John A. Lichty, Pittsburg, Pa.: The pathology which Dr. Wilson has shown us to-day is convincing, and I believe that he has established his point. I am led to recall, however, the appearance of uterine scrapings which have been looked on as suspicious of a beginning carcinoma. In some of those cases I have sent sections to the pathologist: in one case in particular to Dr. Welch, of Johns Hopkins—

which, to me, looked suspicious; yet Dr. Welch told me it was not malignant, and explained the condition very much as Dr. Weil has attempted to explain some of the lesions which Dr. Wilson has demonstrated. The subsequent history of these cases confirmed Welch's opinion. I am afraid Dr. Hall has drawn conclusions from Dr. Wilson's paper which are not relevant to the subject. I do not believe that in all cases of gastric ulcer, and those suspicious of gastric ulcer, the abdomen should be opened and the ulcer incised. This would lead to a great amount of unnecessary surgery and would expose patients to a great risk.

It will be recalled that in only 20 of the 5,000 cases of appendicitis was malignancy found. Now, we know, of course, that malignancy in the stomach is more frequent than in the appendix. I can agree with Dr. Wilson's conclusions as he has stated them, but I would not be willing to attach the conclusions which Dr. Hall has presented to us this morning.

Dr. A. Jacobi, New York: All of us I believe have seen cases of gastric ulcer and also cases of gastric carcinoma. The diagnosis of ulcer of the stomach is not always easy; it is made by different persons differently, and their statistics differ. The surgeon with statistics taken from nothing but a surgical practice, or even a surgical hospital practice, will state that carcinoma of the stomach is very frequently encountered, that it is frequently complicated with gastric ulcer, and that there is a frequent connection between the two. He cannot tell you the reality about these statistics, when he forgets or overlooks the fact that they are the bad cases that have disappeared from the hands of the general practitioner to appear in the hospital wards, and that he sees these bad cases only, and not the average ones. The surgeon will report what he has seen, and so far he is correct. On the other hand, the man in private practice who sees the poor patient with ulcer of the stomach will say that ulcer of the stomach is a very common disease, and he will offer quite different and more favorable statistics; he is the one who can tell whether the case has terminated in hemorrhage or in carcinoma. The fact is that from a large number of statistics it has been found that there is about 3 per cent. of the cases of carcinoma occurring in the neighborhood of the pylorus which are on the scar resulting from an old ulcer. I see a great many of these cases of gastric ulcer and especially among the poor, the working people, male and female, small shopkeepers, etc.; these poor people work hard and may suffer weeks and even months before they consult a physician. Many will take care of themselves and they at times will recover in large numbers. We should compare the sources from which these people come to us. The general surgeon, the surgeon in private practice, the physician, the so-called internist, the physician who has a consultant practice only, or a large practice among the rich, the physician who has a large practice among the poor, all these men will give different statistics, and this is a point which we should all be made aware of. The general practitioner has the more correct statistics. I once suggested that 500 general practitioners should club together and all their cases of gastric ulcer with their outcome be collated and compared.

Dr. Harvey G. Beck, Baltimore: If we accept the fact that carcinoma of the stomach results from ulcers, then with a view of preventing the disease, we should consider the origin of the ulcer, and treat the underlying cause. We all recognize that there are different forms of ulcer of the stomach. For instance, we have the chlorotic form which occurs in girls. If the chlorosis is early diagnosed, and treated, we may prevent ulcers, and indirectly carcinoma. Another form of ulcer is the so-called catarrhal ulcer, which results from a chronic acid gastritis. Here again, if we treat the underlying condition—acid gastritis—we may prevent the ulcer, and the tendency to carcinoma. A third group may be classed as traumatic ulcer. These ulcers are due to an injury or irritation and are frequently the result of occupation. These cases certainly have a greater tendency toward the development of carcinoma, and if they do not yield readily to medical treatment should be treated surgically in order that carcinoma may be prevented.

Dr. G. C. Smith, Boston: During the last 10 years only 2 patients with carcinoma developing on the site of an ulcer of the stomach have appeared in my office. Of the other cases I have had under observation, none has so far developed into cancer. I do not think we are justified in treating these patients along the lines suggested, because there is a possibility of cancer developing on old scar tissue, any more than is the man who treats skin disease who goes on and feels that he must treat the patient indefinitely with mercury. The idea prevails that such a patient has practically recovered from syphilis and that he must be left alone until something develops later, when a short treatment should again be given. I can easily understand the position assumed by Dr. Wilson in his paper. As Dr. Jacobi has so well expressed it, any statistics to be of value depend quite as much on our interpretation of them as upon the mere statement of the anatomic findings. One man has reported many patients with cancer of the stomach operated on, and in many of them he reports that the cancer has developed on an old scar tissue. He is justified in reporting such cases. But he has not seen cases as have Dr. Jacobi, Dr. Stockton, and others, in which the patients were not operated on. Some statistics are given which apply only to those patients who developed cancer; not all individuals, however, develop cancer on scar tissue. It must be remembered that 50 per cent. of patients with tuberculosis recover; this is the report from Prof. Kolisko of Vienna, where it is said that there are more cases of tuberculosis than in any part of the world. But Prof. Kolisko does not state that these patients do not subsequently develop tuberculosis. We cannot state positively that a person has been permanently cured of tuberculosis; we do know, however, that he may become apparently well. This is our interpretation of the facts.

Dr. Frank Smithies, Ann Arbor, Mich.: I wish to act as a sort of mediator between Dr. Stockton and Dr. Hall. There is a middle ground in the consideration of gastric ulcer and gastric cancer, that is, in regard to the prognosis, whether medical or surgical, as well as in the treatment. It depends to a large extent on the location of the gastric ulcer. I think that it is poor practice to hand these patients over to the surgeon for exploratory operation, or operation of any kind, without having at least made an attempt to determine the position of the ulcer and its effect on the motor power of the stomach. If an ulcer be situated near the pylorus and we have every reason to believe that it has healed, with a resulting scar which produces a certain amount of obstruction to the free emptying of the stomach, I think it is an extremely unwise practice to treat such a patient for a gastric ulcer indefinitely; he is bound to become a chronic dyspeptic when by an operation in the hands of a competent surgeon he can be made a useful citizen and not be left a chronic invalid. Ulcers seem to be very favorably situated for the development of carcinoma when placed where they are constantly subjected to irritation. On the other hand, it is a fault of the internist to recommend operation in all cases of simple ulcer situated in any part of the stomach which has no influence on the stomach so far as its motive power is concerned. Of course in all cases one must make an exact diagnosis. I wish to call attention to the constant and repeated examination of the stools for occult blood, not making a haphazard examination for this occult blood, but making a careful and painstaking examination of the stools that have been properly prepared for such an examination, that is, after an absolutely meat free diet for at least three days. Another point is to examine the blood serum carefully with the idea of discovering the hemolytic reaction. This is a point which I will not debate at present. However, in carcinoma we may expect positive reaction; whereas in ulcer we do not. Again, one might speak of a very careful examination of the interior of the stomach by means of the gastroscope, but always in the hands of an expert.

Dr. Theodore Potter, Indianapolis: It seems to me that in the discussion so far we are hardly fair to Dr. Wilson. We seem to have engaged in a general quarrel as to the diagnosis and treatment of gastric ulcer, with which he really had nothing to do. He comes to us presenting a careful pathologic study which he hopes may throw some light on the question of the factors which enter into the development of carcinoma. He has shown us that in a considerable proportion of the cases in which the disease has developed, and which have followed ulcer of the stomach, certain things take place and which are very significant. We must recognize them as being significant too. Dr. Wilson has presented studies which certainly will throw some light on this problem as to what is the cause of gastric cancer. With regard to the diagnosis and treatment of ulcer of the stomach, and the question as to what we are going to do about it, this certainly is not Dr. Wilson's affair; that is our quarrel. But please let us be just to Dr. Wilson and show appreciation for the work that he has done and is doing for us.

Dr. Louis B. Wilson, Rochester, Minn.: No doubt there are cases of cancer of the alimentary canal that have occurred without any previous epithelial segregation. We have one such, a case of carcinoma of the stomach. We have also 5 cases of carcinoma or ulcer of the stomach in which there is a proliferation, or beginning inversion of the epithelium, but I am not prepared to say that they are cases of carcinoma. Every case that I have shown to-day and 183 out of our 189 showed carcinoma in the glands or walls of the stomach. From a pathologic standpoint we are changing our methods of diagnosis. We used to wait until a "lump" was discovered before we diagnosed the case as one of carcinoma of the stomach. This we no longer do. We should not criticize Dr. Hall too severely for his statement that 68 per cent. of the cases resected for ulcer showed cancerous changes. Few known ulcers are excised and there are many in which the surgeon is doubtful as to the diagnosis. The relationship between carcinoma and ulcer so far as we can show is that in many chronic ulcers there is a segregation of epithelium on which carcinoma may develop. Not every person who is exposed to typhoid develops that disease; nor does every person who has been exposed to diphtheria develop diphtheria. The same statement may apply to epithelial segregation. But wheo we do encounter carcinoma, in the majority of cases there will be found to have been previous epithelial segregation. As to what shall be done with those ulcers, that is for the surgeon, and not for the pathologist, to decide.

AN IDEAL OPERATION FOR TOTAL PROLAPSE OF UTERUS *

SAMUEL WYLLIS BANDLER, M.D.
Adjunct Professor of Gynecology, New York Post-Graduate Medical School and Hospital
NEW YORK

There persists, especially after several or instrumental labors, an elongation of the round ligaments and of the six connective-tissue ligaments associated with the uterus, and more especially the ligamenta cardinalia. There is deepening and sinking of the peritoneal pelvic recesses anterior and, especially, posterior to the uterus. Since the normal anteverted or anteflexed position of the uterine fundus is maintained only if the cervix is high up and far back, such descent of the cervix and fornices permits the fundus to drop back into retroversion, unless there be present unusually short and muscular round ligaments.

Slight ptosis of the uterus may occur with the fundus in anteflexion or anteversion, but marked ptosis of the uterus implies an associated retrodeviation. A retroversion or slight retroflexion permits abdominal pressure, among other accessory factors, to cause a ptosis of severe degree. Ptosis does not occur if there are no lengthened ligaments; if the broad ligaments are elastic or sclerosed; if the uterosacral ligaments are short; if there is no tugging by a loosened vagina; if there is no atrophy of the perivaginal tissues; if there is no injury to the levator ani muscles, etc.

If a severe degree of ptosis carries the uterus down no further than to the vulva, such a hysteroptosis may be defined by the term "descensus uteri." If the uterus descends beyond the vulva, the condition is called a prolapse. With marked ptosis of the uterus there is descensus vaginæ. The anterior and posterior walls of the upper vagina descend in association with any marked descent of the uterus. The nearer the portio uteri approaches the vulva, the more is the vaginal canal shortened until, in the more extreme cases, it too finally lies outside the vulva.

Injury to the fibers of the levator ani muscles, even when the perineum is not torn, results in a very flabby vulvar outlet, and when the perineum is torn, in a hernia of the rectum (rectocele). Many cases do not result in more than uterine ptosis, or retroversion or retroflexion, even when they develop cystocele, or both. Loss of the support which the levator ani furnishes the vagina may be of importance. In many cases the uterus is elongated, much enlarged, the cervix is thickened and hypertrophic and the vaginal mucosa very thick. There is subinvolution and, at times, atrophy of the elastic periuterine and perivaginal tissues. There is not infrequently associated with this condition, even in cases in which labors have not been numerous or instrumental, a state of general elasticity associated with flabby subinvoluted abdominal walls and with varying degrees of gastroptosis and enteroptosis. What effect may persistence of retroversion and descent associated with intra-abdominal pressure and accessory pressures have in such cases? It leads to further uterine descent, and then, if perivaginal atrophy, large vagina and thickened mucosa are present, we observe further vaginal descent; (1) vagina pushed down by uterus; (2) vagina pulling down uterus; or (3) vaginal descent occurring simultaneously with uterine descent, but primarily independent of it.

The pathologic factors may be grouped as follows:

1. Tendency to inelasticity.
2. Labor injuries, especially if repeated.
3. Subinvolution; ligaments, uterus, vagina, etc.
4. Primary ptosis leading to retroversion. Since retroversion is present, attention has been paid to the displacement, and while this is an important pathologic factor, the elements of subinvolution, injury to the various muscles, atrophy and predisposition are overlooked.
5. Posterior enterocele and large descended fornix.
6. Large vagina.
7. Vagina loosened, giving no support.
8. Loosened vagina, actively tugging on the uterus.
9. Bladder torn from its fastenings.
10. Splanchnoptosis and intra-abdominal pressure.
11. Vocation.
12. Age. Most of the extreme cases occur after the menopause age, when there is great atrophy of the elastic fibers.

In the most extreme cases all union of the vaginal canal with surrounding connective and elastic tissues has been dissolved; all relations of fornices to normally situated peritoneal or uterosacral structures has been altered; all attachment of the uterus to fixed points of the pelvic wall have ended in tremendous elongation or atrophy.

---

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

Surgically, therefore, we have to take into consideration the following points:

1. Bladder and anterior vaginal wall.
2. Retrodeviation.
3. Elongated uterus, hypertrophied cervix.
4. Roof of vagina, which should be restored to its former elevation.
5. Posterior enterocele.
6. Capacious vagina.
7. Descended vagina. } Levator ani.
8. Rectocele and perineum.

The first step in the operation is based on the vaginofixation operation of Dührssen.

The complete separation of the bladder[1] from its attachment to the cervix to the anterior wall of the uterus, to the lateral margins of the lower part of the uterus and to the anterior fornix and anterior vaginal wall, permits this organ to shrink up to a very small size and permits of its dislocation into any desired relation to the uterus. It is, therefore, obvious that, if the uterus is now attached by its anterior surface to the vaginal flaps, so that the fundus lies up behind the symphysis, the bladder must of necessity then rest on the fundus and posterior wall of the uterus and can never again come into contact with any area of the anterior vaginal wall. It is desirable, before attaching the uterus, to resect such an area of the anterior vaginal flaps as will make a taut anterior vaginal wall, a wall of such nature that it neither permits the fundus to sag down into the vagina nor forces it too far back from intimate relation with the symphysis. In this new position of the uterus, the bladder assumes a new and permanent relation to the posterior uterine wall. It is not necessary, nor do I deem it advisable except in rare instances, to sew the peritoneum on the posterior wall of the bladder to the peritoneal covering of the posterior wall of the uterus at the level of the internal os.

Resection of the flaps and fixation of the uterus to the anterior vaginal wall may be carried out at this stage but fixation of the uterus to the resected flaps may be better allowed to wait until the next two steps of the operation have been completed, namely, the amputation of the cervix and the correction of the posterior enterocele. When the uterus is fixed to the anterior vaginal wall, I pass four sutures, two of heavy braided white silk and two of No. 3 chromic, through the edges of the anterior flaps and through the upper part of the uterine fundus. The fixation is best allowed to wait, but the four fixation sutures are carefully passed through the fundus, their ends are grasped by an artery forceps, and are subsequently threaded and passed through the vaginal flaps after the next two steps have been carried out.

A high amputation of the enormously hypertrophied cervix is now in order. The fundus is replaced within the pelvic cavity, with or without fixation to the flaps, and the cervix is pulled down beyond the vulva and lifted up toward the urethra. A transverse incision is made through the vaginal mucosa at as high a point as possible without entering the cul-de-sac of Douglas; the lower edge of the incision is grasped with a mouse-toothed forceps; and the index-finger covered with gauze, sometimes aided by short snips of blunt-pointed scissors, separates the vaginal wall from the posterior wall of the cervix up to the peritoneal fold of Douglas, and continues to dissect this peritoneal fold upward for a considerable distance from the posterior wall of the uterus. We still have the lateral wall of the cervix covered by a bridge of vaginal mucosa; this bridge is incised with scissors down to the actual structure of the cervix, first on one side and then on the other, and with its submucous connective tissue is peeled away from the cervix by upward rubbings of the gauze-covered thumb. It peels away from the cervix smoothly and easily up to the uterine arteries. In this maneuver, as well as in the dissection of the posterior vaginal wall, there is considerable oozing, which is of minor importance. Side retractors are introduced there, if necessary, the bladder is held out of the way by an anterior retractor and the cervix is amputated at the level of the internal os by the aid of scissors. If this amputation is carried on from one side to the other, or from the anterior wall of the cervix down through the posterior, cutting of the uterine arteries should be avoided. As soon as the canal of the cervix is invaded the thick anterior lip should be grasped with single-bladded volsellum.

After amputation of the cervix, the uniting of the vaginal mucosa around this new external os is begun, first at the posterior wall, No. 3 chromic catgut sutures being used and the vaginal mucosa being caught at least three-quarters of an inch from the edge in order to cover thoroughly the denuded lower end of the uterus. After the first suture is applied and tied, the others are applied close to this one, first on one side and then on the other, care being taken to take up the vaginal mucosa snugly, so as to allow of no reefs or pleats. In this way the surplus of the posterior fornix and of the two lateral fornices is done away with. The sutures are then applied to the lateral wall and then to the anterolateral walls. A large surplus of vaginal flaps is noted, which consists of the originally dissected anterior vaginal flaps plus the surplus gained from the posterior and lateral fornices. The flaps are drawn, first one and then the other, over to the opposite side, and a very large triangular area is cut away. Now the uterus may be attached to the remaining vaginal flaps, each of the four fixation sutures which have been applied in the uterine fundus being threaded separately and carried through the vaginal flaps near their upper end. These may now be tied, bringing the fundus into intimate relation with the newly formed anterior vaginal wall. The flaps below the fixation sutures are then united by interrupted sutures of No. 3 chromic, which pass through the anterior uterine wall at the same time; or else the tying of these sutures may be left until the complete dissection of the rectum from the posterior vaginal wall has been completed, for, if in some instances these fixation sutures are first tied, it is a more difficult procedure to carry out a thorough dissection and resection of the posterior vaginal wall.

The next step of the operation consists in a high colpoperineorrhaphy which includes an absolute separation of the rectum from the posterior vaginal wall to within ½ to ¾ of an inch of the newly formed external os.

Two single-bladed volsella are attached to the lateral margins of the vulva at a point which is to constitute the lower end of the posterior vaginal wall and the highest point of the new perineum. These are drawn apart (before this an intra-uterine strip of gauze is introduced); and a pair of curved scissors cuts a wide tape-like strip from one volsellum to the other along the lower edge of the exposed vaginoperineal junction. Three or more heavy artery forceps are applied to the skin edge after this strip has been cut away and are allowed to hang down so that, by their weight, a denuded area half an inch in width is apparent. The upper edge of this denuded area is picked up with a mouse-toothed forceps, and a sharp knife begins the dissection of this thick posterior vaginal wall from the underlying, readily bleeding connective tissues. After this dissection has been well begun from one volsellum to the other, three or more artery forceps are applied to this upper flap, the forceps are grasped in the left hand and the fingers are placed behind the flap and the separation is continued with the knife from the underlying tissue, and then continued by the index-finger covered with gauze. After the preliminary dissection with the knife has been well started, the separation goes on easily, occasionally aided with the knife or with blunt-pointed scissors, the operator being extremely careful to avoid cutting into the rectocele. Oozing is fairly brisk, but no attempt to check it with artery forceps need be made. The dissection should extend very far laterally, especially so into the lateral sulci in which rest the separated levator ani muscles. After the flap has been thus separated upward for a distance of two inches, it is pulled down taut and then bisected along the median line as far as the separation has been carried. Artery forceps are then applied to the highest points of these flap edges and the separation from the rectum upward and laterally is continued. As the separation extends higher the flaps are bisected in continuity and artery forceps are applied high up in succession. In this manner, the entire posterior vaginal wall is separated to within half an inch of its upper limit and very well into the lateral sulci of the vagina. The flaps are then drawn down, first on one side, and then on the other; a large area is resected beginning at each volsellum and extending upwards to the highest point of the dissected flaps.

---

[1] The method employed in the separation of the bladder has been described in the International Journal of Surgery, May, 1909.

If the uterine fixation sutures have not yet been tied, they are tied now, and the union of the edges of what now remains of the posterior vaginal flaps is begun with heavy chromic catgut beginning at the highest point and gradually approaching the perineum. Occasionally, one of these sutures is made to catch the connective tissue over the rectocele in order to reef it upwards. As a rule, this is not advisable, as pockets may be formed, but with each successively applied suture the rectocele is pushed upward by a blunt-pointed instrument. After several such sutures have been tied, it will be noted that the vagina has been reduced to a canal of very small caliber, and this part of the vagina may now be gently packed with iodoform gauze. We now have left a large denuded area with the outline of a rather high colpoperineorrhaphy and some of the bulging rectocele at the lower area still remains to be dealt with.

Since the rectocele is a hernia through separated or torn levator ani muscles, these or the fascia which covers them must be brought together in such a fashion as to lie between the new vagina and the rectum and hold the rectocele permanently in check. Inasmuch as the healing of such a large denuded area is promoted to a great extent by the use of the smallest possible number of sutures, I use for the perineorrhaphy with the very best results a No. 4 chromic catgut suture passed in figure-of-eight fashion and constituting a single stitch. A very long, heavy, slightly curved needle is used; the left index finger is introduced for control into the rectum so that the needle may at no point enter the lumen. The highest area of the remaining denudation is brought into view by a pair of forceps applied to the upper angle; that is, to the last-applied chromic suture which united the newly formed posterior vaginal wall. The needle, introduced on the left side one-half an inch or more exterior to the volsellum, goes in deeply through the lateral area of the denudation under the levator ani muscle. It is then continued up along the left lateral edge of the denudation close along the vaginal mucosa and comes out above the last applied chromic suture, now held by an artery forceps. The needle is pulled through and with it the chromic catgut. It is now introduced on the other side of the median line and passed down between the exposed connective tissue and the rectal mucosa over the finger in the rectum half-way between the median line and the volsellum on the right side. As the needle passes lower down and gets within an inch of the skin, it is passed deeply through the tissue coming out half an inch from the skin margin. The needle and chromic catgut are now pulled through and are passed in the same fashion, but from below upward, midway between the median line and the volsellum on the patient's left side. It is then passed upward, the point of the needle being controlled by the finger in the rectum, and makes its exit at the upper angle of the denudation through the vaginal mucosa. It is then introduced on the other side of the median line, passes under the mucosa on the right lateral edge of the denudation until the point reaches the depth of the right lateral sulcus, and is thus passed deeply under the levator ani muscles and out external to the right volsellum half an inch or more from the skin edge. The needle and chromic catgut are then pulled through.

In order to make the union of the posterior vaginal wall more perfect, three chromic catgut sutures are passed (but not tied) through the edges of the mucous membrane, forming the lateral margins of the denuded area and out through a corresponding point on the other side. These are grasped by artery forceps each one separately. Sutures are now passed to unite the levatores ani of the two sides and form a bridge which is to restrain firmly the rectocele. One, two or three chromic sutures are passed by a well-curved needle deeply through the lateral sulcus of one side in which rests the levator ani and its covering of fascia and, then, through the other side in the same fashion. I have not found it necessary to dissect out through the fascia any muscle bundles of levator ani muscles. These one, two or three sutures are now firmly tied, and their influence in pushing up and holding back the rectocele is readily apparent. These are the only buried knots in this method of perineorrhaphy.

A pair of artery forceps is now applied to the middle point of the skin edge, the two ends of this long, single-stitch chromic suture are pulled on in seesaw fashion, gently but firmly, and that part of the single-stitch suture which has passed from one side to the other over the skin edges is seen to take its place at a point almost midway between the ends of the suture held in the hands and the artery forceps applied to what is now becoming the lowest point of the external perineal wound. When the two ends have been thus pulled on, the two lateral sides of the perineal denudation come together in absolute contact, and a triple knot is tied and cut; the three chromic sutures which were passed and held by a forceps are tied. They unite the lower end of the posterior vaginal wall.

Two or more chromic sutures are now introduced in the perineum itself to bring the skin edges nicely together, and the patient is catheterized. Strips of iodoform gauze are tucked into the vagina, and the sphincter ani is given a most thorough stretching. Then iodoform gauze is applied liberally over the vulva and perineum, and is renewed with sufficient frequency to keep this area dry. The perineum is douched several times a day, especially after catheterization or defecation, with a pitcherful of sterile aluminum acetate solution. Catheterization is continued for three or four days and the patient is then allowed to void, if she can. The bowels are permitted to act whenever the patient is so inclined, otherwise, medicine is administered by mouth on the third or fourth day.

The intra-uterine strip of gauze which is usually marked by having a piece of chromic catgut tied around the end is pulled out without disturbing the vaginal packing on the third or fourth day. The vaginal packing of iodoform gauze is allowed to remain from five to eight days. The operation is attended with a minimum of shock, the pulse-rate in very few instances being over 90 at the completion of the operation.

134 West Eighty-seventh Street.

ABSTRACT OF DISCUSSION

Dr. J. H. Carstens, Detroit: I should like to ask Dr. Bandler how old these patients are that he operates on, generally?

Dr. S. W. Bandler, New York: From 37 to 78. The youngest is 37.

Dr. J. H. Carstens: That is the point that I was going to bring out. This is an operation on the order of the old operation of Martin of Berlin, of Mackenrodt and of Duhrssen. I do this operation once or twice a year because the women are young. They are in the child-bearing period, and anxious perhaps to have children, and I endeavor in every way surgically to save that capacity. But when a woman is over forty, if she is past the menopause, or if she is seventy-five, why in the name of conservatism should anybody try to devise and subject a woman to an operation that takes an hour and a half to preserve a little picayune piece of uterus? When you have a good for nothing piece of uterus, have sliced off a great piece of the cervix, have taken out the tubes so that she cannot become pregnant, then you preserve this little piece. What for I don't know. In this kind of a case you can do all kinds of plastic operations, without benefit. In such a case I just cut around the uterus, take it right out, stitch the two broad ligaments together, and make a little flap. The whole thing can be done in fifteen or sixteen minutes, with good results, and the woman is not subjected to an operation which takes an hour and a half or two hours.

Dr. J. Riddle Goffe, New York City: I quite agree with what Dr. Carstens has said in regard to the removal of the uterus. In all these cases in women approaching the menopause, or afterward, it is my invariable rule to remove the uterus. I see no reason for keeping it. It shortens the operation very much and makes sure of good support from the broad ligaments.

The point I would criticise in Dr. Bandler's operation is that he separates from the cervix at either side the strong structure at the base of the broad ligaments, viz., the fibromuscular structures called the cardinal ligaments. Unless that support is retained, even though you do as complete an operation as has been described, sooner or later that little piece of uterus is going to come down. No matter how thoroughly the perineum is built up or how securely the fundus is stitched to the anterior vaginal wall, unless, as I say, these cardinal ligaments and the round ligaments are preserved and support from them secured, sooner or later the vagina will turn itself inside out, and while the fundus will not be seen at all, the cervix will come down and drag the bladder after it. I have seen such conditions after operation. There may be some cases, as Dr. Carstens says, of women who desire to have children, in whom it is well to preserve the uterus. I have done the operation with that intent. After the uterus is removed my method is to stitch together the broad ligaments from either side across the pelvis, commencing with the round ligaments, carrying my sutures down the full width of the broad ligaments, including the cardinal ligaments. Upon this plane of tissue I spread out the bladder, stitching it firmly at three points, thus hanging it there and securing its support from above. The fascia lata and anterior vaginal wall are then trimmed off and stitched to fit snugly the base of the bladder. It is important to relieve the rectocele. A rectocele, if continued, is bound to pull the uterus down. In a rectocele we have introduced a new force which is not there naturally at all, a pulling force that drags down whatever is above and unless we repair the floor of the pelvis the prolapsed condition is reproduced. My method of doing that is to start from above where I have cut away the peritoneum posteriorly to the cervix, dissect down a broad piece of tissue the full width of the rectum, clear down to the vulva and out on either side to get hold of the levator ani muscles. Where a large rectocele is present I plicate the rectum, taking in the slack in its longitudinal axis, and then bring together the levator ani muscles from either side in front of the rectum to restore the floor of the pelvis.

Dr. F. F. Lawrence, Columbus, Ohio: The questions occur to me: Why do we have prolapse? Why is it that in quite a goodly number of women who have had their perineums torn almost to the rectum they go on for years without even a slight descensus? It seems to me that when we start on the theory of building up from below in a case of complete prolapse or any other marked descent of the uterus we are getting the cart before the horse absolutely. In the first place, a marked retroversion is a physical impossibility, much more is a prolapse an impossibility, so long as the broad ligament is sufficiently tense to sustain the weight of the abdominal contents, not only against normal weight, but against deep inspiration or pressure about the waist from corsets or from clothing. And we may repair from below all we please but we have not relieved the ptosis within the abdomen and consequently the weight of the entire abdominal contents will be on the top of our downward repair and sooner or later with even no recurrence of the prolapse of the rectocele and the vesicocele we will have the women in constant pain because of pressure on the compressed scar tissue. I do not believe (as Dr. Carstens has just so emphatically said) that we are justified in doing any prolonged tedious plastic operation creating an enormous amount of scar tissue which never amounts to anything anyhow, leaving the real cause of the difficulty which lies above. We must restore the tension of the broad ligament to sustain the contents of the abdomen first. Then simply by the repair of the rectocele and the cystocele we shall render all the service we are able to do.

Dr. J. M. Baldy, Philadelphia: This operation does not deal with the essential point of prolapsus uteri. A nice operation is done on the vagina but nothing is done after the uterus is put back into the pelvis to push it up to the normal height and to hold it there. If this is true you fail in everything, because all the pressure that tears the uterus loose will still be operative. Any operation that fails to deal with that *per se* condemns itself. The amount of denudation done is simply enormous. Passing the fingers into the rectum with or without gloves—and gloves make them dirtier than without—you add to the chance of infection.

Dr. S. W. Bandler, New York: I am not at all worried by this tirade. I have not come here and presented to you an idea. I have been working on this vaginal route for fourteen years. I tried to cure these patients originally by a simple vaginal fixation and found it was by no means enough. I added to that the high amputation of the cervix, and found that was not enough. I tried amputating the cervix and special method of getting the two large flaps before fixing the fundus in front. That was fine, but still not enough. But since I diminished the caliber of the vagina and did a high perineorrhaphy not a case has recurred. Where would we be to lay in surgery if its great men said "Don't do this or that operation because it is a long one or a bloody one?" When men like Dr. Baldy talk this way it is child's talk. These patients even at the age of 75 go back to bed with the pulse almost normal in rate. I am not excited in making such remarks, only enthusiastic. I am not here to claim that this is an entirely original operation. If I had had opportunity to finish the paper I would have stated that it is founded on the principle of vaginal fixation as described by Duhrssen and Mackenrodt. What does Dr. Carstens propose to do? I have always admired him for his work. He now speaks of taking out the uterus in ten minutes. It is the hardest thing in the world to keep ourselves from doing a hysterectomy in these cases because it is so easy, but this does not cure the patient; nor have we supported the bladder. When Dr. Carstens removes the uterus he does not cure the prolapse of the vagina or the cystocele. I did that operation in 1900, 1901 and 1902 and the patients would come back with the bladder down. Here is an operation that is a beautiful thing because the cervix is placed high up and far back. The uterus does not descend in the way Dr. Baldy says. Dr. Baldy says I do not lift that cervix up. I do lift it up. I do a high amputation to make the uterus so short that when the intra-abdominal pressure pushes the fundus down the new cervix rises up and back. There will be no new cystocele. Hysterectomy for total prolapse! It is child's talk. Don't forget that the vagina is very capacious in these cases. When you fix the fundus back of the symphysis and it is fixed good and hard, so that it will stay; when you amputate that cervix and do the operation so that you take away the posterior enterocele; when you diminish the caliber of the vagina so that it scarcely admits two fingers by resecting the posterior wall, and do a high perineorrhaphy, then you have a fine complete operation. If these women did not complain we would not do the operation. By this method I have never lost a case, I have never perforated a bladder and have never cut a hole in the rectum.

THE BRONCHOSCOPIC TREATMENT OF BRONCHIAL ASTHMA *

HENRY HORN, M.D.
SAN FRANCISCO

General medicine and the internists are indebted to the laryngologist for the solution of many of their problems. The border-lines between laryngology and internal medicine are many and are constantly being encroached on by men in our specialty. One of the most brilliant examples of this in recent years is the improvement in bronchoscopic methods by Killian, the head of the laryngologic clinic in Freiburg.

Bronchoscopy in less than five years has been raised to the dignity of a science. The recent publication of Brüning's magnificent text-book of Bronchoscopy, the various publications of Jackson in America, and the countless contributions to the literature of this subject from every part of the world indicate plainly that it is a question with which every well-trained laryngologist and internist should be familiar.

Until quite recently the majority of the contributions dealt with the removal of foreign bodies, but a recent article by Ephraim, showing the relation of bronchoscopy to internal medicine, indicates many other uses to which this procedure can now profitably be put.

I make no excuse, therefore, for presenting before this Section a subject which would seem at first glance to belong to the realm of internal medicine. The work was done over a year ago at the University Laryngologic Clinic of Bonn, Germany, and the results are here presented for the first time. The physical examinations were made by the department of internal medicine of the Friedrich Wilhelm Stiftung under Professor Bohland. I am responsible for the bronchoscopic findings alone, except that the examinations were always demonstrated to men visiting from other clinics.

The theories concerning the pathology of spasmodic asthma are many. Until two years ago these theories were based on clinical findings alone. Three autopsies have been reported of patients dying during an attack of asthma, but the findings have been of no importance. Von den Velden, in a recent complete review of the subject, says that asthma is based on a general neurosis, and this seems to be the general opinion to-day, but what actually happens when the patient is in the throes of an attack, fighting and gasping for a breath of air, is a question which was first answered by Notowny, who used the bronchoscope as a method of observation. Up to the present time five reported cases of bronchial asthma have been studied by means of bronchoscopy; the sixth, which I here present, is the first, I think, to be reported in America.

Notowny had an opportunity of seeing three cases. I will in a few words give his findings and the results of his treatment. The treatment consists in swabbing the mucous membrane of the bronchial tubes, as far as one can reach, with a 20 per cent. solution of cocain, containing a few drops of adrenalin.

Case 1.—Boy, aged 15. Spasmodic asthma since childhood. Bronchoscopic examination showed redness and swelling of the mucosa but no contractions spoken of. Patient remained well for one year following last treatment.

Case 2.—Woman, aged 45. Asthma fourteen years. Bronchoscopy showed slight redness and swelling of mucosa of deeper bronchi. Presence of contractions in the bronchi was not mentioned. Patient was under observation only two weeks, but dyspnea became decidedly better.

Case 3.—Girl, aged 13. Asthma for eight years, following scarlet fever. Left lung was entirely obstructed during attack. Tracheotomy, then lower bronchoscopy was done. There was no swelling or hyperemia of mucosa present. Left lung was open for air. No contractions of the bronchi were mentioned. Three bronchoscopies showed no abnormal changes. Patient remained well five months.

Galebsky, working in Simanovosky's clinic in St. Petersburg, published the next series.

Case 1.—Woman, aged 40. Severe bronchial asthma combined with severe bronchitis of several years' standing. Mucosa of left lung was markedly reddened and edematous; the right lung was normal. After first treatment, patient became decidedly better. After a few weeks, the attacks renewed with old severity. The second treatment was without effect. Further treatment was abandoned.

Case 2.—Woman, aged 30. Severe asthma for seven years. The attacks lasted forty-eight hours. The patient was completely cured after one treatment. There was no change in mucosa noted, and contractions were not mentioned.

These five cases are all that I can find in the foreign literature. If I have overlooked any in the American literature I hope my attention will be called to the fact.

The case which I shall now report in detail is of great interest from the standpoint of both the rhinologist and the internist. Space does not permit a complete history of all aspects of the case. The patient was sent to me on account of a suspected double-sided empyema of the frontal sinuses. A typical Killian was done on one side and conservative measures brought the other side to complete healing. This treatment had not the slightest influence on the course of the asthma.

---

* Read in the Section on Laryngology and Otology of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

CASE REPORT

Patient.—A. H., servant girl, aged 21. Mother died of lung tuberculosis. Brothers and sisters were healthy. The patient had measles and scarlet fever during childhood. As a child she had frequent attacks of fainting. She had always been anemic; menstruation had been profuse, painful and irregular.

Present Illness.—Three years before coming under observation the patient had severe diphtheria, followed six months later by asthmatic attacks from which the patient had suffered ever since. The attacks were mostly nocturnal, and influenced by weather. The attacks lasted hours, sometimes days. The patient said that she was always extremely cyanotic and vomited large quantities of mucus. She had undergone several operations for nasal polyps. She was admitted to the Friedrich Wilhelm Stiftung, Bonn, Germany, Sept. 9, 1908, Professor Bohland in charge.

Examination.—The patient was a small, delicately built woman, poorly nourished, pale in color, with lips medium normal in color; she was not cyanotic. Thorax was long, small, flat. Both sides moved equally. Breathing was somewhat hurried. Lung Borders: Anterior, right apex, 5 cm. above clavicle; left apex, 3 cm. above clavicle; lower border, right, eighth rib; left, fifth rib. Posterior, upper border; right vertebra prominent; left somewhat deeper, lower border, both sides tenth rib. Lung borders freely movable. Auscultation: At apex left, shorter breathing sounds than on right. Scattered rattling râles, lengthened expiration. Heart and abdomen normal.

Patient remained in hospital eight days; she had a severe attack every night lasting several hours, relieved only by morphin, 0.01 gm. The patient remained in this condition for one year; then she was turned over to our department on account of the nasal condition.

Nasal Examination.—Middle turbinate on both sides had been removed. Space between stumps of turbinate and septum filled with slimy discharge. No discharge on floor or region of inferior turbinate. Transillumination: Antrum, right and left clear. Right sinus darker than left. Suction gave pus from region of ductus.

In November, I performed an external operation on ethmoid labyrinth. Labyrinth was filled with polypoid mucous membrane. In spite of the operation the attacks continued in unabated severity, it seemed almost as though the patient could not survive another. The weather was bitter cold, the snow lay deep upon the ground, but, hour after hour, with the windows thrown wide open, the poor girl hung to the edge of the bed, clothed only in a flimsy night-dress, gasping and struggling for a breath of oxygen. When I suggested a trial of the bronchoscopic method, she was glad to attempt anything that offered hope.

First Bronchoscopy.—Accordingly at 5 p. m., in the middle of an attack which was pitiful in its intensity, and in the presence of several staff surgeons, I made the attempt. I gave no preliminary dose of morphin, but did an upper bronchoscopy without difficulty. After I had passed the larynx and reached the region of the bifurcation, the patient began to cough up enormous quantities of thick mucus, which I helped to clear away as much as possible with applicators, forceps, suction, etc. The amount was estimated at over 200 c.c. The mucus membrane was so covered with the thick secretion that it was impossible to determine with accuracy whether it was swollen and reddened or not. As far as one was able to reach with the applicator, the mucous membrane was swabbed five times with an abundant quantity of 20 per cent. cocain solution, containing a few drops of adrenalin, and 0.5 c.c. of the solution was sprayed into the smaller bronchi with the bronchial atomizer. The treatment lasted fifteen minutes. The patient was very quiet; there was no straining or anxiety and no pain was complained of.

Course of Disease.—November 7. The patient slept well; there was no attack and no hoarseness. No morphin was used; pulse and temperature were normal.

November 8: At 4 a. m. patient had a very light attack, lasting ten minutes. No morphin used. Patient slept the entire night.

November 9: At 10 a. m. patient had a very light attack.

November 10: Patient had a bad attack; heroin, 0.0005 gm. was administered.

November 10 to November 25: One very light attack.

November 25 and November 26: Severe attacks.

November 26 to December 3: No attacks.

Second Bronchoscopy.—December 4: Patient in light attack. Length of treatment was eighteen minutes; sixty drops of 20 per cent. cocain, with six drops epinephrin (adrenalin) were used on swabs. Cocain, 0.5 c.c. of a 20 per cent. solution was used in atomizer. Nothing abnormal was noted in mucosa or lumen of tubes.

December 5 to December 8: No attacks.

December 8: Typical Killian operation.

December 8 to January 14: No severe attacks; one slight attack. No morphin. Patient discharged practically well, better than she has been in years. Sleeps and eats well.

February 10: Patient readmitted. Since discharge, the father of the patient had died. She became very excited and nervous and caught a severe cold by lying out all night on the grave of her father. Since then, she had a number of attacks, but not nearly as severe as formerly. The patient now complains of pain under the sternum, nervousness and sleeplessness. Physical examination gave the same findings as before.

Third Bronchoscopy.—February 11: Attack of medium severity. Preliminary injection of morphin 0.005 gm., scopolamin 0.0005 gm. Patient in deep sleep when put on chair in sitting position. The pulse 60. During treatment 4 c.c. of 20 per cent. solution of cocain were used on bronchial mucous membranes. Patient very quiet; had no cough. No mucus. Mucous membrane seems normal in color as deep in bronchi as one can see. The main bifurcation seems to be at a depth of 32 cm. and is contracted just below to far less than normal caliber. Time of treatment eleven minutes.

February 12: Patient complains of pain in stomach; morphin 0.005 gm. administered.

February 13: Patient had bad night; no asthma; morphin 0.005 gm. given.

February 14: Patient somewhat better. Pain in stomach less severe. Morphin 0.005 gm.

February 15: Stomach pain still continues. Patient slept badly. Slight attack.

February 16: No morphin. No attack.

February 18: Severe attack. Morphin 0.01 gm. given.

February 19: Slight attack.

Fourth Bronchoscopy.—February 19: Fairly hard attack. Treatment lasted twelve minutes. An 8.5 mm. tube used. More secretion obtained than by last examination. Patient perfectly quiet. Pulse at beginning 100, at close 115. Patient complains of being tired after treatment; but otherwise no disagreeable features present. At 29 cm. one finds no trace of bifurcation, but the right bronchus is continued in a straight line to 31 cm. At 29 cm. one finds on the left tracheal wall what seems to be changed whitened mucous membrane. In the middle of this spot one sees a small opening not more than 2 to 3 mm. in diameter, through which one can pass into the left bronchus with a sound. At 31 cm. the lumen is decidedly contracted; one can go no deeper with the 8.5 mm. tube, there seems to be a constriction, 1 cm. below which one sees a normal bifurcation.

February 20: No attack.

February 21: Slight attack at 4 a. m.; patient otherwise much better.

February 21 to 26: Daily light attacks, easily relieved with stramonium powder.

February 27: Suddenly, while drinking coffee, patient had a severe attack; thinks she aspirated a piece of bread. Patient very dyspneic; cyanosis of face and edema of both eyelids, especially left. Expiration especially difficult. Attack lasted from 4 p. m. to 3 a. m. Morphin, 0.01 gm., given. Patient very weak. Excursion of thorax markedly limited on left side. Pulse 96 to 102, full and regular.

February 28: At 4 p. m. patient had medium severe attack. The left thorax half is decidedly limited in its excursion. The accessory, respiratory musculature is in a state of clonic cramp. Auscultation over right lung gives whistling and piping râles. The breathing is so weak over the left lung that one cannot say with certainty whether the sounds are not carried over from the right side. By auscultation one can follow the trachea to the bifurcation, and the right bronchus on down into the lung. All sounds cease in the left bronchus at the bifurcation.

March 1: Lung findings. Picture entirely changed. Breathing excursion the same on both sides. Râles the same on both sides.

Fifth Bronchoscopic Treatment.—Interval Examination.—March 1, at 6 p. m.: Time of treatment, 10 minutes. Morphin, 0.01 gm. Mucous membrane was very slightly swollen, with scattered masses of thin white mucus. Bifurcation at 29 cm. absolutely normal in appearance. One can pass the 7.5 tube easily into the left bronchus, and all seems normal even in the smaller branches. No contractions visible. Right bronchus and smaller branches seem absolutely normal in appearance. No contractions. The mucous membrane on both sides was thoroughly swabbed with 20 per cent. cocain solution, and the finer branches sprayed with same solution. X-ray picture taken after treatment shows only packets of glands along vertebræ, and a string on the left side reaching upward from the heart.

March 2: Attack. No morphin.

March 3, 11 p. m. to 2 a. m.: Severe attack. Morphin, 0.01 gm.

March 4, 2 to 8 p. m.: Severe attack.

March 5: Light attack.

March 6: Light attack.

March 7: Severe attack.

March 8: Severe attack. Patient discharged at her request.

COMMENT

In reviewing the details of this history there are certain points which seem to me of great importance. We have a case complicated by many factors—hysteria, tuberculosis and severe accessory cavity disease. The asthmatic attacks were of great severity; the patient was obliged to use morphin for years. The successful treatment of the accessory cavity trouble had no influence on the course of the disease.

The first bronchoscopy relieved the lungs of a great mass of mucus. I doubt very much, on account of the amount of secretion present, whether the cocain had any effect at all. The patient was evidently very much relieved, more so than by other form of treatment up to that time. She herself asked for another treatment.

The second bronchoscopic treatment was carried out without difficulty. No secretion, no redness, no swelling and no contractions were noted. Here the conditions were more favorable for the action of the cocain. The ordinary dose of cocain is given as 0.05 gm., which is 5 drops of a 20 per cent. solution or about as much as one applicator would carry. Sixty drops were used on the applicators and, in addition, 0.5 c.c. of a 20 per cent. solution was sprayed into the finer bronchi. Nearly twenty-two times the maximal dose was used and no effects of the drug could be noted. The pulse was not accelerated twenty beats, either by the cocain or by the procedure, which lasted nearly twenty minutes. Was the cocain absorbed as such or did it exercise some local effect on the nerve endings which would account for the subsequent great improvement? From December 4 to the latter part of January of the following year the patient was practically cured. She had no attacks, gained in weight and appetite and considered herself cured. Whatever the cause of the improvement, it seems to me that the treatments were more than justified.

The patient's indiscretion following the death of her father was too much of a strain for her poorly-balanced nervous system. All conditions were most favorable for a recurrence of the attacks, and they recurred, but, as the subsequent bronchoscopic examinations showed, they were of an entirely different type and far less severe than formerly. Whether these spasmodic narrowings or clonic cramps of the musculature of both the large and small bronchi are typical of a certain type of asthmatic attack I do not think that we are in a position to conclude from the fragmentary observations which we now have at our disposal. In a later case, which I shall not now report, I saw nothing of them. So far, observations are too few and the pathologic picture too changing to allow us to form any definite ideas. I have reported this case in the hope that it will stimulate some one to extended experiments.

The third bronchoscopic examination was again carried out during a severe attack. Here a great surprise awaited us. Instead of finding the bifurcation at 28 cm., where it normally belongs, we were obliged to carry the tube on down to 32 cm. No explanation suggested itself. It seemed that this bifurcation was much smaller than usual; it was certainly somewhat contracted, and the mucous membrane, as far as the eye could see, was not reddened and not swollen. My first thought was that I had overlooked the condition at the first examinations, and that it was some anatomic abnormality. I also considered the possibility of having in some way shoved the lungs bodily down with the larger tube. I was entirely unable to offer any sensible explanation to the clinicians present, and I felt that I was facing some problem which I determined to clear up at the first opportunity.

The fourth examination was carried out eight days later, during a severe attack. I was prepared, after thinking over the curious conditions found at the previous examination, to pay especial attention to the region at a depth of 28 cm. As I have already said, at 29 cm. I found a white scar-like change in the mucous membrane, in the middle of which was a small opening about 3 mm. in diameter. The sound passed readily into the left bronchus and the scar-like tissue did not feel at all swollen to palpation but hard. There could be no shadow of a doubt as to the correctness of the observation. It was demonstrated to all present, and in the discussion which followed, bearing in mind the previous severe attack of diphtheria, we were inclined to regard it as a cicatricial contraction at the beginning of the left bronchus, a conclusion which entirely invalidated the observations at my first two examinations. In looking up the literature on the subject, no similar case was to be found, and nothing would satisfy me except another examination.

I was now convinced that I had found the true cause of the trouble and immediately began preparations to carry out a course of dilatations of the bronchus similar to that used by Killian in the removal of a foreign body situated under a stricture.

A careful examination of the chest, carried out a few days later during an attack of unusual severity, seemed to confirm our findings. The left lung seemed completely out of use, and one could determine exactly by auscultation the point of constriction.

Three days later an examination was again made in an interval between attacks. The findings were almost reversed. Both lungs functionated equally and no trace of a stenosis was to be found by auscultation. By this time my suspicions were aroused as to the true state of affairs, and the last bronchoscopic examination, which was made while the patient was free from an attack, showed a perfectly normal mucous membrane, with no signs of contractions either in the left or the right bronchus.

The conclusion was obvious; the patient was suffering from a spasmodic closure, or, better, a tonic cramp of the bronchial musculature, confined principally to the beginning of the left main bronchus, but also plainly to be seen in the deeper branches of the right bronchus.

That this cramp was not present at the first two examinations I am positive. That it was present at the second two examinations I am equally positive; and, besides, it was demonstrated to the many onlookers. And, finally, that the bronchus was again normal at the last examination was proved by the fact that the tube was passed down both sides.

In conclusion, it is interesting to note that the greatest relief occurred after the first two treatments. The relieving of the lungs of the enormous mass of mucus by the introduction of the tube seemed to be the determining factor in the first treatment. The period of forty days' relief following the second treatment might be credited to the combined effect of the dilatation, which I am convinced plays an important rôle, and to the local action of the cocain. How this local action is to be explained I am at a loss to say. I do not think that it is due to the absorption of the drug as such, for I have not yet seen any symptoms which would point in that direction. I am inclined to believe that asthma is a nervous reflex affection, and that the cocain exercises an effect analogous to the favorable action of that drug when applied locally in the nose during an attack of dysmennorrhea.

CONCLUSIONS

Combining and comparing my results with those of Notowny and Galebsky, I think that I am justified in drawing the following conclusions:

1. It is possible in a young adult to have an almost complete closure of a main bronchus, due to a tonic cramp.

2. Notowny's conclusion that the theory of bronchial spasm is false is disproved in this case.

3. The complete cures in some cases and the long period of relief in this case seems to indicate that the treatment of spasmodic asthma by the methods elaborated in this paper is worthy of more extended investigation and should be given a trial when all other methods have proven of no avail.

4. There seems to be no one bronchoscopic picture characteristic for an attack of spasmodic asthma. We may have normal mucous membrane, spasms and contractions of the large and small bronchi, and redness and swelling, alone or combined in the same case.

5. Tuberculosis, heart disease, slightly scoliotic spine, great weakness and age seem to offer no contraindication to the use of this method.

209 Post Street.

ABSTRACT OF DISCUSSION

Dr. E. Fletcher Ingals, Chicago: I have not the enthusiasm of Dr. Horn in reference to bronchoscopic treatment; I do not agree with him that there is no contraindication to the use of this method of treatment. Some men who have great skill in this line can examine patients without much difficulty and without ill effects, but it is equally true that in a large number of cases bronchoscopy is followed by serious results. Von Eicken, in an exhaustive report to the International Medical Congress in Budapest, 1909, records 308 cases of bronchoscopy for foreign bodies, collected from every available source, including the literature and personal communications. Five of these cases he leaves out for reasons not explained; but in 303 there were 40 deaths or 13.20 per cent., the fatalities being considerably more numerous in young children. It is not possible to get accurate statistics, for most unfortunate cases are not reported, but I am under the impression that very few men should attempt this work, because of danger to the patient. There is not opportunity for many men to become expert in this operation. I note that Dr. Horn's examinations were not long continued; this should be remembered as an important factor of safety.

I agree with Dr. Horn in his conclusion as to the error of one author quoted regarding the conditions of the bronchial tubes in asthma. This case occurred in winter; the patient had come from the outside into the warm atmosphere of the hospital and we cannot be so certain as to the influence of the treatment, because, as we know, many cases of asthma are relieved by simply coming into the hospital. I do not think the treatment did any harm and I think it was justified, but I do not think that more than one man in a hundred would be justified in doing bronchoscopy for the relief of asthma. The cocain can be applied more easily and safely through a spray tube passed below the vocal cords or it may be inhaled from an atomizer, with quite as much relief. A method much employed by an irregular who gives patients much relief consists of the inhalation of a small quantity of cocain, atropin and possibly epinephrin—sometimes people are relieved thereby for months; therefore, applications of strong solutions do not seem to me to be justified except in extreme cases, like the one referred to in this paper. The findings of contraction of the bronchus in the fourth examination is interesting. In the other examinations, the large amount of morphin and scopolamin may have prevented contraction. In bronchoscopy, we see rhythmic contraction and relaxation of the bronchial tubes provided the patient has not been overpowered by the anesthetic. In a case which I was demonstrating to a class of doctors, a bronchus from 4 to 6 mm. in diameter, closed so that the opening was not visible. I have seen a bronchus close completely, when search was being made for a foreign body.

I made some experiments about a year ago in the laboratories of the University of Chicago with the view of ascertaining the effects of certain remedies in the spasmodic conditions of the bronchial tubes in asthma. I did not have time to carry these far enough to give me anything worth while, except on one point; in a dog I produced tonic contraction of the bronchus, with almost typical asthmatic breathing, for some time by the insufflation of powdered ipecacuanha. With reference to the position of the bifurcation of the trachea, there is a large chance for error. I have sometimes found it difficult to locate the bifurcation, though I do not think this likely to happen with Dr. Jackson, who is expert and can see better than I. It would not be strange with the variability of the illumination and the anatomic conditions for one to mistake the bifurcation of the main bronchus for the bifurcation of the trachea. I have not examined patients with asthma by this method; I am glad that Dr. Horn has done so and hope it will be done by others, but I hope that not all laryngologists will undertake to cure asthma in this way. It is better to wait until one has had a great deal of experience in bronchoscopy on living dogs, before trying at all. There is all the difference in the world in doing bronchoscopy on the cadaver and on a living subject.

Dr. Chevalier Jackson, Pittsburg, Pa.: I am in direct and absolute opposition to Dr. Ingals in only one statement: he stated that I am more expert and can see better than he can: that I deny most strenuously; it absolutely is not true.

My position is about half way between that of Dr. Ingals and Dr. Horn. I do not think every one should examine the bronchi in disease, but that the dangers are very great I do not believe. I do not think that the difficulties are very great in bronchoscopy if it is for therapeusis. Foreign body work is totally different. There it is a problem of mechanics, and good mechanics are born, not made, and lest I be thought boasting, I would state that it is a generally accepted fact that the best mechanics are men of very little brains. I think in the future many men will devote themselves to the diagnosis and therapeusis of the air passages, using the bronchoscope simply as a speculum, and as a speculum is used in gynecology and other specialties. The field is enormous. We went down into the lower air passages first for the extraction of foreign bodies; then we began to discover pathologic conditions; and we have discovered that there is an immense amount of pathology of the air passages visible bronchoscopically. The time has arrived when diagnosis of thoracic diseases are being made with the bronchoscope. That is the first step beyong the foreign body stage: the next is therapeusis. I regard Dr. Horn's paper as epoch marking in this respect. Now we must bear in mind that an entire year's publication of The Journal would not contain all the remedies suggested for asthma, which is one of the most complicated of conditions, and it will take a long time to perfect bronchoscopic methods of treatment. When cocain first came into use we were enthusiastic about curing acute rhinitis and a host of other troubles with applications of cocain and all physicians know where that drugs stands to-day. I do not think we will apply the bronchoscopic treatment of asthma to all cases, but I think that there are patients who can be cured by local treatment in this way. Asthma is a neurosis and there must be general treatment as well as local; however, this is a step in the right direction and I certainly believe with Dr. Horn that we have here a field for investigation and that patients will be cured in this manner.

I would particularly like to emphasize, however, that we began this work for the extraction of foreign bodies; that we found disease; that diagnosis was the second step, and that the third will be therapeusis.

Dr. W. E. Casselberry, Chicago: Even in foreign body work the bronchoscopic examination is of value from a diagnostic standpoint. It might be thought that we would have in the radiograph sufficient evidence of the presence of a foreign body, but it fails to disclose the exact conditions in which the foreign body may exist in the bronchial tract. The point I would make is that we cannot learn what may be vital conditions until we have made a bronchoscopic examination. A case in point is one in which a 1½ inch glass-headed steel pin was plainly enough lodged in the left bronchial tract as shown by the *x*-ray, but in which on bronchoscopic examination it was found to be immovably transfixed in the first bronchial branch with its head impacted against the upturn of this branch and its point inserted firmly into the bronchial wall. It could be grasped with the bronchoscopic forceps, all suitable kinds being tried, and the force being exerted in all directions, but without success in removing it because of the transfixion until at a second operation it was cut in two. The bronchoscopic pin-cutter which I devised for this case could be used also for needles, safety-pins, etc. To prevent the fragments from flying asunder and getting lost the instrument was so devised that it will hold fast to one of the ends of the pin after cutting. In my case the pin being cut near the point, this end was retained and withdrawn by the cutter and the other end was then picked up with forceps and withdrawn.

Dr. Henry Horn, San Francisco: I have been accused by Dr. Jackson and Dr. Ingals of over enthusiasm and I desire to plead not guilty. I am not at all enthusiastic about this method of treatment. The paper is simply presented as a pathologic experiment. I selected this case from a number of others that I had been working on, not because of the value of the treatment, but because of this remarkable condition of tonic closure of the main bronchus. As Dr. Ingals truly said, it goes without saying that if one's technic is not good, such work should not be undertaken. Of course, I did not mean that there were no contraindications, naturally there are many, but I mean that before I tried this I would not have done it, for instance, in a case of dilated heart. I only wanted to report this experimental work in the hope that some members of the Section would carry on the idea and see what results could be obtained. Dr. Casselberry said that this patient was brought from the outside into the warm atmosphere of the hospital. As a matter of fact she had been in the hospital for an entire year, receiving every treatment that the German Pharmacopeia knows, and she had had morphin every night for a year. It seems to me, therefore, that the result must be credited to bronchoscopy unless it be credited to the mental effect on the patient.

I do not know much about the cocain proposition referred to by Dr. Casselberry. In a large series of experiments on dysmenorrhea, I was able to relieve the patients by local applications in the nose. I do not know why, but the fact that the pain ceased is true. I simply offer the suggestion that there is some sort of an analogy.

This is not the only case I have worked on. When possible I examined every patient with severe chronic bronchitis who came into the clinic, and almost without exception they said that they were relieved. Why I do not know, but I am of the opinion that the passage of a large instrument into the bronchus is somewhat analogous to the passage of the cold steel sound in the urethra. Before I left San Francisco I had a case in which I did not use morphin or cocain and the woman, who had severe asthma, had taken stramonium powders every half hour for years. After one passage of the bronchoscope and that only down to the bifurcation she came back two weeks later, without having had to take a powder. So that there must be something in the mere introduction of the bronchoscope.

As regards the position of the bifurcation, perhaps I did not make myself quite clear. I meant the bifurcation of the trachea, which one can hardly miss. One may pass this little opening of the upper bronchus very easily. If you happen to twist the bronchoscope it may be taken for a cicatricial contraction. Dr. Jackson misunderstood me; I said I mistook the constriction for a scar contraction and supposed it to be a result of diphtheria, but it was not as was shown later. Up to the present time there are no cicatricial contractions reported as due to diphtheria.

Now was I justified in making this trial? I think so. If the technic is good, I do not think that there are many contraindications to the procedure. I have had patients tell me that the passage of the bronchoscope is more comfortable than the passage of the soft rubber tube into the esophagus. If the patient doesn't object to the passage of the instrument it cannot be uncomfortable. This work is certainly going to open up a great field in the study of internal medicine as related to the respiratory tract. We are able to recognize many things that a few years ago we never thought of looking for—abscesses, tumors, strictures, etc.

AGAR-AGAR IN THE TREATMENT OF CONSTIPATION IN CHILDHOOD *

JOHN LOVETT MORSE, A.M., M.D.
Assistant Professor of Pediatrics, Harvard Medical School; Associate Visiting Physician at the Children's Hospital and at the Infants' Hospital
BOSTON

Agar-agar is prepared from hot water extracts of various species of *Gelidium* and differs somewhat in its composition according to its origin. It is sold commercially in the form of strips about eighteen inches long, varying in thickness from that of a straw to that of the finger. It contains about 60 per cent. of carbohydrates, principally in the form of galactosan and pentosan.

Saiki[1] did a series of beaker experiments in order to determine its digestibility and obtained negative results, not only with saliva and pancreatic amylase, but also with an intestinal extract containing very active invertin. The digestibility was but little increased by preliminary treatment with dilute acid. He also found that agar-agar was very resistant to the action of the ordinary intestinal bacteria. Only one of three strains of the

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Saiki: Jour. Biol. Chem., 1906, ii, No. 3.

Bacillus coli communis caused gas production in agar-agar media, and that only to a slight degree. Utilization experiments in both animals and man showed that very little (about 10 per cent.) of the polysaccharides was utilized and that the agar-agar was passed through the intestinal canal unchanged.

Agar-agar has the property not only of absorbing water, but also of retaining it in its passage through the intestinal canal. It thus increases the bulk of the feces and prevents the formation of hard, fecal masses. This peculiarity, together with its resistance to bacterial decomposition, suggests its use in the treatment of that form of constipation which is due to complete digestion of the food and to complete absorption of the water from the intestinal tract, the stools being as the result small and very dry. It has been used with good results in the treatment of this class of cases in adults by Mendel,[2] Schmidt,[3] Gompertz[4] and others. The doses given have varied from ½ to 1 ounce daily. Owing to the nature of its action, no habit is produced and it is not necessary to increase the dose. In fact, it is usually possible to diminish the dose and in some instances to entirely discontinue it. In spite of the fact that agar-agar alters the character of the feces, it does not always induce a spontaneous evacuation of the bowels. This is because it does not exert an irritant action on the intestinal wall as do the products of putrefaction usually formed in the intestine. Schmidt called attention to this fact and added a small quantity of the extract of cascara to the agar-agar in order to supply this chemical irritant. A preparation of this sort is sold under the name of "regulin." This is made with one of the tasteless forms of cascara and is both tasteless and odorless. Whether the tasteless forms of cascara are as active as the others is a moot question. However this may be, a serious objection to this preparation is that it contains two substances having different actions, one acting mechanically by softening the feces, the other as an irritant to the intestinal wall. It is impossible to increase the dose of one without increasing that of the other also. It is much more rational, therefore, if both agar-agar and cascara are indicated, to give them separately, in order to be able to vary the doses of each independently.

Agar-agar is sometimes eaten dry in the stick form, but is more often cut up into small pieces and eaten like a cereal with cream and sugar. It has almost no taste but a rather characteristic gelatinous feel in the mouth. In other instances it is mixed with cereals or cooked in with soups or broths. Schmidt cautions against using it in a too finely divided form, as the rapid swelling from the absorption of moisture in the stomach may cause colic and diarrhea.

I have seen no report of the use of agar-agar in the treatment of constipation in children. Some authors say, indeed, that it should not be given to young children. They do not state, however, why it should not. As there seemed to be no very evident reason why the action of agar-agar should be different in children from that in adults, and as the type of constipation helped by agar-agar is not at all uncommon in childhood, it seemed reasonable to me to try it in spite of these statements. I have, therefore, during the past winter, given it to a number of children suffering from this type of constipation. Their ages varied between 2½ and 8 years. The results have, on the whole, been very satisfactory. It has, in this type of constipation, given much better results than the administration of fruit, vegetables, coarse foods and preparations of bran, or the ingestion of large amounts of water. In many instances it has been possible to stop the use of laxative drugs and in all to diminish their doses. In one instance, however, it seemed to lose its effect after a few weeks. In others it has been possible, after a time, to omit it entirely.

The greatest difficulty encountered has been in inducing the children to take the agar-agar. None of them will take it dry or simply with milk and sugar like a cereal. Some of them will carefully separate out each piece in their mouth and spit it out when it is mixed with cereal. Most of them can be induced to take it in this way if it is cut up into flakes about the size of bran and cooked in with the cereal. It can usually be given to the others in broth or soup, if it is thoroughly cooked before it is mixed in. Several hours' hard boiling are required, however, before it becomes homogeneous enough to mix well; otherwise it will surely be detected by the child.

The dosage is rather indefinite, as the quantities usually given to children are too small to weigh on ordinary scales and hard to measure in spoonfuls because of the comparatively large size of the flakes. Children of 4 or 5 years need, as a rule, about two teaspoonfuls of dry flakes, the size of dry rolled oats, daily. This weighs about one dram. Fortunately no harm can result from either an underdose or an overdose, and after a week or two the amount necessary for the individual child is easily fixed.

CONCLUSIONS

Agar-agar is useful in children, as in adults, in the treatment of the type of constipation associated with small, dry stools. It is harmless and in many instances gives most satisfactory results.

70 Bay State Road.

ABSTRACT OF DISCUSSION

Dr. Alfred Friedlander, Cincinnati: I have used this mixture of agar-agar and cascara with satisfaction by mixing it with some of the desiccated breakfast foods, or with stewed fruits. In this way there has been no difficulty in administration. Doses of about a teaspoonful to children four or five years old gave a satisfactory result, and no bad habit was ever formed in my experience, even if the dose had to be increased.

Dr. C. G. Kerley, New York: I am sorry that I cannot corroborate Dr. Morse's observation. I have found agar agar very difficult to give. It answered all right for a time, and then lost its effect. I have given it in over forty cases, and my results were not at all satisfactory. My results at first were about the results we get from most cathartics, and the effect gradually fails. The difficulty in getting a child to take it and the absence of good results did not warrant its continuation.

Dr. Godfrey R. Pisek, New York: I have also experimented with agar agar, and can corroborate what has been said about the difficulty of administration. With oat meal it was taken better than in any other cereal, but the difficulty in getting the child to take it was a great disadvantage. There are a number of selected cases in which I believe agar-agar is beneficial, that is, in those in which there is a deficiency in the amount of the feces and those that have had all manner of drug treatment. These patients react because of the bulk which is left in the intestine, although one is sometimes obliged to stimulate the discharge of the feces by a suppository. At the same time, the fecal movement is softer and larger than ever before, and the parents are satisfied that

---

2. Mendel: Zentralbl. f. d. ges. Physiol. u. Path. d. Stoffwechs., 1908, No. 17.
3. Schmidt: München. med. Wchnschr., 1905, ii, 1970.
4 Gompertz: Am. Jour. of Med. Sc., October, 1909.

progress has been made toward relieving the obstinate constipation. This is so in a limited number of cases, however. I have lately also tried beet-root, but am not as yet prepared to give a report on these cases.

Dr. J. L. Morse, Boston: I am sorry that Dr. Kerley has had so much trouble with agar-agar, and I wish he would try it again. I want to repeat that agar-agar is not a drug, at least, I do not consider it a drug. It is merely a method of keeping the feces moist and increasing their amount. It does not have any irritant action on the intestine.

THE PRACTICAL USES OF ELECTRICITY IN MEDICINE *

CHARLES S. POTTS, M.D.
PHILADELPHIA

While it is true that electricity is an agent of much practical therapeutic value, it is also true that it is looked on with skepticism by a large number of the profession. The reasons for this would seem to be two-fold: First, the great majority of those who employ it do so without a proper understanding of its capabilities, limitations and the proper technic, and hence do not get the results they expect. As an example of this I not long ago saw a patient with paralysis of the arms due to a neuritis induced by lead, to which the faradic current had been ordered applied for twenty minutes twice daily by a prominent physician. The uselessness and possible harmfulness of such a procedure will be apparent to all acquainted with the proper use of electricity. In hospitals also the electricity is frequently applied by a nurse, who, as a rule, has received no intelligent instruction in its use. Second, some of those who have made a special study of it, have in their enthusiasm made such extravagant claims on slight evidence that many have come to look on all claims made for it either with distrust, or attribute any beneficial results to its psychic influence alone.

THE DIFFERENT CURRENTS AND THEIR PHYSIOLOGIC ACTION

The passage of the electric current through the body does produce actual changes in functions and tissues and for it to be used at all intelligently some knowledge of these varied physiologic actions is essential. These differ somewhat in degree according to the form of current used. There are now employed therapeutically the galvanic or constant, the faradic or induced, the sinusoidal, static and high frequency currents. *X*-rays while due to electricity, and the various forms of light which may be produced by it, are not considered here.

THE CONSTANT CURRENT

The constant current possesses all of these actions to a greater degree than any of the rest. In the other forms of current some are either absent or so slight as to be practically disregarded in considering the indications for their use. The therapeutic activity of the constant current depends principally on its so-called polar effects, which occur at each pole, the interpolar effects occurring in the region between the poles, and its power of producing muscular contractions. The first consist of electrolysis, phoresis and electrotonus. By its electrolytic action on the tissues of the body, composed principally of salts in watery solution, in the region of the poles are decomposed into their ultimate elements or ions, with the result that the anions, oxygen, chlorin and acids appear at the postitive pole or anode and the cations, hydrogen, alkalies and bases are found at the negative pole or kathode. If the current be sufficiently concentrated, caustic and destructive effects are characteristic at each pole, the positive pole particularly searing the tissues by the acid generated, and thus stopping hemorrhage.

By phoresis the fluids and solids either in solution or small particles produced by the electrolytic action just mentioned are transferred from one pole to another, the bulk of the fluids, hydrogen, alkalies and bases (cations) going from the positive to the negative pole and a lesser amount of fluid with oxygen and acids (anions) passing from the negative to the positive. There is thus a double current passing between the two poles. The former is known as cataphoresis and may be employed in therapeutics for the introduction of various drugs into the body; the second is known as anaphoresis and under some conditions, as when it is desired to introduce an acid, may be employed as cataphoresis is. In addition, osmosis is increased, fluids being driven from the anode to the cathode. By this property also we have an accumulation of fluid at the negative pole and consequent vascular congestion, while at the positive pole there is depletion. If the current is weak, these changes are not noticeable, but they are occurring. The electrotonic effects consist of the production of catelectrotonus, or an increased excitability of muscle and nerve produced by the negative pole or cathode, and anelectrotonus, or diminished excitability of muscle and nerve, produced by the positive pole or anode. Muscular contractions are only produced when there is a sudden increase or decrease of the current density, in other words when the circuit is either suddenly opened or closed. While the various phenomena just mentioned are observed most markedly at the respective poles, electrolytic and phoretic effects also take place in the region between the poles. As has been previously stated, whenever the current passes through an electrolyte electrolysis occurs and when it does occur the ions of the decomposed molecules are transferred from one pole to the other according as they are anions or cations. The constant interchange produces metabolic and vascular changes, which facilitate the absorption of morbid exudates and adhesions. To a certain extent also the galvanic current possesses bactericidal properties, but as it is only with very strong currents, it cannot be employed practically for this purpose. It may be said, therefore, that the positive pole is sedative to nerve and muscle, hence may relieve pain and spasm; is capable of diffusing drugs through the skin (cataphoresis, anodal diffusion), is depleting and hemostatic. The negative pole is stimulating to nerve and muscle, hence improves their nutrition, increases moisture and congestion, and if strong concentrated currents are used is most destructive to tissue.

THE FARADIC CURRENT

The faradic or induced current has no power to produce the polar and interpolar effects possessed by the galvanic current, but is an efficient agent in causing muscular contractions, except when the lesion is in the peripheral neuron; i. e., peripheral nerves, nuclei of the cranial nerves and cells in the anterior horns of the gray matter of the cord. It also, when rapidly interrupted, acts as a sedative to sensory nerves and thus may relieve pain. In this respect it is believed to be more effective if a fine wire coil is used. If used with a dry fine-point electrode as the metallic brush, so that the current is at high tension, it stimulates the sensory nerve-endings and may be of value in some forms of anesthesia and paresthesia. As it produces contraction of the muscles it may, if a number of them are excited, cause changes in general nutrition. Weir Mitchell found that an elevation of the body temperature resulted from such use.

---

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

THE SINUSOIDAL CURRENT

The sinusoidal current is an alternating current obtained from a rotary converter or dynamo. It differs from the faradic current in that the alternations are gradual, those of the faradic being abrupt. Hence it is much less painful. It differs also from the faradic current in that it will cause muscular contractions in muscles cut off from their trophic centers (peripheral neuron lesions), and is said to be especially effective in exciting contractions of involuntary muscle. Otherwise it acts similarly to the faradic current.

THE STATIC CURRENT

The static current is unidirectional, and hence has a positive and negative pole which have different actions, the positive being sedative and the negative irritating, similarly to the galvanic current. It acts either locally or generally according to the technic employed. Sparks cause contraction of the muscles and other tissues and hence may relieve local congestion or stasis by squeezing out the fluid contents of the tissues and forcing them in the direction of the lymphatic and blood streams respectively. They thus may relieve pain and remove exudation. After the initial contraction there is dilatation of the small vessels and hyperemia. The positive spark is less painful than the negative. Similar results may be obtained by the socalled static wave current.

The spray or breeze especially if positive with negative insulation, is soothing and may relieve pain. The brush discharge, by which is meant the discharge taking place between a patient insulated and connected with a static machine and an electrode of some resisting material as wood, causes considerable local hyperemia, hence an increased leucocytosis, and has been found useful in conditions similar to those in which Bier's hyperemic treatment is indicated. The static bath is asserted to cause metabolic effects shown by increased frequency of the pulse, which may persist for some time after the treatment; a slight rise in temperature, an increase in respiratory combustion; when used with positive insulation an increase, and with negative insulation, a lowering, of the blood pressure; a tendency toward drowsiness; an increased excretion of urea and some increase in the gastro-intestinal functions.

HIGH-FREQUENCY CURRENTS

High-frequency currents also produce a local and general action. The former is produced by either the spark or effluve, and the effect is somewhat similar to that caused by the static spark, except that the contractile action is not so great. Hyperemia with increased leucocytosis and consequent phagocytic action is caused, and some believe that owing to the absorption of the ozone produced there is an increased germicidal action in the blood. There is also, owing to the capillary dilatation, more or less fall of blood pressure. A temporary lessening of the sensibility of the sensory nerve-endings also occurs. Ultraviolet rays are produced. Concentrated sparks are destructive to skin and small morbid growths. Static sparks also act in a similar way. Local influences are best obtained from either a Tesla coil or resonator, both of which produce currents of high voltage and small amperage.

Freund has asserted that the irritation of the skin and peripheral nerve-endings by these and other forms of high-tension discharge (static spark or the spark from a Rhumkorff coil) reflexly influences distant internal organs. This observation has some significance when the studies of Head[1] are considered. He showed that disease of the viscera caused certain definite areas of pain and tenderness in the skin, there being a constant relationship between the organ affected and the locality of pain and tenderness, this being due to the connection between the sympathetic supply of the viscera by means of the white rami communicantes with the spinal cords and nerves. Brief applications of either static or high-frequency sparks may cause some elevation of blood pressure. Muscular contractions similar to those caused by the faradic or sinusoidal currents are produced by currents from either the D'Arsonval or primary Tesla coils. General influences are better obtained from the D'Arsonval current, which is of lower voltage and greater amperage than either the Tesla or resonator currents. Marked changes in metabolism are produced by it. These are increased tissue changes, more rapid oxidation and increased elimination of waste products in the urine, and, according to most observers, marked diminution of blood-pressure.

EFFECTS ON BRAIN AND CORD

In addition to these various actual changes which electricity is capable of causing in the tissues of the body, must be added its action on the higher mental functions in producing mental impression or suggestion; in other words, its psychic influence. A question of some importance is whether electricity can influence directly the brain and cord through the tissues that cover them. The galvanic or constant current is the only one which seems to have any effect whatever on these structures. Erb showed that galvanization of the head, the electrodes being placed either on each temple or mastoid process, causes vertigo and flashes of light from stimulation of the optic nerves; it seems doubtful, however, that if a current of a safe strength is used enough will reach it after passing through the various coverings of the brain to be of any therapeutic value. Many believe that it will, but I know of no instance where muscular contractions have been produced by such means, and any one who has ever stimulated the exposed cortex, knows how weak a current is used to produce them. Brenner (quoted by Erb) interrupted the galvanic current that was being passed transversely through the head without producing any.[2] The spinal cord is still more protected by exceedingly thick muscles, ligaments, and membranes and a still greater diffusion of current would occur than in the case of the brain. Erb believed that it could be stimulated, and gives as proof the fact that he placed two electrodes over the vertebra, one being over those of the upper lumbar region, and caused contraction in the muscles supplied by the sciatic nerves. This, however, if the current was strong, could be produced by the diffusion of the current through the muscles of the buttocks acting on the nerves. If it was caused by the current entering the spinal canal why were the sciatics alone affected?

---

[1] Head, Brain, xvi, 1, xvii, 23.

[2] Le Duc has undoubtedly influenced the brain by an interrupted galvanic current. The so-called electric sleep or anesthesia being produced. Dangerous symptoms have also been caused and so far it seemes to have no practical value.

THERAPEUTIC USES

As indicated by the title, the scope of this paper includes only the uses of electricity in medicine, but it may be said in passing that it is of use in a number of surgical affections; for instance, the employment of either the electrolytic properties of the constant current or the destructive action of static and high-frequency sparks for the destruction of small growths, nevi, moles, etc.; the production of hyperemia by either high frequency or static currents in the treatment of sprains and other local inflammation, and this property combined with the action of the actinic rays generated and the ozone liberated as a remedy for various ulcerations and infections of the skin.

NERVOUS DISEASES

The agent was originally employed medically in the treatment of diseases of the nervous system and there can be no doubt as to its value, when properly used, in the treatment of motor paralysis due to any cause. By this I mean when employed as a means of producing muscular contractions. Whether, as has been before mentioned, enough of the current can be made to reach either the brain or spinal cord to either improve their nutrition or remove sclerotic tissue is an open question. I have never seen any beneficial results from its use in this way. At the same time it must be remembered that the muscular contractions caused by it react on the nerve centers and improve their nutrition, this being especially so in conditions where there is commencing degeneration of spinal or cranial nuclear cells, as in anterior poliomyelitis, etc.

Electricity has been used in various ways in the treatment of tabes dorsalis. That it may at times relieve many of its symptoms, such as the various forms of paresthesia and pain, there is no doubt, but it is difficult to see how it can remedy the disease itself for the reason that even if the attempts to reach the cord were successful the remedy would be useless, because the disease process probably starts in the meninges and posterior nerve roots; therefore involvement of the cord is due to a secondary degeneration produced by cutting off nerve fibers from their trophic centers. As the nerve fibers of the cord, once destroyed, cannot be regenerated, when the disease has reached there irreparable damage has been done. The sedative action of the galvanic anode may at times relieve local muscular spasm; this at times may be of service in the treatment of the contractures resulting from cerebral apoplexy, especially if the weaker extensors are strengthened with the faradic current. This anodal action is also often of use for the relief of the pain of acute neuritis and symptomatic neuralgias. It may be of service in chronic neuritis, especially sciatica, but in such cases better results are usually obtained from either the static or high-frequency currents employed to produce their local hyperemic and contractile action. Most satisfactory results can be obtained in such cases by the proper use of these currents.

The good results that may be obtained in hysteria are well known, such results being due both to the power of causing mental impression and also, possibly, in some instances, the general tonic action of the current.

Electricity may also be of service in neurasthenia. The headaches and other aches and pains are certainly helped by the static spray. More vigorous treatment may also aid in arousing dormant energy and increasing blood pressure. In some cases good results may be obtained from employing either high frequency or static currents to obtain their general metabolic influence. There can be no gainsaying the favorable influence of general faradization as a part of the rest treatment.

Sexual weakness and psychoses are certainly benefited by electrical treatment.

In the occupation neuroses I have tried various forms of electricity without much satisfaction. Some, however, have claimed good results. As many of these cases are neurasthenic it may be of service with other measures, as a general tonic.

The use of electricity in epilepsy has been advised by some. From the very nature of the disease, however, it is difficult to see how it can be of service. Those who have had large experience in the treatment of the disease have nothing good to say for it. Many cases of so-called epilepsy, also, will be found, if carefully studied, to be due to various organic causes that electricity cannot influence. As autointoxication has some influence in exciting the paroxysms, the asserted eliminative action of high-frequency currents may prove of benefit in some few cases.

The same may be said for its use in chorea, which, if of the ordinary Sydenham's variety, is probably due to an infection, and if of the hereditary type is due to organic changes of the brain-cells and fibers that could not be influenced by electricity. The importance of not using this agent in a haphazard way is shown by its possible employment in myasthenia gravis, a disease in which there is marked exhaustion of the muscles following exertion. One ignorant of the symptomology and history of this disease might be tempted to employ electricity as a muscle tonic when the very exciting of muscular contractions by this means would aggravate the condition.

In mental diseases electricity is of use only in stuporous conditions. In these benefit may sometimes be derived from the application of static sparks as a means of arousing the patient.

ARTHRITIS AND MYALGIA

Since the development of high-frequency currents the range of usefulness of electric treatment has much increased. One of the most valuable has been in the treatment of diseased joints. This is probably due to their power of producing hyperemia. The joints in rheumatoid arthritis especially may be much benefited by their use. In conditions of partial ankylosis following arthritis the absorption and removal of the morbid tissue may be often hastened by utilizing the electrolytic and cataphoric properties of the galvanic current.

Lumbago and manifestations elsewhere of so-called muscular rheumatism may be often quickly relieved by the proper use of electricity.

VISCERAL DISEASES

Williams[3] and others have advocated high-frequency currents in the treatment of tuberculosis of the lungs and have claimed excellent results. It can do no harm, but if used other recognized and more commonly used methods of treatment should be employed in conjunction. In diseases of the stomach the use of the current has been advised by Ewald, Einhorn, D. D. Stewart and others. It is most applicable in conditions where there is either atony, dilatation or functional pain. In chronic constipation from intestinal atony excellent results are obtained.

---

[3] Williams: High Frequency Currents, p. 166.

The lowering of arterial tension by high-frequency currents, especially the D'Arsonval, has been previously mentioned. It has been used for this purpose by many, but that it possesses any advantages over other methods of treatment I am unable to say. The eliminative properties have also been used in chronic nephritis with asserted success and in conjunction with other measures it may be of some help..

The value of the coagulating power of the galvanic anode in the treatment of sacculated aneurism is well known. Hunner[1] of Johns Hopkins University collected reports of 23 cases, in which there were 4 cures and 9 patients were markedly improved. Other successful cases have been reported since.

The frequency of the heart in exophthalmic goiter may also at times be lessened by the employment of the galvanic current.

Electricity has been found useful in many diseases of the eye. As this, however, is a subject of special interest and not within the domain of general medicine, I will do no more than mention it. The same may be said of diseases of the skin. In addition it may be said that the development of high-frequency currents has greatly increased the value of electrical treatment of many of these diseases.

GENITOURINARY AND PELVIC DISEASES

Electrolysis has been employed in the treatment of urethral stricture by a number of different methods. While successful in some cases, the method has not found favor with genitourinary surgeons. Electricity has also been employed in various ways in the treatment of prostatic hypertrophy, but has not met with much favor. More can be said of its use, especially currents of high frequency, in chronic prostatitis. Disorders of the genitalia of women of a medical nature, as distinguished from those purely surgical, may be benefited by the proper use of electricity. B. C. Hirst advises the use of the galvanic current in amenorrhea, in menorrhagia, especially when due to fibroid tumors, and in hypoplasia of the uterus, and the faradic current for weakness of the vesical and rectal sphincters. It has also been employed in other conditions of these organs of a more distinctly surgical nature with asserted success. As a rule, however, in such cases surgical methods will be found preferable.

Of no small therapeutic value is the property of cataphoresis by which drugs can be introduced into joints and certain cavities of the body.

CONCLUSION

In the space allotted it has been possible to give but a very general mention of the capabilities of this agent. It has been of value in many surgical conditions not properly considered in this paper. It has also been employed in diseases within the domain of internal medicine which have not been mentioned here, as there seems to be no good reason for their treatment by electricity. In conclusion I repeat that to get results from the use of this agent it should be used conservatively, with proper understanding of its physiologic action and of the proper technic.

1728 Chestnut Street.

ABSTRACT OF DISCUSSION

Dr. G. Betton Massey, Philadelphia: This interesting paper is an up-to-date statement of the value of electricity in many medical affections; but it indicates one of the errors of my colleagues in presenting electrotherapeutic subjects in too general a way. While we have here an enormous range very well stated of electrotherapeutics in this late day, I think we learn more from a discussion of more circumscribed subjects, with the technic equally well stated but with some portion of the statement in the shape of detailed cases; for after all, our work as physicians is the relief of individual patients. Only last night I was asked to see in consultation in this city a patient in whose case the value of electricity in a hemiplegia case was involved. I knew of nothing to lead me to say that it would be of any value. The academic statements proving the transmission of the current are familiar to us, it having been proved that a minute current will go through the brain after having traversed the living skull structures; but it has also been proved that the bulk of the current will go round the scalp structure. So that in practical medicine we do not need to waste much time on some of these questions of that nature. We want to get down to the actual clinical facts.

It is a mistake to regard electrotherapy as a new subject. I was only recently on the other side at the Physiotherapeutic Congress in Paris, and the scientific exhibit in the hall of the Sorbonne showed ancient apparatus designed by medical leaders for most of our uses of electricity. It is nothing new. The new thing is to bring down to the concrete what we can do for the individual patient by this form of force.

Speaking of hysteria, I fancy the usual feeling about the treatment of this affection is that we must put the patient to-bed and carry him through an expensive rest-cure treatment. That is of very great value in the hands of experts, but the ordinary practitioner can often do better than to employ the rest-cure, static electricity being of extreme value in this state. Moreover, it enables us to differentiate between hysteria and neurasthenia, which is a very important matter, particularly if the rest-cure is contemplated, for I think the rest-cure is generally harmful in neurasthenic patients. This test is based upon the fact that static sparks are most painful to neurasthenic patients, and possibly harmful too, while but little pain is produced by them in hysteria. The differential value is in that a large number of hysterical patients show more or less anesthesia. In other words, the static spark is wonderfully well borne by the hysterical patient. Moreover, the patient feels better immediately after the application of the static spark. So that with this method of treatment such patients may be kept on their feet and have the benefit of exercise and other judicious agents. Speaking of the prostate, Dr. Potts made an excellent distinction there. We have a true fibroid tumor of the prostate of the slowly developing form and greatly interfering with the functions of the bladder, and in these cases electricity is not quickly valuable. But the static spark even in these cases will give great relief, removing congestion, relieving the prostatitis and often practically curing the patient; and that is to be expected in cases of pure prostatitis or chronic enlargement of the prostate. I am a little amused that Dr. Hirst, a very recent advocate of electricity in fibroids, is quoted by Dr. Potts as an authority on the subject. It is very pleasing, however, that Dr. Hirst accedes to that sixteen year old propaganda as to the value of electricity in many gynecologic conditions, particularly in fibroid tumors of the uterus. There seems to me a peculiar value attaching to electric modalities in gynecology, partly due to the fact that we use here very large, commanding currents, currents capable of doing work because of their lack of pain. The field in gynecology is enormous.

Dr. David Paulson, Hinsdale, Ill.: I want to speak of the value of the slow sinusoidal current in relaxed conditions of the abdominal wall. With the sinusoidal current it is possible to produce the most vigorous contraction of the abdominal muscles as well as contractions of the internal ligaments, by simply placing two large electrodes on each side of the abdomen. If persisted in day after day these temporary effects ultimately become more or less permanent. It is possible to make a very strong application of the sinusoidal current without producing any pain; hence its great value in these cases.

---

[1] Bull. Johns Hopkins Hosp., November, 1900.

Dr. Alfred T. Livingston, Jamestown, N. Y.: It has been implied that the electric modality called galvanism is not particularly efficacious or at least has not many appropriate applications. As to the effect on the brain secured by passing the current through the skull, I think Dr. Massey has made a correct statement; but that is not the way to influence the brain. The brain condition is influenced by stimulating the vasomotor centers which control the circulation in the brain; and that can be done without any question by the application with sponge tip electrodes or some other form, over those three chief centers, the upper, middle, and lower cervical sympathetic ganglia. I have always observed that the stimulation of the lower pair has the most marked effect on the circulation in the head. I recall one of the most extreme cases of acute mania in a woman in Philadelphia, who was brought to my house at about 8 p. m. It seemed from her state that there was not much likelihood of securing sleep, but I took my galvanic battery to her bedside and solely by the use of the galvanic current I put that woman to sleep within three-quarters of an hour by stimulating the cervical sympathetics. I have also used it in cases of hysteria, hysteric convulsions. Dr. Massey referred to the use of the static spark in hysteria. If I were to be limited to but one form of electrictity, I would certainly select the oldest of all—galvanism—as having a wider range of application and more certainty of effect than any other. I have also used a hypodermic injection of ergot and within fifteen minutes I have quieted as excited a hysteric patient as I have ever seen. I am perfectly satisfied that the effect of the galvanic current is exactly the same, producing vascular contraction where there had been dilatation. I have used the galvanic current in cases of blindness of various sorts, particularly in cases of atrophy of the optic nerve, and restored a very good vision which continued through many years. Patients whom I treated twelve or fifteen years ago are going about the streets to-day like other people, attending to their business although their cases had been pronounced absolutely hopeless by ophthalmologists, and I was ridiculed for thinking of bettering their condition. I apply the positive pole at the back of the neck with an electrode of 4 by 6 inches. The negative is applied by means of clay electrodes, pulverized clay moistened by water to a paste condition and laid directly on the closed lids, the face except the lids being protected by a piece of rubber dam having holes corresponding to the orbits. A pliable metallic electrode such as tin foil is laid over the clay and connected with the negative pole. In this way I have given 15 milliamperes for two and a half hours.

Dr. H. M. Whelpley, St. Louis: I regret that the author of this paper is not present to explain the purpose for which he wrote it. Previous speakers have criticized the paper as being one which has not given specific cases or detailed technic. I believe that the purpose of the author is to show that caution must be exercised in the proper use of electricity. He points out the variety of forms in which it can be used but avoids going into the citation of detailed cases, which causes so many of the medical profession to rush headlong into the use of electricity without understanding when, where, or how to use it. This paper is filled from beginning to end with the suggestions of caution in the use of electricity. I recall the frequent use of such phrases as "some authors," "Dr. —— has claimed," "it is stated," "it may have been tested," "it seems doubtful," etc. This paper is a warning to the medical profession to study electricity carefully in a general way before giving too much attention to reports of specific cases. The use of electricity in medicine is nothing new, but the paper indicates that it is often used carelessly. Its use by the laity is along very empirical lines; I believe that a paper of this kind full of cautions and written for publication in the newspapers would have a wonderfully good effect on the public. We know only too well how ready the public is to use electricity as a medical agent; laymen buy so-called batteries and other forms of apparatus claimed to produce electricity when there is no possibility of its being generated by the apparatus that is sold for that purpose. I feel that the paper from the standpoint of the author is not subject to criticism that has been made of it by the previous speaker. It does not go into the details of cases and technic, but it does sound a timely note of warning to those who use electricity in a haphazard manner.

Dr. Haven Emerson, New York: If a quarter of what is so conservatively claimed by Dr. Potts' paper is correct, certainly the medical schools of the country ought to take on themselves the burden of teaching some of the elementary principles of electrical application in the treatment of disease. If anybody has seen the relief from lumbago and sciatica, if anyone has seen the improvement in chronic joint affections which electricity will give, I think he will admit that electricity deserves as much consideration in the courses of medical instruction as a good many of the drugs which are now admitted as valueless in the treatment of disease. The teaching of intelligent pharmacology has eliminated a good many drugs from our class rooms. The inclusion of some such methods as Bier's hyperemia and electricity in the teaching of applied therapeutics will certainly help us in diffusing a knowledge of appropriate treatment. I am of the opinion that electricity assists in restoring the tissues to normal, after chronic inflammation, by improving local circulation, by developing hyperemia, and that in exact experimental analysis of the results we should find that this is the cause of its benefits. Massage, constriction, hyperemia, and electrotherapeutics deal with the local blood-supply. Such measures are as useful as many a drug taught and prepared in pharmacologic studies, and their consideration should be included in our medical schools.

Dr. G. Betton Massey, Philadelphia: I appreciate Dr. Whelpley's skill in extracting from this paper what suited him, but I must object to his failure to remember that I spoke very highly also of Dr. Potts' paper. I must protest that we are not here for newspaper articles. We are here to advance each other's art of treatment, and mere negations will not help us.

CLIMATIC TREATMENT OF PELLAGRA

A PRELIMINARY NOTE

C. C. BASS, M.D.
NEW ORLEANS

All writers on pellagra seem to agree that it is a disease of warm countries and of the warm season; that patients with the disease usually improve at once when cold weather sets in, and that many of them never show further evidence of the disease. The literature at my disposal does not show that cold climates have been tried for the treatment of the disease, owing largely, no doubt, to the fact that many pellagra patients cannot afford the expense of going to and of living in such climates. In a paper published in 1909 I called attention to the probable influence of temperature on the course of pellagra.[1]

On several occasions in discussions on the subject last year, notably at the pellagra conference in Columbia, South Carolina, in the symposium on pellagra of the Southern Medical Association, and at the conference on pellagra at Gulfport, Mississippi, I also called attention to this fact and proposed the advisability of arranging artificially refrigerated wards, especially for the poorer class of pellagra patients who could not take advantage of climate.

In June, 1909, I had arranged, with very limited means at command for the purpose, an artificially refrigerated room for a pellagra patient then under treatment.

---

[1] New Orleans Med. and Surg. Jour., August, 1909.

This was a mechanical failure, as it reduced the temperature only about 12 degrees, which was very little below the summer temperature.

I had the fortune to see in the spring of 1910 a patient with pellagra who had gone to Colorado for similar symptoms in 1909. She was then greatly relieved by the climate, according to her statement, and remained well; but the same influences of diet and hot weather induced another attack. She returned to the mountains of Colorado and was promptly relieved of all recognizable symptoms.

Since that time I have sent to Colorado four other patients, all of whom are symptomatically relieved. They have all gone to Denver and after spending a few days there to become accustomed to the altitude, three of them have gone higher up in the mountains. One of them was bed-ridden when she left here but was up in ten days and without recognizable symptoms of pellagra in two weeks.

I have sent two patients to Monteagle, Tennessee, and they write that within one week they had improved wonderfully and almost all symptoms had disappeared.

These cases and others will be reported more in detail when the results obtained can be more definitely stated. This preliminary note is published now in order to suggest the treatment for the benefit of the August and September crop of cases.

741 Carondelet Street.

PARSIMONY IN NUTRITION

GEORGE M. NILES, M.D.
Professor of Physiology, Southern College of Pharmacy; Associate Professor of Physiology and Dietetics, Atlanta School of Medicine; Gastroenterologist to the Tabernacle Infirmary
ATLANTA, GA.

This title, adapted from a recent address of Sir James Crichton-Browne, represents a wide-spread dietetic movement which I view with some concern. Previous to this century, throughout the history of the advancing civilizations of the earth, there has never been any concerted effort toward parsimony in nutrition; and, with the exception of certain ascetic orders, whose habits of self-denial were either religious or esthetic, the desires for food have been universally gratified, subject only to limitations of purse or environment. The doctrine that a strong body should be generously fed, and that a virile people should be hearty eaters, was of world-wide acceptance. Furthermore, it was noted that the liberal consumers of the flesh proteins figured most largely in the arts of both peace and war, while the vegetarian nations either lagged behind, or were the servitors of their meat-eating masters.

In accordance with these historic and economic facts certain dietetic standards have been fixed, these standards being the aggregate result of statistical and experimental studies carried out by many physiologists on numerous large groups of individuals under varying circumstances. These results were collected by Atwater, of this country, and Voit, of Munich, who found that an average individual under average conditions throve on a daily allowance of 118 gm. of protein food, 56 gm. of fat, and 500 gm. of carbohydrates, such as sugar and starch, this containing 3,055 large calories, or heat units. Under increased physical exercise this was raised to 3,370 calories. These findings were approximated by a large number of independent observers, most of them, however, allowing a slightly higher daily protein ration.

These standards having been settled with supposed immutability, all was serene until in the dietetic firmament there appeared a new galaxy. We were informed that the theories drawn from the dietetic experience of untold millions of progressive and militant human beings, were altogether erroneous; and, like the man with the eight-day clock, who wound it up every night for twenty-five years before he discovered his error, we have been partaking of double or treble the amount of protein necessary for our well-being. We might say that after these eons the light has just broken in, opening up to us a new heaven and a new earth.

The advance guard of this new thought was Mr. Horace Fletcher, a gentleman of intelligence and culture, who, finding himself obese, dyspeptic, and in declining health, accidentally discovered that by slow, deliberate eating he was much benefited. Being both observant and analytical, he reasoned out a theory that the whole process of bodily nutrition is materially affected by the preliminary treatment of food in the mouth; furthermore he became satisfied that by most thorough mastication and insalivation less food is required for adequate nutrition, while bodily conditions are improved. He sums up his philosophy as follows: "If you eat only when you have an earned appetite, masticate your food thoroughly, and take great care to eat only what your appetite approves, the rest will take care of itself."

Like many other fads containing elements of truth this "chewing fad" attracted to it a circle of adherents, and, fortunately for Mr. Fletcher, it caught the ear of some level-headed physiologists, among others the late Sir Michael Foster, of Cambridge, England, and Dr. Van Someren, of Venice, the latter of whom read a paper on "Fletcherism" before the Congress of Physiologists at Turin in 1901. This led to a series of experiments at Cambridge, which were later continued in America by Professor Chittenden, of Yale, the latter, however, losing sight of the chewing feature, except as it lessened the craving for food, and hinging his experiments on the momentous question: What is the proper daily protein ration best to meet the requirements of the average human body?

The investigations of Professor Chittenden,[1] are in some respects epoch-making contributions to physiology. The experiments were on groups of professional men, army volunteers, athletes and animals, and proved to his entire satisfaction that 60 gm. of protein daily is sufficient for a man weighing 154 pounds, or practically one-half of the previously accepted standard. To quote his words:

> These are perfectly trustworthy figures, with a reasonable margin of safety, and carrying perfect assurance of really being more than sufficient to meet the true wants of the body, adequate to supply all physiological demands for reserve protein, and able to cope with the erratic requirements of personal idiosyncrasies.

The limits of this paper will not permit an analysis of Professor Chittenden's experiments, showing where fallacies may exist, or where conclusions are drawn on too meager evidence. He is a doughty antagonist, and one may well hesitate before breaking lances with either him or the formerly obese Mr. Fletcher. They have made out a strong case, but not an impregnable one, and I humbly suggest that we pause and consider before revising our whole dietetic system, not simply, as expressed by the recent tariff tinkers in Congress, "revising it downward," but absolutely cutting it down to half.

---

[1] Chittenden: Physiological Economy in Nutrition; and The Nutrition of Man.

That a large percentage of the American people eat too much is admitted; that a large percentage, especially the well-to-do, ingest a surplus almost from the cradle to the grave cannot be gainsaid. The great number of middle-aged and old people, who constantly throng the doctors' offices and health resorts, seeking help for overtaxed eliminative organs, mournfully attest to past gastronomic excesses; but that the American people, as a nation, consume too much protein food, or that our national virility is handicapped by gluttony, cannot be conceded by any student of present-day history.

Leaving for a time the discussion of this subject in its larger aspects, a common illustration of parsimony in nutrition is the custom of some medical men of putting patients on dietaries without duly considering the caloric values contained therein. It would be thought careless indeed should the physician not know, in prescribing atropin or strychnin, how much in the aggregate was being taken daily; yet it is just as irrational to expect an invalid to gain strength on a diet furnishing insufficient calories, as to expect physiologic effects from inadequate doses of drugs.

I have several times seen persons unwittingly starved to a dangerous degree, and in one instance a case came under observation in which the patient, while being treated for an acute disease, was really starved beyond the power of recuperation before his true condition was recognized.

The appetite of healthy individuals or large groups of men will generally prove a reliable index to bodily needs, but in digestive disorders accompanied by malnutrition it is not enough for the physician to cut out offending articles of food; he should also see to it that sufficient calories are being furnished. Right here it is proper to sound a note of warning concerning the alcoholic proprietary foods on the market. As an auxiliary to other nourishment they have their place, and are not without value, but to give them in amounts large enough to meet ordinary caloric needs would result in continued alcoholic intoxication.

A few years ago in New York City I saw a genuine attack of delirium tremens complicate a case of typhoid fever, in which for two weeks the patient had been generously "supported" by a well-known and popular proprietary food. In this connection I wish to commend the thorough and impartial work of the Council on Pharmacy and Chemistry of the American Medical Association, whose very lucid reports have done much to dispel the glamour thrown about some of these alcoholic "supporters" and individually I desire to speed it in its meritorious labors.

The dry proprietary foods are equally unsatisfactory, because in adequate quantities they often disturb digestion more than the ordinary wholesome foods, while the caloric value claimed for them is unreasonable. Dr. David Edsall, of Philadelphia, recently weighed a specimen of one of these dry foods, and reported that if all its weight were nutritive material (a liberal estimate), it was so light that it would take $1.25 to $1.50 to buy an amount equal in food value to a five-cent loaf of bread.

Some of the most graphic examples of parsimony in nutrition are exhibited by infants (not the chubby ones with roly-poly little bodies extolling the virtues of various brands) whose eager digestive organs are vainly attempting to glean sustenance from some of the infant foods on the market.

Dr. John Howland, of New York, in a late paper on proprietary and predigested foods, showed by calculation that two of the most representative and widely used of these foods have little more than twice the nutritive value of whole milk, and that without the alcohol they contain the same nourishment as milk. The dose of these foods advised for a child of six months is a teaspoonful every four hours, which would give the infant the munificent equivalent of two ounces of milk daily! Dr. Howland further says:

> Assuming that such a food could be ingested without grave gastric, intestinal or other disturbance in sufficient quantity to nourish the six-months-old infant, it would cost about a dollar a day, and would, moreover, require the child to take in twenty-four hours alcohol equivalent to six ounces of brandy, enough to terminate his short life or keep him in a continuous state of alcoholic coma.

Another greatly overrated class of foods leading to parsimony in nutrition are the meat-juices (not meat extracts), for which fabulous powers have been claimed. Well-expressed juice obtained from freshly chopped beef may contain a fair amount of actual nourishment in the form of coagulable proteins and meat bases, and is useful to tide over emergencies, or to satisfy the patient that he is being fed. It would take the stomach of a rhinoceros, however, to hold up under a continuous diet of meat juice for any length of time.

As to meat extracts, they are beyond parsimony—they are a delusion and a snare. To quote Dr. A. L. Benedict, of Buffalo.

> A meat broth prepared at a temperature above 160° F., the coagulation point of albumin, contains salts, extractives, which are mainly excrementitious, and a little gelatin, as well as some melted fat, although the last is often skimmed off to make the broth more pleasing and palatable. In so far as protein is concerned, a meat tea made by boiling cannot be more nourishing than egg tea, that is to say the water in which eggs are poached, or in plain words, it contains no protein nourishment at all, and is, barring certain qualitative and quantitative differences, of the same dietetic value as urine.

On such a regimen the patient may be fairly waterlogged with soup, and still get less than a hundred calories daily. If strength holds up under such feeding, it is from the reserve protein and fat stored in the body, not from any decided nutritive virtue in the soup.

It is of course wise to provide for economical use of the body fuel, just as engineers endeavor to get the most heat value from coal or wood burned in the furnaces of their engines. It is also well to minimize the surplus ashes of combustion in the body, as the engineer keeps his grates cleared of clinkers. There is, though, a point beyond which economy ceases and parsimony begins, and there can certainly be no permanent healthy growth, nor can there be maintained a normal "moving equilibrium" in the bodies of individuals or nations unless there is a liberal intake of protein food, for, as Rubner declares, "A large protein allowance is the right of civilized man."

Sir James Crichton Browne tersely puts it thus:

> The health and welfare of individuals and of peoples must depend on right methods of living, and of all methods of liv-

ing the most momentous are those relating to the up-keep of the body by alimentation. It is food that supplies the material for that perpetual series of transformations in which life consists, and it must be adequate in quantity and suitable in quality, if these transformations are to proceed with that nicely balanced adjustment that is known as health. . . . Nutrition is therefore an important branch of preventive medicine.

It may be confidently asserted that no physiologic alchemy or mathematical legerdemain can ever hope to reduce materially the fixed demand for approximately 120 gm. of protein daily for every active individual of average weight. The late Sir William Roberts once said:

> The generalized food customs of mankind are not to be viewed as random practices adopted to please the palate or gratify an idle or vicious appetite. These customs must be regarded as the outcome of profound instincts which correspond to certain wants of the human economy. They are the fruit of colossal experience accumulated by countless millions of men through successive generations. They have the same weight and significance as other kindred facts of natural history, and are fitted to yield to observation and study lessons of the highest scientific and practical value.

The foregoing thoughts are respectfully submitted to the sober students of both individual and collective problems of nutrition.

409 Candler Building.

A CASE OF FRACTURE OF THE THYROID CARTILAGE WITH PROMPT RECOVERY

A. C. MATTHEWS, M.D.
Assistant Physician, Hudson River State Hospital
POUGHKEEPSIE, N. Y.

Fractures of the larynx are generally considered grave injuries. When one considers the danger of suffocation from displacements of the fragments, or from edematous swelling, or from occlusion of the air-passages with blood-clots, one can understand why a case of this kind should not be looked on lightly. Fisher pronounced every case serious. Gurlt in 1864 collected reports of 69 cases in which 47 patients died and only 21 recovered. Eastman[1] quotes Durham, who collected reports of 30 cases of fracture of the thyroid cartilage, in ten of which the patients recovered, most of them after tracheotomy. During the past few years a few cases have been reported in which the symptoms were of a mild type. The "American Practice of Surgery" states that tracheotomy is not usually necessary in the simple cases and those of vertical fracture of the thyroid, but is indicated in any fracture of the cricoid cartilage. The case I observed was one without complications. Because it shows how exceedingly light the symptoms resulting from such a fracture may be I thought it worthy of publication.

An insane man (aged 49) was forcibly struck over the larynx by a fellow inmate. At the time no indications of injury were observed, and the patient went to the dining-room and ate his breakfast. Soon some hoarseness developed. This soon became more pronounced, and his throat appeared somewhat filled up with mucus. There was a constant desire to swallow. An examination disclosed a complete vertical fracture of the thyroid in the median line. Crepitus was distinct, but there was no apparent displacement. As there were no dyspnea, and no sign of suffocation, it was thought best to immobilize the fragments and await further developments. Immobilization was secured by padding on each side held in place by adhesive strips. As swallowing caused slight movements of the fragments, the patient was allowed no food for twenty-four hours. His voice continued hoarse for four days; then there was a rapid improvement. On the seventh day the fixation strips were removed, and a perfect union was found. On the ninth day the patient was up and about as usual.

Some surgeons believe that tracheotomy should be performed immediately after such an injury in order to forestall suffocation. Eastman[1] refers to Cohen, who says: "It is better that an unnecessary tracheotomy should occasionally be performed without detriment to the patient than that a number of cases should be allowed to terminate fatally for the want of it." This is very true, but if the symptoms are of a mild type and the surgeon is in a position to render immediate service if the case demands it, one is justified, I believe, in delaying active procedure.

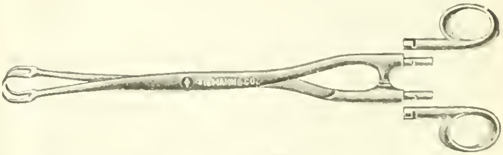
If the patient be allowed to swallow too early the fragments will be moved and union interfered with. Weaver's patient[2] attempted swallowing at long intervals during the first twenty-four hours, but this moved the fragments. Weaver then resorted to nutritive enematas for three weeks. Tube-feeding through the mouth can be used to advantage in cases in which the throat is not too sensitive, so as to cause reflex movement of the larynx.

I take this opportunity of expressing my thanks to Dr. Chas. W. Pilgrim, Supt. of the Hudson River State Hospital where this case was observed, for the privilege of reporting it.

A VOLSELLUM FORCEPS WITH DETACHABLE HANDLES

A. HERZFELD, M.D.
NEW YORK

Occasions frequently arise when curettage, or in fact any vaginal operative interference on the uterus, has to be done without sufficient assistance. In many cases for better orientation the grasping of the uterus has to be done through a bivalve speculum. It is very difficult, if not impossible to remove the bivalve speculum after the uterus is grasped with the ordinary volsellum forceps on account of the width of the handles of the instrument. To facilitate the removal of the speculum, I devised a volsellum forceps with detachable handles. The handles are easily applied and removed by means of a bayonet lock.



Volsellum forceps with detachable handles.

224 West Twenty Fourth Street.

---

[1] Eastman, T. B.: A Case of Fracture of the Thyroid Cartilage; Recovery without Tracheotomy, The Journal A. M. A., 1895, xxiv, 161.

[2] Weaver, H. S.: Fracture of the Larynx, Hahnemann Month. Philadelphia, 1901, xxxvi, 282.

GUNSHOT WOUND OF THE CHEST AND INJURY TO THE SPINE

WITH SPECIAL REFERENCE TO PROGNOSIS

R. T. FERGUSON, M.D.
GAFFNEY, S. C.

I report this case to furnish some idea of the prognosis to be made in cases involving injury to the spine. The literature on prognosis in such injuries is very incomplete.

History.—The patient, a colored man, aged 21, single, laborer in a railway camp, was shot July 18, 1909 at close range with a 38-caliber revolver, the ball entering the eighth interspace on the right side one inch to the right of the mammillary line, passing downward and backward and emerging through the eleventh interspace behind in the mid scapular line 2¾ inches to the left of the spinous process of the eleventh dorsal vertebra. The man was hauled 4 miles in a wagon and 12 on train with no dressing on either wound.

Examinations.—The pulse was 130, the temperature 102, respirations 30, paralysis of the left thigh and leg was complete. There was retention of urine and paralysis of rectum with involuntary evacuations; loss of all sensation in the left thigh and leg supplied by the musculocutaneous, external saphenous, anterior tibial, external and internal plantar, and internal calcanean and the lower part of the leg that is supplied by the lateral cutaneous and internal saphenous nerves.

Course of Case.—The patient had to be catheterized for two weeks, after which there was involuntary urination as well as defecation for six months; since that time he has improved steadily until now (twelve and a half months after injury) he can control bowels perfectly and retain his urine four to five hours. A bed-sore six inches in diameter developed over the sacral region and smaller ones over both hips, which caused a considerable amount of trouble.

Temperature ranged between 101 and 104 3/5 for a month, after which time it became normal. After two months the patient could move the toes slightly, then the foot, knee and thigh; and six months after the injury he could move the entire leg a small distance in every direction. August 9, 1910 he is walking around quite well without the use of his crutch and gives every indication of an early and complete recovery. The injury to the spinal cord appeared to be limited to the direct pyramidal tract and antero-lateral column in the left side of the cord.

800 Limestone Street.

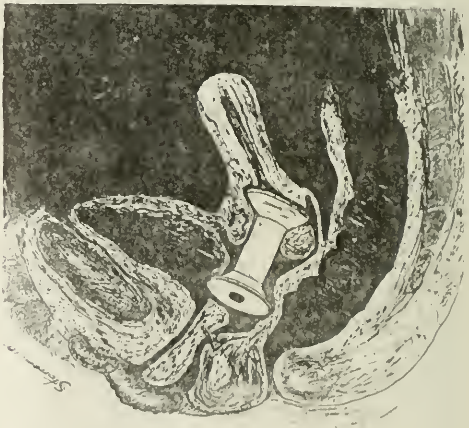
Bilateral Herpes Zoster. Dr. Lester C. Diddy, Oswego, Ill., writes: Reading the article in The Journal (July 30, p. 372), by Drs. Varney and Jameson brought to mind a similar case, which occurred in my practice recently, of which the following is a brief report: Mrs. S., housewife, aged 54, American, whose family history is negative, as far as anything bearing on the present condition is concerned, had the ordinary diseases of childhood, since which time she has been healthy. There is no history of injury at the site of eruption. Pains of neuralgic character appeared several days before the lesions which were typical of herpes zoster. They first appeared on the left side in the dorsal region near the midaxillary line, and gradually extended over nearly the entire left half of the chest and abdomen anteriorly and posteriorly. Lesions appeared on the right half of chest and abdomen and extended until they met those on the left side, completely girdling the patient. The lesions became very extensive and caused no little annoyance. They extended upward to the second rib in front and to the scapula behind, downward to the groin on the right side and about half way down the left thigh and down the back as far as the buttocks. The inner surface of the left arm was also affected nearly to the wrist.

CASE OF A SPOOL EMBEDDED IN THE CERVIX UTERI

A. P. STONER, M.D.
Instructor in Surgery Medical Department, Drake University. Attending Surgeon Mercy Hospital.
DES MOINES, IOWA

History.—S. L., aged 16, colored, entered my service at the surgical dispensary of Drake University, July 14, with a history of pelvic trouble of some years standing. She menstruated at 13 for 5 successive periods, after which time the period ceased altogether.

Examination.—Her general condition and appearance was good and she was of average intelligence. On investigation the underclothing was found to be saturated with urine and the vulvar region was excoriated. A vegetative growth of small size and of a reddish hue, surrounded the meatus, and urine was trickling from the vagina. The examining finger came in contact with a foreign body in the vagina, which proved to be a wooden spool. Further examination showed that one end of the spool which measured about 5 centimeters in length, was securely embedded in the cervix. The free end was grasped with a pair of forceps and an attempt made to extract it, but this effort created great pain, and chloroform was administered. A more complete examination was then made. The uterus was retroverted and its body atrophied. The cervix held the spool tightly, about its middle third. One edge of the upper end of the spool through pressure necrosis, had worked its way through the uterine tissue back into the vagina.



Drawing to show position of spool before removal, with infantile uterus and fistulous tracts from bladder and uterus into vagina

Treatment.—As it was impossible to extract it forcibly or to dilate the canal the cervical tissue was divided at this point and the spool released.

Remarks.—The free end for the spool was covered with calculous salts and its upper edge had protruded into the base of the bladder, creating a vesicovaginal fistula, through which the index finger could be freely passed. The girl denied all knowledge of the presence of a foreign body in the vagina but stated that when she was about 8 years old her mother, who was very unkind to her, had placed something in the vaginal canal which gave her great pain and caused hemorrhage for a few days. She has had more or less discharge ever since she claims but it was not until 8 or 9 months ago that the urine began to pass through the vagina.

The length of time the spool had been in the uterus, and the manner in which it had become embedded therein are of interest. Conception and abortion were denied, and excluding the latter, the only plausible solution seems to be, that the spool was inserted by the patient into the vagina, and as she was probably unable to remove it, the upper edge of the spool by constant pressure against the external os produced sufficient dilatation to allow the spool to pass into the cervical canal. This new position assumed by the spool then caused retroversion of the uterus, while its presence interfered with the nutrition and growth of the organ. The opposite end of the spool also assumed a more intimate contact with the bladder wall, causing pressure necrosis and a fistula. The walls of the vagina were found to be thickened, very nodular and much reduced in depth.

CONCUSSION OF THE BRAIN

ALFRED REGINALD ALLEN, M.D.
Lecturer on Neurologic Electrotherapeutics, Instructor in Neurology and in Neuro-Pathology at the University of Pennsylvania
PHILADELPHIA

In this day and generation a justification is desirable when a single case is reported. This is particularly in order when the case is one of cerebral concussion. Nevertheless, on account of the extraordinary symptom-complex and course of the case in question, I offer no apology for its presentation.

History.—August 6, 1910. E. D., male, aged 6½, weight 49 pounds, in robust health, fell while running on the porch, striking the left side of his head. The time of the accident was about 4 p. m. Judging from the position of the echymosis, which was very slight, the point of impact must have been about 4 cm. above and 2 cm. behind the external canthus of the left eye.

I saw the child within ten minutes of the accident. The nurse said that after he fell he got upon his feet immediately, crying lustily. He was very pale, and the nurse thinking that he was more scared than hurt, sought to pacify him by walking. He had not gone far before he said: "I can't see anything but sky."

Examination.—My examination revealed the following condition: Total blindness in both eyes for both form and light. A lighted candle held 25 cm. from his eyes in a darkened room gave no visual impression of light. The irides reacted to light. All extraocular movements were perfectly normal. The hearing in each ear was normal. The tongue was protruded in the median line. There was no involvement of the facial muscles, and the elevation of the soft palate was normal and symmetrical. The movements of the upper and lower extremities were normal in all directions. The reflexes of the upper extremities were normal and no spasticity was present. Both knee jerks were greatly exaggerated, and although there was no ankle clonus present, yet the sudden flexion of the foot at the ankle provoked one quick reflex extension movement. Passive movement of the lower extremities demonstrated a very decided degree of spasticity. Normal plantar reflex was present on right, but a well marked Babinski reflex was elicited on the left. The pulse was full but irregular, and at the rate of 63 to 72 per minute. The breathing was deep and sighing in character, and at the rate of 16 per minute. He answered questions readily, and showed great mental distress because he was afraid he would never see again. After the examination he quickly went to sleep. He could be aroused from this sleep, and showed no predisposition to lie on either side. During this sleep the breathing still maintained the deep sighing character.

I made my second examination about one hour after the first, at which time all the symptoms as above recorded were present, with the exception that on testing the eyes with the candle he said that it seemed a little lighter when the candle was placed 25 cm. in front of his eyes. The Babinski reflex on the left at this examination was pronounced. In a half hour from this time he called a lighted candle a lighted match. In another half hour, two hours from my first examination, he was able to recognize a lighted candle as such, but could not distinguish objects, such as a pair of scissors, knife, picture, etc. From this time on his eyesight returned with great rapidity, and three hours after my first examination he was able to distinguish objects and people wth great precision. On account of his general condition I did not make any examination of his visual fields at this time. His temperature never went above 99.1 F. At 10 p. m. I found his vision normal, pulse 72, temperature 98.4 F., respiration 18. At this time I found the Babinski reflex on the left hard to elicit but questionably present. The chief symptom at this time was vertigo on motion.

Subsequent Course.—The next day he felt perfectly well except for the vertigo which was present when he was propped up too erectly in his bed. He had an attack of nausea and vomiting at 5 a. m. A careful examination for hemianopsia, astereognosis and lack of sense of position in the limbs proved negative. His reflexes were all normal and the Babinski reflex on the left was replaced by normal plantar flexion. The recovery was uninterrupted, and four days after the accident he was leading his normal life. There was never any disturbance of bladder or rectal functions. The only therapeutic treatment was magnesium sulphate to open the bowels.

The case is interesting on account of the rapid clearing up of the complete blindness, the sudden causation of the monolateral Babinski reflex, which cleared up within eighteen hours, and the very evident interference with the spinal reflex inhibitory mechanism with no symptoms of compression.

After writing the above report, the *Deutsche medizinische Wochenschrift* (August 4, 1910) has come to hand, in which is a short paper by Hirsch of Prag ("Ueber passagere Rindenblindheit durch Commotio cerebri"). There is no mention of any examination for involvement of the central nervous system, other than a careful examination of the eye. He cites Wildbrand and Sänger ("Die Neurologie des Auges") as having collected seven cases of similar nature.

111 South Twenty-first Street.

Therapeutics

GENERAL PRINCIPLES IN THE MANAGEMENT OF DISEASES OF THE HEART

As has been a number of times stated in these columns, with all our knowledge of physics, of cardiac ability and cardiac disability, of blood pressure, of arteriosclerosis, of myocarditis and cardiac muscle degenerations, with all our better knowledge of physical therapy and of the pharmacologic action of drugs, still there are no defects of mankind that are so many times mismanaged and mistreated as are cardiac defects. They are mistreated from the very fact that the drugs and methods used are powerful for good or bad, and not only may the wrong method be instituted, but too much or too little of the method or treatment may be used.

Sir James Barr, of Liverpool (*British Medical Journal*, April 21, 1909) discusses the above subject and especially urges the attempt to prevent the development of serious disease of the heart in various conditions, and especially to prevent that which is due to rheumatism. He states a fact, viz., that though the majority of sudden deaths are due to a cardiac cause, still there are very few chronic diseases so amenable to treatment and so compatible with long life and comfort, if judiciously handled, as are diseases of the heart.

As a prevention of heart disease he properly urges the prevention of rheumatism in the children of families who have shown a tendency to it. Although rheumatism is doubtless always an infection, still, like the development of tuberculosis, there is a tendency to or an inherited lack of ability in certain families to combat this particular germ. Hence Barr believes that such children should always be warmly clothed, that they should have daily baths, either warm or cold, to keep the skin in good condition, that proper fresh air and physical exercise should be taken, that they should not over-eat or over-drink, and that the bowels should move freely, daily. This simply means first class, sensible hygiene aiming to prevent poisoning with food products, and to cause increased circulation in the muscles and therefore less pressure internally, and to promote perfect functioning of the skin. The parents of children who are likely to have rheumatism should be especially cautioned to take note of everything in the line of so-called "growing pains." As there is "an increase in the formation of sarcolactic acid and all the excretions are very acid in rheumatic fever," Barr would prevent this increased acidity of secretions of possibly rheumatic children by omitting starch and milk from their diet. He believes that milk forms lactic acid during digestion. As a matter of fact, probably, in healthy digestion milk does not form lactic acid. Still such is his belief that he would not give such children milk. Also in rheumatism there is a great tendency to form fibrin; hence he would give nothing to such children that contained lime, and he would cut out of the diet cheese, gelatin and animal jellies, as well as milk. As lime also raises the blood pressure, he thinks that milk is a bad diet during rheumatism, and has condemned it since 1886. He gives as a diet in rheumatic fever plenty of hot water, chopped meat, poached eggs, thoroughly cooked oatmeal gruel, oranges and lemons. After the acute attack is over he varies the diet by allowing a certain amount of farinaceous food, plenty of fruit and vegetables, but he still prohibits the milk. Such a diet in rheumatic fever is certainly different from that generally followed, but he believes that he may thus prevent cardiac complications.

A patient who is rheumatic and is putting on flesh and getting fat and flabby should immediately have his food amount reduced and his diet so arranged that he will not only not increase in weight but that he will lose what is superfluous. Barr urges what is also very essential, especially if the patient has a defective heart, that the liquid be reduced to two pints a day, or even less, if this does not so deplete the tissues that some of the fat is resorbed. Patients with valvular lesions should not use tobacco at all, should take but little tea and coffee, and, if there is any edema, even if the kidneys are not affected, should cut down the amount of salt in their diet.

If endocarditis has developed, the blood pressure should be kept as low as possible with a prolonged rest in bed, but as soon as the heart muscle improves the patient should be allowed to get up and gradually begin ordinary exercise, as anything that brings the blood to the muscles and dilates the surface capillaries is a relief to inflamed parts that are trying to heal permanently. When the patient is in bed after the rheumatism has ceased, massage should be daily given, to do what can be done to stimulate the muscular circulation. After the patient has permanently recovered graded exercise, mild hill climbing, etc., should be advised, but Barr does not believe in any such strenuous work for an incompetent heart as advised by Oertel. Marriage, he thinks, especially of females, should be prohibited when there is valvular disease of the heart.

As the left side of the heart has the most work to do, it is its valves that are most likely to be permanently damaged by an endocarditis, and anything that aids the plasticity of the blood, as calcium in any form, and anything that increases the blood tension, which puts the most work on the left side of the heart should be interdicted. Respiratory exercises are valuable as aiding the right side of the heart.

Cardiac disturbance caused by diphtheria and typhoid fever is more myocardial inflammation than endocardial, and in both these conditions the blood pressure is generally low enough from the disease. The heart readily dilates and becomes weak but the valves are not injured. Here lime salts as present in milk are advisable and will do good, although an injudicious amount of milk, as any other liquid in injudicious amount, is a mistake in any weakened condition of the heart. Barr thinks it quite possible that the tendency to arteriosclerosis after typhoid fever may be due to an injudicious amount of calcium administered with milk during the fever process. Although we are firm believers that about a pint of milk is sufficient per diem for a typhoid patient and do not believe in the enormous quantities of milk that have been given in this fever, it hardly seems probable that the little calcium in milk, or even the lime water that may be added to the milk, could be a cause of arteriosclerosis so often seen to follow typhoid fever.

The failure of the heart in diphtheria is partially due to disturbance of the pneumogastric nerve, and such a heart needs a tonic, not only lime but iron and possibly digitalis. The same cardiac depression as seen in diphtheria, although not as acutely serious, may show itself in influenza, where cardiac debility is prolonged and tedious. This is probably a nervous debility. Here lime is valuable; also strychnin, atropin, and perhaps digitalis.

Whooping cough injures the heart physically and is likely to injure the right side, and in whooping cough Barr advises the administration of atropin or perhaps other cardiac tonics. In all cases of whooping cough it is advisable, as long as the cough is severe, to administer digitalis regularly in such doses as meet the requirements of the child's age and condition.

In any infective endocarditis an autogenous antitoxin cannot be too soon developed, as such a complication shows that the disease is beyond almost any other control.

Barr states what is so well understood by physicians but so little understood by the laity, viz., that chronic heart lesions of all kinds are extremely amenable to treatment. This means that generally for years a patient may lead his ordinary life provided he will follow out the rules and regulations advised. Of course, sooner or later every diseased heart is beyond repair, but even in the worst instances amelioration of symptoms is generally for a long time possible. Moderate exercise, Barr urges, brings the blood to the muscles and relieves the inner tension and prevents the development of chronic disease of the organs from continued internal congestion. Excessive exercise is, of course, serious and should be interdicted because of the sudden extra work put on the heart. Large eating of any kind is inadvisable, and especially is it inadvisable to eat too much protein, as the blood loaded with insufficiently oxidized protein products can do nothing but debilitate the heart muscle and irritate the arterioles to greater contraction and thus put more work on the heart. While at many so-called "cures" enormous amounts of water are administered to flush out the system "as though a sewer was to be cleaned," the inadvisability of loading up the circulation, especially the venous circulation, with extra amount of fluid is readily understood from a physical standpoint; it can sooner or later do nothing but harm. This of course is especiallly true if there is edema or a tendency to edema, to say nothing of general anasarca. It is so much more sensible, in conditions of internal congestion, to diminish the food, give a small amount of liquid, to gradually eliminate toxins from the system, and then to prevent more toxins from being formed.

Barr well says that he does not believe in any routine system in the treatment of chronic heart disease, but the patient should be individualized; the amount of exercise, hot baths, sweatings, food, and drink that one patient should take is not at all a criterion of what will be of benefit to the next patient.

We can but agree with him when he urges the necessity, in lack of compensation in valvular disease or in an acutely weak heart from any cause, for absolute bed rest, in fact, complete repose, not even rising to dress. It certainly is no time to consider exercise when a patient has great loss of compensation, as is shown by edemas, dyspnea, albuminuria, nosebleed, petechiæ, profuse menstruation or even uterine hemorrhage, or bleeding from the lungs. It may generally not be advisable to have the patient absolutely flat in bed during the whole day; even if he can lie on one pillow, it is advisable several times a day to have him recline on two or three or even four pillows. This is all the exercise the heart requires until it becomes stronger. A diminution of the liquid taken, and especially the withholding of salt (sodium chlorid) and the administration of just sufficient nutriment to provide for nutrition, and a daily evacuation of the bowels will, even without cardiac tonics, often cause diuresis and an absorption of the fluid extravasations. If in spite of an improvement of the arterial circulation the circulation of the veins is sluggish and the edema, especially of the extremities, is not readily removed, Barr suggests bandaging the extremities.

When the heart muscle is not much diseased, advanced arteriosclerosis is not present, and the heart is dilated, there can be no question of the value of digitalis in most instances. The arterial blood pressure should, however, be carefully noted, and if this is high digitalis is not the drug to administer. If it is low, digitalis is generally the drug to be used. The amount must depend on the tolerance of the patient and the results obtained. The dose should not be too frequent; two or three times in twenty-four hours is sufficient, as it is slowly excreted. If the blood pressure is high or there is much arteriosclerosis, or if the lesion is an aortic lesion, many times the vasodilators are the drugs most efficient. Sometimes digitalis causes digestive disturbances sufficient to prohibit its use, and if digestive disturbances are not in evidence it may cause headache; and yet the blood pressure may be so low as to contraindicate the use of vasodilators. In such apparently hopeless cases which are often accompanied by pulmonary congestion from failure of the right ventricle, often accompanied by the expectoration of bloody sputum, sometimes an actual venous hemoptysis, no treatment is as valuable as the so-called hot air treatment or "body bake."

While repeated baths are almost always advisable in heart disease, and while the Turkish bath will often cause sufficient elimination to improve the circulation, it can do harm, but the body bake, with the head exposed to the fresh, clean air, and the peripheral circulation of the body dilated and profuse perspiration caused, all under careful supervision of the pulse by an expert, will relieve internal congestion, reestablish and equalize the circulation, and cause a return of compensation when all other means have failed. Also, in conditions of failing heart due to arteriosclerosis no amount of dilators or other treatments will reestablish the circulation and give a prolonged amelioration of symptoms and apparently perfect health as will the body bake. The blood pressure will be reduced by this means and remain reduced for months under proper simple regime, after it is once brought down by the body bake. Such baking should not be too frequent, possibly every other day for once or twice, then once in five days or once a week, combined with at first rest in bed, then gradual convalescence, and then graded exercise.

If a patient, for any reason, must remain long in bed, massage must be done daily to keep the muscles in proper condition, to keep the circulation in the muscles normal and to relieve the internal congestion.

The expectation of forced diuresis alone doing much good in cardiac failure with anasarca is generally without justification. Under the management suggested albuminuria, which is caused by the chronic congestion of the kidneys from a bad heart, is relieved, and as soon as this congestion is lessened an increased output or urine takes place without a diuretic.

Barr urges the danger in anasarca from failing heart, even with almost anuria, of causing profuse watery evacuation of the bowels with any cathartic. Many a death is thus caused by the depletion and weakening and the terribly low blood pressure caused by salines.

Any bath treatment that equalizes the circulation and brings the blood to the surface and relieves internal congestion, or stimulates sweating and causes increased capillary circulation, whether the carbonic acid bath, the Nauheim bath, or any massage, will almost always aid in improving the circulation in heart disease.

It would prolong this article too much to discuss the relative values and relative indications for the cardiac tonics and stimulants other than digitalis, or to discuss the various methods of producing dilatation, or the best method of treating angina pectoris and cardiac pain and irregular and intermittent heart action, but it should be urged that alcohol is not a real cardiac stimulant; that tobacco always weakens the heart muscle; that any excess of lime is contraindicated in arteriosclerosis and when there is an increased coagulability of the blood or a tendency to plastic exudates.

Ethics.—Standards of ethical conduct that is, conduct which not only extends to the development of individual character but also to that of the well-being of the race—have undergone considerable evolution, the most potent single influence which has been brought to bear on them being Christianity. "An eye for an eye and a tooth for a tooth" of the Judiac law, is supplanted by the offering of the other cheek to the smiter, of the Christian dispensation. Taking the world as a whole, even to-day, external standards vary enormously with the degree and kind of civilization—and its lack—with the religion and organization of society, the physical peculiarities of a country, the density of population, means of communication and a thousand other things.—F. B. Shattuck, in *Cleveland Medical Journal.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 10, 1910

CHOLERA AND CIVILIZATION

The reappearance of cholera in Europe raises again the question whether the twentieth century, like the nineteenth, is to witness pandemics of this disease sweeping over Western Europe and even extending at times into the United States and Canada. Fortunately we now possess very definite information concerning the modes of spread and usual vehicles of infection of this once greatly dreaded malady. It is, for example, an incontrovertibly established fact that a sewage-contaminated water supply is responsible in practically all cases for the epidemic prevalence of cholera. Scattered cases of the disease may occur in a city with a pure water supply, but no general and widespread infection need be feared so long as the water supply remains uncontaminated.

The sudden outbreak of cholera which occurred in Hamburg in 1892, and which attacked about 17,000 persons and carried off 8,600, might well have been predicted by sanitarians on the basis of the known facts regarding the entrance of sewage into the river water from which Hamburg obtained its supply and the significant prevalence of typhoid fever in that city. So too at the present day, if cholera should become at all widely distributed in this country, we could predict with a high degree of certainty those sections of the country and even the communities that would suffer most severely. Cholera in even greater proportion than typhoid fever is a water-borne disease.

Almost any article of food or drink may occasionally serve as a medium for conveying typhoid infection. Of course such substances as milk, vegetables and fruits consumed without cooking are to be regarded as particularly dangerous, but any food handled or kept under uncleanly conditions may be the means of introducing cholera vibrios into the intestine. Flies fed with cholera-infected material have been found to contain the vibrios in their intestines for as long as fourteen days.

"Cholera carriers" have been shown to exist in the persons of healthy individuals resident in districts where the disease prevails. There seems no doubt that cholera spreads from locality to locality not by bales of merchandise, but by the carriage of the specific germ in the body of man himself. Dunbar has stated that in the Hamburg epidemic of 1892-93, he was able to detect the cholera vibrio in no fewer than twenty-eight persons who were entirely healthy and had never manifested any symptom of cholera or had suffered the slightest attack of diarrhea.

The immediate practical deduction from these facts seems plain. It is more rational to expend our efforts in improving general sanitary conditions in this country than to establish a shotgun quarantine and attempt—probably in vain—to prevent any person harboring cholera vibrios from landing on our shores. Attention to the ordinary demands of civilization, the elimination of sewage from our water supplies, the insistence on clean milk and bread, the banishment of the common drinking-cup and the roller-towel, the extermination of the house-fly and other vermin, the observance of a decent degree of cleanliness in the streets and in the house—such measures will go far to avoid the danger of cholera epidemics now and henceforward. More than once has it been shown that in default of an efficient system of national and municipal sanitation, quarantine is but a broken reed. The British sanitary system makes a clear recognition of this principle. Nearly twenty years ago a distinguished British official wrote:

"For England the abandonment of quarantine has been an almost unmixed good. The knowledge that no pretense would be made to keep out all chance of cholera in this country, has done more perhaps than anything else to induce our sanitary authorities to spend their money on great works of sanitation and on such improved sanitary administration as is likely to prevent the spread of any imported disease of the type of cholera. Millions have been spent to this end; but, on the other hand, hundreds of thousands of lives have been saved. Even if cholera should once more succeed in passing the barrier of our ports and, diffusing itself inland, cause a heavy mortality, we should still be enormously the gainers in point of human life by the system which we have so deliberately adopted, but there is no doubt that our system is rather calculated to prevent than to lead to such a contingency."

Local isolation and general sanitation are the most effective defenses against cholera, as against typhoid fever and many other infections. To use a simile of Pettenkofer's, insanitary conditions may be looked on as a kind of powder for which cholera is a spark; it is a much wiser procedure to see to it that we allow no such inflammable powder to accumulate than to spend our efforts in frantic attempts at beating off the spark.

SEWAGE DISPOSAL BY DILUTION

It is often considered a procedure far from ideal to discharge sewage without treatment into the nearest large body of water, whether ocean, lake, or river. Yet many municipalities are so situated that this is the least expensive course open to them, and it is not surprising that hard-pressed city administrators find the least costly way the most tempting. On the public health side this method of sewage disposal always raises two questions: first, whether the degree of dilution proposed is sufficient to avoid offensive decomposition, and second, and more important, whether the procedure involves contamination of the city's own water-supply, or of that of any other municipality. Where either of these conditions can be shown to exist exception must be taken to this mode of sewage disposal.

In this country, many cities situated on the Great Lakes have long made a practice of discharging their sewage directly into the lake water at the most convenient point. Unfortunately these cities have also drawn their drinking supply from the same body of water within a few miles, or even a few hundred yards, from the sewage outfall. The result has been that, as is well-known, in times past several of these cities suffered severely from water-borne disease. Buffalo, Cleveland, Chicago, Toronto, Milwaukee, and other cities, have all at various times had occasion to deplore the close connection between water-supply and sewage disposal. It may therefore come as something of a surprise to find leading sanitary experts, including the chief engineers of the state boards of health of Massachusetts, New York and Pennsylvania, giving their sanction to a proposal to discharge the raw sewage of Rochester, N. Y. (population about 200,000) into Lake Ontario. The local features that have led to such recommendations are worth noting as an illustration of the fact that under proper conditions sewage disposal by dilution may be legitimately practiced.[1]

At present the Rochester sewage passes into the small Genesee River, which flows into Lake Ontario and at certain seasons is greatly overburdened, so that a serious nuisance is caused. The new plan proposes to discharge the sewage, after a slight period of sedimentation followed by screening, directly into Lake Ontario in water 55 feet deep, 7,000 feet from shore. The proposed outlet is about three miles from the Rochester and Ontario Water Works, but according to the opinion of the sanitary engineers, the process of filtration to which the water is subjected renders danger of infection very unlikely and in no case greater than at present. It is also the belief of the experts that the likelihood of contamination of the Oswego water-supply, 50 miles distant, is too remote for practical consideration. The degree of dilution outlined under this project is sufficient to avoid any possibility of a nuisance.

Altogether the reports of the experts in the Rochester case constitute a strong endorsement of the principle of sewage disposal by dilution. No water-supply is threatened, a present nuisance is abated, and no fresh nuisance created. Given suitable conditions, such as seem to exist at Rochester, it must be admitted that sewage purification by dilution may be a safe and legitimate solution of the sewage problem.

ORGANIC ARSENIC PREPARATIONS—EHRLICH'S 606

The prominence into which organic arsenic compounds have again been brought by their application to the treatment of protozoan diseases, such as sleeping sickness, and, more recently, syphilis, makes it seem desirable to call attention to a few fundamental facts which are apt to be overlooked. Merely to warn[1] against the ready acceptance of optimistic preliminary reports in a general way is not sufficient; it is better to consider the principles underlying the action of these substances and to base our warning on well-known difficulties.

The action of organic arsenic compounds is fundamentally an arsenic action and depends on the destruction of the organic radicle, with the liberation of the inorganic portion. Against this view may be cited the clinical observation that the use of inorganic arsenic preparations is not attended with the same success as can be obtained with the more special preparations, such as atoxyl, or more recently "606." This difficulty can be easily understood, however, when we consider that the efficiency of such compounds depends on their specific affinity for the protozoon, in other words their ability to enter the protozoon in preference to the tissues of the host. After they enter the protozoon their action is essentially an arsenic action, but their specificity of distribution between the invading organism and the host depends on the structure of their organic radicle. In the course of a search for such specific differences a vast number of preparations have to be examined, as the above number, "606," would indeed suggest.

The dangers and the difficulties in the practical application of these compounds, which recent work has disclosed, are due to two facts, careful attention to which is necessary on the part of everyone wishing to form a fair judgment. In the first place Ehrlich has found in treating trypanosome infections, that a certain proportion of the protozoon are tolerant to the arsenic preparation. The well-known difficulty—the incomplete destruction of the invading organisms—encountered in treating a case of mixed infection in malaria is here rendered more difficult by the fact that even under the most favorable conditions it is impossible to destroy completely all the invading organisms. This fundamental difficulty has not yet been overcome and is very likely to apply to the similar case of the spirochete of syphilis

---

[1] Engineering News, Aug. 11, 1910.

[1] The Journal, Aug. 13, 1910, p. 601.

From this difficulty arises the second complication, the danger of giving these substances in overdose. This danger is particularly prominent with organic arsenic preparations, on account of the large amounts which can be given before the arsenic action is apparent, and on account of the great difficulty in making an early diagnosis of arsenic poisoning. When we consider the difficulties that have been encountered in the recognition of such well-known cases of arsenic poisoning as the Manchester epidemic, poisoning by ferrosilicon,[2] and a number of criminal cases, obscure until chemical analysis revealed the cause, the very great danger likely to arise from this source will be apparent. Some who are familiar through long use with Fowler's solution may be inclined to minimize this danger. We must remember, however, that Fowler's solution is very soluble and easily eliminated while the very nature of organic arsenic compounds depends on their ability to show more or less of a cumulative action. This cumulative action may lead to the well-known symptoms of chronic arsenic poisoning, among which peripheral neuritis accompanied by blindness is perhaps the most apparent, although a great many more obscure complications due to injury to the capillary walls are also apt to occur. In the use of atoxyl in sleeping sickness, several cases of blindness have been reported.

This criticism is not intended to be destructive but rather constructive. If arsenic compounds are destined to give us the long-sought specific for syphilis, the final decision as to its usefulness must depend on the results of clinical experience. During the experimental period, however, attention should be directed to the two principal points here outlined: the completeness of the destruction of the invading organism, and the careful control (preferably by quantitative estimations) of the arsenic eliminated during treatment to avoid the danger of cumulative action. Professor Ehrlich's caution in guarding against the general use of his preparation cannot be too highly commended.

Current Comment

OSTEOPATHS CANNOT SIGN DEATH CERTIFICATES

A New York court has decided that local boards of health cannot recognize death certificates issued by osteopaths until a coroner has made an investigation. The decision sustains the position taken by the corporation counsel of the City of New York. In rendering the decision, Judge Putnam said, "While the state has wisely allowed the practice of osteopathy, it does not follow that it thereby holds one without any practice in surgery or experience in prescribing drugs as fully qualified to certify the cause of death. . .The sanitary code is discriminatory but the discrimination is not personal or arbitrary. It is based on a limitation which the osteopath may be said to make for himself and deprives him of no right he ought to exercise consistent with the public safety." The essential point in the decision is Judge Putnam's statement that the limitations of osteopathy have been made by the osteopath. Whenever an osteopathic bill has been before a state legislature, the osteopaths themselves have been most vehement in their declaration that they were not physicians and that osteopathy was not the practice of medicine, consequently they could not be made amenable to medical practice acts. Yet as soon as the osteopathic bill is passed, they demand the privileges of legally qualified physicians. The personal practice of osteopathy is comparatively unimportant. The recognition of osteopathy, scientifically and economically, is a most important matter. Osteopaths, as a class, must accept one of the horns of the dilemma. If they are physicians practicing medicine and surgery, then they are amenable to medical practice acts and there is no justification for allowing them to practice medicine and surgery on a basis of qualification lower than that exacted of other practitioners. If they are not physicians and if they are not practicing medicine, then they cannot expect to exercise the functions of legally qualified physicians. While the decision referred to above is not final, the ruling is so clearly in line with common sense and logic that it will undoubtedly stand.

AMERICANIZING OF FOREIGN NAMES

The Prussian Minister for Commerce and Trade urges that a German becoming a citizen of the United States should retain his original name rather than Americanize it. While this recommendation doubtless was inspired by a commendable spirit of patriotism, it is also to be endorsed on practical grounds. The changing of names indulged in by many of our foreign-born citizens, as well as by their children, has a confusing effect in tracing lines of descent, family connections, relationships, etc., especially on public records and documents. The matter is of medical interest because it frequently happens that a medical student of foreign birth or parentage graduates from a medical college under one name, receives his state license under another, and in a few years is practicing under a third designation. The names may either be variations of the original or in some cases entirely different, with much confusion in personal identity as a result.

PRESIDENT TAFT ON PUBLIC HEALTH LEGISLATION

The efforts of certain interested individuals to make it appear that the President has withdrawn from his position on advanced health legislation have been nullified by the latest utterance of Mr. Taft. In a letter carefully prepared for publication in the Republican Campaign Handbook the president enumerates the measures to which the Republican party stands committed. The letter may be regarded as representing not only the personal views of the President but the position of the party also. "As to future legislation," the President says, "a number of promises remain to be kept." After alluding to important commercial and economic measures, he continues, "There is also the promise of the Republican platform to make better provision for securing the health of the nation. The most tangible and useful form that this can take would be the establishment of a National Bureau of Health, to include all the health agencies of the government now distributed in different departments." The public health plank of the Democratic platform of 1908 was even stronger than the declaration of the Republican platform. The proposed federal health legislation is being supported without regard to political affiliation. The question is in no sense a partisan one. It is simply a problem of method—a problem of the best way to unite and strengthen existing health agencies of the government. Mr. Taft's recognition of the obligations of his party and of his administration with regard to health legislation will go far toward making possible the passage of a satisfactory law in the near future.

---

[2] The Journal, Aug. 7, 1910, p. 781.

BUDDING ELOQUENCE

In a periodical published by a medical students' fraternity we find this gem: "If men and women will awaken from their sleep of apathy, throw aside the mantle of inertia, wash from their eyes self-centered indifference to needed reforms, and try to get nearer to that utopian time when man will really love his fellowman and will strive to do unto others as he would have others do unto him, then will the child be really given a fair chance. With such a resolve for the future, with enlightenment, justice and liberality for guides it can be accomplished, and a race of people of such moral, mental and physical excellence be developed as to render Earth nigh akin to Heaven." Note the prodigal extravagance of the first sentence, in which the author feels able to afford four figures of speech. And yet again, note the beautiful progress of the figures: to awaken from sleep; to throw aside the *robe de nuit*; to perform one's morning ablutions—what a realistic touch! Surely we have here a coming medical poet.

YELLOW FEVER

In the United States and Cuba, at least, yellow fever has become almost a historical disease. Not so much can be said, however, for the Central and South American countries. The gulf states, realizing this, and anticipating a large increase in commerce with the southern countries with the completion of the Panama canal, with commendable caution are keeping in view the possibility of a return of this scourge to their cities and towns. The *Gulf States Journal of Medicine and Surgery* in commenting on a paper by Dr. Charles A. Mohr, on the symptomatology of yellow fever, which it publishes, urges physicians practicing in the gulf cities to familiarize themselves with the symptoms of this disease and to make a searching examination of every case of fever occurring from August to November so that the disease may not gain a foothold. It suggests that while the U. S. Public Health and Marine-Hospital Service is performing an invaluable service in preventing the introduction of the fever into the South, the gulf cities are not doing their full duty in destroying the stegomyia and their breeding-places so that yellow fever could not spread if it once gained entrance. It is the "swat" of the mosquito in time that saves nine lives.

EHRLICH'S SYPHILIS REMEDY NOT YET ON THE MARKET

In view of the far-reaching consequences of that dread disease, syphilis, and especially in view of the remarkable success which is reported to have attended its treatment by Ehrlich's arsenic preparation, it was only natural that the announcement of this remedy should have created intense interest and a demand for the substance. We have heard of a number of men starting for Europe, to endeavor to see Ehrlich and to secure some of the remedy. Hundreds of others doubtless have written him. One letter was sent in care of THE JOURNAL to be forwarded, because the writer had only the word "Frankfort" for Ehrlich's address and questioned whether this meant "Frankfort, Ky.," or some other place. Without doubt, Professor Ehrlich has received more letters than he is at all able to answer. It is fitting therefore, for us to warn the profession in the words of a cablegram just received from one of THE JOURNAL'S foreign representatives:

"Ehrlich says doctors stay home, don't write; 606 market November."

In other words, the remedy will be ready for distribution in November, and at present, physicians will find it useless as well as annoying, both to themselves and to Professor Ehrlich, to write to him or to go to Europe to see him. One who saw a similar concourse waiting on Koch after his great announcement, described it as such an embarrassing throng that even eminent men had difficulty in securing an audience. Practically everyone there had wasted his time in going. The warning is a timely one. In the interim, THE JOURNAL will continue to keep its readers fully informed on the subject.

HOW THE RELIGIOUS PRESS ASSISTS IN HUMBUGGING THE PUBLIC

"Vitæ-Ore,"[1] according to its exploiters, is the "dried residue of the greatest curative spring in the world"; according to Bulletin 69 of the North Dakota Agricultural College Experiment Station, it is a mixture of Monsel's and Epsom salts. The marvelous (commercial) possibilities of this preparation—it sells at a dollar a package—were "discovered" by one Theophilus Noel, who is said to have at first peddled the nostrum in order to get a start. Soon, an advertising campaign was instituted in religious papers and was kept up with great persistence. As business increased, a British depot was opened in London and the clergy of that country received letters from the concern in which the personality of Christ was used to boom the sale of the nostrum. Evidently this combination of piety and quackery has proved profitable. The newspapers of a few days ago contained an item regarding the divorce suit brought against Theophilus Noel—referred to as "the millionaire 'patent-medicine' manufacturer"—in which the wife testified that it would be impossible for her to live on less than $500 a month at Noel Heights, the California residence of the nostrum vender. She said that it would cost that much to keep up the premises and pay the servants. With the domestic affairs of this enterprising promoter of modified Epsom salts our readers are not interested, but the testimony quoted is striking evidence of the value of well-advertised piety as a "patent-medicine" asset. To the religious press of America, more than to any other one factor, Mr. Noel owes his financial success; to such satisfaction as this particular field of journalism may derive from this fact, it is more than welcome. Fortunately religious papers are awakening to the iniquity of the whole wretched "patent medicine" business and the advertising field for such preparations as Vitæ-Ore is becoming daily more restricted.

---

[1] See also THE JOURNAL A. M. A., Feb. 2, and 16, 1907; also Propaganda for Reform, page 208.

ELECTIVE MEDIA FOR CHOLERA VIBRIOS

The appearance of cholera in Western Europe adds interest to the attempt to discover a culture medium which shall facilitate the isolation of the cholera vibrio. An attempt of this sort was made a short time ago by Dieudonné,[1] who took advantage of the well-known tolerance of the vibrio for alkali. The blood-alkali-agar prepared by him has been tested with favorable results by Huntermüller[2] and others. Still more recently Neufeld and Woithe[3] have published results of work with the medium and have somewhat extended Dieudonné's observations. These latter authors find that ordinary agar rendered strongly alkaline has the same effect in suppressing *B. coli* and in producing a characteristic cholera vibrio colony that Dieudonné's medium is credited with. Indeed they declare that simple alkalization of peptone water with potassium or sodium hydrate (0.7 to 0.8 per cent. normal solution) affords a medium that possesses some advantages over the alkaline agar.

Medical News

GEORGIA

Resolutions Regarding Dr. Calhoun. A committee of the board of trustees and the faculty of the Atlanta College of Physicians and Surgeons, at a joint meeting held August 29, adopted resolutions recounting the distinguished services of the late Dr. Abner Wellborn Calhoun, deploring the loss of his wise counsel and deprivation by his death of his contributions for the public welfare, and setting apart a page in the records of the institution to be inscribed to his memory.

ILLINOIS

Personal.—Dr. Edward S. Winbigler, Alexis, is reported to be seriously ill at his home with septicemia.——Dr. Hiram T. Hardy, Kaneville, was operated on in Wesley Hospital, Chicago, August 27, for the removal of gall stones.

Tuberculosis Hospital in Evanston.—The Chicago Fresh Air Hospital, recently organized with Dr. Albert S. Ochsner as vice president and Dr. Ethan A. Gray as medical superintendent, has secured a farm of 20 acres on the boundary between Chicago and Evanston with accommodations at present for 23 patients.

Notes About Hospitals.—The plans and specifications for the new hospital building for the Peoria Deaconess' Hospital are ready. The building will cost it is estimated about $45,000. It will be of stone, 5 stories in height and fireproof and will adjoin the present hospital building.——The hospital for the new Naval Training Station, North Chicago, which will be finished next month, is to be so arranged as to minimize noise. The nurse and emergency calls are to be made by light signals instead of buzzers or bells.

Chicago

Personal.—Dr. B. K. Shimonek has been elected director for the Central Division of the North American Esperanto Association.——Dr. and Mrs. Thos. D. Palmer have returned from Europe.

College Merger.—The American Medical Missionary College of Battle Creek and Chicago has been merged with the College of Physicians and Surgeons, Chicago, the Medical Department of the University of Illinois.

Hospital Notes.—The work of erection of the Iroquois Memorial Emergency Hospital at 87 Market Street, has been commenced, and it is expected that the relief station will be ready to receive patients about Jan. 1, 1911. The cost of the building is estimated at $30,000. On its completion it will be turned over to the city and will be operated by the Department of Health.——The Francis E. Willard Memorial Hospital has purchased a lot 48 by 125 feet on Lincoln Street, adjoining the present hospital. The lot is improved with a two-flat building which will be remodeled and used for the nurses, and will accommodate 30. It is to be known as the Hobbs Home in honor of Mrs. J. B. Hobbs, the recording secretary. Plans for the Nelson Morris Memorial Institute of Medical Research, opposite the Michael Reese Hospital, have been completed and the work will begin in a few days. The building will be 100 by 96 feet, and four stories in height.

LOUISIANA

Hospital Buys Sanitarium.—The Presbyterian Hospital of New Orleans has acquired possession of the New Orleans Sanitarium for about $180,000. It is proposed gradually to develop a charity department of the sanitarium under the charge of the hospital authorities.

Health Board Laboratory.—The State Board of Health will move from the Perrine Building to the new Court House Building, New Orleans, early next month. A new laboratory is being equipped in the new quarters, which will be ready for operation as soon as the change is made.

Personal.—Dr. A. Penn Crain, Shreveport, has been appointed bacteriologist and chemist of the State Board of Health, vice Dr. Jacob M. Bodenheimer.——Drs. Charles J. Landfried, Homer Dupuy, Lieven D. DePoorter, Allan A. Kennedy, John P. Leake, and A. Benjamin Gaudet have resigned from the staff of the New Orleans Eye, Ear, Nose and Throat Hospital.

MARYLAND

State Medical Society to Meet. The Medical and Chirurgical Faculty of Maryland will hold its semi-annual meeting, September 12 to 14 at Annapolis, where extensive preparations have been made for entertainment. On the second day a symposium will be held on the administration of the State Board of Health with addresses by the various heads of the departments of that body. On the third day a joint meeting will be held with the Maryland Psychiatric Society.

Baltimore

New Building for Hospital. The new ward building of the Bay View Hospital, which has cost $55,000, is reported to be complete but will not be occupied until the water, heat and power plant, contracts for which have just been made, is finished.

Hospital Ship.—Dr. R. Martin Bruns has advocated a hospital ship for babies on the plan of the Boston and New York floating hospitals. He claims that with $60,000 he can equip a ship and care for patients for two years, providing for 100 day patients and their mothers and 50 permanent patients.

---

[1] Centralbl. f. Bakt., I, p. 107.

[2] Centralbl. f. Bakt., I, 1909, l, p. 1[illegible].

[3] Arb. a. d. k. Gsndhtsamte, 1910, xxxiii, p. 605.

Personal.—Dr. E. H. Brannon, who has had charge of a railway field hospital on the upper Amazon for two years, has returned to Baltimore.——Dr. Thomas W. Keown sailed August 31 for Ireland.——Dr. John T. King has returned from Europe.——Dr. Charles A. Fetterhoff has been appointed resident physician at St. Luke's Hospital, vice Dr. Samuel E. Edmunds, resigned.——Dr. Herbert H. Haynes, demonstrator in anatomy at the College of Physicians and Surgeons, has resigned and will practice in Clarksburg, W. Va.

MISSOURI

Tuberculosis Tour Ends.—The tuberculosis car, sent through the southwestern portion of the state by the State Society for the Relief and Control of Tuberculosis, has returned after a trip of 1,265 miles. A second trip is contemplated in September.

Aid for Sanatorium.—W. C. Root, Kansas City, consulting architect for the Missouri State Sanatorium for Incipient Tuberculosis, Mount Vernon, after careful investigation, says that the work in general has been well done at a reasonable cost, and advises the expenditure of $35,000 for a new infirmary building.

To Save Sight of Babies.—Social settlement workers and physicians have organized the State Sight-Saving Society the Missouri Association for the Prevention of Blindness. Dr. John Green, Jr., St. Louis, is chairman, and Drs. Clarence Loeb, Frederick J. Taussig, and Albert H. Hamell, all of St. Louis, represent the State Board of Health on the directorate. The object of the association is the awakening of the public mind to the enormous amount of preventable blindness throughout the state.

Personal.—Governor Hadley has been elected president of the Missouri Association for the Prevention and Control of Tuberculosis.——Dr. William W. Graves, St. Louis, has sailed for Europe.——Dr. Francis L. Reder, St. Louis, will sail for France this month to attend the twenty-third French Congress of Surgeons.——Dr. and Mrs. Francis R. Anthony, Maryville, sailed for Europe August 15.——Dr. Hasbrouck DeLamater has been appointed assistant to the health commissioner of Kansas City.——Dr. Elmore O. Smith, Kansas City, is said to have been fined $100 on the charge of maintaining a private hospital for treatment of cancer without permission of the Hospital and Health Board.

NEBRASKA

Personal.—Dr. Warren W. Thompson, West Point, has been appointed assistant physician to the State Hospital for the Incurable Insane, Hastings.——Dr. William F. Callfas, Omaha, has been appointed chief of the department of anatomy at Barnes University, St. Louis.——Dr. Samuel C. Beach, McCook, has been appointed a member of the board of health of Red Willow county.

State Board of Control Favored.—The state political conventions have inserted planks in their platforms endorsing the creation of a state board of control for charitable, penal and reformatory institutions. At the coming session of the legislature, an act incorporating the best features of the Iowa and Illinois laws will be introduced as a constitutional amendment. This movement has been endorsed by the county societies, the state medical society, and the Nebraska Association for Charities and Corrections.

NEW JERSEY

Cocain Dealers Sentenced.—Harry Simmons, Camden, and his wife are said to have been found guilty of the illegal sale of cocain and opium, and to have been sentenced to two years' imprisonment.

Personal.—Dr. Samuel D. Bennett has been appointed medical inspector of Millville public schools, and Dr. Duncan W. Blake, Jr. of the Gloucester City public schools.——Dr. Gustave A. Schoening and family, Trenton, have sailed for Europe.

Tuberculosis Camp for Union County.—A committee of the board of freeholders of Plainfield have recommended an administration building and four leantos to be built on the site of fifty acres at a cost of not to exceed $50,000, to be raised by the issue of bonds.

NEW YORK

Personal.—The will of the late Mrs. Sarah Flower contains a bequest of $50,000 for Dr. Murray M. Adams, Watertown.——Dr. George A. Leitner of Piermont, Dr. William Meddaugh Dunning, and Dr. and Mrs. A. L. Wolbarst, New York City, have sailed for Europe.

New York City

To Enlarge Hospital.—Plans have been filed for converting the four-story private dwelling adjoining the Hospital for Deformities and Joint Diseases, New York City, into an office and dispensary, and a nurses' dormitory for the institution.

Vacancy in Dispensary.—Washington Heights Hospital Dispensary, 551 W. 165th Street, announces a vacancy in the medical and surgical department, Tuesdays, Thursdays, and Saturdays, 2 to 4 p. m. Applications should be made to Dr. Louis Neuwelt, 2424 Seventh Avenue.

Proposed Colony for Lepers.—It is understood that the Board of Health intends establishing isolation quarters for lepers on North Brother Island. There are at present four men living in a small house on Blackwell's Island who are suffering from the disease in its last stages.

Want Straus Milk Stations.—The New York Milk Committee has sent out a statement expressing regret at the announced intention of Nathan Straus to close his milk depots. The commissioner of health has also spoken very strongly on the subject. He says: "To see these milk stations shut down would be to witness a great public calamity."

Avoidance of Accidents.—The large number of street car accidents in New York City has led to the printing on the back of transfers the following warning: "Never leave a street car until it has come to a full stop. In this way you will do your share for the betterment of the service and the lessening of accidents. Most street-car accidents are due to the non observance of this simple rule. May we look for your cooperation in this regard?"

Law Breakers.—Forty bottles of cocain are said to have been found on a man arrested in front of the police headquarters, August 22. This is said to represent the supply of cocain for Chinatown for one day. The original source of the illegal supply has not yet been traced.——William Bechtold, a former nurse in the U. S. P. H. and M.-H. Service, Stapleton, is said to have been convicted of the practice of medicine without a license, August 24, and to have been sentenced to imprisonment in Richmond County jail for thirty days.

Academy to Discuss Animal Experimentation.—The New York Academy of Medicine has purchased property at 10 W. 44th Street, and 15 W. 43rd Street, either for the purpose of remodeling the present building, or for the erection of a new building. The anniversary meeting of the academy will be held November 17, and will be devoted to animal experimentation in medicine. Addresses will be delivered by Dr. William W. Keen, Philadelphia, on "The Influence of Antivivisection on the Character of its Advocates;" by Dr. William H. Welch, Baltimore, on "The Objections to Proposals of Further Legislation to Regulate Animal Experimentation;" by Dr. W. B. Cannon, Harvard Medical School, on "The Character of Antivivisection Literature."

Buffalo

Personal.—Dr. Emil S. Tobie has been appointed a member of the board of trustees of the J. N. Adams Memorial Hospital for Incipient Tuberculosis.——Dr. David E. Wheeler arrived in Athabasca Landing, Alberta, August 30, after a sojourn of several months in the Keewatin country of the north.

Hospital for Incipient Tuberculosis.—Bids for the J. N. Adams Memorial Hospital for Incipient Tuberculosis, the new municipal hospital to be built at Perrysburg, were recently submitted at $158,415. The trustees have decided to readvertise and double the capacity of the institution. The sum of $200,000 is now available for construction and equipment. The site of the hospital was presented to the city by former mayor J. N. Adams. The hospital will accommodate about 300 patients.

Scarlet Fever.—Four new cases of scarlet fever have developed at Cradle Beach, the resort of the tenement children of Buffalo, about 250 children are at this camp and conditions are believed to be so serious that the State Health Department has sent Dr. Edward Clark to investigate them. For more than two years the Buffalo Academy of Medicine and the county medical society have called the attention of the council repeatedly to the serious condition of the infectious disease situation in Buffalo, due to the fact that the facilities for the segregation of this class of patients are limited and insufficient.

NORTH CAROLINA

Visit State Tuberculosis Institutions.—The superintendent of the State Hospital for Tuberculosis, with Dr. M. Eugene Street, Glendon, R. Gordon, Greensboro, James E. Brooks, Montrose, and Richard H. Brooks, Raleigh, a committee of the directors of the institutions, are making a tour of the state tuberculosis institutions of the east.

Personal.—Dr. Thomas C. Quickel, Stanley, has located in Gastonia, where he will devote his attention to diseases of the eye, ear and throat.——Dr. Wingate Johnson, Thomasville, has located in Winston.——Dr. Alfred A. Kent, Lenoir, has received the unanimous nomination of the Democratic party of Caldwell County for representative to the legislature, and this nomination is said to be equivalent to election.

PENNSYLVANIA

Infantile Paralysis Situation.—Twenty cases of infantile paralysis were reported to the State Health Department, September 3. The disease now prevails in 41 counties, the total number of cases being at present 469.

Boards of Health Required.—It is stated that the State Commissioner of Health will send notice to all boroughs in Pennsylvania which have not organized boards of health and provided appropriation for combating disease, that they must do so without delay. This action of the commissioner will affect boroughs in every county. In case of failure to comply with this decree, the commissioner will invoke the aid of the attorney-general either by mandamus proceedings to compel the organization of board or action for revocation of charter.

Philadelphia

Personal.—Dr. Caroline M. Purnell sailed for Europe August 31.——Dr. John J. Moylan returned from Europe August 28.——Dr. Edward H. Jerecki, chief of staff at the Jewish Hospital, was badly shaken up and bruised, in a collision between his carriage and a trolley car, August 29.

Resignations from the University Faculty.—Dr. Harold B. Wood, assistant demonstrator of normal histology at the University of Pennsylvania, has resigned to become state bacteriologist and chief of the laboratories of the Mississippi State Board of Health. He will be stationed at Jackson.——Dr. Horatio C. Wood, Jr., assistant professor of pharmacology in the university, has resigned.

Special Train for State Meeting.—For those desiring to attend the annual meeting of the State Medical Society at Pittsburg, October 3 to 6, a special train will leave Broad Street Station at 10:30, Monday morning, October 3, stopping at Harrisburg, Tyrone, Altoona, Johnstown, and East Liberty. A uniform rate of two cents a mile will be charged on this train, Pullman service being extra. The train will run as the second section of the Chicago Express. Accommodation can be had by writing Dr. Albert M. Eaton, 2017 [illegible] 13th Street, Philadelphia, Chairman of the Committee on Transportation, enclosing a stamped, directed return envelope.

Railroad Blamed for Poor Milk.—A bill of complaint against the Philadelphia and Reading Railway, in which the transportation company is held responsible for the alleged inferior grade of milk that has been supplied in certain sections of the city was filed in Harrisburg, September 3. It is expected that the state railroad commissioners will institute a searching investigation into the manner in which railroads transport milk. The specific charge is that it required the defendant company three hours to convey the milk a distance of 35 miles in common baggage cars. Twenty thousand quarts of milk are supplied in this city daily by the Reading system.

Dedication of Consumptive Institute.—The dedication exercises of the Jewish Consumptive Institute, 406 Wharton Street, will continue for a week beginning September 11. All the Jewish organizations will be represented and addresses will be made by the following: Dr. S. Solis-Cohen, Rabbi A. H. Erschler, Rabbi B. L. Levinthal, and Dr. M. Barbour. Dr. M. Staller is chairman of the dedication committee. In the new institution, no patients will be housed in the building, the advanced cases being turned over to sanatoriums at the expense of the institution. A dispensary will be established for incipient cases and for the distribution of milk and eggs. A large sun parlor has been constructed in the yard.

GENERAL NEWS

Electrotherapeutists to Meet.—The American Electrotherapeutic Association will hold its twentieth annual meeting at Saratoga Springs, N. Y., September 13 to 15.

Measles Epidemic in South Africa.—An epidemic of measles is reported in Pretoria. Up to the present, the inhabitants of 300 houses have been infected, and in all about 1,000 cases have been reported. The schools are being closely watched but the health officials believe that the epidemic is sufficiently under control to obviate the necessity of closing them.

Cancer Vaccine Tested.—Dr. Philip K. Gilman, formerly of Oakland, Cal., professor of surgery in the Philippine Medical School and surgeon in chief of the Philippine General Hospital, Manila, announces his belief that he has discovered a vaccine which will stop the ravages of cancer. He reports apparent cure with the vaccine in twenty cases of cancer in Manila.

Pacific Coast Surgeons Meet.—The annual meeting of the Pacific Coast Association of Railway Surgeons was held in San Francisco, August 27 and 28 and the following officers were elected: President, Dr. Oliver D. Hamlin, Oakland; vice presidents, Drs. Wallace I. Terry, San Francisco, and Robert T. Legge, McCloud, Cal.; secretary, Dr. George R. Carson, San Francisco (re-elected); treasurer, Dr. Ernest M. Keys, Alameda. The association will hold its 1911 meeting in Los Angeles, the day before the meeting of the American Medical Association.

Colored Practitioners Hold Meeting.—Colored physicians, dentists and pharmacists, making up the National Medical Association, held their meeting in Washington, D. C., August 23 to 25. Hampton Institute, Hampton, Va., was named for the next meeting-place and the following officers were elected: President, Dr. Austin M. Curtis, Washington, D. C.; vice presidents, Drs. William M. Slowe, Philadelphia, and Dr. L. H. Singleton, Washington, D. C.; general secretary, Dr. J. A. Kenny of the Tuskegee Institute, Ala., and member of the executive board, Dr. John W. Jones, Winston Salem, N. C.

The Valmora Sanatorium.—The Valmora Industrial Sanatorium at Watrous, New Mexico, an institution incorporated not for profit, announces that it is ready to receive patients. The expense per week for patients sent by subscribers will be $10 and for others $12.50. Individuals desiring to enter the sanatorium should write to the office, 34 Washington Street, Chicago, for application blanks, which should be filled out by their physicians and then presented to one of the examiners of the sanatorium who will determine whether or not the case is suitable for treatment at the institution. As the chief object is to accomplish the greatest possible good at the sanatorium, patients who have not a fair chance for recovery are not accepted. The examiners in Chicago for the institution are Dr. Arthur M. Corwin, 34 Washington Street, and Dr. Edwin B. Tuteur, 103 State Street.

Coming State and National Meetings.—A large number of state and national medical societies are to meet this fall. Among them are the following which will meet in September or October:

Amer. Acad. of Ophthalm. and Oto-Laryn., Cincinnati, Sept. 19-21
Amer. Assn. of Obstetricians and Gynecol., Syracuse, Sept. 20-22.
Amer. Roentgen Ray Association, Detroit, September 28-October 1
American Association of Railway Surgeons, Chicago, October 19-21
American Electro-Therapeutic Assn., Saratoga, N. Y., Sept. 13-15.
Medical Association of the Southwest, Wichita, Kan., October 11-12.
Michigan State Medical Society, Bay City, September 28-29
Minnesota State Medical Association, Minneapolis, October 6-7
Mississippi Valley Medical Association, Detroit, September 13-15.
Nevada State Medical Association, Lake Tahoe, Cal., Sept. 10-21.
Pennsylvania, Medical Society of State of, Pittsburg, October 3-6
Utah State Medical Association, Salt Lake City, October 3-4
Vermont State Medical Society, St. Albans, October 13-14.
Virginia, Medical Society of, Norfolk, October 25-28
Wyoming State Medical Society, Casper, September 27.

MANILA LETTER

(From Our Regular Correspondent)

Manila, P. I., July 31, 1910.

Obstetric Superstitions in the Philippines

Since so widespread an interest, both professional and lay, in the very high infant mortality in Manila and in the Philippines generally has been aroused, it is not surprising that there should follow an inquiry into the status of the practice of obstetrics and midwifery in the Islands. Such a study has been made by a number of Manila physicians interested in obstetrics. As might be expected, some interesting facts, situations and customs were encountered.

Seven articles dealing with different phases of obstetrics and gynecology are published in the *Bulletin of the Manila Medical Society* for June, 1910. It is rather surprising to learn that in both surgery and obstetrics it is particularly easy to avoid infection. The explanation of this is the rarity of the virulent streptococci. This organism is seldom encountered in laboratory work, in the morgues or in clinical work. "Streptococcic septicemia, cellulitis, erysipelas, scarlet fever and even streptococcic sore throat are extremely rare conditions in the Philippine Islands and streptococcic metritis and peritonitis following childbirth have not been encountered in autopsy work in Manila." Yet in spite of these conditions the death-rate among infants and of mothers during or following labor is very high.

In this connection it must be remembered that rational medicine is only a recent institution in the Philippines. Until the early seventies the practice of medicine was almost entirely in the hands of the quack and until very recent years the same has held true with regard to obstetrics, even among the majority of the more wealthy families. It is said that "to the Filipina woman, like the Chinese woman, personal exposure is so repulsive that often she will not accede to it even when in labor. Such scruples and shyness, caused perhaps by a misunderstanding, very often lead Filipina mothers to refuse the services of physicians and to repose their confidence in quack midwives." This is one of the principal reasons given for the almost primitive condition of obstetrical practice in the Islands. Whatever the causes of the vicious practices of the midwives, certainly the results are most lamentable and are to be seen on the streets of Manila or any of the provincial towns every day. Moreover, in Manila "the never-ending procession of women suffering from misplacements, prolapses of all degrees, lacerations of every conceivable class and severity, endometritis, fistulas, chronic congestions and inflammations, vesical troubles and general debilities is a common sight to the clinician."

It is easy to understand these conditions, as well as the fact that Filipina women become prematurely old, when one becomes aware of the obstetrical customs obtaining in the Philippines. Dr. Rebecca Parish has made a study of these customs and they are even more appalling than had been expected. Among many of the customs the following may be mentioned: If any one stands in the door in the presence of a pregnant woman, it is a sure sign that at the time of her labor the child will also stop at the door of the uterus. The prospective mother must not step over the tether of a pony while out walking as a difficult labor will result. Very tight belts and strings, worn about the waist during pregnancy, will insure an easy delivery and also prevent the child's growing too large. Many times the woman is forced to engage in the most arduous exercise, a favorite one being grinding rice; this causes an easy delivery, and is certainly effectual as the babe is sometimes born at the mill. During the course of even a normal pregnancy it is necessary for the midwife to make frequent examinations and, if she sees proper, to "change the position;" this she calls "placing the baby" and she receives 10 centavos (equal to 5 cents U. S. coin) for each such service. As a rule the Filipina woman is very indefinite as to the time when her pregnancy will terminate and consequently rarely is she prepared for this event. However, very little preparation is required except the midwife who is considered quite sufficient for her needs, and in many instances the patient cannot afford this luxury.. In some provinces it is said that men act as assistants and are better for this purpose, as they are stronger and can apply more force in kneading, pressing, squeezing, pulling and pushing, as all these operations are considered essential. Short stout clubs, made of wood or burned clay and sold in the public markets, are used a great deal for pressing, pushing and kneading and are considered much more effectual for the purpose than is the hand. The waist is tied about tightly during labor to make sure that the child passes downward instead of upward. The placenta with a paper and pen buried under the house will insure a bright and intelligent child. It is said that soup made from small pieces of the placenta and given to the mother as her first postpartum nourishment prevents fever, weakness and other forms of illness. The mother is given large quantities of rice and urged to eat so that the abdomen will be filled, as it was so large before. The waist is tied after labor to prevent the abdomen filling full of wind when the patient breathes deeply and also to prevent the blood from coming up and out of the mouth. The bones of the sacro-iliac joint are separated during labor, therefore a strong band is placed about the hips and tied tightly by two men, one bracing himself on either side with his feet against the patient's body.

The patient's abdomen is rubbed with oil for 25 days so the uterus will become soft and send out the blood, thereby becoming small. Hemorrhage is encouraged by propping the patient up with pillows this also prevents the uterus going high in the abdomen, and causes the bad blood, which must be gotten rid of, to drain better. Frequently the patient is almost exsanguinated, and death from hemorrhage may occur without any effort being made to stop the bleeding. Sleep is not allowed because it produces a tendency to insanity; frequently the patients are allowed to sit up and even to stand within a day or two after delivery. After-pains are greatly helped by the patient getting the odor of burning deer-skin. After three days the procedure of "replacing the uterus" takes place. For 9 days it is thought bad to eat salt or drink cold water. About the tenth day the woman is bathed with a little warm water and smoked underneath a mat enclosing her and a jar of burning leaves. Following this, since there is a suspicion that the uterus is still raw, a fire is made of charcoal in a large earthen pot and the patient stands astride this, surrounded by blankets and supported by her friends. It requires an hour of this treatment to cause the uterus to "dry up." For three months the woman should not put her hand in cold water, drink cold water or take a cold bath. This rule evidently does not apply to laundresses whose occupation calls them to the river or the spring. No antiseptic precautions are known; old rags, old clothing and the family bedding are used about the parturient.

Perhaps the most prevalent and terrifying of all the superstitions is concerning the "Aswang," an imaginary being, half man and half beast. This creature prowls around at night and is the terror of the patient and all her relatives, because he watches to get the blood of the patient and to steal the child. As he lives both in the air and on the land and is guided in his night depredations by a bat, it is next to impossible to feel free from him at any time. During the latter months of pregnancy it is necessary for the woman to sleep under a black cover so that the "Aswang" cannot see her; and frequently there is a fire kept burning under the house so that the smoke may keep him away. It is considered exceedingly dangerous to be out after dark, and if the woman does go out at this time it is necessary to wear the hair loose down the back, which is her protection against the "Aswang" influencing her child and causing him also to be an "Aswang."

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 26, 1910.

Measures Adopted in France Against Cholera in Italy

The now official news of the appearance of cholera in several localities in the Italian provinces of Bari and of Foggia in the region of Apulia, where the scourge seems to have been introduced by a band of Russian pilgrims from Odessa, has naturally aroused much excitement, not only throughout Italy but also in the neighboring countries. In France, M. Briand, the prime minister, immediately telegraphed to the prefects to apply to intercourse with the infected portions of Italy the provisions of the recent decree in regard to the cholera epidemic in Russia. These provisions include surveillance over travelers at the frontier stations; isolation of persons suffering from suspected ailments; reports from hotelkeepers and others of travelers who arrived from the infected regions; reports to the mayors of every case of suspicious disease, and the designation for each department of a delegate charged with directing the application of prophylactic measures, and the prohibition of the importation of objects or products such as clothing, rags, fruits or vegetables from affected regions. All the French ports have been warned to cause all vessels coming from infected regions to undergo the measures required by the maritime sanitary police. At the moment that I write, I learn that the Swiss

Federal Council is on the point of deciding to declare the Italian provinces of Bari and Foggia infected with cholera and of requesting the cantonal governments to take all measures of security against possible infection in Switzerland.

The Question of Charitable Assistance to Foreigners

The International Congress of Public Relief and Private Charity, which has just met at Copenhagen, has taken up among other problems, the delicate and complex question of public relief to foreigners. The Danish government has acquiesced in the request of the congress for a diplomatic conference in which this important question might be studied. At the initiative of the vice-president of the French delegation, M. Hébrard de Villeneuve, the congress has arranged the basis of a diplomatic understanding looking toward the repatriation of an important and expensive class of foreign paupers, namely, deserted children, the insane and confirmed paupers, or the reimbursement of the expenses of public relief. As uncompensated relief of the other classes of unfortunates might become a heavy charge on certain countries, the congress has endeavored to enlist the aid of charitable societies of various nationalities, which are quite able to play an important part in this matter, as is shown by an investigation by the French ministry of foreign affairs.

Monument to Dr. Mauchamp

At Chalon-sur-Saône, a monument has just been dedicated to Dr Emile Mauchamp, who was assassinated in 1907 at Marakech in Morocco. Charged by the French government with the mission of founding dispensaries in Morocco, Dr. Mauchamp established himself at Marakech, Morocco, where France had as yet no consul. This situation in the heart of fanatic Morocco was particularly dangerous, and placed Dr. Mauchamp at the mercy of an uprising. At the instigation of a fanatic, who told the natives that the physician was sent to be a spy for an approaching invasion by the French, Emile Mauchamp was assassinated in cowardly fashion at the very moment when he was going from his house to his dispensary. He was hardly 37 years old. The monument was dedicated by M. Pichon, Minister of Foreign Affairs. It consists of a bust of Dr. Mauchamp on a high pedestal before which stands a Moroccan woman looking sadly at the man who has saved the life of the child that she carries on her left arm. On each side are bas-reliefs; one represents Dr. Mauchamp in his dispensary at Marakech caring for a little leper; the other reproduces the scene of the crime. The doctor is struck down and a Moroccan fanatic pierces him to the heart with a dagger while other bandits are stoning him and striking him on the head.

Utilization of Soiled Surgical Dressings

The commission of industrial hygiene of the Ministry of Labor recently received a complaint from labor delegates in regard to the utilization of soiled surgical dressings. In the political press, the subject is receiving all the more notoriety because, according to certain journals, the refuse in question comes from Germany, where such dressings are baled by powerful hydraulic presses and then sent into the vicinity of Paris where they are sorted over by women and children and then cleaned and sent out for commercial use. A medical journal has gone so far as to publish an article declaring that "the wounds of our patients are dressed with discarded German dressings." The fact is that the unscrupulous merchants who ply this repulsive trade do not need to go to Germany for their wares, for this deplorable traffic is carried on in France likewise. The sheets of glazed cotton which dressmakers use to pad women's garments are often made from cotton which has been used in dressings; and in certain felt factories the workmen are obliged to card dressings, especially cotton, still more or less soiled with blood or pus, which come from certain hospitals and clinics.

The Hygiene of Hospitals and Tuberculosis Among Nurses

It has long been recognized that dry sweeping of the floors of hospitals constitutes a practice dangerous both to patients and to attendants. The supervising council of the Public Charities of Paris is of the opinion that such methods of cleaning ought to be strictly forbidden in the Paris hospitals. Notwithstanding they continue to be used. As tuberculosis is especially frequent among the lower grades of the hospital staff and as there is a mortality of about 20 per cent among the hospital attendants the association of hospital attendants has several times demanded that such methods of cleaning should be discontinued. The answer of the administration is that in many cases the medical profession is opposed to washing and dampening floors before sweeping. The secretary of the nurses' society has therefore asked the opinion of all the physicians of the Paris hospitals in regard to the practice.

Stiff Knapsacks No Longer to be Used in the French Army

The knapsack hitherto carried by our troopers, which was adopted after the Algerian conquest and which has just been replaced by another model, has a rigid frame which presses most uncomfortably on the back during long marches and compresses the shoulder by straps which impede the respiration considerably. Unanimous approval, therefore, greets the adoption of the new knapsack, a kind of little water-proof canvas case, carried low, about the lumbar region and held in place by two straps of flexible leather depending from the shoulders like tourists' knapsacks. The new knapsack packed weighs only 3,950 gm. (about 10 pounds). It contains a change of linen, reserve provisions and an aluminum kettle of 3 liters (nearly 3 quarts). While the old knapsack, with its rigid frame, is always of the same volume whatever its contents and is always uncomfortable, the new knapsack, because of its flexibility, takes the form and the dimensions of its contents.

Death of Professor Masse

Dr. Ernest Masse, former professor of operative medicine at the Bordeaux college of medicine, has just died at Montpellier, where he retired about four years ago. Born in 1839, he was made professor in 1880 and the same year he founded the *Gazette hebdomadaire des sciences médicales de Bordeaux*.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, August 18, 1910

Personal

Prof. G. Klemperer, who is at the same time director of the medical department of the Moabit Hospital, has undertaken the supervision of the institute for cancer research, hitherto conducted by von Leyden. Leyden, whose health is failing more and more, resigned from this position a few months ago. It may be considered as quite questionable whether there is any need of continuing this institution, for the prospects of attaining any notable progress in the field of cancer pathology and therapy by special investigation have not only not increased within recent years but have actually grown less. All the studies on the experimental communication of cancer have yielded very slight results, for the problem of human cancer and investigations on the treatment of cancer are better carried on in the various clinical institutions for internal medicine as well as for surgery and gynecology than in a small institution for that special purpose.

Professor Lexer of Königsberg has received a call as successor to Riedel in the surgical clinic at Jena.

Cholera in Russia

As is the rule in late years, cholera has broken out in Russia and is threatening East Prussia. In the last report of the Russian ministry about 3,500 cases of cholera were reported in six cities, of which one-half were fatal. In the whole affected district the number of cholera cases is much greater than that reported. The difficulties that are met in dealing with an epidemic of the character of cholera in a country so little civilized as Russia are not to be forgotten, but it may also be stated without doubt that the government officials are not capable of performing their task; else better results would have been obtained than has been the case hitherto. So far no invasion of Prussia by the cholera has occurred. The plague has also broken out in Southern Russia; in one district alone 145 places have been officially noted as infected.

An Arabian Doctor of Medicine

A few days ago the Berlin medical faculty granted the degree of doctor of medicine summa cum laude to the Arabian sheik Hamed Waly from Egypt, who is a seminar lecturer on Arabic at the Berlin University. This is the first time that an Arabian from Egypt has received this title in Berlin. His thesis included three chapters from the medical history of Ibn Abi Osaibi'a and gives in the introduction the life and works of this physician who was very noted in Arabia in the thirteenth century and who wrote a very careful history of medicine. The new Arabian doctor who was employed in his own country at the Azhar mosque has been appointed by the Egyptian government as a sanitary inspector.

Hospital for Juvenile Criminals

For some years juvenile criminals have been tried in Prussia before special courts, so-called juvenile courts. This arrangement rests on the assumption that the mind of children requires special treatment and that the process before a general court is not suitable for youthful criminals, neither for the purpose of punishment nor for the youths themselves. It is now purposed to erect a hospital for such youthful criminals as have shown mental or physical defects in the proceedings of the juvenile court in order eventually to bring up a part of these youthful criminals as useful members of human society. In addition there has been for some time a movement on foot by a committee under the leadership of Professor Ziehen, a psychiatrist of this city, to collect the funds for an institution for psychopathic children.

New Bath Arrangements at Nauheim

In order to increase the bathing facilities for the constantly growing throng of patients at Nauheim, the Hessian government has determined to provide for the piping of water from the springs to each of the hotels of the place for a certain fee so that the patients may use the spring water in the hotels themselves. This plan is very desirable and it will remove to a great extent the frequent complaints of patients that they have to wait too long for their baths; it will also make it possible for those whose disease makes it difficult for them to go to the treatment house to take their baths in their own dwelling. Similar arrangements are found in other bathing resorts, especially at Wiesbaden.

A Sordid Business

As the newest drawing card for a so-called backstairs romance is the announcement made by the publishers that all readers of the novel who are in possession of the last installment may receive free medical advice in cases of illness. Also they will be furnished medicines at a remarkably reduced price. Whether a physician has already offered himself for such a disreputable practice or whether the publisher will first take pains to find such a physician when he has received a sufficient number of subscribers is not known.

Quackery in Saxony

The kingdom of Saxony has been known for a long time as the Eldorado of quackery. The number of quacks according to official enumeration has continually increased. In 1900 there were 748; in 1909, 1,337, nearly twice the number; there surely are more than are officially noted. The city of Dresden harbors proportionally most of the quacks, to the number of 374, with a population of about 395,000. At the beginning of 1909 there were in Saxony 2,129 licensed physicians, so that the number of quacks equals two-thirds of that of the physicians. In many large districts the quacks exceed the physicians.

Eddyism

According to a decision of the highest Prussian court, recently published, Eddyism is regarded as a commercial exercise of the healing art. Those pursuing it must report themselves to the district physicians (*Kreisärzten*) for inclusion in the list of unlicensed practitioners.

The Municipal Hygienic Laboratory of Berlin

The first official report of the municipal hygienic laboratory has been published and contains a number of generally interesting communications. The institute conducts investigations of food-stuffs and bacteriologic examinations both at the request of municipal officials and private persons (the latter partly for pay). The degree of uncleanliness which has occasionally occurred in the preparation of food is shown by the circumstance that once a lump of horse manure was found in a sausage. An examination of noodles showed that the entire sample had been made without eggs. The examination of Haferkakao (Oat Cacao) showed 50 to 60 per cent. of oatmeal. The price is designated as being as a rule disproportionately high as compared with the first cost of the individual constituents. Among the medicines investigated "Epileptol-Rosenberg," which according to the statement of its discoverer is a condensation product of aminoformic acid, was shown to be a watery solution of a mixture of formamid and formaldehyde with small amounts of hexamethylentetramin. A diabetes powder consisted of a mixture of roasted and unroasted lentil groats. The investigation of substances used during an epidemic of febrile diarrhea showed repeatedly the presence of paratyphoid bacilli. In a diphtheria epidemic in a Berlin parochial school, diphtheria bacilli were found in a large number of the pupils, some of whom showed a mild pharyngeal catarrh. Diphtheria bacilli were also found in the crevices in the class room. After energetic disinfection of the class room and treatment of the children at home, the diphtheria bacilli disappeared without a new infection occurring. The examination of the Berlin tap water showed that it must be regarded as an unobjectionable drinking water.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Aug. 22, 1910.

The Cholera Danger

For some time, Russian districts have been the seat of a severe cholera epidemic, and the possibility of its introduction into this country is imminent. The frontier common to Russia and Austria-Hungary is very long, several hundreds of miles in extent and the population on both sides of this line belongs to the same race, nationality and often also, creed; therefore intimate business and social relations exist between the infected districts and our own country. With the spread of cholera, strict precautions have been taken by our health department. The International Cholera Convention makes it obligatory for the infected country to inform every other member of the convention of each case of cholera, as well as of each suspicious place. Therefore, it has been possible for the last eight or ten years to suppress any danger from sporadic outbreaks in the vast Russian country. This year, however, the epidemic has assumed such proportions and severity that very real danger now threatens central Europe. The measures of quarantining all persons crossing the frontier for a period of at least eight days, of disinfecting their baggage and vehicles, and of prohibiting the importation of all articles of food, leather, hide, hair, and second-hand clothes from the infected districts have hitherto been effective, as only two cases have been observed within Austrian boundaries in two months, and in both cases the persons had arrived from Russia. The real danger is the extensive smuggling business going on between the two countries; the utmost efforts of the health, excise and revenue departments are directed against this possible channel of infection.

Meanwhile, another focus of infection for Europe has been discovered in southern Italy, where cholera has killed over forty persons within a few days. Italy, which has just now an enormous influx of visitors from all parts of the civilized world, borders for over 200 miles on Austria, while only a narrow strip of sea, the Adriatic, separates it from the Austrian coast for a length of about 250 miles. There, too, the same racial and trade relations exist as on the Russian frontier. The notorious lack of public sanitation both in Russia and Italy makes the task of Austria very hard. Naturally, the populace here is much alarmed and all help is given to those entrusted with the hard task of prophylaxis. The leaflets of instruction distributed among the people are eagerly received and, what is better, obeyed.

Vacant Seats in the Vienna University

There are at present vacant three important chairs for medical instruction, those of the deceased Schnabel and Zuckerkandl (ophthalmology and anatomy, respectively), and of von Strümpell (medicine), whose sudden resignation caused so much comment in all circles. The successors have been nominated already by the recommendations of the medical faculty of the university; and Professor Demmer of Graz will take over the eye clinic in October; it will be remembered that this place was refused by Hess on account of the insufficient endowment and little space in the old clinic whence so much original investigation had come. The chair of anatomy has been offered to Tandler of Vienna, who will probably be appointed. The successor of Strümpell will be either Chvostek or Ortner, both Austrians and both in very good standing in medical circles. Ortner has the better chance, being a younger man and more in touch with the most important government personages. Either of the two would be very welcome to the students, who suffer much under the frequent changes.

Death of Professor Oser

A few days ago, Prof. Leopold Oser, one of the best-known Vienna physicians, died after a prolonged illness, in the seventy first year of his age. Oser had celebrated his jubilee a few months ago, and according to the custom here, had to resign his post, that of clinical professor, on attaining the patriarchal age. He was granted, however, an "honorary year"—a mark of special esteem—and he died just on the eve of his final resignation. He was director of the Rothschild (Jewish) Hospital, and also head of the internal department of the General Poliklinik. In both these positions, he had gained the esteem and love of patients and students and his classes were very much frequented by foreign doctors, too. He was a recognized leader as a specialist on the diseases of the alimentary canal. His most famous books were "The Mechanical Treatment of Diseases of the Stomach and Intestines," "The Neuroses of the Stomach," "Atonia Gastrica," and a treatise on the pancreas, which is a standard work on this subject. He was a gifted and keen observer of symptoms, an exceedingly exact and scientific investigator, who did not publish much because of his long and painstaking investigations, but each of whose works stood every test. He had reached about the utmost honors a physician can attain in this country: He was imperial councillor and president of the board of health. It need not be said that his private practice was one of the best in this country.

Marriages

George Blaine Crow, M.D., U. S. Navy, to Miss Ruth Bokenkamp, at Agana, Guam, May 26.

Alexander C. Foster, M.D., to Miss Helen Vowells, both of Owensboro, Ky., at Louisville, August 11.

Joseph Linton Siner, M.D., Philadelphia, to Miss Alice Lampe Gunn of Jersey Shore, Pa., recently.

Faneuil Dunkin Weisse, M.D., to Mrs. Mary Churchill Ripley, both of New York City, August 27.

Courtland Linden Booth, M.D., Portland, Ore., to Miss Juanita Clemm Snyder of Wheaton, Ill., August 24.

Deaths

Charles Benoni Hanson, M.D. University of Tennessee, Nashville, 1897; for six years superintendent and physician and surgeon-in-charge of the Monterey (Mexico) Hospital, an institution under the direction of the Board of Missions of the Methodist Episcopal Church, South; a member of the International Medical Association of Mexico; died in a sanitarium in San Antonio, Texas, August 10, from pellagra, aged 47.

Guy Carson Kinnaman, M.D. Rush Medical College, 1903; a member of the American Medical Association; fellow in surgery in Rush Medical College from 1903 to 1908; instructor in skin and venereal diseases in the Chicago Policlinic, and clinical assistant and lecturer on diseases of the skin in Rush Medical College; died at the home of his parents in Ashland, Ohio, August 29, from ptomain poisoning, aged 32.

Robert Bruce Hixson, M.D. College of Physicians and Surgeons, Chicago, 1900; a member of the American Medical Association; local surgeon at Cambridge, Minn., for the Great Northern Railway; city physician of Cambridge; chairman of the local board of health, and physician of Isanti county; died at his home in Cambridge, August 23, from anterior poliomyelitis, aged 36.

Robert Amory, M.D. Harvard Medical School, 1866; of Boston; a member of the Massachusetts Medical Society; lecturer on physiology and the action of drugs in his alma mater, and later professor of physiology in Bowdoin Medical College, Brunswick, Maine; author of several works on physiology and therapeutics; died at his summer home in Nahant, Mass., August 27, aged 68.

James Meredith Mathews, M.D. Jefferson Medical College, 1840; a member of the Medical Society of the State of Pennsylvania and once president of the Berks County Medical Society; who retired from practice in 1873; for many years justice of the peace; died at his home in Reading, August 17, [illegible] after sustaining a fracture of the hip, aged 94.

Thomas Evans Westman Brown, M.D. College of Physicians and Surgeons, New York City, 1900; a member of the American Medical Association; of Asheville, N. C.; died suddenly from heart disease in Memphis, Tenn., August 23, aged 37. At a [illegible] meeting of the Buncombe County Medical Society [illegible] resolutions and memorials were adopted.

David Gilmore Foster, M.D. Western Pennsylvania Medical College, Pittsburg, 1898; formerly of Crafton, Pa.; for three years resident physician in the West Penn. Hospital, Pittsburg; died in Campo, Cal., August 18, from the effects of a gunshot wound of the head, self-inflicted, it is believed, while despondent, on account of ill health, aged 35.

Bezaleel Bell Andrews, Jr., M.D. Marion-Sims College of Medicine, St. Louis, 1896; Kansas City-Hahnemann Medical College, 1904; formerly of Cordell, Okla., but more recently of Kansas City, Mo.; died in the Kansas City General Hospital, August 23, from the effects of phenol, self-administered, it is alleged with suicidal intent, aged 35.

William E. Miller, M.D. Ensworth Medical College, St. Joseph, Mo., 1891; formerly a member of the American Medical Association; local surgeon at Wellington, Colo., for the Colorado and Southern Railroad; died in the Fort Collins, Colo., Hospital, August 19, from septicemia, two weeks after an operation for appendicitis, aged 50.

Albert Charles Lewis, M.D. Minnesota Hospital Medical College, Minneapolis, 1882; of Mount Vernon, Wash., for several years a member of the local board of education and a member of the city council; died August 22, from heart disease, while crossing the sound from his camp on Whidby Island to the main land, aged 56.

Frank Denton Gavin, M.D. University of Maryland, Baltimore, 1874; a member of the American Medical Association; general superintendent of the Church Home and Infirmary, Baltimore, for thirty-five years; died at his home in that city, August 24, from an infection of the throat, after an illness of three months, aged 56.

William Wands, M.D. Medical College of Indiana, Indianapolis, 1880; a member of the Indiana State Medical Association; a surgeon during the Civil War; for more than 30 years a practitioner of Indianapolis, and for 8 years physician of Marion county; died at his home in Indianapolis, August 25, from heart disease, aged 73.

Albert Gallatin Sims, M.D. University of Nashville, Tenn., 1869; a member of the American Medical Association; formerly president of the Talladega County (Ala.) Medical Society, and senior councilor of the Medical Association of the State of Alabama; died at his home in Renfroe, August 8, from paralysis agitans, aged 66.

Edward Lee Pearce, M.D. University of Louisville, 1886; a member of the Kentucky State Medical Association; assistant surgeon of the Louisville Legion from 1888 to 1898; and for many years local surgeon in Louisville for the Illinois Central Railroad; died at his home, August 23, from pericarditis, aged 46.

Edwin J. Richardson, M.D. Central College of Physicians and Surgeons, Indianapolis, 1881; a veteran of the Civil War; for 23 years a special pension examiner in Washington, D. C.; and for four years deputy coroner of Marion county, Ind.; died at his home in Washington, June 23, from nephritis, aged 65.

Caleb Allen Manley, M.D. University of Nashville, 1857; surgeon in the Confederate service during the Civil War; formerly president of the Madison County (Tenn.) Board of Health, and one of the oldest practitioners of Jackson; died at his home in Jackson, August 19, from paralysis, aged 76.

Joseph Janney Hall, M.D. New York University, New York City, 1858; a member of the New York Pathological Society; and for many years consulting surgeon to the Nursery and Children's Hospital; died at his home in New York City, August 26, from arteriosclerosis and myocarditis, aged 76.

Daniel Watt Copeland, M.D. Starling Medical College, Columbus, Ohio, 1893; who served three years in the medical department of the Navy and for one year in the Army during the Spanish-American War; died at his home in Somerton, Ohio, August 23, from autointoxication, aged 40.

Stephen Milton Hand, M.D. Berkshire Medical College, Pittsfield, Mass., 1853; for twenty years health officer of Norwich, N. Y.; and at one time president of the Chenango County Medical Society; died suddenly August 9, from heart disease while making a professional call, aged 79.

Foster Frutchey, M.D. Medico-Chirurgical College of Philadelphia, 1891; a member of the Illinois State Medical Society; professor of operative surgery and applied anatomy in Illinois Medical College; died at his home in Chicago, August 28, from meningitis, aged 44.

Joseph Merritt Moore, M.D. Eclectic Medical College of the city of New York, 1881; a veteran of the Civil War; once president of the state eclectic medical society; died at his home in West Rupert, Vt., August 17, from valvular heart disease, aged 74.

James E. Taylor, M.D. Cincinnati College of Medicine and Surgery, 1871; of Richmond, Ind.; a veteran of the Civil War; a practitioner for more than 50 years; died in a sanitarium in Spiceland, Ind., August 25, from heart disease, aged 75.

Henry Francis Murray, M.D. Tulane University of Louisiana, 1851; a veteran of the Mexican War; for 60 years a resident of the Choctaw and Chickasaw nations; died at the home of his son near Colbert, Okla., Dec. 29, 1909, aged 91.

Samuel Scott Salisbury, M.D. Western Reserve University, Cleveland, 1854; a member of the Illinois State Medical Society; for nearly half a century a practioner of Tolono, Ill.; died at his home, August 22, from senile debility, aged 81.

Henry M. Pollard, M.D. Missouri Medical College, St. Louis, 1888; a member of the American Medical Association; for more than 20 years a practitioner of Shelbina, Mo.; died in Kansas City, Mo., August 21, from myocarditis, aged 49.

Martha A. Richardson, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1896; of Canton, Ill.; a member of the American Medical Association; died in the Proctor Hospital, Peoria, Ill., August 25, from chronic nephritis, aged 39.

Paul Cheesebrough Skiff, M.D. Yale University, New Haven, 1853; of New Haven; a practitioner of New Haven for more than 40 years; died at his summer home in Kent, Conn., August 26, from cerebral hemorrhage, aged 81.

Robert W. Park, M.D. University of Pennsylvania, 1856; surgeon of the Fifth Alabama Infantry, C. S. A. during the Civil War; and for nearly 40 years a practitioner of Waco, Texas; died at his home, August 21, aged 74.

Oscar W. Oberlander, M.D. Syracuse (N. Y.) University, 1881; a member of the Medical Society of the State of New York and the Syracuse Academy of Medicine; died in Ogdensburg, N. Y., June 25, from general paresis.

Harland L. Stanbro, M.D. University of Buffalo, 1896; died at his home in Prattsburg, N. Y., August 9, from burns caused by the explosion of the gasoline tank of an automobile a week before in Wayland, aged 39.

William B. Presnell, M.D. Barnes Medical College, St. Louis, 1901; of Center, Okla.; died in that place, August 29, from the effects of a gunshot wound of the head, self-inflicted, it is believed, with suicidal intent, aged 39.

Darwin G. Palmer, M.D. Western Reserve University, Cleveland, 1879; a veteran of the Civil War; a member of the American Medical Association; died at his home in Geneva, Ohio, August 27, aged 68.

Joseph J. Tremblay, M.D. College of Physicians and Surgeons, Chicago, 1895; a member of the American Medical Association; died suddenly at his home in Moline, Ill., August 23, from heart disease, aged 48.

David Howard Cronyn, M.D. Long Island College Hospital, Brooklyn, 1873; a veteran of the Civil War; coroner of Brown county, S. D.; died at his home near Houghton, August 21, from arteriosclerosis, aged 66.

Joseph Dennis Willson, M.D. Cooper Medical College, San Francisco, 1873; for more than 50 years a practitioner of California; died at his home in Cloyne Court, Berkeley, August 25, from nephritis, aged 80.

William Becker Stewart, M.D. University of Vermont, Burlington, 1904; formerly a member of the Vermont State Medical Society; died at his home in Unadilla, N. Y., August 21, from nephritis, aged 32.

Kimmel K. Harrison, M.D. Eclectic Medical Institute, Cincinnati, 1872; of Clayton, Mich.; died near his home in that place, August 24, from the effects of the kick of a horse, aged 75.

William H. C. Sterrett, M.D. Missouri Medical College, St. Louis, 1891; formerly of Corning, Mo.; died in Excelsior Springs, Mo., July 28, from the effects of a fall down stairs, aged 40.

Julius Stein, M.D. College of Physicians and Surgeons, New York City, 1885; died at his home in New York City, July 22, from fatty degeneration of the heart, aged 47.

Jacob Alexander Baker, M.D. Meharry Medical College, Nashville, 1903; formerly of Jacksonville, Fla.; died in Asheville, N. C., August 16, from tuberculosis, aged 33.

Nicholas Blackwell, M.D. Jefferson Medical College, 1860; surgeon in the Confederate service during the Civil War; died at his home in Bartlett, Tenn., August 16, aged 71.

Louis Phillipe Coyner (Years of practice, Va.) For twenty years a practitioner of Spring Creek; died at his home in Waynesboro, August 11, from diarrhea, aged 62.

Francis M. Carez, M.D. Paris, France; a veteran of the Mexican and Civil wars; died at his home in Fort Scott, Kan., July 9, from senile debility, aged 91.

Wilson Lumpkin Heflin, M.D. Medical College of Georgia, Augusta, 1851; died at his home in Roanoke, Ala., August 13, from cerebral hemorrhage, aged 82.

Isaac N. English, (license, Minn., 1896); for many years a practitioner of Motley; died in Brainerd, August 26, from carcinoma of the stomach, aged 59.

John Jacob Strecker, M.D. Columbus (Ohio) Medical College, 1880; died at the home of his son in Chattanooga, Tenn., August 6, from diabetes, aged 79.

William C. Stout, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871; died at his home in Killbuck, Ohio, August 19, from paralysis.

Frederick Densmore Tyrrell, M.D. Bellevue Hospital Medical College, 1895; died at his home in Sacramento, Cal., August 5, from uremia, aged 39.

Robert Emery, M.D. Victoria College, Toronto, 1857; one of the oldest practitioners of Peoria, Ill.; died suddenly in Dunlap, Ill., August 24, aged 82.

Douglas C. Cannon, M.D. Bellevue Hospital Medical College, 1866; a Confederate veteran; died at his home in Norfolk, Va., August 21, aged 74.

Alfonso Wetmore, M.D. New York University, New York City, 1848; died at his home in Clinton, Iowa, August 24, from senile debility, aged 89.

Charles B. West, M.D. Jefferson Medical College, 1883; died suddenly at his home in Upper Strasburg, Pa., August 18, from heart disease, aged 52.

Hannah Tyler Wilcox, M.D. Homeopathic Medical College of Missouri, St. Louis, 1884; died at her home in St. Louis, Nov. 22, 1909, aged 71.

Otis A. Jakway, M.D. University of Buffalo, 1875; a veteran of the Civil War; died at his home in Breesport, N. Y., August 14, aged 76.

William Fleet Nelson, for 33 years a practitioner of Clay county, Mo.; died at his home in Liberty, Dec. 26, 1909, from rheumatism, aged 60.

William W. Easton, M.D. Bennett Medical College, Chicago, 1877; died at his home in Dowagiac, Mich., July 14, from paralysis, aged 56.

Chalon Guard Campbell, M.D. Washington University, St. Louis, 1875; died at his home in San Bernardino, Cal., August 22, aged 61.

Pharmacology

[Contribution from the Chemical Laboratory of the American Medical Association]

CAPTOL

W. A. Puckner and L. E. Warren

"Captol" is a hair tonic put on the American market by Mülhens & Kropff, New York City under the following claims:

> "Captol is a newly invented chemical product of the Chemical Works, late Fr. Bayer & Co., Elberfeld."
>
> ". . . the outcome of the joint condensation of tannin and chloral and possessing neither the unpleasant secondary effects of tannin nor the particular irritating action so frequently observed in the employment of chloral."
>
> "The unrivaled hair tonic."
>
> "A preventive of baldness."
>
> "Contains: Not to exceed 70 per cent. alcohol, 4 grains chloral hydrate to the ounce, 3 grains Captol pure to the ounce."

Since, according to the circular, "Captol" is a condensation product of chloral and tannin the term "Captol" is evidently used by the manufacturer in two senses, viz., one intended to refer to the alleged chloral-tannin "synthetic" and the other meaning a solution of the "synthetic," together with other ingredients, in alcohol.

Several formulas for "Captol" hair tonics are found in pharmaceutical literature. As they are all similar, the following taken from the *Pharmazeutische Zeitung* (Vol. xlii, 1897, p. 770) may be taken as the type:

Captol	1.0
Chloral hydrate	1.0
Acid. tartaric	1.0
Castor oil	0.50
Perfume	q. s
Alcohol (65 per cent.) q. s. ad	100.0

In addition to these ingredients some of the suggested formulas contain resorcin and salicylic acid. It is stated in Hager's "*Handbuch der Pharmazeutischen Praxis*," Ergänzungsband, p. 203, that a "hair water" similar to the original may be made according to the following formula:

R

Chloral. hydrati	2.0
Acidi tannici	1.0
Acidi tartarici	1.0
Ol. ricini	0.25
Spiritus	65.00
Aqu. dest	35.00
Essentiæ odor. Violæ	5.00

An examination of the patent files showed that in 1897 a German patent was granted to the Farbenfabriken vorm. Friedr. Bayer & Co. (D. R. P. 98,272) for a process by which it was claimed that chloral and tannin could be combined. The new "synthetic" is described as a grayish-brown, fine, amorphous powder which is slightly soluble in cold water but readily soluble in alcohol.

Other than the above, the only information that could be obtained concerning the composition of this alleged tannin-chloral compound is found in the medical and pharmaceutical journals of about ten years ago. There it is stated that "Captol" is a condensation product of chloral and tannin, an assertion evidently based on the claims made in the patent specifications. While such statements have appeared in medical and pharmaceutical publications, an examination of price lists shows that at present there is apparently no such compound for sale on the American market. An order for "Captol," without other qualifications, placed with a large wholesale drug firm brought only the proprietary liquid preparation of that name. Chemical literature apparently shows no other record of such a compound having been made and studied either by the Farbenfabriken of Elberfeld Co., or by others. In reply to an inquiry for information concerning this alleged synthetic the Farbenfabriken of Elberfeld Co., New York, the American agents for Farbenfabriken, vorm. Friedr. Bayer & Co., stated that they did not handle it but referred to Mülhens & Kropff, the exploiters of "Captol" hair tonic. An inquiry for information addressed to this company and accompanied by a request for a specimen of the compound which is supposed to form the basis of the preparation, elicited no reply.

Since the tannin-chloral compound (if there be such) could not be procured on the American market, specimens of the hair tonic of the same name—put up in typical "patent medicine" form—were purchased and were examined in the Association laboratory.

The material examined was a dark, amber-brown liquid, smelling strongly of alcohol and eau de cologne. Qualitative tests indicated the presence of alcohol, tannic acid, chloral and traces of a fixed oil, perfume and coloring matter. Neither resorcin nor salicylic acid were found. Quantitative analysis showed that the preparation contains nearly 4 grains of chloral hydrate and about 6 grains of tannic acid in each fluid ounce, an amount of each substance greater than could possibly be present in 3 grains of "Captol" were such a compound present. Hence considerable quantities of chloral and tannin must be present in the free state. Since "Captol" (the "synthetic") is claimed to possess "neither the unpleasant secondary effects of tannin nor the particular irritating action of Chloral" its employment (as claimed) in a mixture containing both free tannin and chloral would be irrational and unscientific.

Analysis indicated that the composition of "Captol" is essentially as follows:

Chloral hydrate	0.83	gm. in 100 c.c. (3.8 gr. per fl. oz.)
Tannic acid	1.333	gm. in 100 c.c.
Tartaric acid	0.81	gm. in 100 c.c.
Alcohol (U. S. P.)	64.44	c.c. in 100 c.c.
Perfume	ā.ā., á trace	
Coloring matter		
Fixed oil (probably castor oil)		
Water (by difference) to make	100 c.c.	

No evidence was obtained that the tannin and chloral were combined in any way as the usual qualitative reactions for each substance were obtained. Bearing in mind the reluctance of the manufacturers to furnish information concerning the product, the dearth of reliable information in the literature concerning the tannin-chloral compound—Captol—and the negative evidence obtained by the examination of the material as it appears on the market, it seems very probable that no such compound of tannin and chloral is present and that the proprietary hair water "Captol" is nothing more than an aqueous-alcoholic solution of chloral hydrate, tartaric acid and tannin, with a little fixed oil, coloring matter and perfume.

Correspondence

Registration of Foreign Physicians

To the Editor: The comments on my letter in The Journal, August 6, are interesting. The correspondent of August 20 realizes the importance of legal regulation of registration of foreigners. The one who wrote August 27 is a Canadian and probably has some friends and countrymen who wish to register in the United States before long. He does injustice to the American physician. It is true that a great many old practitioners received complimentary recognition when state laws were first enacted. They could not well have been turned down, but to-day our recognized colleges are equal to those of other countries, and in some instances superior, as was shown by Dr. Honeij in The Journal, September 3, and our state examinations are so thorough that only well qualified men can pass. This, however, is not the fundamental question. We want recognition in other countries, which we will never have so long as we admit foreigners to our state examinations without requiring equal rights for our graduates from them. As I said in my first letter, why should foreign countries admit our graduates when we give them all the rights they could desire? If we should keep foreigners out until those countries decide to reciprocate with us, it would not be long before American physicians would be recognized the world over, and then we would be glad to welcome our friends from abroad and we would feel that we were their equals wherever we met them, at home and abroad.

A. J. Hoenes, Denison, Iowa.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HEALTH OFFICERS AND WATER PURIFICATION

To the Editor: I was much interested in the editorial on "Purification of Water" and on the necessity of having efficient health officers. Please direct me to the most up-to-date and practical filter for a town of about 10,000, and also give the method of coagulation and mechanical filtration.

E. B. Hardin, Florence, Ala.

Answer.—Probably the most useful book along this line is Hazen's "Clean Water and How to Get It," published by John Wiley and Sons, New York.

It is impossible to make recommendations for a specific local situation without full knowledge of the local conditions. Circumstances vary so greatly that a method or form of apparatus that might be very satisfactory in one locality would not be desirable in another. We would suggest that advice be obtained from some expert sanitary engineer, who can investigate local conditions and give an expert judgment. Names of competent firms can be obtained from either the *Engineering News* or the *Engineering Record*, New York City.

---

1. The analysis in detail will be sent on receipt of a stamped, addressed envelope. It will also be published in the annual report of the Chemical Laboratory.

PRONUNCIATION OF "DIPHTHERIA"

To the Editor.—What is the correct pronunciation of diphtheria. Is it *dif*-theria or *dip*-theria? F. E. S.

Answer.—Most authorities prefer the pronunciation *dif*-theria. *Dip*-theria is given as a second choice by several dictionaries: Century, Stormonth and Webster. The word is derived from the Greek *diphthera* (διφθέρα), a membrane, so that the pronunciation corresponds to the teymology.

PREPARATION OF SECTIONS FOR THE MICROSCOPE

To the Editor:—Please refer me to a late work on the preparation of specimens for the microtome and the technic for staining sections in pathologic work? V. L. Mann, Melrose, Mass.

Answer.—Mallory and Wright: Pathologic Technic, W. B. Saunders Co., Philadelphia. Lee: The Microtomist's Vade-Mecum, P. Blakiston's Son & Co., Philadelphia.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Aug. 27, 1910:

Norriss, H. C. R., M. R. C., relieved from duty at Vancouver Barracks, Wash., and will proceed to his home, and on arrival there report by telegraph to the Adjutant General of the Army for further orders.

Sanford, Joseph L., M. R. C., granted 30 days' leave of absence.

Hill, Felix R., lieut., left Fort George Wright, Wash., en route to Wallace, Idaho, on detached duty.

Graham, George D., D. S., left Fort Leavenworth, Kan., on 10 days' leave of absence.

Maul, Louis M., col., will proceed from Chicago, to Fort Benjamin Harrison, Ind., for duty at Camp of Instruction.

Hall, James F., capt., in addition to his other duties, will take charge of the office of the chief surgeon, Dept. of the Lakes, Chicago.

Persons, Elbert E., major, will, at the proper time, join the 11th and 18th Cos. Coast Artillery in New York City, and proceed with those organizations to San Francisco, and on completion of this duty return to station. Major Persons is authorized to delay one month en route on returning.

Hess, Louis T., major, will proceed, at the proper time, to Fort Mott, N. J., for duty with the 42nd and 138th Cos. Coast Artillery, en route to San Francisco. Major Hess is authorized to delay 10 days en route in returning.

Reasoner, M. W., capt., left camp, American Lake, Wash., en route to Butte Falls, Ore., with troops to fight fire.

Griswold, W. Church, M. R. C., relieved from duty at Fort Oglethorpe, Ga., Oct. 1, 1910, and will proceed to Brooklyn, reporting on arrival to the Adjutant General of the Army. Lieutenant Griswold is relieved from active duty in the M. R. C., to take effect on the expiration of leave of absence granted him this date for 1 month and 15 days, to take effect on arrival at Brooklyn.

Manly, C. L., major, granted leave of absence for 2 months.

McIntyre, H. B., capt., relieved from duty at Army General Hospital, San Francisco, and ordered to Fort Caswell, N. C., for duty.

Sanford, Joseph L., M. R. C., relieved from duty at Fort Caswell, N. C., and ordered to Fort Ruger, H. T., for duty.

Hopwood, L. L., capt., relieved from duty at Army General Hospital, San Francisco, and ordered to Fort Monroe, Va., for duty.

Bartlett, Wm. K., capt., relieved from duty at Fort Totten, N. Y., and ordered to the Philippines Division for duty on transport sailing from San Francisco, Nov. 5, 1910.

Heflebower, Roy C., lieut., relieved from duty at Army Medical School, and ordered to Fort Hamilton, N. Y., for duty.

Gentry, Ernest R.; Thearle, Wm. H., lieuts., relieved from duty at the Army Medical School and ordered to Fort Leavenworth, Kan., for duty.

Cooper, Alexander F., lieut., relieved from duty at Army Medical School, and ordered to proceed to San Francisco, for assignment to duty at Army General Hospital, San Francisco.

Risdon, Herbert T., D. S., recently appointed, will proceed from San Francisco, to Fort Miley, Cal., for temporary duty.

Woodson, Thomas D., lieut., reports arrival at Republic Wash., with Cos. B and C, 1st Inf., on detached service, left Camp, American Lake, Wash., Aug. 13, 1910.

Marshall, John S., E. D. S. D. S., admitted to Army General Hospital, San Francisco, for observation and treatment.

Patterson, R. F., D. S., left Fort Sheridan, Ill., en route to Fort Benjamin Harrison, Ind., on temporary duty.

Keller, William L., capt., left West Point, N. Y., with cadets on practice march.

Banister, William B., lieut. col., left Camp Bruce E. McCoy, Sparta, Wis., on leave of absence.

Jenkins, F. E., M. R. C., left Camp of Instruction, Fort Riley, Kan., on leave of absence.

Baily, Howard H., capt., ordered to proceed to Fort Ancient, Ohio, for duty as inspector-instructor of the First Ohio Brigade Encampment, from Aug. 27 to Sept. 4, 1910.

Thearle, Wm. H., lieut., granted 10 days' leave of absence about Sept. 1, 1910.

Crum, Wayne H., lieut., ordered to accompany Co. A, Signal Corps, to Fort Benjamin Harrison, Ind., for duty at Camp of Instruction.

Barney, Charles N., major, will report in person without delay to Brigadier General Wm. P. Hall, adjutant general, president Army Retiring Board, at Washington, D. C., for examination by the board.

Baker, David, major, leave of absence extended 20 days.

Bowman, M. H., M. R. C., ordered to Presidio of San Francisco, for temporary duty.

Pierson, Robert H., capt., left Vancouver Barracks, Wash., on detached duty, en route to Butte Falls, Ore.

Lynch, Edward C., M. R. C., reports for duty at Fort D. A. Russell, Wyo., Target and Maneuver Reservation, Wyo.

DeWitt, Wallace, major, left Fort Yellowstone, Wyo., on practice march with Troop E, 5th Cavalry.

Risdon, H. T., D. S., reported for duty at Fort Miley, Cal.

Heterick, R. H., M. R. C., left Fort Oglethorpe, Ga., en route to Key West, Barracks, Fla., on detached duty.

Changes for the week ended Sept. 3, 1910:

Hallett, Harley J., M. R. C., ordered to proceed to Fort Hamilton, N. Y., Aug. 29, for temporary duty.

Hill, Eben C., lieut., ordered to proceed to Pine Camp, N. Y., for duty.

Marietta, S. U., M. R. C., left Fort Des Moines, Iowa, en route to Camp at Fort Benjamin Harrison, Ind.

Baker, Frank C., major, left Fort Moultrie, S. C., en route to Camp at Fort Benjamin Harrison, Ind.

O'Connor, R. P., major, left Fort Screven, Ga., en route to Camp at Fort Benjamin Harrison, Ind.

Shaw, Henry A., major, granted 20 days' leave of absence.

Nichols, Henry J., lieut., on expiration of present leave of absence, will repair from duty in New York City to this city and report in person to Colonel Louis A. LaGarde, Medical Corps, president of the Army Medical School, for duty as assistant instructor in clinical microscopy and bacteriology at that school.

Wolfe, Edwin P., major, ordered to proceed from New York City to Philadelphia, on business connected with the Medical Department of the Army. Major Wolfe will also proceed from New York City to Middletown, Conn., on business connected with the Medical Department of the Army.

Howell, Park, capt., granted leave of absence for 2 months.

Norman, Seaton, M. R. C., ordered to proceed to Fort Huachuca, Ariz., for temporary duty.

Darnall, M. H., M. R. C., left Fort Washington, Md., on 10 days' leave of absence.

Long, Charles J., D. S., granted 2 months' leave of absence.

Kierulff, H. Newton, M. R. C., relieved from duty at Fort Missoula, Mont., and ordered to proceed to his home for further orders. Same date granted leave of absence for 1 month and 4 days.

Birmingham, Henry P., lieut.-col., leave of absence extended 20 days.

Mabee, James I., capt., left Jefferson Barracks, Mo., on 8 days' leave of absence.

Long, Charles J., D. S., reports for temporary duty at Madison Barracks, N. Y., from Pine Camp, N. Y.

McCaw, W. D., lieut.-col., left Washington, D. C., on 30 days' leave of absence.

Ireland, M. W., major, left Washington, D. C., on 18 days' leave of absence.

Lynch, Charles, major; Baily, Howard H., capt., and DeLaney, M. A., capt., detailed to act as judges of the Inter Coal Co. competition in the application of first aid to the injured, to be held Sept. 17, 1910, at Scranton, Pa.

Bundesen, H. N., M. R. C., granted 15 days' leave of absence.

LaGarde, Louis A., col.; McCaw, Walter D., lieut.-col., and Winter, Francis A., major, appointed members of a board to meet in this city, Sept. 20, 1910, for the examination of such applicants for appointment in the Medical Corps as may be invited to appear before the board.

Talbott, E. M., capt., on return to Fort D. A. Russell, Wyo., will proceed to Fort Riley, Kan., for duty at camp of instruction in command of one-half of Co. A, Hospital Corps.

Tenney, Elmer S., M. R. C., relieved from duty at Fort Strong, Mass., and ordered to proceed to the Philippine Islands for duty on the transport sailing from San Francisco about Nov. 5, 1910.

Slater, Ernest F., M. R. C., granted 30 days' leave of absence.

Medical Corps, U. S. Navy

Changes for the week ended Aug. 27, 1910:

Fitts, H. B., medical inspector, ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

Downey, J. O., P. A. surgeon, commissioned passed assistant surgeon from Aug. 1, 1909.

Straeten, R. J., P. A. surgeon, commissioned passed assistant surgeon from Dec. 20, 1909.

Steadman, W. G., Jr.; Donelson, M., and Baker, M. C., P. A. surgeons, commissioned passed assistant surgeons from July 12, 1910.

Leys, J. F., surgeon, ordered to temporary duty in the bureau of medicine and surgery, Navy Department.

Higgins, M. E., asst. surgeon, ordered to temporary duty at the Naval Medical School Hospital, Washington, D. C.

Dodge, A. H., asst. surgeon, granted sick leave for 3 months when discharged from treatment at the Naval Hospital, Mare Island, Cal.

Cohn, L. F., P. A. surgeon, commissioned passed assistant surgeon from Feb. 28, 1910.

Fitts, H. B., medical inspector, ordered home to wait orders, when discharged from treatment at the naval medical hospital school, Washington, D. C.

Richardson, R. R., surgeon, ordered to duty at the Navy Yard, Portsmouth, N. H., and to additional duty in connection with the *Southery*, the *Topeka* and the Naval Hospital at that place.

Valz, E. V., P. A. surgeon, detached from duty at the Navy Yard, Portsmouth, N. H., and ordered to duty at the Naval Prison at that place.

Iden, J. H., surgeon, commissioned surgeon from Oct. 31, 1909.

Seaman, W., surgeon, commissioned surgeon from Nov. 20, 1909.

Richardson, R. R., surgeon, commissioned surgeon, from Dec. 13, 1909.

Asserson, F. A., surgeon, commissioned surgeon, from Jan. 30, 1910.

Dunn, H. A., surgeon, commissioned surgeon from Feb. 5, 1910.

Stuart, A., surgeon, commissioned surgeon from Feb. 19, 1910.

Step, J., surgeon, commissioned surgeon from March 5, 1910.

Lee, A. E., P. A. surgeon, commissioned passed assistant surgeon from May 9, 1909.

The following named acting assistant surgeons are detached from duty at the places indicated and ordered to Washington, D. C., for examination for appointment as assistant surgeons: O. J. Miller,

Naval Hospital, Washington, D. C.; W. H. Halsey, Naval Hospital, Norfolk, Va.; J. J. Lynch, Naval Hospital, Boston; E. E. Woodland, Naval Hospital, Philadelphia; J. V. Howard, Naval Hospital, Philadelphia; O. O. Hightower, Naval Hospital, New York; E. P. Halton, Naval Training Station, Newport, R. I.; A. L. Jacoby, Naval Hospital, Newport, R. I., and W. E. Eaton, Naval Hospital, Boston.

Wilson, G. B., surgeon, ordered to duty on board the *New York* as fleet surgeon of the Asiatic Fleet.

Huff, E. P., P. A. surgeon, detached from the *Charleston* and ordered to the *New York*.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended Aug. 31, 1910:

Gassaway, Jas. M., surgeon, granted 1 month leave of absence from Aug. 7, 1910, on account of sickness.

Gardner, C. H., surgeon, granted 1 month leave of absence from Sept. 1, 1910.

Anderson, John F., P. A. surgeon, directed to proceed to Chicago and Milwaukee, on special temporary duty. Detailed to attend the annual meeting of the American Public Health Association, to be held in Milwaukee, Wis., Sept. 5-9, 1910.

King, W. W., P. A. surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Naples, Italy, and report to Surgeon H. D. Geddings, for duty.

Moore, Dunlop, P. A. surgeon, leave of absence for 14 days from Aug. 10, 1910, amended to read 10 days from Aug. 18, 1910.

McClintic, F. B., P. A. surgeon, granted 6 days, leave of absence from Aug. 22, 1910.

Goldberger, Jos., P. A. surgeon, directed to proceed to Reedy Quarantine Station on special temporary duty.

Vogel, Chas. W., P. A. surgeon, leave of absence for 15 days from Aug. 10, 1910, amended to read 12 days.

McLaughlin, A. J., P. A. surgeon, directed to report to Surgeon Rupert Blue, for duty Aug. 13, 1910.

Stimson, A. M., P. A. surgeon, granted 14 days' leave of absence from Sept. 6, 1910.

Foster, A. D., P. A. surgeon, granted 10 days' leave of absence en route to station, granted 30 days' leave of absence from Aug. 30, 1910.

Roberts, Norman, P. A. surgeon, granted 12 days' leave of absence from Sept. 6, 1910.

Frost, W. H., P. A. surgeon, detailed to attend the meeting of the State Board of Health at Des Moines, Iowa, Aug. 17, 1910. Directed to proceed to Britt, Iowa, on special temporary duty.

Grimm, R. M., asst.-surgeon, granted 4 days' leave of absence from Sept. 1, 1910.

Knight, Carlisle P., asst.-surgeon, relieved from duty at Buffalo, N. Y., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Boyd, Frank, acting asst.-surgeon, granted 20 days' extension leave of absence from May 27, 1910, on account of sickness.

McDaniel, S. E., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 14, 1910, under paragraph 210, Service Regulations.

McGinnis, R. H., acting asst.-surgeon, granted 19 days' leave of absence from Sept. 11, 1910.

Robertson, Herman, acting asst.-surgeon, granted 6 months' leave of absence without pay from Sept. 1, 1910.

Rodman, J. C., acting asst.-surgeon, granted 7 days' leave of absence from Aug. 30, 1910.

Rosello, M. M., acting asst.-surgeon, granted 5 days' leave of absence from June 27, 1910, under paragraph 210, Service Regulations.

Rush, John O., acting asst.-surgeon, leave of absence granted Aug. 6, 1910, amended to read 14 days from Aug. 13, 1910, with pay, and 28 days from Aug. 27, 1910, without pay.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC

The Opposition to a National Department of Health

Good Health, under the heading "The Animus Behind the Opposition to the National Department of Health," editorially comments:

"There is abundant reason for believing that the 'patent medicine' interests are a prime mover in the active opposition which has recently appeared to Senator Owen's Bill providing for the establishment of a national department of health. This would be naturally expected, since the 'patent medicine' man is the only one of the numerous sorts of medical fakirs likely to come in any way within the province of the proposed board. Magnetic healers, Christian Scientists, faith healers, clairvoyant doctors, hypnotists, palmists and fortune tellers will be allowed to ply their arts on the gullible public without molestation by the national department of health. Neither can it possibly come within the province of the proposed department to interfere in any way with practitioners of medicine of any of the recognized schools, whether regular, so-called, or irregular. The field of the new board will be prophylactics; therapeutics, or the treatment of disease is a matter which by no stretch of the imagination could be considered a proper subject for regulation or even investigation by the national department of health.

"But the 'patent medicine' man is a bird of another feather. He bottles up all sorts of stuff, often deadly poisons, and puts on labels claiming miraculous qualities for his pernicious decoctions. Investigation of his wares and publicity in relation to their properties are the most deadly blows which can be aimed at his business. No doubt, one of the first duties of a national department of health would be to investigate the doings of the 'patent-medicine' vendors. It is not at all surprising that they see in Senator Owen's bill the handwriting on the wall which spells calamity and disaster for their nefarious traffic."

After stating that the "patent-medicine" and other interests opposed to national health legislation have been spending from $10,000 to $25,000 a day in newspaper advertising for the purpose of misleading the public, and quoting a letter from Prof. Irving Fisher on this point, the editorial concludes:

"It is noticeable that among the newspapers which have been the most active in opposing Senator Owen's bill are those which in time past, through the efforts of medical men, have been convicted and punished for aiding abortionists and others in their criminal work through the agency of their advertising columns. Christian scientists, osteopaths, and the partisans of other peculiar medical or antimedical beliefs, have nothing whatever to fear on the proposed national board of health, for it will not concern itself in the least with questions of this sort."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month—First Weekly Meeting

Etiology

Historical: Many organisms "established" as cause. Hallier, Lustgarten, Seigel, Van Niessen and many others. Schaudinn and Hoffman.

Treponema Pallidum: Size, length, shape, flagellæ, motility. Methods of staining, identification. Found in all syphilitic lesions, in acquired and congenital cases. Transmission to apes and monkeys. Effect of antisyphilitic treatment.

Contagion and Immunity

Modes of Infection: 1. Sexual contact. 2. Accidental infection, extra-genital chancres. 3. Hereditary transmission: (a) sperm inheritance, (b) germ inheritance, (c) placental transmission.

Nature of Virus: Occurrence in blood, secretions and excretions of body; in primary, secondary and tertiary lesions.

Immunity: Acquired immunity. Profeta's immunity. Colles' immunity.

ACQUIRED SYPHILIS

Clinical History

Primary Stage: Incubation; chancre, typical chancre, varieties of chancre, genital and extragenital chancres, course and complications. Lymphatic involvement.

Secondary Stage: Constitutional disturbances, fever, general lymphatic involvement, arthritis, blood changes, alopecia, ocular symptoms, changes in nervous symptoms. Syphilides, erythematous, papular, pustular, tuberculous, pigmented, varieties of each. Lesions of mucous membranes.

Tertiary Stage: Effect of treatment on tertiarism. Relation to primary and secondary symptoms. Tertiary syphilides, tuberculous, gummatous and ulcerative. Gummata, visceral lesions. Amyloid degeneration.

Quaternary Stage: Parasyphilis. Tabes, dementia paralytica, nervous affections, pigmented syphilides, affections of tongue.

State Boards of Registration

COMING EXAMINATIONS

IOWA: Capitol Building, Des Moines, September 12-14. Sec., Dr. Guilford H. Sumner, State House.

MASSACHUSETTS: State House, Boston, September 13-15. Sec., Dr. Edwin B. Harvey.

MISSOURI: Capitol Building, Jefferson City, September 20-22. Sec., Dr. Frank B. Hiller.

NEW YORK: Albany, September 27-30. Chief of Examinations Division, Dr. Charles F. Wheelock.

Ohio June Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports the written examination held at Columbus, June 13-15, 1910. The number of subjects examined in was 12; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 151 of whom 147 passed including 13 osteopaths and 4 failed, including one osteopath. Thirty-eight candidates have been licensed through reciprocity since Jan. 1, 1910. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED		
Rush Medical College	(1910)	87.5
Harvard Medical School	(1907)	82.2
Starling-Ohio Medical College	(1910)	76.1, 76.1, 78, 78.1, 78.4, 80, 80.4, 80.9, 81.1, 81.1, 81.3, 81.4, 81.4, 81.5, 82.2, 82.9, 83.4, 83.6, 83.6, 84.2, 84.7, 84.9, 85.2, 85.6, 85.8, 86, 86, 86, 86.6, 87.2, 87.5, 87.6, 88, 88.1, 88.2, 90.2, 90.4, 90.6, 90.8, 91, 91.4.
Western Reserve University	(1910)	79.9, 81.2, 81.4, 81.4, 83, 84, 84.5, 84.6, 85.9, 86.1, 86.5, 86.5, 86.9, 87, 87.5, 87.6, 88.2, 88.7, 90.4, 92.
Ohio Miami Medical College	(1910)	78, 80.2, 83, 83.7, 84.5, 85.7, 86.7, 87.1, 87.4, 87.5, 87.7, 88.5, 91.1, 91.1.
Medical College of Ohio	(1903)	75.4
Pulte Medical College	(1910)	83.8, 88.2, 89.4
Eclectic Medical College, Cincinnati	(1909) 75.1; (1910)	79.7, 81.4, 84.4, 84.5, 85.1, 86.7
Starling Medical College	(1898)	80.1
Cleveland College of Physicians and Surgeons	(1910)	82.4, 83.3, 83.6, 84.1, 84.5, 84.6, 85.4, 85.7, 85.7, 86.4, 86.6, 86.6, 88.3, 88.4, 88.8, 89.5, 91.7, 92.1.
Toledo Medical College	(1910)	80.2, 80.4, 81.7, 83.2, 84.7, 86.4, 90, 90.9, 90.9.
Miami Medical College	(1909)	80.8
Cleveland Homeopathic Medical College	(1909) 89; (1910)	76.2, 81, 85.2.
University of Pennsylvania	(1909) 89.1, 92.8; (1910)	82.9
Jefferson Medical College	(1901) 88.7; (1909)	85.4, 92.3
Hahnemann Medical College and Hospital, Philadelphia	(1894) 86.4; (1910)	83.
Meharry Medical College	(1910)	77
Queen's University, Kingston, Ontario	(1907)	85.6
University of Toronto, Ontario	(1909)	87.1
University of Palermo, Italy	(1902)	76.
FAILED		
Kentucky School of Medicine	(1903)*	
Starling-Ohio Medical College	(1909)*	
Cleveland Homeopathic Medical College	(1910)*	

LICENSED THROUGH RECIPROCITY SINCE JANUARY 1, 1910

College.	Year Grad.	Reciprocity with.
Howard University, Washington, D. C.	(1906)	Dist. Colum.
Rush Medical College	(1909)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1907) (1908) (1909)	Illinois
Northwestern University Medical School	(1901)	Illinois
Chicago College of Medicine and Surgery	(1910)	Illinois
Jenner Medical College	(1908)	Illinois
Indiana Medical College	(1906) (2, 1907)	Indiana
Physio-Medical College of Indiana	(1906)	Texas
Medical College of Indiana	(1888)	Indiana
Kentucky School of Medicine	(1883)	Illinois
Maryland Medical College	(1901)	West Virginia
College of Physicians and Surgeons, Baltimore	(1887) (1909) Maryland; (1909)	West Virginia
Baltimore University	(1899)	Maine
University of Michigan, Dept. of Med. and Surg.	(1907) (3, 1909)	Michigan
Detroit Homeopathic College	(1906)	Michigan
Marion-Sims College of Medicine	(1899)	West Virginia
St. Louis University	(1906)	Illinois
Columbia University, College of Physicians and Surgeons	(1895)	New York
Eclectic Medical College of New York	(1896)	New York
University and Bellevue Hospital Medical College	(1899)	Indiana
Leonard School of Medicine	(1908)	Maryland
Ohio Medical University	(1903)	Indiana
Pulte Medical College	(1897)	Indiana
Medical College of Ohio	(1889)	Indiana
University of Pennsylvania	(1908)	West Virginia
Jefferson Medical College	(1906) (1907)	New York
Tennessee Medical College	(1893)	Michigan
University of Virginia	(1904)	Maine

* Percentage not given.

The following questions were asked:

ANATOMY

1. Give the origin, course and distribution of the brachial artery. 2. What are the relations of the pneumogastric nerve in the neck? 3. How many bones in a lower extremity? Name them. 4. Name the cerebral lobes and fissures. 5. Give origin, insertion and action of the triceps muscle. 6. Name the parts of the digestive system. 7. Name the muscles of mastication. 8. Give the blood supply of the stomach. 9. What is the cauda equina, foramen of Winslow, optic thalamus, urachus, canal of Nuck? 10. What difference in the structure of voluntary and involuntary muscular tissue?

OBSTETRICS AND DISEASES OF WOMEN

1. What changes take place in the blood during pregnancy? 2. What purpose do these changes conserve? 3. Give briefly some of the theories which explain how, following labor, the placenta separates from the uterine wall. 4. Give the data on which at term a diagnosis of first position of the vertex may be made without making a vaginal examination. 5. Name some of the causes which predispose to hemorrhage after labor. 6. You are called at the outset of labor and find a brow presenting, what do you advise? 7. Differentiate between a tubal pregnancy and an acute salpingitis. 8. Name some of the causes and give the treatment of acute cystitis. 9. How would you treat a hematoma of the scalp in the new born? 10. What have you to say concerning chronic endometritis as a cause of sterility; give its treatment.

PATHOLOGY

1. Name the different kinds of necrosis. 2. Describe the pathology of pyosalpinx. 3. Describe the microscopic appearance of a tubercle. 4. Name the different kinds of aneurism. 5. Define pyemia, septicemia, toxemia, and bacteriemia.

DERMATOLOGY, SYPHILOLOGY, AND DISEASES OF THE EYE, EAR, NOSE AND THROAT

1. Describe ichthyosis and its varieties. 2. How does chronic eczema of the palms of the hands appear and how is it treated? 3. Describe lichen planus (Wilson), its varieties and mention the treatment. 4. Describe macular syphilids, or syphilitic roseola. 5. When should the treatment of syphilis be commenced and how should it be conducted? 6. Define hypermetropia, how does it occur and how is it corrected by lenses. 7. Describe catarrhal conjunctivitis. How is it treated? 8. What is atrophic rhinitis? How is it cured? 9. Describe chronic catarrhal inflammation of the middle ear. 10. Describe perichondritis of the laryngeal cartilages.

DIAGNOSIS

1. How are functional or hemic murmurs discriminated from organic murmurs? 2. Aphasia in its varieties. What central lesions indicate? 3. Determine diagnostic value of laryngeal paralysis. 4. What diagnostic significance is derived from a gross examination of the sputum? 5. What diagnostic significance has coma.

PRACTICE OF MEDICINE

1. How would you diagnose hereditary syphilis in a child? 2. What are the causes and symptoms of multiple neuritis? 3. Name the symptoms or physical signs of locomotor ataxia. 4. What is apoplexy? Give its etiology and state briefly the symptoms. 5. What is the significance of the Wassermann reaction? How is it obtained? 6. Name conditions with which uremia may be confounded. 7. Give the symptoms and physical signs of thoracic aneurism. 8. How would you treat lobar pneumonia? 9. Give treatment of epidemic and endemic influenza and give sequelæ. 10. How would you diagnose and treat cholera morbus?

SURGERY

1. Give the diagnostic signs of a typical case of pericardial effusion. What is the treatment? 2. Give the treatment of a fractured costal cartilage. 3. Diagnose a case of gall-stones. How treat? 4. Differentiate extra-uterine pregnancy, ovarian cyst, and peritoneal effusion. 5. Diagnose anterior luxation of the hip joint. How correct? 6. Diagnose calculus of bladder. How treat? 7. Diagnose and give the significance of two kinds of chancre. How treat. 8. How would you treat a case of gonorrheal cystitis? 9. What important structures may be wounded in a vaginal hysterotomy? 10. Differentiate pregnancy and intra-uterine fibroid.

CHEMISTRY

1. How does oxygen give strength to the body? 2. Describe the element that is a part of all acid compounds. 3. What is glycogen, where found, and from what derived? 4. What elements belong to the nitrogen group? Give the properties and uses of the one you consider the most important. 5. What is the amount of CO in the atmosphere and why does it not increase? 6. In what part of the body and in what forms is phosphorus found? 7. Name the most important elements entering into the composition of the human body. 8. Give the principal constituents of milk. How would you detect water adulteration in milk? 9. What is a poison? 10. Name a poison which has a local and a remote effect and give its antidote.

PHYSIOLOGY

1. Describe a cell. How are cells propagated? 2. What are the elementary tissues and how are their cells classified? 3. What constitutes the cerebrospinal nervous system? 4. What results are observed when the seventh cranial nerve is paralyzed? 5. What is the relation between blood pressure and the pulse rate? 6. What

changes take place in the blood during respiration? Where and how is it accomplished? 7. In a general way, of what does digestion consist? 8. What are enzymes and how do they act? 9. What is the function of the pancreatic juice? 10. What are the solid constituents of the urine and what conditions may change their quantity in health?

MATERIA MEDICA AND THERAPEUTICS (REGULAR)

1. Explain the action of heat and cold as therapeutic agents and mention indications for each. 2. Under what conditions would you advise arterial transfusion of blood? What advantage has the process over hypodermoclysis? What disadvantage? 3. Given a case of diphtheria in a child five years old. Describe in detail your treatment and the effect expected of the remedy. 4. When should silver nitrate and when should the organic salts of silver be used in the treatment of ophthalmia neonatorum? 5. Give some indications for the use of thyroid gland. What untoward effects are produced by over use? 6. Give some indications for the use of arsenic. In what forms may it be used? Give dose of each and symptoms resulting from its excessive use. 7. Outline a diet for a patient suffering with diabetes mellitus. Also for one suffering with chronic interstitial nephritis. 8. What would you use to overcome pleurisy with effusion? Explain action. 9. Explain the physiologic action of the salines. 10. For what conditions would you advise *x*-ray treatment? How long should the patient be exposed at a single sitting? When would you advise him to return for treatment if a series of treatments were advised?

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC)

1. Explain the action of heat and cold as therapeutic agents and mention indications for each. 2. Name the salient symptoms that would lead you to prescribe opium. In what doses would you prescribe it? Is a careful history of the case essential? How many alkaloids has opium? Name five. 3. In prescribing—what is the only true scientific basis for the selection of a drug? 4. Given—swelling and suppuration of glands; exostosis, curvature, caries, pale bloated face, ulceration of skin, swelling of nose and upper lip, scabs on hairy scalp, otorrhea—cancerous affection. Prescribe. 5. Give some indications for the use of thyroid gland. What untoward effects are produced by over use? 6. Diagnose dysentery and give the three most likely indicated remedies. 7. Given—a woman extremely pale, not emaciated, pulse rapid, 160, almost imperceptible at wrist, slow of comprehension, difficult respiration, coldness of extremities, finger nails blue, excessive hemorrhage from uterus, history of pregnancy negative, single—give the homeopathically indicated remedy. What would you do? 8. How would you treat a case of membraneous croup? What germ is present? Name three remedial agencies that will probably be indicated during progress? 9. Differentiate calcarea carb and silicea. Rhus tox and lachesis. 10. For what conditions would you advise *x*-ray treatment? How long should the patient be exposed at a single sitting? When would you advise him to return for treatment if a series of treatments were advised?

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC)

1. Explain the action of heat and cold as therapeutic agents and mention indications for each. 2. In what class of agents would you place passiflora? How would you prescribe it? What indications would guide you? 3. What are the properties of gelsemium? What are its indications and in what diseases is it useful? 4. Give dose and indications for use of apocynum. Name some conditions in which you would prescribe it. 5. Give some indications for the use of thyroid gland. What untoward effects are produced by over use? 6. Give indications for bryonia and diseases in which it is useful. 7. What uses would you make of phenol (carbolic acid) in practice? How use it? 8. Chionanthus—In what conditions is this agent useful? What are indications for it? 9. What is the formula of Dover's powder? What are its properties and uses? 10. For what conditions would you advise *x*-ray treatment? How long should the patient be exposed at a single sitting? When would you advise him to return for treatment if a series of treatments were advised?

Pennsylvania June Reports

The Medical Council of Pennsylvania reports the written examinations held at Philadelphia, Pittsburg and Harrisburg, June 21-24, 1910. The number of subjects examined in was 7; percentage required to pass, 75.

At the examination held by the State Medical Society of Pennsylvania, the total number of candidates examined was 347, of whom 308 passed and 39 failed. The following colleges were represented:

College. PASSED	Year	Total No. Examined.
[illegible] Medical College	(1909)	1
Bennett Medical College	(1909)	1
Chicago College of Medicine and Surgery	(1910)	1
College of Physicians and Surgeons, Baltimore	(1908) (7, 1910)	8
University of Maryland	(1908) (4, 1910)	5
Johns Hopkins University	(1908) (1909) (4, 1910)	6
Baltimore Medical College	(1910)	3
Maryland Medical College	(1910)	1
University Medical College, Kansas City	(1910)	1
Columbia University, College of Physicians and Cleveland College of Physicians and Surgeons	(1910)	1
Starling-Ohio Medical College	(1910)	1
[illegible]	(1907) (1909)	2
Jefferson Medical College	(1880) (2.1908) (2, 1909) (43, 1910)	48
University of Pennsylvania	(1900) (1905) (1908) (4, 1909) (73, 1910)	80
University of Pittsburg	(1908) (4, 1909) (50, 1910)	55
Woman's Medical College of Pennsylvania	(2, 1908) (10, 1910)	12
Medico-Chirurgical College, Philadelphia	(1902) (46, 1910)	47
Temple University	(1910)	27
University of Nashville	(1907) (1909)	2
Medical College of Virginia	(1910)	1
University of Edinburgh, Scotland	(1909)	1
University Lausanna, Switzerland	(1903)	1

College. FAILED	Year Grad.	Per Cent.
Howard University, Washington, D. C.	(1907)	63.1, 68.
Chicago College of Medicine and Surgery	(1910)	71.4
Atlanta School of Medicine	(1910)	65.2
Kentucky University	(1906)	64.3
College of Physicians and Surgeons, Baltimore	(1910)	66.5
Maryland Medical College	(1910)	40.6, 58.7, 61.7, 63.4, 66
University of Maryland	(1909)	65.1; (1910) 70.5, 70.8
Baltimore University	(1905)	60.7
Baltimore Medical College	(1910)	66.6, 68.2, 69.2, 71.1
Ohio Medical University	(1905)	64.1
Medico-Chirurgical College, Philadelphia	(1910)	57.8, 61.7, 66.6, 67.1, 70.2, 71.1, 71.8
Temple University	(1910)	71.1, 71.5, 72.7
University of Pittsburg	(1909)	70.2; (1910) 61.5, 68.9, 70.1, 70.3, 70.3.
University of Pennsylvania	(1910)	65.8
Meharry Medical College	(1902)	51.5
University of Toronto, Ontario	(1905)	70.2

At the examination held by the Homeopathic Medical Society, the total number of candidates examined was 34 of whom 29 passed and 5 failed. The following colleges were represented:

College. PASSED.	Year Grad.	Total No. Examined.
Atlantic Medical College	(1910)	2
University of Michigan, Homeopathic College	(1909)	1
Pulte Medical College	(1910)	1
Hahnemann Medical College and Hospital, Philadelphia	(1908) (2, 1909) (22, 1910)	25

College. FAILED	Year Grad.	Per Cent
Hahnemann Medical College and Hospital, Chicago	(1909)	63.5
Hahnemann Medical College and Hospital, Philadelphia	(1909)	61.8; (1910) 62.1, 65.2, 68.8

At the examination held by the Eclectic Medical Society, the total number of candidates examined was 20 all of whom passed. The following colleges were represented:

College. PASSED.	Year. Grad.	Total No Examined
Georgia College of Eclectic Medicine and Surgery	(1910)	1
Bennet Medical College	(1910)	3
University of Louisville	(1910)	1
Atlantic Medical College	(1908) (2, 1910)	3
Maryland Medical College	(1905) (1906) (1909) (3, 1910)	6
Baltimore University	(1899) (1904)	2
Baltimore Medical College	(1910)	1
Eclectic Medical College, Cincinnati	(1910)	2
Medico-Chirurgical College, Philadelphia	(1910)	1

Medicolegal

Privilege and Waiver of Same Extend to Statements Made by Physicians

The Supreme Court of Nebraska says, in Bryant vs. Modern Woodmen of America (125 N. W. R., 621), that the insured in his application waived for himself and his beneficiaries "the privilege or benefits of any and all laws which are now or may be hereafter in force making incompetent the testimony of or disqualifying any physician from testifying concerning any information obtained by him in a professional capacity." When, however, the testimony of a physician who had previously amputated the man's arm above the wrist was offered to show that he told the man at that time that he was suffering from tuberculosis of the wrist, the evidence was excluded on the ground that the communication from the physician to the patient was a privileged one, and had not been waived. But holding that it had not been waived was error.

A statement of fact or opinion expressed by a physician to a patient in the course of a professional visit, based on a relation of facts by the patient, or on a physical examination by the physician, is as much a privileged communication as the facts or statements on which it is based. It is a part of the same transaction, and, if the statute excludes the facts disclosed by the patient, it must equally exclude the statements and the opinions, expressed or unexpressed, of the physician, if its protection is to be of any avail. If the physician is permitted to disclose what he said to the patient, the patient's privilege to prevent the disclosure of a communication by him to the physician or the result of an examination would be of little use; for by indirection a disclosure of the nature of the disease would in many instances be made.

A waiver of the privilege or benefit of the protecting statute is a waiver of the disqualification as to the whole transaction, and not as to a part of it only. And, in view of the statements in the application, if the evidence should prove that the insured had consulted reputable physicians as to his condition, and that he had been told by them that he was suffering from such an insidious and dangerous disease as tuberculosis at a time so near the time of making the application as to rebut and repel the idea of forgetfulness or good faith on his part, the concealment of such a fact, so material to the risk, and one that if known his application would have been rejected, would render void the contract. The offered evidence would tend to show notice and knowledge by the applicant of the actual facts as to his condition before he made the representations in his application. It was material to the issues, and since the privilege was waived, was admissible.

Limit to Responsibility of Employer Selecting Surgeon—Skill and Learning Required—Sufficiency of Fluoroscopic X-Ray Examination Without Making Photograph

The Supreme Court of Washington holds, in Wells vs. Ferry-Baker Lumber Co. (107 Pac. R., 869), that where an employer withholds $1 per month from the wages of its employees, and pays same to a physician or surgeon selected by it, the implied duty of the employer is to select a competent physician and surgeon, and when it does so it discharges its full legal obligation. There being no express contract between the employer and its employees, and no profit resulting to the employer, it is a noncompensated or gratuitous trustee, and is liable only for a failure to use reasonable care in the selection of a competent surgeon.

A physician and surgeon by taking charge of a case impliedly represents that he possesses, and the law imposes on him the duty of possessing, reasonable skill and learning. He is not liable for mistakes if he uses the method recognized and approved by those reasonably skilled in the profession.

The plaintiff in this case, an employee of the defendant company, had a fall in which the bones of each wrist were broken, but alleged that the surgeon selected by the company negligently treated the left one for a sprain. The evidence disclosed that the surgeon at first expressed the opinion that both arms were broken, but said that he would examine them with the *x* ray; that he did so, and then said that there was a fracture of the right wrist, but that the left was sprained; that he so treated them; that the right wrist was restored to its normal condition; that, on complaint from time to time that the left wrist was painful and not improving, he re-examined it with the *x*-ray at least three times; that each examination confirmed his later opinion that it was sprained and not broken; that he said to the plaintiff whenever he complained of the pain that a sprain was "worse" than a break. The *x*-ray examinations were what were termed "fluoroscopic," to make which, as it was explained, "You use an *x*-ray, but instead of taking a picture you have an apparatus that you hold in the hand and look through the arm." The only negligence claimed was that the attending surgeon failed to take an *x*-ray photograph so as to make certain his diagnosis.

The conclusion, the Supreme Court says, is irresistible, that the surgeon used reasonable diligence and skill, and that to permit a recovery of damages would establish the rule that a surgeon is liable for a failure to use extraordinary care and diligence in both diagnosis and treatment. The surgeon who testified that an *x* ray photograph should have been taken stated that he had practiced his profession for a period of 20 years, and that he had never had an *x* ray machine. He examined the plaintiff for the first time about 17 months after the injury, and took *x*-ray photographs of the left wrist which he said showed a fracture which in his opinion a like investigation in the beginning would have revealed. Another surgeon said that the *x* ray was used only as a matter of extreme care. Viewing the testimony in the light most favorable to the plaintiff, it clearly showed that the attending surgeon used reasonable care, skill and diligence in diagnosis and treatment. A verdict for the plaintiff could not be permitted to stand, and a judgment resting on it would be set aside.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

August 27

1 Report of the Scoliosis Department of the Children's Hospital, Boston. J. W. Sever, Boston.
2 Historical Notice of the Operation of Cesarean Section from the First Operation to the Middle of the Eighteenth Century. C. G. Cumston, Boston.
3 *Lactic Acid Bacteria: What They Are and What They Are Supposed to Do. A. I. Kendall, Boston.
4 Fracture of the Lower Epiphysis of the Tibia. A. O'Reilly, St. Louis.
5 *Hygienic and Dietetic Treatment of Delicate Children by the Class Method. W. R. P. Emerson, Boston.
6 Presence of Air in the Blood Vessels in Medicolegal Autopsies. G. L. West, Newton, Mass.

3 and 5. These articles also appear in the *Archives of Pediatrics*, August, 1910. For abstract of Dr. Emerson's paper, see abstract No. 57.

Medical Record, New York

August 27

7 Postoperative History of Eighteen Cases of Magnetic Foreign Bodies Removed from the Eye by the Haab or Giant Magnet. C. S. Bull, New York.
8 Importance of Early Recognition of Cancer. I. Levin, New York
9 *Adaptation of the Human Saliva to Diet. L. B. Mendel, J. Chapman and A. F. Blood, New Haven, Conn.
10 *Chemistry of the Urine in Pulmonary Tuberculosis. R. W. King, Las Animas, Colo.
11 Simple Extraction of Cataract. J. S. Fernandez, Havana.
12 The Car Barn Bandits. A Study in Degeneracy. G. F. Lydston, Chicago.
13 Case of Sarcoma of the Adrenal Gland. J. A. Jackson, Indianapolis.
14 Anchoring the Kidney for Dislocation or Displacement. E. N. Liell, Jacksonville, Fla.
15 Two Cases of Actinomycosis. H. Jones, Circleville, O.

9. **Adaptation of Human Saliva to Diet.**—Mendel and his assistants detail experiments made by feeding persons with starchy substances to see whether there is any ground for the belief that diet will change the saliva, inducing adaptation to the diet furnished. There are a large number of variable factors aside from diet that affect the activity of the saliva. The author made use of Wohlgemuth's method of testing the concentration of amylose in the saliva. Individuals were treated for a period of from 7 to 10 days with a mixed diet; then without any starches for a second period, and later with carbohydrates alone. The results obtained would go to show that there is no adaptation of the saliva to the diet selected. In two vegetarians it was found that the saliva was no more active than in other normal individuals.

10. **Chemistry of Urine in Pulmonary Tuberculosis.**—It is claimed by King, who has done some original work in this line that the urine would show wasting and an imperfect interchange of gases due to diseased lung tissue. Wasting should be shown by the urea excretion, and imperfect interchange by the elimination of the purin bodies. He tabulates the results in 52 cases, 43 of which represented various stages in patients who were able to be out of bed, the others being

bed cases. If the patient is near a fatal termination the urine will measure between 600 and 800 cc.; it will have a decided red color from pigments of blood cells that are being destroyed: it will show a urea reaction that is more than 4.00, and the urinometer reading will be between 20 and 25. Specific gravity undergoes little change. Uric acid is not increased to any great degree. Tuberculosis produces a relative increase in the principal products of nitrogenous metabolism. If the volume of urine expressed in hundred c.c. be multiplied by the urinometer reading, we shall get a so-called V-G factor; if this be low it indicates that the patient is not taking sufficient nourishment to sustain the body in a state of health. The author introduces various new reactions that are explained in connection with the tables.

New York Medical Journal

August 27

16 Oral Prophylaxis. L. A. Faught, Philadelphia.
17 *Hypothyroidism. H. L. Pitfield, Philadelphia.
18 *Critical Analysis of 180 Cases of Acute Intraperitoneal Infection. E. MacD. Stanton, Schenectady, N. Y.
19 "Celestial" Surgery. J. Knott, Dublin, Ireland.
20 The Use of the Association Tests in the Study of Certain Types of Insanity. E. Gillespie, Binghamton, N. Y.
21 Atony of the Stomach (concluded). J. W. Weinstein, New York.
22 Diphtheria Bacillus-carriers. W. G. Bissell, Buffalo.
23 *Anemic Ulcers of the Throat. A. G. Pohly, New York.

17. **Hyperthyroidism.**—Hyperthyroidism, says Pitfield, may be so mild as to cause a few pains and aches, or so severe as to render the victim a bedridden, neurasthenic invalid; ugly, perhaps, and miserable; and often a complete puzzle for the medical attendant. Not always is the patient myxedematous. He or she may be so far advanced in the disease that the atrophic form obtains with emaciation and cachexia, so extreme that no subcuticle tissue, save bones and muscles, remain. Or the disease may be so slight that almost no skin changes are apparent, as in the cases reported by Pitfield. In fact, the patient may be rather fair to look on and yet have so many nervous symptoms as to be miserably ill, and in the eyes of many doctors a nervous, rheumatic crank.

Pitfield has seen in all nine cases in private practice. One patient was so myxedematous that she and her family preferred that she should not appear in public places, because she attracted the attention of nearly everybody by her hippopotamus gait. Two other patients were merely fat looking with puffy faces and swollen eyelids; one was a cachectic, prematurely old and withered-looking woman invalided for years, in whom there was but little suggestion of myxedema; two were comely, handsome women, one 35 and the other 53 years of age; another a thin, nervous little woman, a familiar type, with many ills and no myxedema. All had several things in common. All had had children. All had joint pains that were called rheumatism. The fat ones were all thought to have nephritis, the thin ones nervous prostration. And all without exception had had a galaxy of doctors who had misdiagnosticated their ills.

Any woman approaching middle life or in the fourth decade, who has had a history of backache, an occipital headache, together with joint pains, dyspnea, asthenia, should be suspected of having hyperthyroidism, especially so if she has amenorrhea or had had it during the menstrual life. The treatment consists in the administration of thyroid extract.

18. **Peritoneal Infection.**—Analysis has convinced Stanton that the complete removal of the infection is the ideal procedure and that removing the source of the infection and instituting a postoperative regime of peritoneal rest (Murphy's method) gave almost ideal results in early cases of peritonitis. He failed to get good results, however, when he attempted to apply Murphy's method to patients with peritoneal infection of more than 10 hours' duration, though the most severe intermediate stage cases gave almost no worry at all when put on the Ochsner treatment. Once the peritoneum has become infected, Stanton believes that peritoneal rest is probably the most valuable single therapeutic means at command and should be rigidly enforced whether one operates early or late.

23. **Anemic Ulcers of the Throat.**—Pohly believes that ulcers of the throat may be due to anemia or lowered vitality. He has seen three cases, all in young women. The ulcer is round, small, with scanty secretion. There was no history of either tuberculosis or syphilis and no swelling of the glands.

Lancet-Clinic, Cincinnati

August 13

24 Significance of Rectal Hemorrhage. L. J. Krouse, Cincinnati.
25 Diarrhea—A Symptom in Disorders of the Digestive Tract: Etiology, Diagnosis and Treatment. R. M. Rankin, Covington, Ky.
26 Prophylactic and Therapeutic Importance of Powerful Cervical Muscles. I. O. Allen, Richmond, Ind.

August 20

27 Angioneurotic Edema. W. E. List, Cincinnati.
28 Mode of Action of Mineral Waters Employed Internally. G. A. Persson, Mount Clemens, Mich.

University of Pennsylvania Medical Bulletin, Philadelphia

July-August

29 *Are Tubercle Bacilli Excreted Through the Bile? L. H. Maxson, Philadelphia.
30 *Ascending Infection of the Kidney Carried Out by the Method of Transplanting the Ureters Into the Intestines. L. F. Stewart, Philadelphia.
31 Pathogenesis of Tabes; Its Relation to the Biochemistry of Syphilis. W. E. Munroe, Philadelphia.
32 Practicability of the Meltzer-Auer Method of Continuous Intratracheal Insufflation. L. H. Landon, Philadelphia.
33 *Therapeutic Value of the Extract of Human Corpus Luteum. C. B. Maits, Philadelphia.
34 *Febrile Mania of Unusually Long Duration Ending in Recovery. D. Riesman, Philadelphia.
35 Infection of a Stillborn Infant by an Amebiform Protozoon (*Entameba mortinatalium*). A. J. Smith and F. D. Weidman, Philadelphia.

29. **Tubercle Bacilli Excreted Through Bile.**—Maxson's observation points strongly to the fact that while the circulation of tubercule bacilli in the blood and their excretion in the bile is not proved, the evidence is sufficiently strong to make it very probable.

30. **Ascending Infection of the Kidney.**—In order to study the question of ascending infection of the kidney, Stewart concluded that it would be necessary to place uretero-intestinal implantation on a more firm basis. Formalin-hardened arteries suggested a way of doing this. The object was to have the arteries preserve the patency of the ureters and provide a way of making a more perfect anastomosis, which would lessen the possibilities of peritonitis. The preparation of these arteries was made by placing the carotid arteries of dogs in a formalin solution for 48 hours, after which time they were sufficiently hard to remain patent under pressure. Following this they were placed in olive oil and sterilized in an autoclave. Several experiments were performed to find out the result of passing these arteries diagonally through the intestinal wall. Autopsy in these cases showed that in about 2 weeks the arteries disintegrated and began to pass into the intestinal canal, leaving behind a rigid channel lined with fibrous tissue, the fibrous tissue formation probably being stimulated by the formalin remaining in the arteries. The following operation was first devised. The ureter was cut anywhere between the bladder and 3 inches from the kidney and an artery 2 inches long was inserted in it so that one half was left uncovered. The uncovered portion of the artery was passed into the intestinal canal through an intermural channel from one-half to one inch in length, and the distal end of the ureter was sutured to the intestinal wall. The rigid artery containing ureter was covered by invaginating a portion of the intestinal wall and placing Lembert sutures; in this way the point of perforation of the intestine was covered and adhesions were permitted to form between the peritoneal surface of the intestine and the wall of the ureter. Thus the artery served to preserve the patency of the ureter at its point of attachment to the intestinal wall and to permit of a more perfect anastomosis with the intestine, in this way avoiding peritonitis. The object in making the intermural channel was to overcome the tendency to closure of the intestinal wound by muscular contraction, to place some distance between the end of the ureter, where it was attached to the peritoneal surface of the intestine, and the intestinal contents and to have the urine empty in the direction of peristalsis and the fecal current. It was thought that these precautions would lessen the chances of ascending infection of the kidney. The above described operation with slight modifications was performed on 10 dogs. As a result

of his experiments, Stewart concludes that ascending infection of the kidney often takes place through either the lymph or the blood vessels of the ureter. When infection takes place in this way, it seems almost positive that the lymph vessels of the ureters are the carriers of the infection. It is probable that perinephritis is primary to the kidney involvement when infection of the lower urinary passages has caused perinephritis and kidney infection. The lumen of the ureter is less often a factor in ascending infection of the kidney than has previously been supposed.

33. **Extract of Human Corpus Luteum.**—In 9 cases Maits has used an extract of human corpus luteum made by Allen J. Smith in the University of Pennsylvania laboratories. He found that the extract of human corpus luteum possesses a distinct therapeutic action in osteomalacia, disturbances of the natural and artificial menopause and in hypofunction due to infantile uterus. In amenorrhea and in dysmenorrhea the treatment must at first be given each month. How long this must be continued before a permanent cure is effected and the injections can be omitted, Maits has not yet determined.

34. **Febrile Mania of Unusually Long Duration.**—Riesman's patient began to be troubled with insomnia, moodiness and causeless irritability of temper, which, however, did not attract attention at the time, being brought out only afterward in retrospect. Labor occurred on Jan. 4, 1909, and was entirely normal. On January 21, without any apparent cause, the patient began to have fever, which was thought to be due to a late puerperal sepsis; though this was, *a priori*, unlikely, as the confinement had been conducted with the greatest care by a skillful obstetrician. An enlarged spleen and a few suspicious rose spots on the abdomen seemed to warrant a diagnosis of typhoid. This probability was strengthened by two positive Widal reactions. A doubtful diazo reaction was also obtained. A slow pulse on several occasions when the temperature was high (82, for instance, with a temperature of 103) seemed also to favor the diagnosis of typhoid. On January 28, after 8 days of fever, the temperature fell by crisis, and the patient seemed to be perfectly well. She was, however, very much excited, did not cease talking of her speedy recovery, and constantly acclaimed it as a wonderful miracle. On the day following the fall in temperature, toward evening, she was unusually quiet, and as this followed a day of much mental exaltation a close watch was kept on her. Suddenly the patient began to scream and throw herself about so that it was necessary to hold her in bed. The eyes were wild and staring, and there was a white froth at the corners of the mouth. Coincidently with the onset of the mania there was inaugurated a fever ranging from 99 to 104 F., which lasted practically without any intermission from January 30 to August 11, a total of 193 days. The pulse was variable. Despite the extraordinary duration of the fever, the urine remained almost unaffected, aside from being highly concentrated and loaded with urates. There was, barring a trace on one occasion, no albumin and no pus. Blood examination showed hemoglobin 90 per cent.; red blood cells, 3,200,000; white blood corpuscles, 1,000.

Several points present themselves for special consideration: First, the cause of the fever, lasting nearly 200 days. There was no evidence of tuberculosis; no signs of endocarditis, no enlargement of the spleen and no intercurrent temperature to indicate malaria, and the blood examination was negative. All those who saw the patient were of the opinion that she was suffering from some sort of toxemia. The nature of the infection remains unknown. Riesman thinks the case was one of infectious mania in which the mania is comparable to the delirium seen in acute forms of infectious diseases.

Virginia Medical Semi-Monthly, Richmond

August 12

36 Cardiac Surgery—Its Lost Opportunities, Slow Development and Present Status. E. M. Hasbrouck, Washington, D. C.
37 Hysteria in its Relation to Gynecology and Obstetrics. G. F. Butler, Chicago.
38 Facial Erysipelas with Meningitis as a Sequel. J. N. Upshur, Richmond.
39 Indications for Trephining the Mastoid. W. A. Wells, Washington, D. C.
40 The Value of Exercise in Infancy. St. G. T. Grinnan, Richmond.
41 Placenta Prævia. A Plea for the Mother. J. A. Owen, Turbeville.

Memphis Medical Monthly

July

42 The Significance of Hematemesis. G. M. Niles, Atlanta, Ga.
43 Nasal Stenosis. B. S. Penn, Humboldt, Tenn.
44 Treatment of Fracture of the Long Bone. W. T. Black, Memphis.
45 Pityriasis Rosea. J. D. Hopper, Jackson, Tenn.
46 Present Day Serum and Vaccine Therapy. R. B. Underwood, Memphis.
47 The General Practitioner as a Specialist. P. M. Farrington, Memphis.

Archives of Pediatrics, New York

August

48 *Value of Brudzinski's "Neck Sign" and of the Contralateral Reflex in the Diagnosis of Meningitis in Infancy and Childhood. J. L. Morse, Boston.
49 *Comparison in Boys and Girls of Height, Weight, and Epiphyseal Development. T. M. Rotch, Boston.
50 *Stomach Contents and Motility in Bottle-fed and Breast-fed Infants. H. Heiman, New York.
51 Problems of Nutrition in Early Life. F. S. Meara, New York.
52 The Plantar Reflex in Infancy and Childhood. E. C. Fleischner, San Francisco.
53 Therapeutic Use of Sea Water in Infants. R. M. Merrick, Boston.
54 *Treatment of Enuresis by Re-education. C. Herrman, New York.
55 Finkelstein-Meyer Method of Infant Feeding by "Casein Milk." J. S. Leopold, New York.
56 *Education of the Mother in Relation to Infant Mortality. E. B. Sterling, Baltimore.
57 *Hygienic and Dietetic Treatment of Delicate Children by the Class Method. W. R. P. Emerson, Boston.
58 Lactic Acid Bacilli: What They are and What They are Supposed to Do. A. I. Kendall, Boston.
59 Tetanism. H. B. Sheffield, New York.

48, 50. Abstracted in The Journal, May 21, 1910, pp. 1710, 1712.

49. Abstracted in The Journal, June 4, 1910, p. 1889.

54. **Treatment of Enuresis by Re-Education.**—Applying the so-called method of conscious repetition of Brissaud to the treatment of involuntary micturition, Herrman has had the patient urinate at regular stated times, but every time he urinates he is directed to void a little, say 2 drams, and then stop; then void 2 drams more and stop, and so on, until the bladder is emptied. In this way the individual exercises the mechanism which controls urination; he trains and educates himself in the voluntary execution of the act. After this has been done two or three times under the direction of the physician the patient can carry it out himself.

56. **Education of the Mother in Relation to Infant Mortality.**—Sterling conducted an investigation of the experiences of a number of women whose special training in matters of health was definitely known. A set of questions, covering the occupation before marriage, the number of children, manner of birth, infant feeding, etc., were sent to 105 married graduates or former students of a successful normal school of physical education. Each of these women had spent one, two or three years at the school, where rational physical exercise, personal hygiene, and right habits of living were emphasized. Ninety-one replies were received and form the basis of this paper. The investigation covers a period of nearly 17 years, the first baby of the series being born in September, 1893. Of the 91 marriages 25 have been sterile to date. Of the 66 mothers, 56 were occupied in teaching for periods varying from 3 months to 12 years. In obtaining an average it was necessary to eliminate 10 of these, because their answers were too indefinite to show exactly how long they were thus occupied. The average length of time of the 46 who gave definite replies was nearly 3½ years. In the 66 fertile marriages, 112 pregnancies have occurred, the number per marriage ranging from 1 to 4. There are living to-day, at the end of almost 17 years, 100 children. This gives a total death rate from all causes of 10.7 per cent.; 6 of the pregnancies resulted disastrously through abortions, premature birth, or birth causes at full term. In the series of 106 children surviving the ordeal of birth, practically 70 per cent. were breast-fed for periods varying from 1 month to 12 months, though in many instances artificial feeding was used as an aid to the breast; 77 per cent. of the mothers were able to nurse one or more children for one or more months. Of the 6 who died, 2 were nursed one or more months, and 4 were not nursed. Of the nurslings

who succumbed. 1 died of meningitis at 2 years of age and 1 of strangulation at 4 months. Of the 112 pregnancies, 75 resulted in normal or spontaneous births, 34 were not normal, and in 3 no report was made on this point. The death-rate among the children of these marriages is lower than that given for the registration area of the United States, which is about 14.5 per cent. Eliminating the so-called "unavoidable causes" connected with birth, the death-rate is markedly lower. The percentage of premature births is scarcely more than one-quarter that noted by Ballantyne in maternity hospitals. Abortions occur about one-quarter as frequently as in most series of cases. In the school which these young women attended subjects pertaining to health were of paramount importance. Sterling does not think that hygiene will ever become vital to the young women of the land until the academic councils of the various schools make as ample provision for such a course as they do for mathematics, or languages, or literature. Students will not take seriously a subject which the governing boards neglect.

57. **Treatment of Delicate Children by Class Method.**—Emerson is convinced that the class method is particularly well adapted to the proper treatment of delicate children. The spirit of competition, the "game" in it, has a powerful attraction to the child, aiding greatly in his management and control. The steady gain in weight in children following directions furnishes a strong incentive to the parents and the children alike. The class method makes the necessary instruction of the parents easy and effective. The results obtained each week remove prejudices and fears and convince in a moment, as if by magic, where hours spent in arguments fail. In the giving of instructions and directions to the parents and the children assembled together there is an enormous saving of time. The class method furnishes the best training school for the social worker. She can here learn what instructions are to be carried out; what the object sought. She catches the spirit of the work and is enabled to relieve the physician of a large mass of detail for which he has neither the time nor the energy to perform, and for which the social worker is the one person especially qualified by sex and training to carry out.

Long Island Medical Journal, Brooklyn

August

60 The Associated Physicians of Long Island. J. C. Hancock, Brooklyn.
61 Preventive Medicine from a Chemical Standpoint. H. W. Wiley, Washington, D. C.

Medical Herald, St. Joseph, Mo.

August

62 The Non-Operative Treatment of Tuberculous Arthritis. H. W. Orr, Lincoln.
63 Certain Facts in Ophthalmology of Practical Importance to the General Practitioner in His Daily Practice. J. M. Banister, Omaha.
64 Should the Operation for Ruptured Tubal Pregnancy be Immediate or Deferred—Personal Experiences and Deductions. J. E. Summers, Omaha.
65 The Rapid and Complete Cure of Gonorrhea. T. M. Paul, St. Joseph.

Therapeutic Gazette, Detroit

August

66 *Calomel to Increase Elimination in Pregnancy. S. Coles, Philadelphia.
67 Action and Uses of Salicylic Acid and its Preparations, Especially in Rheumatism. B. N. Ghosh, Calcutta, India.
68 Carbon Dioxid Snow in Certain Cutaneous Diseases. H. W. Stelwagon, Philadelphia.
69 Vulvitis, Vaginitis and Vulvovaginitis of Children. F. H. Maier, Philadelphia.

66. **Calomel to Increase Elimination in Pregnancy.**—The eliminative action of calomel is best obtained by giving from 1/20 to 1/10 grain 3 times a day, which course can be safely continued throughout pregnancy, says Coles, by omitting it for 3 or 4 days every 2 weeks. To get the best results from these small doses the calomel should be well triturated with bicarbonate of soda, which increases its action and lessens the danger of salivation. For the past 12 years Coles has made this method of administration a routine treatment in all pregnant women in whom elimination was deficient, as indicated by headache, slight disturbance of the digestion, and diminution of solids and urea excreted in the urine. Usually in less than a week after beginning this treatment these symptoms will disappear, and the urea and solids become normal. Then the patient is instructed to discontinue the powders or tablets until she again feels the need of them.

Journal of the Minnesota State Medical Association and Northwestern Lancet, Minneapolis

August 15

70 Uses of Morbidity Reports. H. W. Hill, Minneapolis.
71 *Probable Spinal-Cord Lesions Following the Pasteur Treatment. W. A. Jones, Minneapolis.
72 Arteriosclerosis in the Nervous System: Special Reference to Apoplexy. A. S. Hamilton, Minneapolis.
73 What is a Predisposition to Inguinal Hernia? J. E. Moore, Minneapolis.

71. Published in full in The Journal, Nov. 13, 1909, p. 1626.

Chicago Medical Recorder

August

74 *Retroflexion and Retroversion of the Incarcerated Gravid Uterus. H. M. Stowe, Chicago.
75 *Cure of Varicose Veins by Intravenous Injections. W. F. Bernart, Chicago.
76 Robert Koch (1843-1910). P. Ehrlich, Frankfort on the Main, Germany.
77 *What the Mayor and City Council Can do in the Prevention of Typhoid. L. L. Lumsden, U. S. P. H. and M.-H. S.

74. **The Incarcerated Gravid Uterus.**—In Stowe's case the urethral orifice was drawn upward behind the pubic bone so that the catheter was used with difficulty. The posterior vaginal wall was displaced anteriorly, the canal assuming the form of a crescent with its convexity forward. Douglas' pouch was filled with a hard, resistant mass which was slightly movable—the uterine fundus. The cervix lay behind the pubis and was firmly compressed against the bone. The sharp flexion between it and the fundus was easily made out. The anus was swollen and the anterior rectal wall greatly stretched. The rectum was empty. The bladder was palpable at a level of 5 cm. above the umbilicus. It was very tender to pressure. An attempt was made to pass the catheter without narcosis but it failed. Under anesthesia, a soft catheter was passed with great difficulty because of the traction on the urethra; 3 pints and 9 ounces of urine were finally withdrawn and the swelling in the abdomen immediately disappeared. After the urine had been removed, two fingers were passed in to raise the fundus above the promontory. This procedure failed. The patient was then held in the knee-chest position, the cervix secured with two strong volsellum forceps and the uterus forced into an oblique diameter and slowly—25 minutes—raised out of the true pelvis. An Albert Smith pessary was then introduced to maintain the organ in its natural position. A permanent soft rubber catheter was secured in the uretha to avoid further over-distention of the bladder, and this organ was irrigated with warm boric-acid solution every 3 hours. The catheter was removed in 36 hours. The bowels were moved by glycerin injections. The abdominal pain gradually subsided and the pulse fell to normal in 4 days. Hexamethylenamin was administered for several weeks as a urinary antiseptic. The further course of the pregnancy was undisturbed and the patient was delivered in due time. No complications were present.

75. **Cure of Varicose Veins by Intravenous Injections.**—If the injection of a corrosive solution, such as of mercuric chlorid, is directed against the endothelium of a vein instead of into the middle of the blood stream a complete and lasting occlusion of the vein can readily be accomplished. The irritation caused by the injection produces a hyperplasia of connective tissue cells, which encroach on the lumen of the vessel and ultimately obliterate it. Bernart has tried this treatment in three cases, with marked success in each one. The ultimate results in these are said to be equal to those of a radical operation. The technic of the procedure consists of applying a tourniquet some distance above the point to be injected so as to make the veins tense and firm. The site selected is washed with alcohol or ether and a 2-inch small gauged platinum needle is passed up to its shoulder into the lumen of the vessel. The tourniquet is then loosened and the solution is injected against the wall of the vein. While injecting the needle is partially withdrawn so as to cover a wider area of the endothelium.

77. Also published in the *New Mexico Medical Journal*, August, 1910; see No. 131.

Journal of Nervous and Mental Disease

August

78 Three Pre-Frontal Tumors. F. X. Dercum, Philadelphia.
79 *Sarcomatosis of the Cervical Dura Suggesting Hypertrophic Cervical Pachymeningitis. F. X. Dercum, Philadelphia.
80 Laminectomy for Postsyphilitic Nerve Root Pain. F. R. Ray and S. I. Schwab, St. Louis.
81 *Radiculitis. F. W. Langdon, Cincinnati.
82 Kernig's Sign: Its Presence and Significance in General Paresis and Arterio-Capillary Fibrosis. S. Stern, Philadelphia.

79. Abstracted in THE JOURNAL, June 4, 1910, p. 1894.

81. Abstracted in THE JOURNAL, July 16, 1910, p. 249.

Journal Oklahoma State Medical Association, Muskogee

August

83 Modern Research—A Criticism and a Suggestion: With Special Reference to Typhoid. A. K. West, Oklahoma City.
84 Malaria, Atypical Forms. R. K. Pemberton, Kress.
85 Diagnosis and Treatment of Typhoid Perforation. J. H. White and I. B. Oldham, Muskogee.
86 *Local Anesthesia. L. F. Watson, Oklahoma City.

86. **Local Anesthesia.**—Watson holds that the strong solutions are equally or more dangerous than general anesthesia, while the weak solutions are the safest of all methods of analgesia. When local anesthesia is possible he prefers cocain to ether or chloroform, because he believes it to be less dangerous, from observations on its use during the last 23 years in over 10,000 operations not only without a death but without any disturbance of the "*equilibre physiologic*" of the patient. On the strength of the solution, he says, depends the rapidity, intensity and duration of the anesthesia. The technic of the injection is always delicate; it varies with each region, with each operation and in each patient. The technic must be learned with a knowledge of its application and adaptation to each individual case. Success in the use of local anesthesia depends on the patience, special training in the technic and an intimate knowledge of sensory nerve distribution. Because of the slower appearance of complete anesthesia with the weaker solutions, surgeons who begin operating as soon as the injection is finished will often fail with local anesthesia. Nerves, no matter how small, should never be handled previous to cocainization; to do so will lessen the confidence of the patient in the method, cause unnecessary pain and a certain amount of shock. For a similar reason lacerated and contused wounds of the extremities should not be prepared for operation previous to cocainization. Without the absolute confidence of the patient, work under local anesthesia will tax the patience of the most skillful surgeon; therefore, it is very important to always proceed slowly during the early stages of an operation under cocain.

Watson considers the addition of adrenalin unnecessary to prevent poisoning when the weak solutions are used, besides it increases the tendency to secondary oozing of blood into the tissues. The point of the needle should always be in sight (intra-epidermal), otherwise an unnecessary amount of solution will be required to anesthetize the sensory nerve terminals. It is impossible to insert the needle too superficially. Local anesthesia can be employed in any part of the body where the nerve supply can be controlled. With a proper selection of cases, Watson asserts, the majortiy of surgical operations can be performed under local anesthesia. He recently had a case in which an infected wound of the foot was freely incised under vein anesthesia without the knowledge of the patient. A tourniquet was applied just above the knee and 15 c.c. of a 0.2 per cent. cocain solution was injected into the external saphenous vein in the upper third of the leg. Anesthesia was complete in 30 minutes, extending as high as point of injection. Sensation reappeared as soon as the tourniquet was removed. No untoward symptoms were present at any time.

Vermont Medical Monthly, Burlington

August

87 Aphasia. W. L. Wasson, Waterbury.
88 Reflex Stomach Symptoms in Surgical Disease of the Gastro-intestinal Tract. J. M. Gile, Hanover, N. H.
89 Technic of Using Forceps. J. R. Patton, Fairfield.
90 Hernia. W. J. Aldrich, St. Johnsbury.
91 Scarlet Fever. F. C. Angell, Randolph.

Dominion Medical Monthly, Toronto

August

92 The Old and the New Gynecology. H. C. Coe, New York.
93 Renal Calculus with Nephrectomy. W. W. Jones, Toronto.
94 Appendicitis in Children. I. Wood, Kingston, Ont.

Journal of Medical Research, Boston

August

95 Antianaphylactic Vaccination. E. J. Baazhaf and E. Steinhardt, New York.
96 *Vaughan's Split Products and Unbroken Proteins: A Comparative Study of Their Effects. E. J. Baazhaf and E. Steinhardt, New York.
97 *Anaphylaxis and the Antibodies Concerned. J. F. Anderson and W. G. Frost, U. S. P. H. and M. H. S.
98 *Typhus Exanthematicus (Tabardillo) in Mexico. E. F. McCampbell, Columbus, Ohio.
99 *Properties of Ascitic Fluid, Especially in Cancer. R. Weil, New York.
100 *Bacteriemic Theory of Tuberculosis. B. White and O. T. Avery, Brooklyn.
101 Origin and Development of Giant Cells in an Epidermoid Carcinoma of the Tongue. A. Forbes, Boston.
102 *Relation of Intestinal Absorption to Pulmonary Anthracosis. C. M. Montgomery, Chestnut Hill, Pa.
103 Sporothrix and Epizootic Lymphangitis. C. G. Page, L. Frothingham, Boston, and J. B. Paige, Amherst, Mass.
104 *Gonorrheal Salpingitis. P. B. Gurd, New Orleans.
105 Larvæ of *Strongyloides Intestinalis* in Human Lung. J. G. Gage, New Orleans.

96. **Vaughan's Split Products.**—This article is a confirmation of Vaughan's work and theory.

97. **Anaphylaxis.**—The experimental work reported on by Anderson and Frost is chiefly a study of the anaphylactic antibody (allergin) designed as a study of the principles of anaphylaxis rather than of its details. The authors have given special attention to the quantitative relations existing between allergin and its specific antigen, also to the relation of allergin to the conditions of hypersusceptibility, anti-anaphylaxis, and immunity. The wealth of detail in the paper precludes making an abstract for these columns.

98. **Typhus Exanthematicus.**—It is McCampbell's belief that European typhus fever and tabardillo are probably identical. The virus of tabardillo cannot be cultivated by the ordinary methods. There is nothing distinctive in the pathology of tabardillo. The most characteristic change is the extensive waxy degeneration of the heart and voluntary muscles. The blood taken from the rash in the macular stage in a large percentage of cases shows small micro-organisms which resemble the belted bacilli of the hemorrhagic-septicemia group. These micro-organisms are not present in other parts of the circulation and are found only during the rash. The erythrocytes of tabardillo patients drawn during the rash show a peculiar vacuolization in a large number of instances. The vacuolization is not general throughout all the corpuscles. This suggests the possibility of an intracorpuscular parasite. The virus of tabardillo can probably be transmitted to the monkey, producing a low febrile infection, and it is probably not filterable. The louse could be directly connected by experiment with the carrying of the virus of tabardillo.

99. **Ascitic Fluids in Cancer.**—The result in Weil's experiments have been almost entirely negative in character—that is to say, they have not indicated the existence of any specific character such as would serve to differentiate with certainty fluids derived from cancerous individuals from those of another origin.

100. **Bacteriemic Theory of Tuberculosis.**—The authors claim that there is no proof to show that the acid fast organisms found by Rosenberger and others in their preparations of sedimented, citrated blood from tuberculous individuals were originally present in the circulating blood of these individuals, or that these bacilli are tubercle bacilli. On the contrary, it now seems reasonable to suppose that these acid fast organisms were accidentally introduced into the microscopic preparations and are to be considered as contaminations. There appears, therefore, to be no adequate reason for changing previously established conceptions concerning the conditions governing the presence of tubercle bacilli in the circulating blood.

102. **Intestinal Absorption and Pulmonary Anthracosis.**—The alimentary route of pigment failed to lead to pulmonary anthracosis in guinea pigs after ingestion and inhalation

experiments in which amounts of pigment were administered far in excess of amounts ingested under ordinary conditions. Intestinal absorption of inert particles has been demonstrated by proper experiments, but only after the repeated ingestion of amounts far in excess of those entering the alimentary tract under normal conditions. Apart from the alimentary route—which is practically a negligible factor—Montgomery says that there is only the respiratory route which may lead to pulmonary anthracosis occurring (1) accidentally, as found at autopsy in animals and human beings, and (2) artificially, the result of inhalation experiments. This is confirmed by inhalation experiments.

104. **Gonorrheal Salpingitis.**—According to Gurd, a much larger percentage of cases of salpingitis are due to the gonococcus than is usually supposed; at least 80 per cent. of the cases in Gurd's series are probably due to that organism. Old pus collections may become the nidus for infection by other organisms such as the colon bacillus. This organism, in all probability, enters the already present pyosalpinx by direct passage through the tissues from the frequently adherent sigmoid. The appearance of the tubes examined in this series suggests that the exacerbation of symptoms which occurs, periodically, in cases of chronic salpingitis is due to the repeated involvement of the peritoneal covering in an acute inflammatory process. The great preponderance of plasma cells over the other inflammatory cells, as well as the localization of the lesion, chiefly in the mucosa and submucosa, is very suggestive of the gonorrheal origin of an affection. The gonococcus invades the tube by means of the continuity of surface of the mucosa from the uterus. The histologic picture is probably to a great extent dependent on this fact.

Old Dominion Journal of Medicine and Surgery, Richmond

August

106 Medical Men of Virginia. L. G. Tyler, Williamsburg, Pa.
107 Hygiene of the Nervous System During Infancy and Childhood. B. R. Tucker, Richmond, Va.
108 Preparation of Patients for Prostatectomy. E. S. Judd, Rochester, Minn.
109 Congenital Union of Spleen and Liver. B. C. Willis, Rochester, Minn.
110 Effect of Heat and Cold in Tuberculosis. C. L. Minor, Asheville, N. C.
111 Uterine Descent. L. Gwathmey, Norfolk, Va.

Kentucky Medical Journal, Bowling Green

August 15

112 Peripheral Operation for Trigeminal Neuralgia. A. Schachner, Louisville.
113 Nystagmus as a Symptom in the Diagnosis of Ear Diseases. J. M. Ray, Louisville.
114 Cesarean Section. J. G. Sherrill, Louisville.

Bulletin of the Johns Hopkins Hospital, Baltimore

August

115 *Fatal Apnea and the Shock Problem. Y. Henderson, New Haven, Conn.
116 The Threefold Physiologic Origin of Uric Acid. W. Jones, Baltimore.
117 *Intrathoracic Displacements in Pulmonary Tuberculosis. A. P. Francine, Philadelphia.
118 Blood Cultures in Pneumonia. S. Strouse and F. W. Clough, Baltimore.

115. **Fatal Apnea and the Shock Problem.**—The acapnia hypothesis, according to Henderson, requires the prevention of excessive pulmonary ventilation. The administration of morphin and full anesthesia diminish the activity of respiration under pain and thus prevent acapnia. If, however, one administers morphin or chloroform to a subject after he has suffered for some time fatal apnea is hastened unless carbon dioxid is also administered. When a moderate degree of shock has been induced by irritation of afferent nerves or by exposure of the viscera, Henderson finds that it is possible to induce a rapid recovery of arterial pressure by the infusion into a vein of normal saline or of Ringer's solution saturated with CO_2. Then the animal is made to breathe an atmosphere of oxygen and CO_2 or else merely of oxygen supplied at the end of a long tube. Under these conditions it rebreathes the oxygen several times and thus the CO_2 which the subject itself produces is utilized to stimulate respiration and increase the otherwise insufficient oxygen intake. If the degree of shock previously induced is not too severe not only do these measures of relief induce a rapid restoration of arterial pressure and respiration, but this restoration is maintained. On the other hand, in profound shock these measures fail to effect an ultimate recovery. Indeed, after the diminished blood stream has resulted in tissue asphyxia and acidosis no measure of relief, except perhaps hypertonic saline or transfusion of blood, can be of much use.

There are two methods of treating acapnial failure of respiration under anesthesia. If a soft catheter is inserted in the trachea down to the bifurcation of the bronchi and a gentle stream of oxygen gas is supplied, according to the method devised by Volhard, the subject will lie for a very long time indeed in complete apnea. By this method a supply of oxygen ample for all the needs of the tissues may be maintained. The oxygen should, however, be measured, and for a man should be not less than 400 c.c. per minute. Under these conditions in animals reaccumulation of CO_2 proceeds relatively rapidly. In one case Henderson has seen a dog in acute acapnia lie for 12 minutes without the slightest respiratory effort and at the end of this period recommence normal breathing. The oxygen jet had supplied ample oxygen for the combustion of the acidosis substances which would otherwise have been produced. This method of Volhard, therefore, accomplishes a double object. It prevents the acidosis of asphyxia at the same time that it allows the subject to recover from acapnia. Another method of restoration of breathing has been tried in dogs during apnea with strikingly successful results. It consists in administering air or oxygen containing 5 or 6 per cent. of CO_2 and in starting the subject to breathing by one or two artificial respirations. As soon as the normal tension of CO_2 in the lungs is thus restored spontaneous breathing immediately recommences and is maintained as long as the inspired air contains a sufficient quantity of CO_2 to stimulate the respiratory center. It will, Henderson thinks, be advisable to use for this purpose oxygen and CO_2, and not merely air plus CO_2, for the purpose of preventing the acidosis of which he speaks. Indeed, oxygen and CO_2 would combine the advantages of both methods for preventing fatal apnea. It must be remembered that CO_2 is a powerful drug and one to be administered in small quantities only—never in greater concentration than 5 or 6 per cent. Henderson has devised a simple gas meter which he believes may be useful for measuring the small quantities of CO_2 to be added to air or oxygen as a respiratory stimulant. It would be better to have the gases already mixed.

117. **Intrathoracic Displacements in Pulmonary Tuberculosis.**—This paper deals with the changes brought about in intrathoracic relations as shown by skiagrams of cases of pulmonary tuberculosis, studied clinically before and after taking of the *x*-ray plate, and is supplementary to a paper published in the *American Journal of Medical Sciences*, May, 1910, and abstracted in The Journal, May 28, 1910, p. 1822.

Iowa Medical Journal, Des Moines

August

119 The Quality, Quantity and Preparation of Foods. T. E. Powers, Clarinda.
120 Treatment of Valvular Heart Disease. G. C. Moorehead, Ida Grove.
121 Dietetics and Therapeutics of Autointoxication. M. Emmert, Atlantic.
122 Present Status of Serotherapy. W. J. Findley, Sac City.
123 Chronic Intestinal Catarrh. With Special Reference to Dietetic Management. W. E. Sanders, Alta.
124 Our Rights and Privileges. B. S. Louthan, Sutherland.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

August

125 *Action of Drugs on the Salivary Secretion. V. E. Henderson, Toronto.
126 Thyreotropic Iodin Compounds. R. Hunt and A. Seidell, Washington, D. C.
127 *Insufflation of the Lungs with Hydrogen, Carbon Dioxid, and Air. C. C. Guthrie, F. V. Guthrie and A. H. Ryan, Pittsburg.
128 *Influence of Intravenous Injections of Spartein and Adrenalin on the Heart of the Dog. A. Strickler and M. S. Fleischer, Philadelphia.
129 Detoxification of Benzoic Acid by Optical Isomers of Leucin. A. H. Koelker and S. Amberg, Baltimore.
130 Toxicology of the Tutu Plant. W. W. Ford, Baltimore.

125. **Salivary Secretion.**—It was found by Henderson that iodids are excreted by the salivary gland, but that their

presence in the blood stream does not initiate a flow of saliva if the salivary center is depressed or its nerve connections to the glands broken; nor does the excretion of iodids increase a previously existing flow or increase the effectiveness of a reflex stimulation. Salivation from iodids must be due to some reflex cause. Other salts, sulphocyanates, carbonates, and nitrites, when injected intravenously, act similarly to iodids. Emetin has a central and reflex action; antimony in non-toxic doses acts only reflexly. Ammonium salts have a central action, but also a reflex action which is probably the more important. Apomorphin acts directly on the center. It has no peripheral action in the gland. The salivary center is very labile, readily affected by sensory stimuli and readily depressed by narcotics.

127. **Insufflation of the Lungs with Hydrogen.**—With hydrogen gas containing less than 1 per cent. of oxygen, a typical asphyxial blood-pressure curve was written by the mercury manometer, only the events (rise and fall of pressure and slowing of the heart) appeared sooner and were of shorter duration than was the case when asphyxia was produced by clamping the trachea. Also respiratory effort disappeared and death occurred more quickly than with simple clamping of the trachea. If, before the final stage of asphyxia was reached, the hydrogen was shut off and air turned on, resuscitation rapidly occurred. With a mixture of hydrogen and air, a state of partial asphyxiation could be produced and indefinitely maintained. The same was true for a mixture of nitrogen and oxygen which was prepared by partially removing the oxygen from air. With carbon dioxid the results were essentially the same as with hydrogen, the signs of death being somewhat more rapid.

Similar results follow the use of imperfectly air-tight bellows. For example, with a pulmonary ventilation much greater than that adequate with air, if the insufflation be carried out by compression of the gas death occurs rapidly, but if the gas be pumped through a leaky bellows, a ventilation not much greater than that adequate with air may not immediately be followed by death or even the severer grades of asphyxial symptoms. If now the bellows be treated to a tightening process (e. g., wetting), death may soon occur, when the experiment is again performed. Under the conditions of their experiments, the authors therefore conclude that insufflation of the lungs of cats or rabbits with hydrogen gas leads rapidly to cessation of respiratory and circulatory movements (clinical death). Also, if not delayed too long, resuscitation may be accomplished by insufflating the lungs with air, accompanied by cardiac massage if the circulation has fallen very low.

128. **Influence of Spartein and Epinephrin on the Dog.**—It appears from Strickler and Fleisher's work that the intravenous injection of spartein sulphate followed by the intravenous injection of epinephrin does not produce myocarditic lesions in dogs, a fact which seems to be of great interest inasmuch as the lesions produced by similar injections in rabbits are so very pronounced. It is probable that this difference is due to the fact that the heart of the dog is relatively stronger than that of the rabbit and is consequently better able to resist the injurious effect of these substances. The results of experiments with dogs, therefore, confirm the explanation which Fleisher and Loeb offer for the causation of myocarditic lesion in rabbits—namely, that they are due to excessive mechanical strain.

New Mexico Medical Journal, East Las Vegas

August

131 *What the Mayor and City Council Can Do in the Prevention of Typhoid. L. L. Lumsden, U. S. P. H. and M.-H. S.
132 Status of Tuberculosis in the City of Roswell. C. N. Yates, Roswell.
133 Medical Organization and its Results. F. Palmer, Cerrillos.
134 Artificial Feeding of Infants. M. K. Wylder, Albuquerque.

131. Also published in *Chicago Medical Recorder*, August; see No. 77.

Colorado Medicine, Denver

August

135 Hernia: False or Pseudotraumatic Hernia. R. W. Corwin, Pueblo.
136 Peritonsillar Abscess: Cause and Treatment. W. C. Bane, Denver.
137 Importance of Pain in the Back as a Diagnostic Symptom. C. B. Lyman, Denver.
138 Operative Treatment of Recent Fractures of the Patella. M. Kahn, Leadville.
139 Fractures of the Pelvis. P. Jaffa, Trinidad.
140 Sliding Hernia. F. C. Buchtel, Denver.
141 The Insane of Colorado. J. E. Courtney, Denver.

Philippine Journal of Science, Manila

February

142 The Tropical Sun. P. C. Freer, Manila.
143 *Treatment of Trypanosomiasis with Special Reference to Surra. R. F. Strong and O. Teague, Manila.
144 *Etiology of Beriberi. H. Fraser and A. C. Stanton, Kuala Lumpur, Malay States.
145 *Idem. J. deHaan, Java, East Indies.
146 Beriberi in Siam. H. C. Highet, Bangkok, Siam.
147 *Phosphorus Starvation: Special Reference to Beriberi. H. Aron, Manila.
148 *Idem. H. Aron and F. Hocson, Manila.
149 Beriberi. G. Shibayama, Tokio, Japan.
150 Food Salts in Relation to Beriberi. E. D. Kilbourne, U. S. Army.

143. **Treatment of Trypanosomiasis.**—The authors find after long-continued observation that arsenophenylglycin is by far the most satisfactory means of treatment of trypanosomiasis yet discovered. In the use of arsenophenylglycin two methods of treatment may be considered, as already outlined by Ehrlich: First, that by stages in which relatively small doses are given and at repeated intervals; second, the treatment by one or several large doses. Arsenophenylglycin is a light yellow powder, very soluble in water and containing about 38 per cent. of metallic arsenic (atoxyl contains about 31 per cent.). It is manufactured by Ehrlich and thus far for experimental purposes only.

144 to 148. Discussed in Manila Letter, The Journal, Aug. 20, 1910, p. 706.

Mississippi Medical Monthly, Vicksburg

August

151 Adhesions of the Lower Abdomen: Their Causes, and Indications for Their Surgical Relief. A. G. Trotter, Greenwood.
152 Difference Between the "Ethical Proprietary" and the "Secret Nostrum." H. H. Goyer, Okolona.
153 Dwarf Tape-Worm. W. L. Little, Wesson.
154 Etiology and Dissemination of Typhoid. E. W. Hunter, Greenwood.
155 Hypodermic Use of Quinin in the Infant as well as the Adult, with Special Reference to Malarial Hematuria. E. R. McLean, Cleveland.

Detroit Medical Journal

August

156 Treatment of Cardiovascular Disease. J. Tyson, Philadelphia.
157 Foot Troubles Due to Relaxation of the Plantar Ligament: Clinical Classification, Increasing Prevalence and Treatment. W. H. Wood, Cleveland, Ohio.
158 Thyroidism as a Causative Factor of Intestinal Disturbances. M. Ballin, Detroit.
159 The Wassermann Test for Syphilis. T. Walker and R. G. Owen, Detroit.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

August 13

1 *Fibroma, Sarcoma and Fibromyoma of the Abdominal Wall. C. R. Lockwood.
2 Acute Laryngeal Dyspnea. H. Barwell.
3 *An Aid to Diagnosis in Malignant Disease. F. N. Royle.
4 *Occluding and Subocclnding Ligatures. V. Bonney.
5 Congenital Spastic Hypertrophy of the Pylorus. F. Barker and L. Mackay.
6 *Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis. W. Holmboe.
7 A Dermoid Cyst of the Testicle Associated with a New Growth. F. J. F. Barrington.
8 Extrauterine Pregnancy Occurring Twice in the Same Person. W. W. Stainthorpe.
9 *Effect of Radium on the Healthy Tissue Cell. G. P. Mills.
10 Public Health Administration in Hamburg. W. T. Home.

1. **Fibroma, Sarcoma and Fibromyoma of Abdominal Wall.**—Over a very long period Lockwood has encountered only 7 instances of fibroma, sarcoma and fibromyoma of the abdominal wall. They were all situated on the front abdominal wall. Only 2 were found to the left of the median line, the remaining 5 being on the right side. The anatomic situation is a point of some importance, and ought to be more accurately noted than has hitherto been done. As a rule, the tumors are situated in the aponeurotic structures, but not

always. Of his series one was in the back of the sheath of the rectus. one in the conjoined tendon of the internal oblique and transversalis, another in the substance of the exterial oblique muscle above the eleventh costal cartilage, and finally, one consisting of fibrous tissue with unstriped fibers in the left inguinal canal, and, in Lockwood's opinion, in the round ligament of the uterus.

The anatomic situation of these tumors, says Lockwood, ought to be noted, because some are spindle-cell sarcomata, which return after removal, and ultimately kill the patient. To extirpate a spindle-celled sarcoma successfully, it is necessary to make a very wide removal of the muscle in which it is growing. To the naked eye these tumors have the ordinary character of the fibrous structures of the body. Perhaps they may look a little redder, but there is nothing distinctive in the naked-eye appearances. Some of them are like the gizzard of a fowl in shape, color and consistency. Some have a capsule.

With regard to the clinical history of these tumors, the patient says that they are usually painless, and are not tender to the touch. The fibromata are of long duration; they take years to grow. In the case of a man with one behind the sheath of the right rectus, there is a history of fourteen years, and others had histories measured by years. The growth of sarcomata, on the other hand, is measured by months, so that an accurate clinical history throws some light on the nature of the tumor and the course which it might pursue. The surgical treatment of these tumors of the abdominal wall depends on their pathologic characters. An encapsulated tumor may be removed from its capsule, especially when one knows that the tumor consists of fibrous tissue. But if there is no capsule and if the tumor is growing along one of the abdominal muscles then the removal becomes a matter of great difficulty.

3. **Aid to Diagnosis in Malignant Disease.**—A careful examination of the urine in malignant and non-malignant cases convinced Royle that the uric acid output in malignant disease is greater than in ordinary hospital patients under similar conditions and taking the same diet, and that the phosphate excretion is much lower in malignant than in non-malignant patients under corresponding conditions and taking the same diet, and that it falls with the advance of the disease. The resulting ratio of

$$\frac{\text{phosphates}}{\text{uric acid}}$$

is much lower in malignant cases than in the corresponding controls done in non-malignant cases. Also, this ratio falls throughout the course of the disease. These conditions, Royle thinks, are largely, though not absolutely independent of the particular form of diet, the same changes being noted in malignant patients on any diet as compared with ordinary hospital patients on a similar diet. With diets consisting largely of milk, however, and of little or no meat, lower uric acid figures, often higher phosphates, and in most cases higher ratios are given in malignant and non-malignant patients than would be the case if the patient were on "common diet."

From the results obtained, Royle believes that an examination of the urine will prove of great value as an aid to diagnosis in obscure cases of cancer, especially in cancer of the alimentary canal and abdominal organs, which is often difficult to distinguish from such diseases as gastric ulcer, tuberculosis, gall-stones, etc. In order to apply this test, it is necessary to estimate the uric acid and phosphate content of the urine, and to consider the figures separately and then take into account the

$$\frac{\text{phosphates}}{\text{uric acid}}$$

ratio, any ratio below 4 being suggestive, especially if it remains low on several occasions, and any ratio below 3 is almost diagnostic of malignant disease or a blood disease.

4. **Occluding and Suboccluding Ligatures.**—The point made by Berney is that suboccluding ligatures should be avoided.

6. **Artificial Pneumothorax.**—Holmboe reports in detail a case of moderately advanced pulmonary tuberculosis in which the production of an artificial pneumothorax resulted in wonderful improvement after serotherapy had failed. Cough and expectoration ceased, temperature and pulse became normal, weight increased 20 pounds, and the patient was able to work several hours each day. Similar results were obtained in four other cases.

9. **Effect of Radium on Healthy Tissue Cells.**—This preliminary note is the result of some experimental work by Mills on the comparative effects of radium on normal mouse tissues. The radium was applied over the anterior abdominal wall and the subsequent changes in the liver tissue were observed. The applicator used was one of 500,000 units and was guarded by a shield which cut off the A and B rays, while allowing the more penetrating Y rays to pass through. It was applied for 30 minutes in each case. The mice were killed at varying intervals after exposure and the liver examined microscopically. The earliest definite change noticed occurred about one hour after irradiation. The liver cells in this section were more granular than usual, and there were none of the clear glycogen-containing vacuoles which are present in the normal mouse liver. Otherwise the liver cells themselves appear normal. The connective tissue elements also showed the early stages of a reaction. This was manifested by the presence of numerous groups of round and spindle cells in the neighborhood of the veins. There was distinct hyperemia, but at this stage there was no general increase of the mesoblastic cells. Three hours after irradiation the liver cells were profoundly altered. The protoplasm was deeply granular and the nucleus stained very clearly and was considerably swollen. The whole cell also was slightly increased in size, but not nearly to such an extent as the nucleus. The areas of mixed-cell infiltration round the veins were larger and more numerous. Sections taken 6 hours after irradiation showed that the liver cells had become more normal in appearance. The protoplasm was no longer granular, but the nucleus was still enlarged. The hyperemia was less and there was less infiltration with connective tissue cells than in the previous section. In 24 hours the vast majority of the liver cells appeared normal. Scattered about the section, however, there were a few cells which appeared to have degenerated completely. While these changes were found in the liver generally, there was in most of the sections a place near the edge where the cells had suffered a greater and permanent change. There was in the sections taken 3 hours after irradiation a mass of liver cells which had completely lost their structure. A similar condition was found in the sections examined up to the eighth day after irradiation, and in the later ones some signs of organization of the affected part were observed. Presumably this mass of necrosed tissue corresponded to the spot immediately over which the radium was applied, and represents the effect of the rays at a very close range. It is of interest that in no case was any inflammation of the skin observed.

In the sections taken 14 and 15 days after irradiation, however, there were obvious signs that a second or late reaction was taking place. This was confined to the connective tissue elements and consisted of a marked general infiltration of the liver with lymphocytes, connective tissue cells, and a few polymorphonuclear leukocytes, and this to a greater extent than in any of the sections taken during the few days immediately following irradiation. There were also large masses of similar cells clustered round the veins. These changes were associated with a general hyperemia. No area of necrotic cells was observed. It would appear that this is the histologic basis of the "radium reaction" observed clinically by radiographers, and it is of interest to note that it is confined to the connective tissue elements. This late reaction lasts longer than the initial one, for 20 days after irradiation the liver was still found to be in a similar condition.

British Medical Journal, London

August 13

11 Value and Misuse of Spectacles in the Treatment of Headache, Migraine and Other Functional Troubles of the Eyes. R. W. Doyne.
12 Refraction of the Eye in School Children. A. E. Dorrell.
13 Relations of Poor Law Reform to Public Health and the Medical Profession. S. Webb.

Medical Press and Circular, London

July 27

14 The Principles and Treatment of Pulmonary Emphysema. T. Ewart.
15 The General Medical Council: The Medical Profession and the Public. D. Walsh.
16 Displacements of the Uterus. H. R. Andrews.
17 The Conceptions of Insanity and Their Practical Results. J. MacPherson.
18 The Acute Infections of the Lungs. A. Fraenkel.

Clinical Journal, London

August 3

19 Skin Rashes and Their Treatment. J. L. Bunch.
20 Mucomembranous Colitis. A. F. Hertz.
21 Aphasia and Other Disorders of Speech: Dysarthria, Aphemia, Apraxia, Idioglossia, Amnesia: Prognosis, Diagnosis and Treatment. T. A. Williams.

Journal of Tropical Medicine and Hygiene, London

August 1

22 Blackwater Fever. J. F. G. Mayor.

Annals of Tropical Medicine and Parasitology, Liverpool

July

23 Parasitic Granuloma. A. R. Ferguson and O. Richards.
24 Study of *Porocephalus Armillatus*. A. Broden and J. Rodhain.
25 Absence of a Vesicant in Ether Extract from Mosquitoes. J. O. W. Barratt.
26 *Factors in the Transmission and Prevention of Malaria in the Panama Canal Zone. S. T. Darling.
27 *Effect of Cold on Various Diseases in Small Animals. R. Ross and C. L. Williams.
28 Malaria Prevention in Jamaica. R. Boyce.
29 Species of Cyclops and Other Entomostraca Collected in Northern Africa. G. S. Brady.
30 A New Anopheline from the Federated Malay States. M. Watson.
31 Occurrence of Schizogony in an Avian Leucocytozoon, *L. Lovati*, Parasitic in the Red Grouse, *Lagopus Scoticus*. H. B. Fantham.
32. Sleeping Sickness Studied by Precise Enumerative Methods. R. Ross and D. Thomson.

26. **Transmission and Prevention of Malaria in Panama.**—This paper details a most exhaustive study of many phases of malaria, and for purpose of reference only, the following list of points discussed are given: Anophelines of this region; collection of larvæ; breeding out mosquitoes and methods of feeding; biting infecting experiments; estimation of gametes; care of mosquitoes after feeding; method of examining for zygotes and sporozoites; description of the malarial parasite in the mosquito; table of infecting experiments; notes and conclusions from table of infecting experiments; limit of infectiousness of man; notes on the bionomics of anophelines; effect of salt or sea water on larvæ; experiments with larvacides; experiments with agents destructive to vegetation, grass and algae; experiments with screening of various mesh; relative value of wire screening of various composition, based on practical tests and chemical analysis; note on the value of the practice of killing anophelines found in quarters and barracks; effect of quinin on the parasite in mosquito and man.

On the last point mentioned, Darling says that the effect of quinin administration is to make the gametes gradually disappear from the peripheral blood by the destruction of the young forms, the gametes being phagocyted by splenic and hepatic endothelium. It is concluded that quinin, 10 grains, thrice daily, in solution, will gradually reduce the sexual form of the parasite in man to a non-infective minimum in from a few days to a few weeks, depending on the severity of the infection. In simple tertian malarial fever, gametes disappear from the peripheral blood within two or three days under quinin treatment, and generally disappear even when quinin is withheld, even if the patient is at rest. There are never so many gametes in the peripheral blood in simple tertian malaria as in malignant tertian malaria. As a consequence, one never finds so many simple tertian zygotes as malignant zygotes in infected mosquitoes.

27. **Effect of Cold on Diseases in Small Animals.** The animals subjected to the influence of cold were guinea-pigs, rats and mice. They were placed in cages, well-bedded and well-fed, fat and proteid especially being provided in their diet. The diseases brought under the influence of the cold were chiefly various trypanosomiases, with, in addition, tuberculosis (bovine), cancer (in mice), tetanus, and spirochetosis. The only animal which failed to show trypanosomes after inoculation with *T. brucei* was one in the cold chamber. Twelve mice were inoculated with cancer, and 6 put into the cold chamber; 5 lived 50, 51, 56, 70 and 90 days respectively, whereas of the 6 controls, 2 lived 56 and 76 days respectively. Of the remainder, 3 controls failed to develop tumors, and 1 each in the control and cold chambers died within a few days of inoculation. Some mice were also infected with *Spirochæta duttoni*, but no appreciable influence on the course of the disease could be observed in them.

Five guinea pigs with tetanus were placed under observation. One, injected with 1/500 c.c. of a culture and placed in a cold chamber, died in 9½ days, but it is very doubtful if it died of tetanus; 2 injected with 1/1,500 and 1/1,000 c.c. respectively and kept as controls never showed any symptoms; while 2 injected with 1/500 c.c. and placed, 1 in the cold chamber and 1 as control, died with similar symptoms in a similar time—something over 50 hours.

An Englishman suffering from sleeping sickness of some 3 months' duration had a course (interrupted for some days) of 12 days, or some 53 hours in all, of cold air. The temperature was gradually decreased till 24 degrees F. was reached. He himself said he felt much better for the treatment which acted on him as a tonic, but in the short period he was under observation no visible diminution was apparent in the number of trypanosomes in the blood.

Six guinea-pigs were inoculated with bovine tuberculosis (0.1 mg. culture) and 3 placed in the cold chamber and 3 outside, with, of course, uninoculated controls in both cases. The uninoculated controls throve, except that 1 in the cold chamber died after 34 days of no obvious cause, there being only a little lung congestion evident in post mortem. Of the inoculated, all are still alive, and those in the cold chamber have now been in it 137 days, and seem quite fit and well. One female has aborted twice, but whether from the cold, the tuberculosis, or other cause, cannot be stated definitely. Four guinea pigs have since been inoculated with human tuberculosis, and 3 of these are at present under observation, 1 having died soon after inoculation. Several rats have been inoculated with cultures of pneumococcus, but so far no marked difference has been observable in their symptoms, whether in or out of the chamber, and none has died, so that they remain under observation, and the final result will only become apparent later.

Glasgow Medical Journal

August

33 Latent and Chronic Infections with the Typhoid Bacillus. C. H. Browning and W. Gilmour.
34 Embryologic Significance of Certain Lesions of the Prepuce and Neighborhood. G. H. Edgington.
35 Congenital Occlusion of the Duodenum (Accompanying a Deficiency of the Hind Gut). A. H. Gray.

Journal Laryngology, Rhinology and Otolaryngology, London

August

36 Ménière's Symptoms with Facial Paralysis. A. Bruce and J. S. Fraser.
37 The Operative Technic of the Labyrinth. Dr. Bourguet.

Archives des Maladies du Cœur, Etc., Paris

August, III, No. 8, pp. 467-528

38 The Proteolytic Antiferment of the Serum. N. Fiessinger.
39 The Wassermann Reaction with Disease of the Cardiovascular System. Oigaard.
40 The Neutro-Leukocyte Quotient and Nuclear Index. (Examen des neutrophiles du sang circulant: leur valeur nucléaire en rapport avec les autres globules blancs: Indice nucléaire et quotients neutro-leucocytaires.) J. Sabrazès.

Lyon Chirurgical, Lyons

August, II, No. 2, pp. 109-[illegible]

41 *The Thyroid Lesions of Primary Exophthalmic Goiter and of Goiter Tending to this Type. (Les lésions thyroïdiennes de la maladie de Basedow primitive et du goitre basedowifiant.) H. Alamartine.
42 The Wassermann Reaction. C. Garin and C. Laurent.
43 Fractures of the Elbow in Children. (Les fractures du coude chez l'enfant.) H. Muller. Commenced in No. 1.

41. **The Lesions in the Thyroid with Exophthalmic Goiter.** Alamartine has become convinced by his clinical experiences and research on resected goiters that exophthalmic goiter is generally the result of some toxi-infectious thyroiditis, entailing cirrhosis with hypertrophy of the gland and insufficient or perverted secretion. Rheumatism and tuberculosis, he asserts, are the two infections whose causal influence has been most effectually demonstrated.

Obstétrique, Paris

July, N. S. III, No. 7, pp. 609-672

44 *Treatment of Depression of the Skull in New-Born Infants. (Traitement des enfoncements du crane chez le nouveau-né.) F. Commandeur.

44. **Depression of the Skull in New-Born Infants.**—Commandeur warns of the serious consequences liable to follow birth traumatism causing depression or indentation of the cranial bones. The immediate mortality is about 14 per cent. In case of survival there may be hemiplegia, convulsions and epilepsy or idiocy as the child grows up. Sometimes the depression spontaneously springs back into place; this is more likely to occur with parietal than with frontal depressions. If the depression is causing symptoms it should be corrected immediately, and a frontal depression should always be corrected, he affirms, without waiting for symptoms. If there are no symptoms from a parietal depression temporizing is allowable but never for more than 10 days. He has found 46 cases on record in which the depression was artificially corrected; infection was responsible for the 3 possibly operative fatalities. Correction of the depression put an end at once to the symptoms; they were more severe with the frontal depressions. Vicarelli has improved the corkscrew method and has applied it in 14 cases with constant success; in 5 cases in which it was applied by others, 2 of the infants succumbed to meningeal hemorrhage. In the 27 other cases the depressed part of the bone was pushed into place from below, entering through the sutures or an incision in the bone. Commandeur commends the corkscrew method as preferable when indications permit, especially when the soft parts are incised and drawn out of the way and the Heine or modified corkscrew is inserted directly into the bone. Full directions are given for this and the other modes of correcting the depression and the cases in which this treatment was applied are reviewed with some medical cases bringing the total to 52. All emphasize the dangers of delay.

Presse Médicale, Paris

July 27, XVIII, No. 60, pp. 577-584

45 Characteristics of the Streptothrix Family. (Sur les caractéristiques du genre Oospora et son extension dans l'état de nos connaissances.) A. Sartory.
46 *Differential Diagnosis of Syphilitic Chancre of the Tonsil and Chancriform Angina. A. Le Play and A. Sézary.

August 3, No. 62, pp. 593-600

47 The Criteria of Physical Development. H. Dausset and P. Desfosses.
48 Intravesical Segregation of Urine and Catheterization of the Ureters. G. Luys.

August 6, No. 63, pp. 601-608

49 *Recurring Attacks of Diarrhea with Neuro-Arthritic Diathesis. (La crise d'entéro-colite chronique envisagée comme décharge toxique des neuro-arthritiques.) H. Marcou.
50 *Repeated Lumbar Puncture in Treatment of Fracture of Base of Skull. A. G. Apostolides.

46. **Chancre in the Tonsil.** Le Play and Sézary report a case in which the chancre developed in the left tonsil, the lesion presenting the aspect of an ulceromembranous sore throat. The persistence of the lesion for three weeks notwithstanding systematic gargling with potassium chlorate was suspicious although there was no enlargement of glands in the vicinity and the ultramicroscope revealed spirochetes. The diagnosis of syphilis was confirmed by a roseola that developed soon afterward and the positive Wassermann reaction. There was no fever at any time. In a second apparently similar case there was slight fever towards night and a slight tendency to glandular enlargement, but the ultramicroscope revealed the spirilla and fusiform bacilli of Vincent's angina and the course of the case confirmed this diagnosis. In both cases the microscopic field contained two or more specimens of the *Spirochæta refringens*.

49. **Periodical Intestinal Disturbances as Regulatory Processes.**—Marcou explains the sudden transudation into the bowel, which is the common feature in all cases of chronic diarrhea, as sometimes an automatic means of clearing out the poisons in the system when they have accumulated beyond a certain point. The diarrhea in chronic kidney disease is merely an exaggeration of this process of clearing out the body such as occurs in the neuro-arthritic on a milder scale. Schmidt's "diarrhea from transudation of an easily putrefying fluid" also belongs in this class as also some of the attacks of gastrointestinal trouble that come on after weaning, such as Herter and Heubner have described (The Journal, March 13, 1909, page 913, and Jan. 22, 1910, page 330). The attacks of recurring enterocolitis can thus be regarded as an automatic regulating process when they occur in individuals with an inherited tendency to auto-intoxication, belonging to the great family of neuro-arthritics, that is, those predisposed to nervous and joint disturbances. This conception enables the physician to tranquilize the patient during these recurring bowel troubles, teaching him to regard them as an effort by Nature to throw off accumulated poisons, a natural purification, which must be borne in patience, and that there is no necessity for doing the Wandering Jew act from doctor to doctor which is so often the practice of patients of this class. The violence and frequency of the attacks can be influenced by treatment of the underlying neuro-arthritic diathesis, reducing the opportunities for accumulation of toxins by dieting, and toning up the nervous system in general. At the same time, Marcou warns against too precise instructions in regard to the diet as the patient may learn to dread all kinds of food.

50. **Lumbar Puncture after Fracture of Base of Skull.**—This communication from Smyrna emphasizes the advantages of lumbar puncture both for differentiation and cure of fracture of the base of the skull, reporting a case in which there were signs of meningitis after a fall on the head, intense headache, incoherent babbling, the pulse being 50. Lumbar puncture released about 40 c.c. of bright red fluid under high pressure and the patient roused at once, the headache disappeared and the mind became clear. Some of the symptoms returning later other punctures were made with equally good effect. The fluid was limpid at the fourth puncture and recovery was soon complete and there have been no disturbances during the 10 months since. In this case the puncture was made the same day as the accident, but in the second case the meningitic symptoms did not develop for a few days and the puncture was not made until the twelfth day after the accident; 4 punctures in the course of 6 days also resulted in practically complete recovery although this patient still has total anosmia. The puncture not only relieves the brain from the pressure of fluid but by releasing this fluid it washes out quantities of germs which otherwise would find in the bloody fluid an excellent culture medium.

Semaine Médicale, Paris

August 10, XXX, No. 32, pp. 373-384

51 Digestive Insufficiency After the Nursing Period. (La dénutrition par insuffisance digestive au cours de la seconde enfance.) L. Cheinisse.

Berliner klinische Wochenschrift

August 1, XLVII, No. 31, pp. 1441-1484

52 *Treatment of Spastic Paralysis by Resection of the Posterior Spinal Roots. (Operative Behandlung der spastischer Lähmungen mittels Resection der hinteren Rückenmarkswurzeln.) O. Foerster.
53 *Test of Kidney Functioning by Determination of Proportion of Diastase Eliminated in the Segregated Urine. (Neue Methode zur Prüfung der Nierenfunktion.) J. Wohlgemuth.
54 Action of Gonococcus Vaccine on Course of Gonorrheal Processes. C. Schindler.
55 Superinfection of Rabbits with Syphilis. (Ergebnisse der Superinfektion bei der Syphilis der Kaninchen.) E. Tomaszewski.
56 Intravenous Injection of Ehrlich's 606. (Die intravenöse Einspritzung des neuen Ehrlich-Hata Präparats gegen Syphilis.) E. Schreiber and J. Hoppe.
57 *Transfusion of Human Blood in the Clinic After Preliminary Biologic Tests. (Bluttransfusion beim Menschen.) W. Schultz. Commenced in No. 30.
58 Staining Technic for Differentiation of Tubercle Bacilli. (Weitere Erfahrungen über meine Methode der Tuberkelbacillenfärbung.) D. Gasis.
59 Bacilli on Faucets Liable to Prove Source of Error in Sputum Examination. (Eine Fehlerquelle bei der Antiforminmethode.) H. Beitzke.
60 Hemolytic Substances in Stomach Content Not Specific for Cancer. (Anwesenheit hämolytischer Substanzen im Mageninhalt.) S. Livierato.
61 Idem. (Wert des Isolysinebefundes für die Diagnose bösartiger Geschwülste.) B. Agazzi.

52. **Resection of Posterior Roots for Spastic Paralysis.** Foerster here gives the theoretical bases for the operation generally known by his name and reviews the indications, technic and results. In every case in which it has been applied to date the spastic contractures were mitigated or entirely cured, he states, adding that adjuvant measures are indis-

pensable to produce the best ultimate results. He cites 16 cases in which the operation has been performed, but the list is actually much longer.

53. **Test of Kidney Functioning by Elimination of Diastase in the Urine.**—Wohlgemuth applied this test first on dogs and then in 50 clinical cases, the reliability and accuracy of the findings sustaining, he declares, the value of this simple method of testing kidney functioning; the test is complete in half an hour. He has two sets of 10 test-tubes, in which he pours from 0.06 to 0.6 c.c. of urine in turn and then to each tube he adds salt solution to bring the total contents of each to 1 c.c. He then adds to each tube 2 c.c. of a 1 to 1,000 solution of "soluble starch." The stands with the tubes are then set in the water bath at 38 or 40 C. for half an hour after which 1/50 normal iodin solution is added to each tube, a drop at a time, until the tint changes permanently. The findings are obtained by comparison of the action of the diastase according to the concentration in starch in the different tubes, each set containing the urine from only one kidney, segregated by catheterization of the ureters. The urine does not have to be filtered, and it can also have served previously for determination of the freezing-point; a little blood does not affect the test. In health, both human beings and dogs seem to eliminate approximately equal proportions of diastase with both kidneys. In a typical case reported, the freezing-point was 1.28 in the right urine and 0.53 with the left; sugar, 1.6 per cent. with the right, and 0 with the left; indigocarmin test: green after 7 minutes and blue after 15 with the right urine, the left urine still colorless; the index from the diastase test after 30 minutes was 10 in the right kidney and 3.33 with the left; after 24 hours, 25 with the right and only 8.3 with the left. The findings with all these functional tests thus harmoniously agreed, while the diastase test is even more sensitive than the indigocarmin and phloridzin tests as it often gave positive findings when the other tests were still negative.

57. **Therapeutic Transfusion of Blood.**—Schultz reports a good outcome in 10 cases in which he made a transfusion of defibrinated blood in serious anemia, after having tested the action of the alien blood on the patient's blood corpuscles. He was thus able to refrain from using blood that displayed any tendency to induce agglutination or hemolysis. Even in the one case in which this was not done, and the transfusion induced acute collapse, chill, fever to 104 F. and edema, yet the general effect seemed to be good after these symptoms had subsided. The transfusion had a markedly favorable effect in all the cases of secondary anemia, but in pernicious anemia the benefit was only transient.

Correspondenz-Blatt für Schweizer Aerzte, Basel

August 1, XL, No. 22, pp. 697-728

62 *Indications for Prostatectomy. F. Suter.
63 Progress and Limitations in Efforts to Insure Asepsis Before, During and After Operations. (Keimprophylaxis bei der Wundbehandlung und Streben nach Präventivmitteln gegen die Wundinfection.) C. Brunner. Commenced in No. 21.

62. **Indications for Prostatectomy.**—Suter operated last year in 10 cases of prostatic retention, all by the suprapubic route by Freyer's technic. The functional results were good in every case except one in which the hypertrophy proved to be malignant. In the case of 2 comparatively young men he performed the primary prostatectomy without delaying for catheter treatment as he was anxious to ward off infection of the bladder. The virility was not impaired in any case by the operation; this is the prinicipal advantage of the Freyer technic.

Deutsche medizinische Wochenschrift, Berlin

August 4, XXXVI, No. 31, pp. 1433-1472

64 Prophylaxis and Treatment of Measles. (Masern.) F. Siegert.
65 *Transient Cortical Amaurosis from Traumatism of the Head. (Ueber passagere Rindenblindheit durch Commotio cerebri.) C. Hirsch.
66 Present Status of Knowledge in Regard to Viscosity of the Blood. F. Krone.
67 Study of the Psychic Gastric Secretion. (Untersuchungen über den psychischen Magensaft bei einem Kranken nach Gastrostomie.) R. Hertz and S. Sterling.
68 *Amenorrhea and Tertiary Syphilis. E. Meirowsky and K. Frankenstein.
69 Production of and Technic for Use of Compressed Air in Hospitals. (Der Luftkompressor im Krankenhaus.) F. Kuhn.

65. **Transient Blindness from Contusion of the Skull.**—The patient was a boy of 12 who had been run over by an automobile and brain substance protruded from a gash in the skull. The boy was unconscious at first and was blind when he roused, the amaurosis being complete with no perception of light. Vision then gradually returned and by the third day was normal and it has persisted so to date, the other injuries soon healing.

68. **Amenorrhea and Tertiary Syphilis.**—The amenorrhea had lasted for 6 and 8 years in the 3 cases reported; the women were from 28 to 42 years old. All were suffering from severe manifestations of tertiary syphilis and under the mercury and iodid they were taking menstruation returned; is was quite normal in the younger women but assumed a vicarious form in the other, epistaxis recurring regularly at the menstrual period. The cases emphasize the importance of specific treatment for amenorrhea in women whose history suggests the possibility of syphilitic changes in the ovaries.

Medizinische Klinik, Berlin

August 7, VI, No. 32, pp. 1245-1284

70 Neuroses after Accidents. (Neurosen nach Unfällen: Winke für den Praktiker.) S. Erben.
71 Psychology and Psychopathology of Old Age. (Greisenalter.) A. H. Hübner. Commenced in No. 31.
72 Generalized Infections with the Colon Bacillus. (Allgemeininfektionen des menschlichen Körpers durch Bacterium coli commune.) A. Lindemann.
73 Incandescent Light Baths. (Ueber Glühlichtbäder.) R. von Jaksch.
74 Bismuth Paste in Treatment of Fistulas. M. Brandes.
75 Normal Weight in Proportion to Height. (Ueber das nach der proportionellen Körperlänge bestimmte Normalgewicht.) G. Zickgraf.
76 Radium in Treatment of Cancer. F. W. Nahmmacher.
77 Formula for Expressing Features of the Circulation. (Zur Theorie der Zirkulationsformel.) A. Sperling.
78 Tuberculosis Toxins. (Ueber Tuberkulosegifte.) F. Jessen.

Münchener medizinische Wochenschrift

August 2, LVII, No. 31, pp. 1625-1672

79 Industrial Accidents Arousing Latent Internal Disease in Apparently Sound Individuals. (Betriebsunfälle: Mitteilung eines Falles von bis dahin symptomlos verlaufenem Verschluss der l. Karotis und erheblicher Verengerung beider Arteriae subclaviae.) Ch. Bäumler.
80 *Atypical Forms and Complications of Intermittent Limping. (Atypische Formen und Komplikationen der arteriosklerotischen und angiospastischen Dysbasie.) H. Curschmann.
81 *Treatment of Little's Disease. K. Biesalski.
82 Experimental Transplantation of Large Flaps of Stomach Mucosa. (Ueber die Transplantierbarkeit von breiten Magenschleimhautlappen.) I. Debernardi.
83 Experiences with Ehrlich's 606 in Treatment of Syphilis. (Kurzer Bericht über 109 mit "606" behandelte Luesfälle.) A. Glück.
84 Treatment of Anthrax. (Zur Behandlung des Milzbrandes.) F. Koelsch.
85 *Improved Technic for Treatment of Small Pox. (Beitrag zur Behandlung der Variola.) W. Dreyer.
86 Helminthiasis and Treatment with Oil of Chenopodium. (Ueber Ascaridiasis und ihre erfolgreiche Behandlung mit dem amerikanischen Wurmsamenöl.) M. Goekel.
87 Aspiration of Pleural Effusion. (Ein neuer Pleurapunktionsapparat.) W. Weitz.

80. **Atypical Forms of Intermittent Limping.**—Curschmann regrets that physicians do not make a practice of examining the arteries in the foot more frequently as they thus miss the explanation of many puzzling syndromes. The diagnosis of arteriosclerotic intermittent limping is further rendered more difficult by the atypical forms occasionally observed, as in 2 cases he describes in which the patients had intense pains come on while they were at rest, especially at night, and the pains were dissipated by getting up and walking—the syndrome thus being exactly the reverse of the classical type. In both the cases there was a history of syphilis 10 or 11 years before, and in both the affection came on with a sudden onset. These cases resemble 2 recently described by Erb as "arteriitic dysbasia." In some other atypical cases reported by Curschmann there was a combination of intermittent limping affecting the left foot, vascular cramps in both hands during work, with occasional motor disturbances, actual dyspraxia, and at the same time intermittent intense pain in the left arm. A similar syndrome was observed in other patients free from arteriosclerosis, and he is inclined to explain it as an abnormal tonicity of the smaller arteries, a pure angiospastic form of dyspraxia. In another case the presumptive diagnosis is angiospastic intermittent limping developing in the course of a climacteric vasomotor neurosis.

intermittent limping may accompany osteomalacia and he reports a case of this combination in a woman of 43 who had had two premature deliveries about 30. After a couple of years the patient was totally unable to walk and the skeleton was tender but there were no signs of arteriosclerosis although the pulse in the feet was imperceptible. Under two months of bed rest, phosphorus and cod-liver oil and brine baths all the symptoms of the osteomalacia subsided and also all traces of the intermittent limping syndrome. Even the pulse in the feet returned as the osteomalacia subsided. He has noticed pronounced vasoconstrictor phenomena in the hands and feet in 3 other patients with osteomalacia, women 50, 73 and 79 years old, but they never progressed to actual intermittent limping. As puerperal osteomalacia is probably the result of perverted functioning of the ovaries or uterus, the vasomotor symptoms may have a similar origin.

84. **Resection of Posterior Roots for Spastic Paralysis.**—Biesalski admits the theoretical importance of Foerster's operation to interrupt the reflex arc causing Little's disease on account of the lack of the normal inhibiting influence of the pyramidal tracts. At the same time, he insists that this treatment should be restricted to the severest cases and applied only after failure of the ordinary measures. The paralysis has generally entailed such secondary shriveling and shortening of the soft parts, vessels and nerves that normal functioning of the limb is impossible even after the contracture has been cured. Patient, persevering exercise of the contracted muscles, never leaving them at peace, may induce surprising improvement in time, he says. Even rest over Sunday is liable to undo much of the good realized. Only in the cases with rigidity of all the muscles and when new spasmodic contractures develop as the primary are corrected, should the Foerster operation be considered; it is too serious for children. The technic is not difficult but nearly every surgeon who has reported its application has had a fatality except Küttner in his 12 cases. Biesalski has applied it himself in 2 cases; the results were disappointing on account of the secondary changes. See abstract 52 above.

85. **Treatment of Small-Pox.**—Dreyer writes from Egypt to call attention to his method of excluding the chemical rays from his numerous small-pox patients without bothering with red curtains, etc. He merely paints the patient's body, especially the exposed regions, with a saturated solution of potassium permanganate. This stains the skin and has the same filtering effect on the light rays as Finsen's red-light treatment while it permits ample ventilation of the apartment. It has further a distinct disinfecting action; the pustules seem to be less malignant and the pitting is less under this treatment although it does not affect of course the specific variola process. Caution is necessary in case of weakness of the heart, preexisting or from the toxic action of the disease. It might be possible, he suggests, to substitute the sodium for the potassium salt as potassium is more toxic for the heart, but he has had no experience with the former.

Therapie der Gegenwart, Berlin

August LI, No. 8, pp. 337-384

88 *Encapsulated Pleural Effusions and Empyema, Especially the Interlobar Variety. (Abgekammerte, insb. interlobäre Pleuraexsudate.) A. Fraenkel.
89 *Intravenous Injection of Diphtheria Antitoxin. (Die Intravenöse Injektion des Heilserums bei Diphtherie.) H. Tachau.
90 *Prophylaxis and Cure of Faulty Attitudes by Utilizing the Children's School Book Bag. (Zur Prophylaxe der habituellen Haltungsanomalien.) G. Müller.

88. **Encapsulated Pleural Effusions.**—Fraenkel remarks that diaphragmatic pleurisy causes insignificant symptoms when the encapsulated effusion is of slight extent—merely a big blister—but the pain may be considerable with much tenderness at certain points, especially at the intersection of a line continuing horizontally the tenth rib with a vertical line continuing the outer margin of the sternum. The epigastrium may also be tender and the tenth and eleventh interspaces, and there may be a particularly sensitive point close to the spine. Pressure on the phrenic nerve in the neck is also liable to be painful. Besides these radiated pains there is sometimes pain in the stomach and pain as what is swallowed passes the diaphragm and, likewise, pain in the region of the diaphragm during coughing. Hiccough and vomiting are also liable to occur from reflex action as the food passes the diaphragm. A reflex contraction of the abdominal wall at the close of a deep inspiration may also be observed. When the mediastinal pleura is involved there was a sudden stormy onset of symptoms in the 6 known cases of this kind, high fever, the disturbances restricted to one side, and the affection leading to a small accumulation of pus which generally perforated into the bronchi. The symptoms are those natural from compression of the vagus and recurrent nerves, air passages or esophagus. An encapsulated interlobar effusion may be of small amount or up to a pint or quart of effusion or pus; it generally is most evident along the axillary line from the fourth to the sixth interspace, where it is most readily reached by the needle. When it increases in amount threatening symptoms on the part of the lungs and heart are possible. Puncture may not locate the effusion, and the compression of the air passages and heart may suggest a tumor but radiography will confirm the assumption of an interlobar effusion based mainly on the pallor, persisting fever and resonance over the right upper lobe. Putrid empyema is generally secondary to a gangrenous process in the lung, he says, but he has met with a case in which a traction diverticulum of the esophagus was the primary trouble. He adds that these traction diverticula are common but are easily overlooked at autopsies.

89. **Intravenous Injection of Antitoxin.**—Tachau's experiences failed to demonstrate that there is any advantage in the intravenous over the subcutaneous route in administering antitoxin. He applied the intravenous technic in 100 cases; the temperature rose after the injections in half the cases while in 3 cases, the patients between 15 and 24, there were chills and transient collapse.

90. **Correction of Faulty Attitudes in School Children.**—Müller advises a knapsack for the child to carrry his books home from school; it is supported by straps from the center, passing over the child's shoulders, then through a slanting catch on each side of the knapsack; the straps are then brought around the waist and buckled in front. The weight from the books in this knapsack is exactly what is needed, he states, to correct the faulty attitudes assumed by children at their school work. The ordinary methods of carrying the school books tend to exaggerate the faulty attitudes which in time lead to actual curvature of the spine.

Wiener klinische Wochenschrift

August 4, XXIII, No. 31, pp. 1131-1160

91 *Bladder Disturbances after Administration of Ehrlich's "606." (Ueber Blasenstörungen nach Anwendung des Präparates 606. Erwiderung.) P. Ehrlich.
92 *Idem. (Ueber unerwunschte Nebenerscheinungen nach Anwendung von Dioxydiaminoarsenbenzol—606—Ehrlich-Hata.) K. Bohac and P. Sobotka.
93 Opsonins of Normal Active Serum. E. E. Pribram.
94 *The Stage of Fatigue in Encroaching Stenosis of the Pylorus, and Its Treatment. (Das Ermüdungsstadium der Pylorusstenose.) S. Jonas.
95 Importance of the Complement-Binding Test in Diagnosis of Echinococcus Disease in Man. G. Braunstein.
96 Action of Mineral Waters on the Metabolism. (Zur Kenntnis der Wirkung der Mineralwässer auf den Stickstoffwechsel bei Menschen.) Markl.

91. **Bladder Disturbances after Administration of Ehrlich's "606."**—This is a telegram to the editors of the *Wochenschrift* from Ehrlich expressing regret that Bohac and Sobotka had not advised him at the proper time of their experiences with disturbances after giving the "606" in 3 cases before publishing them. (Their communication was summarized in THE JOURNAL, September 3, page 898.) If they had informed him of their experiences, he adds, the sensational disquietude caused by their article might easily have been avoided. He says that 132 other vials of the same batch of "606" were sent to 5 other hospital physicians and none has had any untoward experiences with it, and both himself and Alt and Sellei think that the disturbances reported by Bohac and Sobotka are typical methyl alcohol intoxication symptoms, and that the trouble was due to the injurious action of a perhaps not entirely pure methyl alcohol. The powdered drug had been rubbed up with a little methyl alcohol before dissolving in water, according to Ehrlich's directions and practice.

92. Untoward By-effects after Administration of Ehrlich's "606."—Bohac and Sobotka here report the later history of the 3 patients referred to in the last abstract. The complete retention of urine lasted for 10 days in one case, the rectal tenesmus a little longer. The reflexes behaved better at the second examination; the knee-jerk could still not be elicited reclining but could be elicited with more or less facility when the patient sat up. They add further that 3 other patients have returned with new periosteal gummas, new eruption of papules or pustulization of the old eruption 2 or 3 weeks after the apparent cure under the single dose of 0.3 gm. of the "606." They state further that the syndrome they observed in the 3 cases presenting untoward symptoms differed entirely from that of methyl alcohol intoxication as depicted by Robert and by von Jaksch. (This article was mentioned in the Vienna Letter, August 27, page 791.)

94. The Stage of Fatigue in Stenosis of the Pylorus.—Jonas calls attention to a possible source of error in functional tests of the stomach, namely, that the test meal is so light that even an insufficient stomach is able to take care of it without fatigue. The same stomach, with a meal making more demands on its functioning, may reach a stage of fatigue or exhaustion, and this stage would be reached more readily the less functionally capable the stomach. He reports 2 typical cases of this fatigue phase and another bordering on it. In the 2 typical cases described, in men of 48 and 53 respectively, signs of hyperacidity and hypersecretion had been noted for years; and finally they began to vomit, occasionally, from a pint to a quart of acid vomitus, containing scraps from the previous day's meals and sarcinæ. The symptoms indicated ulcer and stenosis of the pylorus but the skiagram showed an apparently normal stomach and the stomach emptied itself in approximately the normal period. Treatment should aim to reduce the work demanded of the stomach and favor its evacuation. This is accomplished by giving oil which lubricates the pylorus while soothing the mucosa and the tendency to spasmodic contraction and modifying the acidity; it has also nutritive value. Rinsing out the stomach also relieves it of retained matters and products of hypersecretion. The food should be soft and fluid to spare the stomach as much work as possible, and particularly nourishing food should be given as the stomach musculature seems to grow stronger as the patient gains in weight. Treatment along these lines has given excellent results in his cases. Gastroenterostomy is the last resort.

Zentralblatt für Chirurgie, Leipsic

August 6, XXXVII, No. 32, pp. 1033-1072

97 *Enteroanastomosis Above Incarcerated Hernia. (Behandlung gangränöser Hernien ohne sofortige Lösung der Inkarzeration.) F. Hesse.
98 Extension Device for Fracture of the Forearm. (Ueber den Zugverband beim Vorderarmbruche.) C. Ewald.

97. Enteroanastomosis above Incarcerated Hernia.—Hesse expatiates on the advantages of leaving the incarcerated hernia unmolested while the enteroanastomosis is made above it, without attempting to reduce the incarcerated loop. This technic was suggested by Samter 15 years ago, he says, but has not obtained the vogue it merits. The lateral anastomosis is made far enough above to refrain from pulling on the incarcerated bowel, which is wrapped in gauze below. The anastomosis is made through an incision over an inch above Poupart's ligament; the mesentery is fastened to wall off the region below, and the incision is then sutured. The gangrenous hernia and surrounding inflammation are then taken care of through an opening below, but Hesse advises not to attempt to reduce the incarceration nor pull on the bowel in any way. By this method it is possible to reestablish the permeability of the intestinal canal, and open up the focus while yet protecting the abdomen above from contamination, and all with the simplest and least exacting technic, deferring the resection of the gangrenous loop to a more propitious hour, when the patient has regained strength, the wound is in better condition or the light better. The objections to the method are that the lateral anastomosis has to be made against the peristalsis and the liability to a persisting fistula at the hernial opening. It should be reserved for cases in which every minute counts or the patient is too weak to stand a more extensive operation. Hesse gives the details of two cases in which he has successfully applied this technic. Both patients were women, 43 and 53 years old.

Zentralblatt für Gynäkologie, Leipsic

August 6, XXXIV, No. 32, pp. 107[illegible]-110[illegible]

99 *Vaginal Cesarean Section for Artificial Abortion and Premature Delivery. (Hysterotomia vaginalis anterior als Methode zur künstlichen Unterbrechung der Schwangerschaft.) R. Jahreiss.

99. Vaginal Cesarean Section for Abortion and Premature Delivery.—Jahreiss reports a few cases in which he evacuated the uterus by a simple anterior vaginal hysterotomy at the sixth or eighth week or fourth or sixth month of pregnancy on account of aggravation of epilepsy, eclampsia or other reason. The facility of the operation, its effectualness and the smooth recovery speak in favor of this means of abortion and premature delivery as less of a physical strain on the whole than the ordinary technics.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 31, XXXI, No. 91, pp. 953-968

100 Albumin in Sputum Not Always due to Tuberculosis. (Sul valore dell' albumino-reazione nell' espettorato.) C. P. Goggia.
101 Histologic Research on Action of Roentgen Rays on Experimental Uranium Nitrate Nephritis. C. Quadrone.

August 2, No. 92, pp. 969-976

102 Action of Epinephrin on the Circulation in the Lung. (Azione dell'adrenalina sul circolo polmonare.) A. Farini.

August 7, No. 94, pp. 985-1000

103 Metabolism. (Sul ricambio.) P. Giacosa.
104 *Simplified Skin Tuberculin Test. (Nuovo metodo innocuo, facile e comodo di reazione tubercolinica.) P. Barabaschi.

104. Simplified Tuberculin Skin Test.—Barabaschi rubs the region with alcohol until the skin is red. Then in the center of the small area thus prepared he spreads the thinnest possible layer of undiluted tuberculin without rubbing it in and lets it dry. In the cases in which he has applied the tuberculin test in this way, the reaction was always positive in the 34 known tuberculous and negative in 35 controls. A positive reaction was obtained in 3 cases in which only the tendency to anemia had suggested tuberculosis but the course of the cases confirmed the accuracy of the response. The method is similar to Lignière's technic only that there is no waste of tuberculin; Lignière rubs the skin with a wad of cotton dipped in the tuberculin while Barabaschi does the rubbing with alcohol.

Policlinico, Rome

August 7, XVII, No. 32, pp. 995-1026

105 *Simple Conservative Treatment of Gangrenous Incarcerated Hernia. (Sopra un semplice metodo conservativo nelle necrosi intestinali da strozzamento erniario.) G. Lerda.
106 Pernicious Malaria. (Sulla perniciosità.) G. Baccelli. Commenced in No. 31.

July, Medical Section, No. 7, pp. 285-332

107 Pityriasis Rubra of Tuberculous Origin. (Tubercolosi cutanea eritrodermica desquamativa generale.) P. L. Bosellini.
108 Multiple Calcification of the Subcutaneous Tissue, of Syphilitic Origin. G. Stradiotti. Commenced in No. 6.

July, Surgical Section, No. 7, pp. 289-332

109 Negative Experimental Research on Active Anaphylaxis in Respect to Carcinoma. (Anafilassia attiva e carcinoma.) D. Maragliano.
110 Negative Experimental Research on Passive Anaphylaxis in Carcinoma. (Dell'anafilassi passiva come mezzo di diagnosi dei tumori maligni.) A. Isaja.
111 Experimental Research on Operative Technic for Treatment of Salivary Fistulas. S. Cassio.
112 Importance of Histologic Examination of Metastatic Tumors for Diagnosis of the Primary Cancer. (Tumore a tipo surrenale di sede atipica con metastasi multiple sottocutanee e sottomucose.) F. Brugnatelli.

105. Conservative Treatment of Gangrenous Incarcerated Hernia.—Lerda was unable to apply the ordinary technics in a case reported as the patient was too old and decrepit to stand much of an operation and the incarceration of a large femoral hernia was of 4 days' standing. He made a longitudinal incision on the lower side of the hernial sac and carried the incision upward into the parietal peritoneum in the shape of a Y. The incarcerated bowel showed a ring of necrosis and was adherent to the sac. He then turned up the end of the sac and sutured it to the mesentery above the gangrenous bowel, thus enclosing the latter in a sheath of tissue formed of the hernial sac. The only part of the bowel left unenclosed was on the side toward the opening in the skin, which was tamponed. Four days later, the gangrenous intestine perforated as anticipated at the point thus left exposed, and fecal matter was voided here as well as by the rectum for a time but the fistula gradually tended towards healing. In a second case in which this technic was applied the fistula healed completely in 25 days.

Riforma Medica, Naples

July 18, XXVI, No. 29, pp. 785-812

113 Demonstration of a Capsule for Certain Bacteria Hitherto Supposed Not to Have Capsules. T. Carpentieri.
114 *Cure of Perforating Ulcer of the Foot by Stretching the Sciatic Nerve. (Contributo alla cura dell'ulcera perforante del piede mediante lo stiramento dello sciatico.) A. Fontana.
115 Two Cases of Primary Melanotic Sarcoma of the Parotid Gland. F. Delaini.

July 25, No. 30, pp 813-840

116 Study of the Blood with Thyroid Disturbances. (Ricerche ematologiche nelle affezioni della tiroide.) G. Morone.
117 Behavior of the Malta Fever Micrococcus in the Liver and the Biliary Passages. (Comportamento del micrococco melitense nel fegato e nelle vie biliari.) G. Radice.
118 Experimental Research on Influence of Jaundice on Phagocytosis. (Influenza dell'ittero sul potere fagocitario del sangue in alcune infezione.) S. Maggiore.

114. **Stretching the Sciatic Nerve in Treatment of Perforating Ulcer of the Foot.**—In the first of the 4 cases reported the trophic disturbances had been cured by stretching the plantar nerve, but the ulcer in the foot recurred before the year was out, and this time the sciatic nerve was isolated and stretched. The cure was soon complete and has been permanent during the 2 years since. In the second case the sciatic was stretched to cure coexisting sciatica and it cured at the same time the ulcer on the foot which was evidently secondary to the trouble in the sciatic nerve. The results were equally good in the 2 other cases. His patients were men 25, 49, 60 and 70 years old, and 3 were hard drinkers. The nerve was stretched under morphin-chloroform general anesthesia and the ulcer was curetted and dressed at the same time.

Hospitalstidende, Copenhagen

June 29, LIII, No. 26, pp. 705-800

119 Pathogenesis of Glaucoma. (Overvejelser og Undersøgelser angaaende Glaucomets Pathogenese. Om lymfostat og hemostat Glaucom.) C. F. Heerfordt.
120 Differential Pressure. (Nogle Bemærkninger om Overtryksrespiration.) A. Krogh.

July 6, No. 27, pp. 801-824

121 Treatment of Vulvovaginitis with Gonococcus Vaccine. H. Boas and O. Wulff.

July 13, No. 28, pp 825-848

122 Traumatic Rupture of the Sclerotic with Hydrophthalmia. N. Høeg.
123 Negative Tuberculin Skin Test in Hebra's Prurigo. (Prurigo Hebræ's Forhold til Tuberkulose.) H. Boas.

July 27, No. 30, pp. 873-904

124 Research on Causes of Fluctuations in Number of White Corpuscles in the Blood in the Capillaries. (Nogle Undersøgelser over Svingninger i Antallet af hvide Blodlegemer i Kapillærblodet og Aarsagerne til disse.) J Lindhard. Commenced in No. 29.

Ugeskrift for Læger, Copenhagen

July 28, LXXII, No. 30, pp. 885-922

125 The Hypophysis Cerebri and its Pathologic Importance. P. T. Hald

August 4, No 31, pp. 923-942

126 Chemotherapy to Date. H. I Bing.
127 Advantages of Local Treatment of Superficial Ulcerations with Ethyl Chlorid (Terapeutiske Noter.) S. Christens.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for review in the interests of our readers and as space permits.

I. Influence of Age and Temperature on the Potency of Diphtheria Antitoxin. By John F. Anderson, Director Hygienic Laboratory U. S. P. H. and M. H. S. Pp. 9-26. II. An Organism (Pseudomonas Protea) Isolated from Water, Agglutinated by the Serum of Typhoid Fever Patients. By W. H. Frost, Passed Assistant Surgeon, U. S. P. H. and M. H. S. Pp. 29-76. III. Some Considerations on Colorimetry, and a New Colorimeter. By Norman Roberts, Passed Assistant Surgeon, U. S. P. H. and M.-H. S. Pp. 79-93, with illustrations. IV. A Gas Generator, in Four Forms, for Laboratory and Technical Use. By Norman Roberts, Passed Assistant Surgeon, U. S. P. H. and M.-H. S. Pp. 99-110, with illustrations. Hygienic Laboratory, Bull. 66, U. S. P. H. and M.-H. S. Treasury Dept. Paper. Pp. 110, with illustrations. Washington: [Superintendent of Documents] Government Printing Office, 1910.

A Text-Book of Mental Diseases. By Eugenio Tanzi, Professor of Psychiatry in the Royal Institute of Higher Studies of Florence. Authorized Translation from the Italian by W. Ford Robertson, M.D., C.M., Pathologist to the Scottish Asylums, Edinburgh, and T. C. MacKenzie, M.D., F.R.C.P., Edin., Medical Superintendent, Inverness District Asylum. Cloth. Price, $7. Pp. 803, with 132 illustrations. New York: Rebman Company, 1910.

The Extra Pharmacopeia. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B., Lond., D.P.H. Fourteenth edition. Morocco. Price, 12 shillings net. Pp. 1054, with supplement, Organic Analysis Chart, by W. Harrison Martindale, Ph.D., Pharmaceutical Chemist. Morocco. Price, 3 shillings 6 pence net. Pp. 80. London: H. K. Lewis, 136 Gower Street, W. C., 1910.

Proceedings of the Exercises and Conferences of the National Association for the Study and Education of Exceptional Children. Inaugurated on the occasion of the Tenth Anniversary of the Groszmann School for Nervous and Atypical Children, April 1, 1910. Waldemar H. Groszmann, Secretary. Plainfield, N. J. Paper. Price, $1.50. Pp. 141. 1910.

Clinical Commentaries Deduced from the Morphology of the Human Body. By Prof. Achille De-Giovanni, Director of the General Medical Clinic, University of Padua. Translated from the second Italian Edition by John Joseph Eyre, M.R.C.P., L.R.C.S.I., D.P.H., Cambridge. Cloth. Price, $4.50. Pp. 436, with illustrations. New York: Rebman Company, 1910.

Investigations on Bengal Jail Dietaries. By Capt. D. McCay, M.B., B.Ch., B.A.O., I.M.S., Professor of Physiology, Medical College, Calcutta. No. 37, Scientific Memoirs by the Officers of the Medical and Sanitary Departments of the Government of India. Paper. Price, Rs. 2-6-0 or 4s. 3d. Pp. 226. Calcutta: Superintendent Government Printing, India, 1910.

Bier's Text-Book of Hyperemia as Applied in Medicine and Surgery. By Prof. Dr. August Bier, of Berlin. Only authorized translation from the sixth German revised edition by Dr. Gustavus M. Blech, Professor of Clinical Surgery, Illinois Medical College. Cloth. Price, $4. Pp. 439, with 39 illustrations. New York: Rebman Company, 1910.

The Diseases of Women. A Handbook for Students and Practitioners. By J. Bland-Sutton, F.R.C.S., Eng., Surgeon to the Middlesex Hospital, and Arthur E. Giles, M.D., B.Sc., Lond., F.R.C.S., Edin., Surgeon to the Chelsea Hospital for Woman. Cloth. Price, $3.25. Pp. 554, with 127 illustrations. New York: Rebman Company, 1910.

Lectures on Cosmetic Treatment. A Manual for Practitioners. By Dr. Edmund Saalfeld, of Berlin. Translated by J. F. Halls Dally, M.A., M.D., Physician to the St. Marylebone General Dispensary. Cloth. Price, $1.75. Pp. 186, with illustrations. New York: Paul B. Hoeber, 69 East Fifty-ninth Street, 1910.

Pulmonary Tuberculosis and Sanatorium Treatment. A Record of Ten Years' Observation and Work in Open-Air Sanatoria. By C. Muthu, M.D., M.R.C.S., L.R.C.P., Associate of King's College, London. Cloth. Price, $2. Pp. 201, with illustrations. New York: William Wood & Co., 1910.

Maritime Quarantine. By Leland E. Cofer, Assistant Surgeon-General. Public Health Bull. 34, U. S. P. H. and M. H. S. Treasury Dept. Paper. Pp. 64, with 25 illustrations. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Lehrbuch der Urologie, mit Einschluss der Männlichen Sexualerkrankungen. Von Dr. Leopold Casper, Universitätsprofessor in Berlin. Paper. Price 15 marks. Pp. 575, with 221 illustrations. Berlin: Urban and Schwarzenberg, 1910.

An Introduction to the Study of Hypnotism, Experimental and Therapeutic. By H. E. Wingfield, M.A., M.D., B.C., Cantab., Consulting Physician, Royal Hants County Hospital. Cloth. Price, $2. Pp. 175. New York: William Wood & Co., 1910.

A Plea for the Home Treatment and Prevention of Scarlet Fever. By Robert Milne, M.D., Ch.M., Medical Officer of Dr. Barnardo's Hospitals and Homes for Thirty Years. Cloth. Price, $1. Pp. 80. New York: William Wood & Co., 1910.

The Solubilities of the Pharmacopeial Organic Acids and Their Salts. By Atherton Seidell. Bull. 67, Hyg. Lab., U. S. P. H. and M.-H. S. Paper. Pp. 98. Washington: [Superintendent of Documents] Government Printing Office, 1910.

Dislocations and Joint Fractures. By Frederic J. Cotton, A.M., M.D., First Assistant Surgeon to the Boston City Hospital. Cloth. Price, $6 net. Pp. 654, with 1,201 illustrations. Philadelphia and London. W. B. Saunders & Co., 1910.

General Surgery. Edited by John B. Murphy, A.M., M.D., LL.D., Professor of Surgery in the Northwestern University, Vol. II. The Practical Medicine Series. Cloth. Pp. 615, with illustrations. Chicago: The Year Book Publishers, 1910.

The Ear and Its Diseases. By Albert A. Gray, M.D., Laureate of the Lenval Prize in Otology, International Medical Congress, 1909. Cloth. Price, $4.25. Pp. 388, with 123 illustrations. New York: William Wood & Co., 1910.

Differentialdiagnostische Tabellen der inneren Krankheiten. Von J. Clemach, in Wien. Paper. Pp. 21. Price, 3 marks. Munich: J. F. Lehmanns Verlag, 1910.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

Vol. LV, No. 12 | Chicago, Illinois | September 17, 1910

THE PROPOSED ENLARGED NATIONAL PUBLIC HEALTH ORGANIZATION

A DISCUSSION OF PLANS FOR ITS ORGANIZATION

GEORGE B. YOUNG, M.D.
Surgeon, United States Public Health and Marine-Hospital Service;
Stationed at Chicago in Charge of the Marine Hospital
CHICAGO

A careful reading of the hearings before both the Senate and the House committees, which have been considering the Owen and other bills, designed to coordinate and increase the public health activities of the general government, compels the conclusion that the committees obtained very little that would be of value in solving the problem before them. That problem may be stated to be the drafting of a law which will give adequate recognition to the importance of national public health work, and at the same time will avoid being made the instrument for exploiting the theories of a great variety of well meaning people whose preference for some particular plan of organization, or enthusiasm for some particular form of research or educational propoganda, is in inverse proportion to their knowledge of the limitations of national health legislation on both the practical and the constitutional sides.

NATURE OF PROBLEM

Broadly speaking, the problem involves two questions: (1) What relation shall the public health organization bear to the other executive organizations of the government? and, (2) How shall the organization be constituted in order to give it at once the greatest practical efficiency within the limits of that relation?

What practical assistance, then, did the committees get from the voluminous testimony presented to them? Let us analyze it and see.

ANALYSIS OF THE HEARINGS

The witnesses fell naturally into two classes, those advocating legislation along the lines of one or more of the pending measures, and those opposed totally or in part to the principle underlying those measures. The second class can be quickly disposed of because, their efforts being directed toward preventing action along the general lines followed by most of the pending bills, their ideas could not be of much use in shaping legislation in furtherance of the object of those measures.

An exception to these must, however, be made in regard to several of the purely legal points raised by Ex-Governor Bates as attorney for certain organizations opposing legislation, for while most of these points were more adroitly than convincingly presented, there were some others which raised questions which, it must be admitted, had apparently never occurred to many of the proponents of the measures under consideration.

Passing to a consideration of the statements of the proponents, they are readily classifiable into several pretty definite categories. First in point of numbers, those whose statements were largely confined to a presentation of the great importance of expanding the scope of the national public health activities, to an enumeration of the problems for the elucidation of which only national agencies seemed adequate, and to explanations of the enormous advantages, racial, social, educational, economic and sanitary, which would follow the solution of those problems. Some of these witnesses had incidentally something to say about the specific measures under discussion, but for the most part their statements contained nothing that would either inform the committee as to what the government was already doing, what it should do, or how it should do it.

The second class comprised those whose arguments were directed to supporting the fundamental proposition that the proposed increase in governmental activities required the establishment of a new executive department, and, in so far as their arguments may be accepted as valid by the members of the committee, their testimony can be regarded as helpful.

The third class comprised those whose testimony concerned the desirability of transferring to the new organization certain specific activities at present located in existing organizations of the government, and while the witnesses concerned had very little if anything to say definitely as to the extent to which these activities were to be transferred, or the manner in which they were to be correlated with other activities in the organization of either existing or new public health agencies, still, so far as it went, this testimony can be considered as helpful, but like that of the other groups, it did not go far in the direction of constructive suggestions. There were two exceptions to this. Before the Senate committee Dr. Kober and Dr. Wiley did present constructive suggestions as to the activities to be transferred to the new organization, and explanations of reasons for such transfers.

Disregarding the statements of the first class of the proponent witnesses as not of immediate constructive utility, what does all the rest of it yield? First, arguments as to what kind of a head the new organization shall have, arguments which go very superficially into only one of several of the suggestions offered as to his rank, and the method of his selection; second, fragmentary discussion of what agencies shall be under him—nowhere any presentation either of the broad generat questions involved in designing the proposed organization, or the systematic study of the details necessary to make that organization effective.

This is in no sense intended as a criticism of the motives or ability of the witnesses. It simply points out the inherent difficulties in properly presenting such questions to a large committee by means of testimony of witnesses, whose very eminence in various lines of human endeavor, while it explains their being put forward as specialists as to certain phases of the subject, causes them to take a rather narrow view of it and necessarily produces a somewhat fragmentary and inconclusive mass of testimony.

Now it appears to me that, aside from the question of who shall be at the head of any organization, the real matters to be considered are what in general terms are the kind of activities that may be properly included in a national health organization at the present time, how far they already exist in one place or another, and how far they must be created *de novo*.

I have kept pretty closely in touch with the discussions of these matters during a good many years, and think it is safe to say that there has been more said about what kind of a head the public health agency should have than about the organization of the agency itself.

PLAN OF DISCUSSION

Deferring for the present the consideration of that matter, I desire to present the question of the organization. I wish first, however, to make it plain that I do not intend to present the matter from the point of view of any particular organization, sect or clique, either official or unofficial. I propose merely to outline a tentative enumeration of the *kind* of activities that might be embraced in the national health organization, to take them up seriatim and set forth to what extent they exist, how far existing agencies are capable of development, to what extent their transfer from their present location would be possible or desirable, and what new agencies would have to be created. I then propose to present the only two possible plans for the organization of the various activities into a practical administrative machine, and lastly, to discuss what sort of a head the whole organization should have.

I am aware, as already stated, that this is reversing the plan followed in most of the discussions of the subject, but I believe it is logically sounder to settle the question of the apex after the dimensions and character of the subjacent pyramid have been settled than to determine the character of the apex and then construct the pyramid to fit it.

Just here it may not be amiss to point out the chief difficulty that has confronted most of those who have undertaken to frame detailed plans for a department or bureau of public health, and that is that very few of them have been familiar with the legal aspects of the case, of precedent, of existing or former laws, the opinions of the comptroller or the decisions of the courts. Neither as a rule have they been familiar with governmental routine. In effect they have undertaken to make plans for a building without being familiar with either the internal structural qualities of some of their materials or the provisions of the building code under which they must be confined. I do not claim to be immune from these deficiencies myself, but twenty-two years close contact with many of these has given me a fair degree of familiarity with the subject, and I have therefore in the preparation of my plan avoided such difficulties as far as I could and endeavored to indicate where they were when I could not avoid them.

In the outline presented in the accompanying diagram I have embodied more or less the suggestions offered by various people at various times as to what should be represented in the new organization, notably those of Dr. Kober and Dr. Wiley before the Senate committee, but the arrangement is my own, the result of many years of practical experience with the advantages and defects of the existing public health agencies of the government.

REASONS FOR TWO GRAND DIVISIONS

In the accompanying diagram it will be noticed that there are two grand divisions—scientific and administrative. There are three reasons for making these two grand divisions.

First.—There are grave constitutional questions involved in administrative action by the government, in many public health matters, questions involving the "police power" and the like, which do not apply to the making of purely scientific investigations and the publication of the results. The latter may be clearly justified as necessary for the information of the government in order that it may intelligently regulate the sanitary aspects of interstate and foreign commerce, or for intelligent regulation of its own governmental agencies, or of areas under its jurisdiction. In organization, therefore, the two sides should be kept distinct in order that legislative action designed to promote the research side be not restricted by the necessity of avoiding constitutional restrictions on administrative encroachment on the powers reserved to the states.

Second.—This arrangement will facilitate the coordination of the commissioned organization of the Public Health and Marine-Hospital Service with the activities to be enlarged, transferred or created. Every impartial student of the subject knows that this service will be the largest single component of any new health organization, and the question has been how to retain the advantages afforded by the coherent, compact and disciplined administrative efficiency of that service, and at the same time secure the necessary flexibility of organization to provide for the utilization of a personnel drawn from a variety of other sources, especially in connection with research work. I do not for a minute mean that the personnel of the Public Health and Marine-Hospital Service shall be confined to the administrative side, or that the personnel drawn from other sources shall be confined to the research side; neither am I trying to champion the Public Health and Marine-Hospital Service under the pretense of an impartial discussion of the subject of the new organization. I only want to point out one of the advantages in keeping the natural grand divisions clearly in view when making legislative provision for the new organization.

Third.—The division follows the customary lines of governmental organization and will therefore promote efficiency.

EXPLANATION OF DIAGRAM

A. SCIENTIFIC SIDE. (First Grand Division.)

I. Bureau (or Division) of Statistics and Reports.

(a) *Compilations.*

The compilation and publication of the mortality statistics of this country is now done by the Division of Vital Statistics of the Census Bureau, Department of the Interior. The current morbidity and mortality statistics concerning the so-called quarantinable diseases, cholera, plague, typhus fever, smallpox and yellow fever of both this and foreign countries are

HEAD

A. SCIENTIFIC

- I Bureau (or Division) of Statistics and Reports
  - (a) Compilation
    - (1) Morbidity.
    - (2) Births.
    - (3) Deaths
  - (b) Publications.
  - (c) Library of Medicine and Surgery.
  - (d) Climatology
  - (e) Advice to State and Local Authorities
- II Bureau (or Division) of Sanitary Research.
  - (a) Laboratory Investigation.
    - (1) Bacteriology and
    - (2) Pathology.
    - (3) Parasitology
    - (4) Physiology
    - (5) Biology to include the control of vaccine and antitoxin production.
    - (6) Chemistry.
    - (7) Pharmacology
  - (b) Field Investigation
    - (1) Epidemiology.
    - (2) Housing and Social Conditions.
    - (3) Workshops, Mines and Industrial Conditions
    - (4) Study of the Disposal of Wastes.
  - (c) School of Applied Hygiene
    - (1) For Service Officers
    - (2) For State and Municipal Officers

B. ADMINISTRATIVE

- I Bureau (or Division) of Personnel and Accounts.
  - (a) Mails, Files, etc
  - (b) Personnel
  - (c) Accounts
- II Bureau (or Division) of Quarantine and Immigration
  - (a) Quarantine.
    - (1) Domestic
    - (2) Foreign and Insular
  - (b) Immigration.
  - (c) International Sanitary Relations.
  - (d) Management of Epidemics.
  - (e) Philippines and Isthmus
- III Bureau (or Division) of Government Hospitals.
  - (a) U S Marine Hospitals.
    - (1) Marine Hospitals and Dispensaries.
    - (2) Medical Officers for Revenue Cutters
    - (3) Physical Examination for Enlistment, Revenue Cutter Service
    - (4) Examination of Sight and Hearing of Pilots and Masters.
    - (5) Physical Examination for Saving Service.
    - (6) Service to be rendered in time of war
  - (b) U S. Hospitals and Baths, Hot Springs, Ark.
  - (c) Medical Service U S Soldiers' Homes.
  - (d) Hospitals for Immigrants
  - (e) Government Hospital for Insane
- IV Bureau (or Division) of Applied Sanitation and Sanitary Engineering
  - (a) Interstate Sanitation.
    - (1) Water Courses.
    - (2) Railways.
    - (3) Shipping.
  - (b) Public Buildings.
  - (c) Assistance to State and Local Authorities

> compiled and published weekly by the Division of Statistics and Reports of the Public Health and Marine Hospital Service, Treasury Department. The statistics of other infectious diseases, as tuberculosis, measles, typhoid and scarlet fever and diphtheria, are also collected from those states or municipalities which will supply them, and published weekly by the Public Health and Marine Hospital Service, Treasury Department, together with the tabulated mortality reports of some ninety principal foreign cities, and untabulated mortality reports from a considerable additional number of foreign cities and countries.

Vital statistics are the foundation of scientific public health work, and they are equally essential for the analysis of census returns. On the other hand, international statistics are not properly a part of the census, and both the Census Office and the Public Health and Marine-Hospital Service rely on states and municipalities for their information, but of course the machinery of the Bureau of Vital Statistics is much more complete than that of the other service and its personnel is better trained in the interpretation of statistics on their social and economic sides, and to a lesser extent on their sanitary side. The question may therefore be stated thus: The census work would not be complete without the collection of vital statistics; scientific public health work cannot begin without access to compilation of vital statistics.

Fortunately figures are not like the fruit of scientific research. They can be collected by one agency and interpreted by another in so far as they apply to its own work. Whether then the Division of Vital Statistics should be transferred to the health organization, or whether it shall supply the latter with the results of its work, the mutual division of the publication to be determined by regulations, is not a very essential matter.

(b) *Publications.*

> The existing publications of direct public health interest are the bulletins of the Hygienic Laboratory, the Public Health series of pamphlets, the Weekly Public Health Reports, and the Surgeon General's Annual Report, all issued by the Public Health and Marine Hospital Service of the Treasury Department; some of the bulletins of the Bureau of Chemistry, Bureau of Animal Industry, Bureau of Plant Industry and the nutrition investigations of the Experiment Stations all of the Agricultural Department, and a few of the publications of the Department of Commerce and Labor especially of the Bureau of Immigration.

One of the greatest fields of usefulness open to a national health agency is in the direction of publishing the results of its various investigations and activities by means of bulletins, reports, lectures, and the like. The enormous good done by the Department of Agriculture along these lines is well known. There may be legal objections to going into a state to do intrastate work, even for interstate purposes, but there can be no objection to the communication to state and local authorities by the government of the results of its own investigations. In so far as it may be deemed wise to transfer, in whole or in part, any of the activities of the last two named departments, of which I will speak later, their publications would logically simply go to swell the number, bulk and value of the first three publications, the research reports falling to the share of the laboratory bulletins, those of the other investigations to the public health series, and the statistical and other matters of immediate interest for national, state and municipal sanitarians to the weekly *Public Health*

Reports. The skeleton of the agency for publications may thus be said to exist already.

(c) *Library of Medicine and Surgery.*

This—known as the Surgeon General's Library—is now in the War Department, but its work has no inherent or essential connection with the work of the Army Medical Corps which now supplies the officers who have charge of its work. It is the great medical library of the country and should logically go into a national public health organization.

(d) *Climatology.*

This is of important public health interest but as the meterologic data on which it rests are compiled by the Weather Bureau in the Department of Agriculture, it would seem expedient that the collection of the data be left as it is, their interpretation only becoming a duty of the national public health organization.

(e) *Advice to State and Local Authorities.*

As this will be principally by means of publications, and correspondence in explanation and amplification of them, the work should belong to the Scientific Division.

II. Bureau (or Division) of Sanitary Research.

(a) *Laboratory Investigations.*

(1) BACTERIOLOGY AND (2) PATHOLOGY.

The bacteriology and pathology of public health interest is now done principally by the Division of Bacteriology and Pathology of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, and the Bureau of Animal Industry of the Agricultural Department.

(3) PARASITOLOGY (to include entomology).

The work on these subjects of most importance from a public health point of view is now done by the Division of Zoology of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, by the Division of Entomology, to some extent by the Bureau of Animal Industry, and to a less extent by the Bureau of Plant Industry, all of the Agricultural Department.

(4) PHYSIOLOGY.

There is no agency of the government now confined solely to the study of human physiology. Incidentally to the other work it is studied by some of the divisions of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, the Food and Drug Laboratory of the Division of Chemistry, Agricultural Department, and by the Nutrition Experiments and Pharmacologic Laboratory of the same department.

(5) BIOLOGY (to include control of vaccine and antitoxin production and nutrition experiments).

This also is studied incidentally as a part of the work of the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, the Bureau of Animal Industry, the Division of Entomology, Bureau of Plant Industry and Nutrition Experiments of the Agricultural Department. The nutrition work only in the latter, and the control of vaccine and antitoxin (by statute) only in the Hygienic Laboratory.

(6) CHEMISTRY.

General chemistry, organic and inorganic, purely as such, is now studied by express statutory direction in the Division of Chemistry, Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, and in the Division of Pharmacology of the same. Chemistry as incidental to food and drug work, in the Division of Chemistry, also incidentally by the Bureau of Plant Industry, and to some extent in other divisions of the Agricultural Department, also in the Laboratory of the Bureau of Standards.

(7) PHARMACOLOGY.

In the Division of Pharmacology, Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department; in the pharmacological laboratories of the bureaus of Chemistry, Animal Industry and Plants Industry of the Department of Agriculture.

The agencies engaged on these branches (laboratory investigations) are so interrelated that the whole matter can best be discussed under one heading. It seems clear that in so far as any of the activities of the bureaus, divisions and laboratories mentioned can be disassociated from the work essential to the performance by the departments containing them of their own particular duties, they should be in a public health organization. In this category are all the divisions of the Hygienic Laboratory, Public Health and Marine-Hospital Service, Treasury Department, the nutrition experiments and the pharmacologic laboratories of the Bureaus of Plant Industry, Animal Industry and Chemistry of the Agricultural Department, and probably the Purification of Water Laboratory of the Bureau of Plant Industry. The Bureau of Entomology may be in this class but probably its major work is too intimately connected with the Agricultural Department to permit of its transfer.

DIFFICULTIES IN ARRANGING TRANSFER OF SOME OF THE LABORATORY INVESTIGATIONS

When we come to the chemical, biologic, pathologic, physiologic and bacteriologic work of the Agricultural Department bureaus and divisions the subject is most difficult. Much of the work done in these lines by these bureaus and divisions is merely incidental to their real function, and yet is inseparable from it, just as the production of by-products in a manufacturing plant may be of little moment to the business as a whole, and still the business cannot be conducted without developing them. Professor Wiley says that some of the "activities" could be transferred, but does not go into detail. The plain fact is that the problem is one that no congressional committee, or no one person outside of the committeee, whether lay or medical, is competent to solve. The reason for this is that the question is neither a wholly legal one nor a wholly scientific one. In a sense it is one of "departmental engineering;" one of deciding just which cogs, wheels and pinions of the department machine can be removed without impairing the efficiency of the machinery or necessitating an expenditure, immediate or future, as great as the saving sought to be secured by the transfer of the parts to some other machine. For the present, however, it may be said that the main controversy rages around the question of what shall be the home of the "pure food" work and the inspection work of the Bureau of Animal Industry of the Agricultural Department, and the nub of the whole matter is whether these activities are "commercial" or "public health" matters. If the so-called "pure food" law is, as one of the most eminent sanitarians in the United States, the late Professor Harrington, has said it was, merely an act to prevent fraud and misbranding, conferring protection to public health as an incident to its execution and not as the object of its enactment, then it belongs where it is; but if it be a public health matter, either primarily or because of the resulting advantages of its enforcement, it should be in the public health organization. The same is true of the activities of the Bureau of

Animal Industry of the Department of Agriculture. One or more witnesses advance the idea that while the inspection, shipping, etc., of live animals was a "commerce" matter and as such should be under the Department of Agriculture, that the slaughtering and post-mortem inspections should be under the public health organization; in other words, that a live steer is an object of commerce, but that a dead one is not. The work of the Bureau of Animal Industry is of incalculable importance to public health, but so it is to the purely agricultural and commercial interests. How shall the dispute be decided? I think there is a way to settle these questions, but it should be properly taken up when we come to the question of legislation.

(*b*) *Field Investigations.*

(1) Epidemiology.

> The work done on this subject is practically confined to certain field investigations made in this country by the Hygienic Laboratory of the Public Health and Marine-Hospital Service, Treasury Department, under the direction of the Division of Sanitary Research of that Service, and in the Philippines by the Director of Health of the Insular Government, who is detailed from the Public Health and Marine-Hospital Service, and by the Army Medical Corps as incidental to their duty in the islands.

The general verdict being that the army work must be kept out of the national public health organization, all that would be necessary for the development of this branch of work would be to extend the scope of the authority, at present much restricted, under which the work is now done.

(2) Housing and Social Conditions.

(3) Workshop, Mines and Industrial Conditions.

> There is considerable work done at present in the direction of investigating the conditions enumerated but it is incidental to the work of several bureaus and divisions of the Department of Commerce and Labor rather than by explicit statutory direction. The Bureau of Mines, Department of the Interior, has been recently created by statute, but it is not known at this time, what, if anything, will be done in the nature of sanitary investigation.

There was more or less said at the hearings, and a great deal has been written, about the necessity of putting this work under the jurisdiction of the national public health organization, and I have therefore included the titles among the activities enumerated as proper to that organization, but as I cannot see how administrative work along those lines can be legally done, I have placed the items under the group of subjects which the government may investigate for its own purpose, the results being then available for general information. If the work be done it must be done either by machinery created *de novo* for that purpose in the public health organization by transferring the activities now in the Department of Commerce and Labor to the health organization, or by the Department of Commerce and Labor as at present. The last plan would be the easiest, the second the most difficult, and the first would give the best results, though of course it would produce some duplication of work.

(4) Study of the Disposal of Sewage and Wastes.

> Some work has been done along this line by the Division of Sanitary Research, Public Health and Marine-Hospital Service, Treasury Department, directly, and some indirectly by officers serving on boards such as the Lake Michigan Water Commission; some by the Purification of Water Laboratory and the Bureau of Plant Industry, Agricultural Department, and very extensive sanitary surveys have been made by the Geological Survey.

It would seem that the Purification of Water Laboratory should come into the public health agency and that means be provided for continuing the present work of the Division of Sanitary Research as above.

LEGAL WARRANT FOR THE STUDY OF THE DISPOSAL OF WASTES

The relations of this subject to the preservation of the navigability of streams, to the preservation of fisheries in waters under the jurisdiction of the general government and to the health of those engaged in interstate water-borne commerce, are so important that it is clearly one of the things about which there would seem no ground for objection from those who question the legality of some of the other work proposed by the advocates of an enlarged public health organization.

(*c*) *School of Applied Hygiene.*

(1) For Instruction of the Personnel of the Public Health Organization.

(2) For the Instruction of State and Municipal Health Officers.

> The Public Health and Marine-Hospital Service, Treasury Department, now sends its officers to the Hygienic Laboratory under its own jurisdiction and admits representatives of state boards of health to take this laboratory course.

This has been the practice for a long time and the results have been good, but very limited. The most vital need in a public health way in this country is a supply of men trained for the work of local, county and state health officers. State and preventive medicine is a profession in itself and we can only advance in local health administration as we give appropriate recognition to that fact. If we had local health officers in the villages and rural districts of this country comparable to those they have in England, for instance, the public health problems would be on the road to solution, and there would be little for a national public health organization to do except to make scientific investigations and act as a sort of clearing house for the state boards, but it will be many, many years before that time comes, if it can ever come under our system of government, and in the meantime the interests of the country can be served in no better way than by providing the means by which the state, county, town and village health officers can be instructed in the technical side of their duties. Every man so trained will become a focus of active sanitary improvement within a certain area, and directly as these areas increase in size and number will those conditions disappear whose existence has been the basic cause of most of the agitation for the performance by the general government of many things that should be done by the states. We have been teaching the farmer how to double the number of bushels of grain he can raise to the acre, and why should we not instruct the farmer's local health officer how to cut in half the number of tombstones in the farmer's graveyard? This would have nothing to do with cults or systems of medicine, or the teaching of medical practice. The work of the health officer stops where the practice of medicine begins. He does not treat the sick, he prevents sickness.

How can the government legally maintain a school of applied hygiene to which the men of the state boards of health can come? For of course there is no dispute as to its right to maintain a school for the instruction of its own officers. It is by the same right that it subsidizes sectarian medical schools in Washington to which all may come, but fortunately there is a more direct precedent as in the case of the army schools at Leavenworth, Fort Riley and Fort Monroe for the instruction of its own officers, to which are admitted such officers of state troops as desire instruction. We already have part of the plant and the skeleton of the organization for this work. Whatever this Congress does in public health legislation it can do no one thing of greater potential good than to provide the means by which this work can grow in scope and efficiency.

B. ADMINISTRATIVE SIDE (SECOND GRAND DIVISION).

I. Bureau (or Division) of Personnel and Accounts.

(a) *Mails, Files, etc.*

(b) *Personnel.*

(c) *Accounts.*

This first division of the administrative side of the national health agency follows the existing plan of the organization in the Bureau of the Public Health and Marine-Hospital Service of the Treasury Department.

It is essential for efficient executive administration that all the work covered by the subheads of this section be administered in one part of the organization. Through this division will pass all the correspondence, and in it will be kept all the records relating to correspondence, and to the personnel composing the various bureaus or divisions of the organization. In it will be handled all the accounts and records pertaining to them, and by it will be transacted all the business which the public health agency will conduct with the other executive departments of the government. All matters relating to personnel, employment, appointments, leaves of absence and the like, will be handled by this division.

This does not mean, of course, that correspondence cannot originate in other bureaus, scientific or administrative; it simply means that all incoming mail will be received and distributed through this division, and all outgoing mail, after being signed by the particular administrative officer charged with the authority to sign for the bureau or division in which the letter originated, will pass out through this Division of Personnel and Accounts after being entered, etc. Without such a division it would be impossible for the executive head of the entire public health service to keep in touch with what had originated, or what had been received by any particular bureau or division of the organization. The organization for this purpose now existing in the Public Health and Marine-Hospital Service of the Treasury Department is capable of being readily expanded to any extent that may be desired.

II. Bureau (or Division) of Quarantine and Immigration.

(a) *Quarantine.*

(1) DOMESTIC.

(2) FOREIGN AND INSULAR.

All quarantine functions of the government are now entrusted to the Public Health and Marine-Hospital Service of the Treasury Department, and for the purpose of carrying on the work that service contains two divisions: 1. the Domestic Quarantine, and 2. the Foreign and Insular Quarantine.

This division is purely one of convenience for the administration within the bureau. Under these divisions the service operates all the maritime quarantine stations of the Pacific coast and practically all of the Atlantic coast except that controlling the two great ports of Boston and New York. The law authorizes the government to take over the control of any state quarantine when the authorities of the state in question request it to do so, and provides for the compensation of the state for the plant turned over. In a few instances inspection stations are maintained by cities, although the government may maintain a station covering the navigable water leading to that city. In addition the government, through the Public Health and Marine-Hospital Service, has charge of the maritime quarantine of the Isthmus of Panama, in the Hawaiian Islands, in the Philippines and in Porto Rico, and maintains a considerable number of inspection stations in different parts of the world for the inspection and treatment, disinfection, etc., of vessels bound for the United States. There are forty-four quarantine stations on the coast of the United States operated by the Public Health and Marine-Hospital Service; twenty-seven insular quarantine and inspection stations, and thirty-three inspection stations in foreign ports. In addition to this the Domestic Quarantine Division has charge of all questions which arise in connection with the interstate transmission of disease and the management of epidemics.

(b) *Immigration.*

The medical inspection of all immigrants arriving in this country is now made by the medical officers of the Public Health and Marine-Hospital Service of the Treasury Department, who are detailed for that purpose. This is at present done under the immediate control of the Division of Domestic Quarantine as above. The officers detailed for this duty receive their orders from the Public Health and Marine-Hospital Service, and are paid through that service, but out of the funds of the Immigration Service, Department of Commerce and Labor. They report directly to the Division of Domestic Quarantine, Public Health and Marine-Hospital Service, and are subject to the regulations of that service. This system has been in existence twenty years and has been found to be very satisfactory. In addition, at times when the importation of such diseases as cholera, plague, etc., are especially to be feared, officers are stationed at foreign ports, attached to the consulates, for the purpose of inspecting immigrants who are about to embark for the United States, and a similar inspection is maintained at all times at such places as Yokohama, Hong Kong, Amoy and Naples.

(c) *International Sanitary Relations.*

At present the government maintains international sanitary relations under the International Sanitary Convention of Paris, of which the United States is one of the ratifying powers, and through the International Bureau of American Republics. The relations with European countries are maintained through the International Bureau of Public Hygiene of Paris established under Article 181 of the above mentioned convention, in which bureau the United States government is represented by an officer of the Public Health and Marine-Hospital Service delegated for that purpose. The international relations with Mexico and the Central and South American states are maintained by means of international sanitary conventions which have been held from time to time under the auspices of the International Sanitary

Bureau of American Republics, of which convention the Surgeon General of the Public Health and Marine Hospital Service of the Treasury Department is the chairman.

At present the international relations are still very largely in a formative state, but the rapid progress being made in the matter will make it necessary very soon that provision be made in the national health organization for a subdivision to handle the questions arising in connection with international relations, and when such a division or subdivision is established it would be logically located in the bureau or Division of Quarantine and Immigration.

(*d*) *Management of Epidemics.*

As already stated, the management of epidemics is at present in charge of the Division of Domestic Quarantine of the Public Health and Marine-Hospital Service of the Treasury Department, and would be naturally, continued in any enlarged public health organization in that division, as a subdivision of the Bureau of Quarantine and Immigration.

(*e*) *Philippines and Isthmus.*

As already explained, the maritime quarantine in the Philippines and on the Isthmus is under the direction of the Division of Foreign and Insular Quarantine of the Public Health and Marine Hospital Service of the Treasury Department, but in addition, there are very important public health functions performed by the same division in connection with the government of the Philippine Islands. The public health work there, as distinct from the maritime quarantine, is under the control of the Insular Government through an officer known as the Director of Public Health. At the present time this position is filled by an officer detailed from the Public Health and Marine-Hospital Service of the Treasury Department who combines with his function of Director of Health under the Insular Government, the position of Chief Quarantine Officer for the Philippines under the Public Health and Marine-Hospital Service of the Treasury Department. This arrangement is at present not a matter of law but is subject to change by the President.

In any new or expanded national public health agency the functions described above under the second heading of the administrative side (Quarantine, Immigration, International, Sanitary Relations, Managements of Epidemics, and Philippines and Isthmus,) would necessarily have to be carried on exactly as at present. As far as I can recall, none of the plans which have been suggested for such a new or expanded organization have suggested the addition of any functions in regard to matters connected with quarantine, immigration, international sanitary relations, management of epidemics, or the Philippines and Isthmus, and as the present arrangement works satisfactorily and is capable of future expansion by presidential regulations, and without the need of special legislation, it does not seem to be necessary to make any suggestions in connection with it.

III. Bureau (or Division) of Governmental Hospitals.

(*a*) *U. S. Marine Hospitals.*

(1) MARINE HOSPITALS AND DISPENSARIES.

(2) MEDICAL OFFICERS FOR REVENUE CUTTERS.

(3) PHYSICAL EXAMINATION FOR ENLISTMENT, REVENUE CUTTER SERVICE.

(4) EXAMINATION OF SIGHT AND HEARING OF PILOTS AND MASTERS.

(5) PHYSICAL EXAMINATION FOR LIFE SAVING SERVICE.

(6) SERVICE TO BE RENDERED IN TIME OF WAR.

The management of the U. S. Marine Hospitals is now under the charge of the Division of Marine Hospitals and Relief, Public Health and Marine Hospital Service of the Treasury Department, and this division also has charge of the other five classes of work mentioned above. Through it are provided the medical officers for the Training School of the Revenue Cutter Service and those who serve on the larger seagoing cutters. At the present time about 10 per cent. of the officers of the lower two grades of the Public Health and Marine-Hospital Service are serving at sea under these details. In addition the service makes all the physical examinations for enlistments in the Revenue Cutter Service and provides the medical officer for examining and retiring boards of that service. The examinations as to color sense, acuteness of vision and hearing, which are now prescribed by law for all applicants for license as masters or pilots of vessels, are conducted by this service, as also are the annual physical examinations made for the crews of the Life Saving Service. In the marine hospitals are cared for the sick of the merchant marine, the Revenue Cutter Service, the Life Saving Service, the civilian crews of the vessels of the Quartermaster's and Engineer's Departments of the Army and of naval colliers, officers and crews of the vessels of the Coast and Geodetic Survey and Mississippi River Commission. In addition the hospitals care for foreign seamen on the request and at the expense of the government to which they belong. The law also provides that in time of war the president can make use of the commissioned medical officers of the Public Health and Marine-Hospital Service of the Treasury Department as he may determine, and such officers have rendered services of this character in action during the Spanish War, and in the Philippine Insurrection.

As it is presumed that the functions outlined above will continue to be performed in the same manner under any new or expanded public health organization it does not seem necessary to make any suggestions in connection therewith.

(*b*) *U. S. Hospital and Baths, Hot Springs, Ark.*

The present situation at the Hot Springs of Arkansas is that the United States Hospital there is maintained for the treatment of officers and men of the Army and Navy, and the officers of the Public Health and Marine Hospital Service, and is under the control of the War Department. Some of the bills now pending propose to transfer the conduct of this hospital to the new or expanded public health organization, and if such action be taken, the management of the institution would logically come under the bureau or division charged with the operation of similar government institutions. I have therefore placed it under this heading.

(*c*) *Medical Service, U. S. Soldiers' Homes.*

At present the medical service at the Soldiers' Homes is under the control of the Department of the Interior, but if transferred to the control of the new or expanded public health agency would naturally come under the jurisdiction of the bureau or division under which I have placed it.

(*d*) *Hospitals for Immigrants.*

At present the hospitals for immigrants are under the control of the Bureau of Immigration, Department of Commerce and Labor, but the medical officers are detailed from the Public Health and Marine-Hospital Service of the Treasury Department, so that they too, if transferred as suggested in some of the bills, would be placed under the bureau or division which we are considering.

(*d*) *Government Hospital for the Insane.*

The management of the Government Hospital for the Insane is at present vested in the Board of Trustees and is under the direct control of Congress.

Whether or not the various institutions enumerated under the last four subheads (*b*, *c*, *d*, and *e*) should be transferred to the control of the national public health organization is a grave question. The Government Hospital for the Insane is practically the local insane institution for the District of Columbia, although it also cares for the insane of the Army and Navy, and the beneficiaries of the Public Health and Marine-Hospital Service. I am unable to express an opinion as to whether it would be best to leave matters as they are, or transfer this institution to the public health organization. The same is true in regard to the Hot Springs Hospital and the soldiers homes. I think, however, that as the medical inspection and treatment of immigrants is now done by the Public Health and Marine-Hospital Service it would be logical to transfer the management of the hospitals themselves to that service, or rather to the national public health organization of which the Public Health and Marine-Hospital Service will be a part. The present arrangement, it is true, works fairly well, but it certainly would seem desirable that the general management of a hospital should be under the same jurisdiction as that which supplies the medical service.

IV. Bureau (or Division) of Applied Sanitation and Sanitary Engineering.

(*a*) *Interstate Sanitation.*

(1) WATER COURSES.

> Except for the extensive surveys made by the Geological Survey the only work done in this connection at the present time is indirect, as detailing officers of the Public Health and Marine-Hospital Service Treasury Department, for service on bodies such as the Lake Michigan Water Commission, or incidental to investigations by the same organization of typhoid outbreaks, or by the Hygienic Laboratory of the same service as in the Sanitary Survey of the Potomac Watershed, and in daily bacteriologic examinations for the Washington filtration plant.

(2) RAILWAYS.

> Except in connection with the management of epidemics by the Division of Domestic Quarantine, Public Health and Marine-Hospital Service, Treasury Department, the government exercises no control over the sanitation of railways.

(3) SHIPPING.

> In times of threatened invasion by such diseases as cholera the Division of Foreign Quarantine, Public Health and Marine-Hospital Service, Treasury Department, has charge of the sanitary conditions of vessels sailing from foreign ports for this country, and in times of epidemics the Division of Domestic Quarantine of the same service, assumes charge of interstate shipping. The general control of regulating the sanitary conditions on vessels, air, space ventilation, food and water supply, character and amount of medical attendance, medical supplies, etc., is under the charge of the Bureau of Navigation of the Department of Commerce and Labor.

How far the government may go in the direction of controlling the sanitary conditions in navigable interstate lakes and streams is a legal question. Under the notes in connection with the subheading "Disposal of Wastes" I have pointed out several reasons which seem to me to justify the opinion that contamination of navigable waters is a proper matter for government regulation, and it is not necessary to repeat them here. Certainly it does not seem reasonable that on the Great Lakes, for example, the general government should prevent the states which draw their drinking water from the lakes from exercising any control over the contamination of these waters by shipping, and yet be powerless itself to take steps for the prevention of the contamination. With this in view I have included watercourses as a proper matter to be embraced in the plan for a national public health organization. It must be admitted, however, that in the case of non-navigable interstate waters the matter can hardly be one for regulation by the general government. Fortunately the Constitution, while preventing direct relief by the government in such cases, has provided a way for adjusting the matter by a congressionally sanctioned agreement between the states concerned, and the court decisions in the Georgia-Tennessee copper fumes case have indicated how a state may force another to either cease polluting a mutual water supply or else join in an agreement for the regulation of the matter. As to the right to regulate the sanitary conditions on interstate railways, there does not seem to be any dispute. The Act of 1893 authorizes the Secretary of the Treasury to make rules and regulations necessary "to prevent the introduction of infectious and contagious diseases from one state or territory into another state or territory" but imposes no penalty. It would seem that all that is needed is the rectifying of this omission to give a national public health organization all the law it needs. In the matter of shipping, it seems clear that execution of the portions of the "Passenger Act" which relate to sanitary matters on vessels should be taken out of the jurisidiction of the Bureau of Navigation, Department of Commerce and Labor, and placed under the control of the national public health organization.

(*b*) *Public Buildings.*

> There is at present no central agency in charge of the sanitary condition of Public Buildings. The Division of Sanitary Research, Public Health and Marine-Hospital Service, Treasury Department, has done some work in connection with the ventilation of the Capitol, and has investigated by a commission the conditions as to tuberculosis in the buildings of the executive departments in Washington, but the tendency has been for each department, or in the case of the very large buildings, the superintendent or custodian, to look after its own sanitary affairs.

It would seem to be desirable that the national public health organization should have at least advisory control of the sanitary problems which arise in connection with the large public buildings—possibly by means of a system of inspections; possibly by merely providing a method by which the superintendent or custodian could apply to the national public health organization for advice, or expert assistance. I doubt very much if it be expedient at present to try to do more than this. Every executive department will have a natural hesitancy in surrendering any actual control in its own territory, while they might be glad to get advice on occasions. In time the control of the sanitation of government buildings should be placed under the control of the public health organization.

(*c*) *Assistance to State and Local Authorities.*

> Assistance in public health matters other than by publications, correspondence or laboratory research has as far as I am aware been given very rarely, if ever, by national agencies to the public health authorities of states and municipalities, except by the Bureau of Animal Industry, Agricultural Department, and by various divisions of the Public Health and Marine-Hospital Service of the Treasury Department. The former agency had done a great deal of field work in aid of states, as, for example, tuberculin testing of dairy cattle destined for particular states, or in investigating outbreaks of animal diseases for,

or in cooperation with state authorities, the most extensive work being in connection with Texas cattle-fever. The work of the Public Health and Marine-Hospital Service along these lines has been very extensive in the direction of assuming direct charge of local epidemics, and by taking up, at the request of state or local authorities, the field investigation of some particular condition. The work along the latter lines has been, of late, especially extensive.

OMISSION OF CERTAIN ACTIVITIES

In the outline given for the organization of a new or expanded public health organization I have purposely omitted, for reasons given below, a great many of the things which have been mentioned in the hearings and discussions as properly within the scope of such an organization, and included therein by the terms of some of the pending measures, as: education, child investigation, medical service of Indian reservations, etc.; and some, such as the establishment of biologic standards, the study of venereal prophylaxis, and the like, because putting them in the law is equivalent to directing that some of the divisions of the organization shall study the things they would be created to study, and furthermore those who are to be in charge of the work to be done should be given an opportunity to develop it along the lines which experience may prove to be best fitted to secure a coherent and logical plan of advancement and *pari passu* with the training and development of the necessary personnel. To prescribe too minutely the subjects for investigation and control will immediately result in an uneven and unbalanced development. Education, child study and the like I have omitted because I have tried to keep in view throughout, the fundamental idea that the law creating the new or expanded public health organization should be drawn in such a way as to avoid as far as possible raising the issue of interference with the powers reserved to the states, and so I have tried to keep pretty close to the lines of precedent in public health legislation. It would be most unfortunate to have some important portion of the new law promptly set aside by the courts. When the new organization is once firmly established and functioning it can be cautiously expanded by amendments which, if found unconstitutional, could be dropped without damaging the legal foundations of the main structure.

CONSTRUCTION OF NEW ORGANIZATION

Coming now to the question of how the machinery of the new organization shall be constructed to secure the performance of the duties grouped under the above suggested plan, it would appear that only two plans of organization are possible: to consolidate the activities, whether resulting from transfer or creation, *with* the Public Health and Marine-Hospital Service under some form of departmental or bureau organization, or, to consolidate such transferred or created activities *into* the Public Health and Marine Hospital-Service under either the present form of control or under some new arrangement.

THE QUESTION OF THE HEAD

This brings us to the question of the head. Four plans are possible:

1. A cabinet officer presiding over a new executive department.
2. An assistant secretary reporting to the head of one of the existing departments.
3. A Director-General of Public Health, or a Commissioner of Public Health, of permanent or semipermanent tenure of office presiding over an independent organization and with a status similar to that of the former Commissioner of Agriculture, and reporting directly to the President.
4. A permanent, or semi permanent, director-general or similar official reporting directly to the cabinet minister at the head of one of the existing executive departments.

ADVANTAGES AND DISADVANTAGES OF EACH PLAN

The first plan is the one about which most has been said, and beyond doubt a just appreciation of the magnitude of the interests involved must lead to the conclusion that these interests are worthy of having a department. Unfortunately there seems to be much opposition in administrative and congressional circles to any increase in the number of the executive departments. The possibilities of overcoming this opposition, and the methods by which it might be overcome, are outside of the scope of this paper, so I shall only briefly mention the advantages and disadvantages of this plan. The principal advantages would be that a departmental organization would give a status to its chief that would enormously increase his prestige with Congress, and his influence and authority in dealing with international and interstate questions; that it would considerably simplify some of the questions arising in connection with the transfer from other departments of the larger activities which have been the subjects of discussion, since there would be no questions of precedence to settle, and would enable the department head to deal directly with other department heads in obtaining data resulting from the researches of agencies working in these departments, in securing cooperation in the larger administrative questions, and in facilitating such joint activities—as for instance the immigration inspections. The disadvantage is that the choice of the department head would not improbably be influenced by geographic or political considerations rather than by the qualifications required of a man who would preside over a semiscientific department.

The second plan, an assistant secretary reporting to the head of one of the existing departments, seems to be open to some very serious objections. The assistant secretary would have to submit questions of policy, legislation or appropriations to the attention of the President and Congress through the intermediary of a department head who might, through lack of either knowledge or sympathy, fail to present them to the President and to Congress in a manner best calculated to secure the ends in view. Whatever department were chosen, the work for the prosecution of which the department in question was created, and for his fitness in administering which the department head had been chosen, would naturally engage most of that chief's attention and lead, unintentionally, perhaps, but still inevitably, to a neglect of the public health interests. If, on the contrary, the department chief took an active interest in the public health work it is exceedingly improbable that he would have the training and knowledge necessary to make the results of his interest and interference advantageous. Moreover, it would involve the possible danger that external interests, political or commercial, would exert pressure on the departmental chief that might be exceedingly disadvantageous to the interests of public health efficiency. Furthermore, it would involve a good deal of lost motion in the machinery of the public health organization by the interposition of an additional gearing between the machine, as such, and the source of its power in presidential and congressional support.

The third plan seems to be, by all means, the one to be followed, but unfortunately is opposed to congressional policy, which is strongly against creating agencies independent of one of the executive departments. It would avoid all the disadvantages outlined in the discussion of the first and second plans, and would possess some advantages of its own, the chief of which would be that it would promote efficiency by definitely fixing the personal responsibility for it. If the plan of organization is followed by which the transferred and newly created agencies are consolidated *with* the Public Health and Marine-Hospital Service, it would, by the independence and dignity of the position of the director or commissioner, attract a better equipped class of candidates than a subordinate assistant secretaryship of anomalous position, and render it much less likely to be the reward for political services. If, on the other hand, the plan is adopted of consolidating the transferred and newly created agencies *into* the Public Health and Marine-Hospital Service the Surgeon-General of that service will either fill the position of director, or commissioner, himself, *ex-officio*, or will be the executive officer of the organization, serving under the director or commissioner, very much as the Chief of Staff serves under the Secretary of War, and in either case the advantage of long tenure of office for the executive will be added to the advantages above enumerated as inherent to the third plan.

As already stated, I am of the opinion that the third plan suggested is the best at the present time, but it is directly against the pretty general trend of congressional policy and probably would arouse as much, or even more, opposition than the establishment of a new department. For this reason I offer the fourth plan of organization. It would be the easiest from a legislative point of view, since it would be practically an amplification of the existing relations of the Public Health and Marine-Hospital Service with its departmental chief, but with the very important difference that its head would by law report directly to the head of the Department concerned, and not, as often has been the case in the past, to a second or third assistant secretary.

The permanency of tenure would eliminate most of the objections inherent to the plan of having an assistant secretary, but the difficult personal equations in handling the chiefs transferred along with activities under their control in existing departments would remain to be solved, and undoubtedly this form of organization would not satisfy many who are actively engaged in the present agitation for increase in the national public health activities.

SUGGESTIONS AS TO DRAFTING BILL

In conclusion, a few suggestions are offered as to the general plan to be followed in drawing a bill designed to embody in law the plan for such an organization as I have outlined:

First, the law should be as brief as possible, and should be confined to the declaration of certain basic legislative intentions, leaving the details to be arranged by regulations to be promulgated by the President. Such expression of legislative intentions should include: (*a*) Provision for the creation of a department, bureau or service, as may be determined on, with a declaration of the fundamental principles in accordance with which the new department, bureau or service is to be organized; i. e., either for a consolidation of the activities to be transferred or created with, or into, the Public Health and Marine-Hospital Service; (*b*) provision for the head of the new department, bureau or service, whom he shall be, how he shall be appointed, his tenure of office and compensation; (*c*) an enumeration in the fewest possible words of the duties to be performed, as, for instance, "the investigation and management of all matters relating to the public health as now or hereafter authorized by law or by this act"; (*d*) provision for the continuance of the personnel of the various existing agencies affected, for their salaries, allowances, etc., and provision for the personnel of any newly created agencies; (*e*) authorization for the necessary clerks, etc., without stating salaries or numbers; (*f*) continuance in general terms to the various agencies of the special authorities and duties now vested in them by law; (*g*) continuance of the availability of all appropriations, funds, etc.

Second, it should for the present only transfer or consolidate existing or new agencies that are not the subjects of serious dispute on grounds of either expediency or constitutionality. The Pharmacological Laboratories of the Bureau of Chemistry, Animal Industry and Plant Industry, Agricultural Department,[1] and the Library of Medicine and Surgery, War Department, are illustrations of the first class, and the study of the disposal of wastes with reference to their effects on interstate, water borne commerce and the health of those engaged therein, is an illustration of the second class.

Third, in order to provide for the question of existing activities, the expediency of transferring which is the subject of much dispute, as for example, certain parts of the Bureau of Animal Industry, Treasury Department, a provision should be inserted authorizing such transfers within one year by Presidential order and providing for a commission or committee of departmental chiefs, or delegated subordinates, who shall advise the President of their findings after investigating each case referred to them, but whose advice shall not be binding on him. The law creating the Department of Commerce and Labor contains a provision somewhat similar to this, but if in the case under consideration this is thought to savor too much of the delegation of legislative authority, the President might merely report his findings for the approval of Congress. All this sounds reasonably simple but it will involve a careful study of a large number of existing laws and no little legislative ingenuity to secure the results wished without the loss of something desirable.

There is much diversity of opinion as to the expediency of having an advisory board associated in any way with the management of the new agency. It is urged that it would strengthen the hands of the director or commissioner in public estimation if he had the support of a board of distinguished and disinterested advisors of national reputation, and perhaps it would, if he had it; but suppose that for reasons political, professional or personal, the board were not disinterested? On this point I venture to obtrude my personal opinion that no board should be given authority to meddle in any way with the management of the organization as a whole.

One more expression of opinion I desire to make, concerns, in general terms, the character of the activities to be transferred to the new agency. No activity should, for the present, be transferred whose work is of such a nature that its incorporation in a national public health organization will lead at once to the concentration on that agency, its personnel and its work, of the interested attention of powerful commercial and political interests. No matter how great the economic advantages resulting from public health work, nor to what extent it is clothed for constitutional reasons in the garb of commercial justification, the fact remains that its real objects are altruistic and humanitarian, and with these the politics of personal interest will not mix, though they may discolor them.

---

[1] See testimony of Dr. Wiley, p. 110, Senate Hearings on S 6049.

In conclusion I deem it proper to state that this article is in no sense inspired by Surgeon-General Wyman or to be construed as an expression of his opinions. It has not been submitted to him, nor has he been informed of its contents. It owes its publication simply to a personal desire to provide a basis for a discussion of a question that is of vital interest to the public and fundamental to the health and lives of the people of the United States.

EXTRACAPSULAR FIXATION OF THE MOVABLE KIDNEY *

CHARLES A. L. REED, M.D.
CINCINNATI

The word "extracapsular" is used in the title of this paper to imply fixation of the kidney by a method entirely external to the tunica fibrosa as distinguished from any method that implies either invasion of that tunic or surgical injury to the kidney itself.

The further significance of the term as it is here used may be made clear by a brief description of the essential features of the operative procedure that I have employed for the last several years—indeed, since 1901—for the anchorage of the pathologically movable kidney,[1] as follows:

TECHNIC OF EXTRACAPSULAR NEPHROPEXY

1. The patient is placed in the classical position on the well side with a firm pad, preferably pneumatic, under the same side. The equally classic incision about 1 cm. below the costal margin and about 10 cm. in extent is made obliquely downward and forward. This dissection is carried through the wall by cutting with the exception that, to the extent that may be found practicable in each individual case, the obliquus externus, the obliquus internus and the transversus abdominis muscles are separated and drawn apart by the finger rather than divided by the knife. In this way the capsula adiposa of the kidney is reached.

2. The capsula adiposa is a most important structure in my procedure, and the very first point that I wish to emphasize is that extreme care must be taken to separate it from its relations to the abdominal wall, to the extent that such relations may have survived the displacement. Care must be taken not to separate the capsula adiposa from the tunica fibrosa.

3. The kidney with its capsula adiposa attached to it is then lifted to the surface. In carrying out this manipulation it may be and generally is necessary first to deliver the upper pole of the organ through the operation wound, for reasons that I shall later explain.

4. The next step in the operation consists in wiping away the globular fat, much or little, from the connective tissue stroma of the capsula adiposa. This stroma, likewise important in this procedure, will be found arranged in very distinct and essentially parallel striæ extending obliquely downward and forward from the lower pole of the kidney. The manipulation of wiping the fat from its meshes is best carried out by the use of gauze, care being taken not to separate these striæ from their attachment to the tunica fibrosa.

5. Gauze is now likewise employed to apply vigorous friction to the tunica fibrosa in its upper zone where the capsula adiposa but rarely invests it; but if it does the fat should be wiped away if possible without disturbing the attachments of its basic connective tissue striæ. This friction to the tunica fibrosa should be continued until the upper zone shows small punctate hemorrhages over its entire area.

6. The kidney is now left for a few moments while any remnant of the capsula adiposa that may have been left adherent to the abdominal wall is entirely wiped away with gauze.

7. A nest—*nidus renalis*—free from fat—having thus been secured, the kidney is slipped back as nearly *in situ naturali* as it will go without force.

8. The connective tissue striæ of the capsula adiposa are then divided transversely at a distance of from 1 cm. to 2 cm. from the lower pole of the kidney. The stump thus formed on the renal side is stitched by chromicized catgut to the inner surface of the upper margin of the operation wound while the lower stump is similarly attached to the inner surface of the lower margin of the operation wound.

9. The operation wound itself is then entirely closed by laminated sutures. Drainage, being unnecessary, is, of course, not employed.

In explanation of the various steps that I have described, more particularly those that are peculiar to this procedure, I beg to offer a few observations:

THE CAPSULA ADIPOSA AND ITS CONNECTIVE TISSUE STRIÆ

The connective striæ of the capsula adipsoa, so essential to this procedure, require a few words of explanation, particularly as they, in an aggregate sense, and as an anatomic structure have so far very generally escaped recognition as being of practical importance. In my previous published remarks[2] on this structure—I have come to recognize these striæ as an anatomic element—I stated that when I first noticed it I thought it was adventitious, and probably, of inflammatory origin and that I had used it because it was convenient and seemed to lend itself to unipolar fixation.

It now seems, from a recent somewhat exhaustive research of the literature, that my experience was not singular. Thus Hahn,[3] whose observation extends back to his inauguration of the practice of kidney fixation in 1881, says that "fibers run from the tunica fibrosa in front and behind to the subperitoneal fascia." Newman, of Glasgow observes[4] that "frequently in long standing cases the fat becomes infiltrated with connective tissue, making it tough and fibrous and when this altered capsule is stitched to the parietes the kidney can be maintained in its position without suturing the organ itself." Carwardine, of Bristol, says:[5] "It is common in cases of wandering kidney to meet with strong fibrous bands some of which require scissors or scalpel for their division." Longyear, of Detroit, was the first to describe[6] these striæ as comprising a distinct and significant structure. His subsequent study prompted him to the conclusion that "this framework of the fatty capsule is probably the tissue left in the track of the ovary or testicle in its descent from the Wolffian body high up near the kidney."[7] As the structure thus became recognized as of definite embryonal origin, he called it a "ligament" and as it extended from the lower extremity of the tunica fibrosa of the kidney to the cecum on the right and to the sigmoid on the left he called it the "nephrocolic ligament." In recognition of this valuable contribution others have called it "Longyear's ligament." But whether the structure may with propriety be called a "ligament," in view of the restrictive meaning of that word, may well be open to doubt. At any rate the structures may be designated as nephro-inguinal striæ. In my own practice in forty-two carefully observed cases, they have been uniformly present. In certain cases, not necessarily of fat persons, the fat of this tunic is very abundant while in other cases, not necessarily of thin persons, it is almost absent. In every case, however, the tunic was represented by the striæ. I am persuaded that in cases in which they have seemed to be absent in the hands of other operators they have either not been looked for or have been torn from the tunica fibrosa in the process of enlevement of the kidney.

---

* Read in the Section on Surgery of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

[1] Tr. Am. Assn. Obst. and Gynec., 1906, xix, 19.

[2] Tr. Am. Assn. Obst. and Gynec., 1905-1906.

[3] Deutsch. Ztschr. f. Chir., 1902, lxvii, 354.

[4] Glasgow Med. Jour., 1904, Series 4, lxi, 345 and 418.

[5] Bristol Med. Chir. Jour., 1905, xxiii, 21.

REMOVAL OF FAT FROM THE RENAL FOSSA

The next step peculiar to this procedure that seems to call for a word of explanation is that of carefully wiping away any mural fat that may be found in the renal fossa. The surface of this fossa is of course the natural bed of the capsula adiposa and the area of its normal implantation. Its attachment to this surface is, however, so much less intimate and so much less firm than that to the tunica fibrosa that it is liable to be entirely broken up by the traction of the displaced organ. In some instances, however, the fatty capsule seems to separate into two layers, one going with the kidney, the other remaining adherent to the inner surface of the renal fossa. An attempt to make a kidney adhere to a surface thus covered with fat, no matter how the kidney may have been prepared, must obviously either fail from the start or be of short duration. This fact is, in my opinion, and in view of the uniform permanency of results in my cases, an important element in the explanation of the relatively large proportion of failures reported by many operators. Indeed but few operators in recording their technic, insist, as does George Erety Shoemaker,[8] for instance, on the importance of clearing the fat away from the internal surface of the abdominal wall.

DIVISION OF THE NEPHRO-INGUINAL STRIÆ

The striæ of the capsula adiposa are divided and the upper segment is attached above the incision and the lower below it for reasons made plain by Longyear's research, confirmed by my own experience. Thus Longyear has demonstrated that these striæ are in such intimate connection with the cecum on the right and the sigmoid on the left that they may and probably do become the media of traction by the loaded or replaced bowel on the kidneys. He is convinced that this is such an actual condition that it is to be considered a positive etiologic factor in descent of the kidney.

It is therefore of importance to sever the continuity of these media, as Longyear does not do, and thus to intercept the transmission of this force, which might otherwise become effective in redisplacing the kidney. But while the kidney is being thus protected from traction, care must be taken not to deprive either the cecum or the sigmoid of any suspensory power that may inhere in this anatomic arrangement. It is important, therefore, that the lower segment of these striæ shall be attached to the lower margin of the operation wound.

FRICTION OF THE TUNICA FIBROSA

Vigorous friction of the tunica fibrosa above the zone covered by the adherent striæ of the capsula adiposa, especially on the posterior surface of the kidney, and carried to the point of inducing punctate hemorrhages, is practiced for the purpose of provoking an abundant exudate—the glue for the postage stamp—by which when organized the organ through its tunica fibrosa becomes adherent to the abdominal wall.

Some operators endeavor to accentuate this process by treating the tunica fibrosa with some irritant. Thus Carwardine[9] treats the whole surface with strong phenol while others use a mild solution of silver nitrate for the same purpose. In the light of my experience with gauze friction these expedients are unnecessary. While their reported immediate results would seem to indicate that they may complicate rather than simplify the operation.

WHY FIXATION SHOULD BE EXTRACAPSULAR

This whole procedure as now evolved is designedly extracapsular, because its object is to restore the kidney as nearly as possible to its original relations and normal attachments. The normal attachments of the kidney are external to its capsular investments. This anatomic fact, generally recognized, is emphasized by Collins Warren of Boston, quoted by G. H. Mallett[10] that "by far the most important tissues concerned in maintaining the kidney in its normal position are the attachments between the posterior and upper aspect of the tunica fibrosa and the fascia covering the lumbar muscles and the peritoneum covering the diaphragm." H. Critchley Hinder,[11] of Melbourne, writing from a large experience, recognizes the rôle of the capsula adiposa, as he says, in holding the kidney in its normal position. This, I believe, is one of the fallacies of our latter-day teaching. It seems to me far more rational to believe that the capsula adiposa is a sort of "shock-absorber," if I may borrow an automobile phrase, and that when the kidney retains its position it is in spite of the looseness and instability of this structure. But even this conception of its function invests it with enough importance to entitle it to consideration, and I consequently agree with Hinder that in the pathologically movable kidney, "the fatty padding which encases the kidney is very loose and does not at all hold the organ in its grasp." It is important furthermore to remember that the intracapsular mobility of the kidney is essential to the normal exercise of its function and that that mobility is destroyed by reimplantation of the kidney following decapsulation.

It is likewise of importance to bear in mind that the muro-parenchymal implantation of the kidney following decapsulation not only interferes with the physiologic vasillation in the volume of the organ incident to its vasillating functional requirements, but subjects it to the damaging influence of vibrations incident to walking and riding and to shocks incident to more violent exercise of the body. In this way, as well as by the use of transfixion sutures, pathologic changes are induced in the organ.

---

[6] Tr. Am. Assn. Obst. and Gynec., 195, xviii, 1.

[7] Detroit Med. Jour., 1906, vi, 1.

[8] The Modification of the Technic of Fixation of the Movable Kidney, The Journal A. M. A., Dec. 8, 1906, p. 1917.

[9] Bristol Med.-Chir. Jour., 1905, xxiii, 24.

[10] Am. Med., 1902, iii, 513.

[11] Intercolonial Med. Jour., Australia, 1903, viii, 499.

Dr. Row, of Huntington, W. Va., brought me a case a year or so ago in which twenty months after operation by decapsulation and transfixion at the hands of another surgeon, I operated for relief of pain. I found that the kidney had been converted into three lobes by the transfixion sutures, and that it had a firm inelastic cicatricial envelope as the result of the decapsulation.

T. Carwardine,[12] reports a similar case in which the kidney was indistinguishably blended with the surrounding parts, but in which the kidney substance was paler and firmer than usual, and scarcely bled when cut as if a certain fibrosis had developed from the capsule along the trabeculæ.

Another case in point was brought to me a couple of years ago by Dr. Heflin of Newport, Ky., for fixation of the left kidney. The right one had been anchored several years before by one of the most distinguished operators in the United States, who employed the decapsulation-transfixion method, with the result that the kidney had been a constant source of pain from the date of operation. I anchored the left kidney by the method that I have just described with the result that it has been absolutely painless from the date of convalescence. When the patient was last seen, less than a month ago, both kidneys were firmly anchored, but the right one—the decapsulated and transfixed one—remained painful. The contrasting results of the two procedures were never more strikingly illustrated.[13]

Paul F. Freiderich of Greifswald[14] asserts that transfixion sutures always cut through, sometimes completely, and interfere with function.

CONCLUSIONS

In conclusion permit me to add that I have been induced to evolve and practice extracapsular fixation of the kidney, because (1) it is surgically feasible, (2) it is effective primarily, (3) it is generally, and indeed, as far as my experience goes always practicable, and (4) it comes nearer than any other procedure to restoring the pathologically movable kidney to its normal anatomic relations and to the exercise of its normal physiologic functions. I urge it as the operation of choice as against certain other procedures that are yet prevalent because, among the latter, (5) decapsulation is liable to induce and frequently does induce wholly unnecessary pathologic changes resulting either in its loss or in the invalidism of either the kidney or the patient or both; (6) transfixion sutures in the parenchyma may and often do induce similarly disastrous consequences; (7) treatment of the surface of the kidney by irritating substances induce adhesions and tissue changes that are pathologic in character; and (8) in consequence of the greater liability to hemorrhage and infection following all invasions of the true capsule and the parenchyma of the kidney and for other obvious reasons these procedures are more liable than extracapsular fixation to be followed by primary complications and final failure.

60 The Groton.

ABSTRACT OF DISCUSSION

Dr. Samuel Lloyd, New York City: My criticism of Dr. Reed's operation would be that he fails to recognize the fact that a very large number of the patients with movable kidney have chronic nephritis. Dr. Edebohls called attention to this fact some years ago, and it was his observation in these cases that led him to perform decapsulation of the kidney for chronic nephritis. Often we do not discover that these patients are afflicted with nephritis until we are operating on them. Dr. Reed, by using the fibrous bands in the fatty capsules for his fixation and leaving the capsula propria intact, would deprive the patients of the very best feature of their operative treatment, the cure of the nephritis by the decapsulation. It has been my experience in following up Dr. Edebohls' operation, that a great deal of benefit is derived from the decapsulation of the kidney and its fixation through the capsule, not through the kidney. I have not seen the difficulties Dr. Reed speaks of following exercise, such as pain or discomfort. The transfixion was given up by Dr. Edebohls many years ago, because fixation by means of the capsule gave better results.

Dr. Charles A. L. Reed, Cincinnati: I recognize the fact that pathologic conditions in an individual case may necessitate division of the capsule.

FURTHER REPORT ON ILEOCOLITIS COMPLICATED BY ACIDOSIS *

THOMAS D. PARKE, M.D.
BIRMINGHAM, ALA.

Three years ago I presented to this Section a series of cases that had occurred under my observation during the preceding four years, and I now wish again to call attention to them by the relation of a few histories and by a brief discussion of the problems involved.

I have been unable to find descriptions in the textbooks of the symptom-complex presented by the series, and my object now, as three years ago, is to focus attention on and bring recognition of this distinctly marked symptom-complex. It is not reasonable to suppose that such cases are confined to one limited area. It is only reasonable to conclude that they have not been recognized elsewhere.

Thirteen cases have come under my observation since the report of three years ago, mostly in consultation, but this does not embrace a number of other cases that have come to my notice, directly and indirectly, in the practice of other physicians of our district. A large percentage of the whole series of thirty two cases has occurred in breast-fed, well-nourished children, previously healthy and flourishing. The oldest of the series was 2½ years of age.

SYMPTOMS

Loose bowels, caused by a mild grade of ileocolitis and lasting from one to four days, precede the onset of the typical symptoms. Then labored breathing develops, often suddenly, followed by prostration, restlessness, obstipation, enlargement of the liver. The temperature in some cases becomes subnormal, in others stands around 100 F.; in a few runs high. Vomiting with acetone odor of breath occurs in a good proportion and is absent in others. The urine is limpid and free. Albumin has been present in some and absent in others of the few cases from which urine could be obtained. Urine from three cases was submitted to chemists for nitrogen estimation, and in each instance the report was that the ammonia nitrogen was high. Jaundice was absent in every case.

---

[12] Bristol Med.-Chir. Jour., 1905, xxxii, 24.

[13] Since this paper was read this patient has returned to the German Deaconess Hospital entirely incapacitated by pain in the right kidney. She has improved somewhat under rest, but insists that if the pain returns with the same severity as formerly the kidney must be removed if necessary for her relief.

[14] Arch. f. Gynäk., lxxii, 368.

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty first Annual Session, held at St. Louis, June, 1910.

During the period of labored breathing the breath feels cold to the hand held in front of the nostrils. This has been interpreted, whether rightly or wrongly, to mean volatile substances thrown out in the respired air. During this period of labored breathing, too, soot, in our locality, lines the interior of the nostrils, being, of course, mechanically deposited by the air as it rushes in. Some of the children noticed little unless their attention was especially attracted, but the impression given was that they were directing attention rather to getting air, as deep labored breathing without interruption, hour after hour, calls for attention on the part of any conscious breather.

OUTCOME

In fatal cases death occurs in from 48 to 70 hours after the onset of labored breathing, 55 hours being about the average.

In the cases recovering, the duration of the stage of labored breathing is about the same. Death seems to occur from exhaustion. Convulsions have not been noted and coma has not developed till within a few hours of death.

The mortality in a series of thirty-two cases, occurring in my own practice or in consultation, has been 71 per cent.

POST-MORTEM APPEARANCE

Post-mortem examinations have been made in nine of the cases. The findings have been negative, as to the gross appearance of the organs, with the exception of the liver and the mucosa of the intestine; these were injected in some cases, in others not. The liver usually showed yellowish areas on the surface, extending downward to varying depths. The gall-bladder in all cases has been distended with dark, green, ropy bile. Microscopic examination of the organs has only shown fatty degeneration of the liver. Neither the heart, the kidney nor the muscles have been found fatty in any instance.

TREATMENT

Treatment has varied from eliminative to symptomatic, with the employment of strychnin in good doses, epinephrin and hypodermoclysis of normal salt solution. I am under the impression that treatment avails little when a sufficient injury has been done the system, but that hypodermoclysis is of decided value when the injury is not sufficient to be lethal.

CASE HISTORIES

Of the fourteen cases encountered during the last three years only three will be cited.

Case 1.—Infant L., male, white, aged 10 months; breast fed, large and plump, never previously ill. The only food given other than breast milk was a few feedings of farinaceous food at irregular intervals. For four days prior to onset of symptoms the mother had noted that the bowels were loose, but as the baby did not seem sick she paid no attention to it.

At 2 a. m. January 6 the mother found the baby breathing in a labored manner. The attending physician, Dr. Pressly, did not reach the child till 9 a. m., seven hours later, when he found it very ill and restless, respirations 48 per minute, temperature 101. Hypodermoclysis was employed in the afternoon and I saw him in consultation at 9 p. m. The respirations were 40, pulse 120, rectal temperature 99.5. The liver was palpable below the border of the ribs. Thursday the child was reported to have progressed fairly well, probably as the result of the salt solution, but on the next morning, Friday, was called to see him again to find him in desperate straits. Respirations were 56, labored, and with an expiratory moan. Pulse not perceptible at wrist, rectal temperature 100, extremely restless. Liver enlarged to over an inch below border of ribs. The child was conscious, was taking water freely, and the kidneys had been acting well; the abdomen was not distended. The child died at 2 p. m., sixty hours after onset of symptoms. In this case vomiting occurred during the first twenty-four hours and did not recur. Post-mortem one hour and twenty-five minutes after death; rigor mortis fairly well developed; discoloration of posterior surfaces of the body; abundant adipose tissue under skin of abdomen. Liver extends two and a half inches below ensiform cartilage in median line and one inch below free border of ribs; yellowish areas over surface of liver, decidedly lighter in color than remainder of organ, gall-bladder distended with a dark green, ropy bile; stomach distended with gas; contains some mucus and the mucosa was congested in places; intestine empty except for the same dark green bile found in the gall-bladder; kidneys apparently normal; lungs normal and pink in color; heart normal; liver weighs 360 grams.

Case 2.—Infant L., male, white, aged 2¼ years. The child was breast fed until weaned at the end of the first year. April 30 the child had two bloody actions, for which castor oil was prescribed by the attending physicians. Friday the mother reported the child so much better that he was not seen. On Saturday the attendant again called to find him with labored breathing, but only thirty to the minute. Vomiting began at midday. After twenty-four hours' vomiting of the water given, coffee grounds vomitus began. The patient was seen in consultation Sunday afternoon at six. Respirations 35, labored and deep; pulse feeble and irregular, 135; liver one and a half inches below free border of ribs; attendant states that he examined the liver the day previous and it was not enlarged; that he examined it again that morning, Sunday, and found it an inch below the ribs with the child vomiting every few minutes a coffee-grounds material, and calling piteously for cold water, which would be promptly rejected. The child was pale and washed out, very restless; mental state clear; kidneys active.

Seen again next morning at eight, its condition was much worse; respirations 44, pulse not countable at wrist; temperature 101.4; vomiting of coffee grounds material still continued. The child called for water but would not respond to questions or apparently take notice of things about him, and died later in the day, 55 hours after onset of symptoms. No post mortem.

Case 3.—Infant B., male, white, aged 15 months; breast raised and still nursing. Lately the child had been given buttermilk in addition. It was a well nourished baby. Seen in consultation April 21, 1910, a history was obtained of slight colitis from the seventeenth, four days previously. The child was not sick enough to cause any concern till the day previously when he developed labored breathing and vomiting. There was obstipation from the onset of symptoms; respirations were 34, labored and deep; pulse 128, easily compressible; abdomen moderately distended with gas, liver an inch below free border of ribs and very tender to pressure; acetone odor of breath quite marked; breath cool to hand; temperature 99.5, mind clear. Hypodermoclysis of normal salt solution, strychnin and epinephrin were recommended. Next day the respirations were 44, temperature 100, pulse 140. Respirations were not so labored as on preceding day, but on least exertion child was badly winded; acetone odor less marked; liver extends two inches below free border of ribs.

On the next day, April 23, the respirations were 33 and not labored, temperature 100.4, pulse 140; liver retracted somewhat from day before, and edge less sharp to finger. On April

24 the child was better in every way; liver not palpable below border of ribs; barley gruel recommended.

A good report was received April 25, except that the barley water had disagreed, causing nausea and had been discontinued. April 26, in afternoon, there was a slight tendency to labored breathing noted on any exertion. Barley gruel and orange juice were given once, followed by vomiting, which kept up during the night and showed coffee-grounds material. When seen April 27, condition was desperate and had been so during the preceding night and that morning. The breathing could be heard as soon as one neared the room during the early morning hours. Respirations 40, pulse 160, child very restless; but vomiting had ceased; liver was felt one and a half inches below ensiform; tympany quite marked over abdomen.

On April 28 respirations 28 and not labored; pulse 150, temperature 100.2; tympany lessened. The child's condition was better and nourishment was again given, consisting of a half ounce of buttermilk. Medication consisted of strychnin and epinephrin. After the obstipation of the period of extreme illness, mucous stools reappeared and persisted during a tedious convalescence not complete to date.

This child received no nourishment from April 18 to 24, when barley water was given and disagreed. It was given barley water again on April 26, when vomiting was precipitated which came nearly being fatal. Buttermilk was given on the 28th and the child was nourished regularly thereafter. This recovery from a condition showing a mortality of over 71 per cent., and other recoveries from similar conditions under enforced starvation of from five to seven days, would seem to merit some attention, in view of the rôle assigned to starvation in the production of acidosis.

As to the nature of these cases, I have come to hold, tentatively, that they belong in the acidosis group; that a colitis, usually of mild type, through the production of some toxin, cripples the liver cells and, as a consequence of impaired liver function, products of faulty, incomplete metabolism are swept into the circulation and carried to the fixed tissue cells, which are dependent, of course, on the blood for proper nutritive and oxidative substances.

Dr. James Ewing[1] has presented elsewhere a thorough discussion, in which he freely admits the difficulties inherent in a question that involves the many unsettled problems of metabolism, and I think every one who has made any study of the question will fully agree with him. He divides cases of acidosis into two main groups: one without fatty degeneration, as represented by diabetic acidosis, and one with fatty degeneration, represented by the toxemia of pregnancy, delayed chloroform poisoning, Eck's fistula, cyclic vomiting in children and poisoning by hematoxic immune serum.

Only recently a professional neighbor was relating the history of a case of toxemia of pregnancy in a woman who had passed successfully through five pregnancies. With my own case in mind, he was asked if dysentery had preceded the onset of toxemic symptoms, and he replied in the affirmative. This question was further suggested by the history of a non-pregnant adult female, in whom a most serious acidosis was precipitated apparently by a mild dysentery.

If we are right in assigning our series of cases to the acidosis group represented by toxemia of pregnancy or by delayed chloroform poisoning, we have traveled only a short way on the road of explanation. We have not explained why the liver enlarges so rapidly; we have not explained the fatty degeneration of the liver, the changes in the bile, the obstipation, nor the factors involved in the air hunger.

Hematoxic immune serum injected into an animal produces fatty degeneration or necrosis, according to the dosage. A ligated hepatic artery results in increase of fats in the liver cells, according to Holmes and Pearce, but the explanation of these results leads to as many theories, practically, as there are investigators. So long as physiologic chemistry fails to account for all the processes involved in the functions of the liver, so long as physiology fails to agree on the functions of the liver, so long as the rôle of the internal secretions is undetermined and the intimate processes of cell nutrition, including tissue respiration, are matters of conflicting theories, it is not to be expected that definite conclusions will be formulated, either by the laboratory worker or the clinician.

Considerable effort was made to discover the explanation of the air hunger met with in all of this series of cases.

Haldane and his coworkers have apparently demonstrated that hyperpnea, labored breathing, results from carbon dioxid tension in the respiratory center, and that the threshold at which the carbon dioxid excites the center may be lowered by acid or other products resulting from the want of oxygen.

No cyanosis exists in any of the cases, as would pertain if the blood contained excess of carbon dioxid, and there is no lack of oxygen in the alveolar air inspired, so that some other factor must be involved beside want of oxygen in the alveolar air.

An original worker writes in a personal letter:

> There may be incomplete oxidation in the presence of abundant oxygen in the blood, because the factors—enzymatic or otherwise—which normally cause oxidation are defective. This would, of course, be defective metabolism. Just what the factors of oxidation are, is the dark problem. The intermediate acids combine with the bases of the respiratory center (Na_2CO_3, $NaHCO_3$, $NaHPO_4$, etc.) and the free CO_2 resulting, remains in the center, causing increased tension and hyperpnea.

And thus we seem to be carried back to the original question involved in acidosis—the production of intermediate acids. Whatever the ultimate explanation of the air hunger, it appears reasonable to think that this explanation will mean the settlement of the controversy between those physiologists who hold respiration to be accounted for by the laws governing diffusion of gases and those who hold vital cell action to be involved.

ABSTRACT OF DISCUSSION

Dr. John Zahorsky, St. Louis: I have seen altogether five cases that fitted this syndrome exactly. All were fatal. I have studied this syndrome from a variety of standpoints, but a year ago I had a patient that put me on an entirely new track. This little boy, two and a half years old, had recurrent attacks of cyclic vomiting and in one of these attacks there seemed a little indigestion and the mother gave him a dose of calomel. This deep breathing developed and the liver swelled enormously, extending to the umbilicus. The pulse was not very full, the child was very sick and I was afraid it would die. That suggested how this syndrome might be explained, i. e., by acute dilatation of the right side of the heart. I could not explain how this liver could swell to twice its normal size except by edema or congestion and passive congestion seemed to be the cause in this case, and that could most easily be explained by an acute dilatation of the right ventricle. We know that deep breathing is one of the symptoms of dilatation or weakness of the right heart. It is true that there was no marked cyanosis or swelling of the veins of the upper extremity, but as there is diarrhea and vomiting with the loss of a large quantity of fluid, we can understand how there might be this accumulation of blood in the liver and yet not such an accumulation of blood in the upper extremities. One boy had spasmodic croup with severe suffocative attacks. I was asked to intubate the child and on examination no marked obstruction in the larnyx was found, but he had this very deep breathing which was mistaken for obstruction. The liver was enormously enlarged, reaching almost to the umbilicus. Another child had cardiac disease. He suddenly had some severe symptoms and developed this deep breathing and also had this swollen liver. I have concluded that this deep breathing and enlarged liver are due to an acute cardiac dilatation which may be incidental to any acute disease, such as acute gastritis, acute gastro-duodenitis or colitis, or severe vomiting forcing the blood into the heart and stretching the right ventricle. So, while I originally considered Parke's syndrome a definite disease, I believe it is merely a group of symptoms occurring in many diseases. The acidosis is due to faulty metabolism in the absence of carbohydrates, and is not the cause of the disease.

---

[1] Ewing, James: Acidosis and Associated Conditions, Arch. Int. Med., 1908, ii, 330.

Dr. Isaac A. Abt, Chicago: I am already on record as having seen a number of these cases, I think a dozen or more. In nearly every one I have had an autopsy performed. In the first case, the child of a physician, the symptoms were pretty much as outlined by Dr. Parke. The child falls suddenly ill, vomiting, rapid respiration, rapid, small pulse, and goes gradually into a coma and last of all develops symptoms of obstruction of the bowel, due probably to extreme atony. They have all shown at autopsy, uniformly, fatty degeneration of all the organs. Dr. Ricketts, who did the autopsy work in the first case, thought that possibly the child might have eaten matches, so profound and extensive was the fatty degeneration. We found not only acetone but leucin and tyrosin in the urine. Dr. Ricketts found that the heart muscle and the intima of the vessel walls showed fatty changes. I think this is a syndrome that is a pathologic entity and depends on some grave toxemia. The acidosis is merely a symptom, and it is of no more importance than the rapid breathing, the rapid pulse, or the mechanical obstruction of the bowels, and it would be wrong to ascribe too much importance to it. I discussed these cases with a pioneer physician of Illinois and he suggested their close resemblance to the disease described as milk-sickness in cattle. Inquiring more closely into the subject one finds that milk sickness or trembles bears a striking similarity in symptoms to those which Dr. Parke noticed in his patients.

Dr. Thomas D. Parke, Birmingham, Ala.: There was no coma in any of these cases and there was no mechanical obstruction. There was dysentery and poor digestion and though the bowels did not act during the period of labored breathing, after this stage of labored breathing passed off, the bowels became loose again. I am sure there was no mechanical obstruction in any single case. I am sure not only from the post mortems that I made but from the patients that recovered. There is a good deal more in the acidosis problem yet to be cleared up and I think you will agree with me if you will study the paper by Dr. Ewing in the December, 1908, issue of the *Journal of Experimental Medicine*. My conception is that the injury done by the toxins of this intestinal trouble cripples the liver cells and when you get crippling of the liver-cells, the products of intermediate metabolism are carried into the general circulation and produce the air hunger. Dr. Ewing attaches immense importance to this fatty degeneration. He says that these studies of the last few years show the immense importance of fatty degeneration. But we do not know just what work the liver has to do. I have been unable to find any physiologist who could tell me the complete function of the liver. I do not know whether the trouble is in the liver-cells or in the blood that is in the liver, and until we can get thoroughly worked out the full physiology of the liver we shall not know its pathology.

SYPHILITIC DISEASE OF THE ARTERIES OF THE CENTRAL NERVOUS SYSTEM WITH DETAILED REPORT OF A CASE*

E. M. HUMMEL, M.D.
Visiting Neurologist, Charity Hospital
NEW ORLEANS

The importance of arteritis or endarteritis as a lesion of syphilis has become well appreciated, especially since the writings of Huebner, Baumgarten, Marchand, Rieder, Nonne, and others. Only recently, however, has sufficient emphasis been placed on the tendency of specific arteritis to appear shortly after primary infection, and on the relative frequency of isolated involvement of the arterial system as compared to the other rather more familiar forms of nervous syphilis implicating the meninges and surrounding structures of the central organ, etc.

As regards the time elapsing between the occurrence of the initial sore and the intervention of symptoms of arterial disease, the tendency of recent writers on this subject, especially Nonne, of Hamburg, is to insist on the very early development of arteritis after the primary infection. The latter author quotes a case in which symptoms of cerebral softening occurred even before the primary sore had healed.

Not only is arteritis now looked on as an early process of syphilis, but it is even held that this lesion in its pure form practically does not occur in very late syphilis, and that nearly all cases occur within three years after the chancre.

Again it is necessary to recognize the frequency of arteritis as one of the grand diseases of the nervous system assignable to syphilis, because both treatment and prognosis are altogether determined by the nature of the processes in the nerve tissues associated with the arterial disease. Only by arriving at a proper conception of the lesions in such instances can the medical attendant properly interpret the phenomena occurring. It is rather probable that disappointment arising out of too sanguine expectations from the application of proper specific treatment, under the mistaken assumption that a gummatous or exudative process is being attacked, in instances of softening and hemorrhage in the central nervous organ, has been the occasion for physicians discarding the correct diagnosis of syphilitic disease, and consequently neglecting the effective agents of treatment subsequently.

It is unnecessary to dwell on the nature of the changes occurring in the arteries, because these are quite well understood. It is important only to recall that the process is practically always a proliferation of the intima with consequent encroachment on the lumen of the vessel and mechanical interference with the passage of the blood-current. And we do not have to wait for complete occlusion of the vessel in the expectation of symptoms, but a very important group of syphilitic nervous diseases is caused by mere diminution of the blood-supply to the tissues, giving symptoms of neurasthenia, transient pareses, and the like, not extending to the gravity of organic disease. In such instances the alterations in the arterial walls, especially in the smaller vessels, further interfere with the interchange of nutritive fluids, thus contributing to the so-called functional disturbances. As a matter of course, it is very important to interpret such symptoms correctly and early, for proper treatment is then most hopeful.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

When actual hemorrhage, softening, or thrombosis occurs, the pathology and symptoms are in no wise peculiar to luetic arteritis, unless we regard the tendency of syphilis to select the branches of the middle cerebral artery as especially great. In my experience with a number of cases, I have found that the involvement of the arteries to the striate body, thalamus and the bulb especially frequent. The interesting lesions seen in the photographs of specimens from the case I am presenting, emphasize this. In this instance the lenticulostriate group of arteries were almost all completely obliterated, leading to practically complete death of these structures on the right side and pronounced softening on the other.

I deem it somewhat foreign to the purpose of the present paper to more than refer to the fact that syphilis is the remote cause of aneurismal processes very late after the infection, operating in conjunction with agencies tending to raise the blood-pressure, such as atheroma, cardiac and renal diseases. This latter observation, however, serves in this connection to emphasize again the great tendency of syphilis to inflict wide-spread damage on the arterial tree.

I shall finish these few generalizations with reference to a case in which I was fortunate enough to follow the symptoms over a period of twenty months, the case finally coming to necropsy. Although I was not able to get the necropsy done in the best manner possible, and to prepare the specimens completely, I have succeeded in securing photographs and slides of two transverse sections which display the most pronounced lesions in a fairly satisfactory manner.

History.—The patient was a white man, aged 36, single, bartender by occupation, and came under observation March 26, 1908. Aside from the fact that the father was alcoholic, the family history was negative. The patient was exceptionally well as a child and during adolescence. In fact, there was no illness of consequence until he acquired syphilis. Beginning at the age of about 25, he led a very dissolute life, drank alcohol steadily and went on occasional week-end drunks; used tobacco and drank coffee to excess. During September, 1906, he contracted a venereal sore and had well-marked secondaries. Treatment was instituted and kept up in a desultory way for two years after appearance of secondary symptoms. There was seemingly no further manifestation of syphilitic activity until November, 1907, when the patient sustained a stroke of partial hemiplegia of the left side. The hemiplegic stroke was, however, preceded by dizziness and malaise for several weeks; and on treatment the weakness on the left side improved greatly, but never got entirely well. A short time before my observation, he became dull and confused, laughed and cried without cause, and showed other signs of disturbed mentalization.

Examination.—On first physical examination (March 26 1908), the following observations were made: All deep reflexes were exaggerated, but those of the left arm and leg were most pronouncedly so; ankle clonus partially developed on left exhausting after a few seconds; the left epigastric and hypogastric reflexes were absent; Babinski sign present on the left, Gordon sign on the right; Romberg test positive. It was impossible to test sensation carefully on account of the mental state, though there was obviously diminution of pain sense on the left side of the body. There was marked weakness of the left arm and leg. With the hands, 38 kilos on right and 12 on left, could be registered on the dynamometer. There was no sign of facial weakness on either side. Tongue deviated slightly to the left; pupils equal, round, active to light and accommodation. There was very slight swelling of the optic disks with obscuration of the edges and what appeared to be a mild toxic retinitis. The patient articulated awkwardly as if the tongue and lips were stiff on voluntary movement, and the voice was nasal. The soft palate sagged, but was observed to move on forced voluntary effort, not, however, on stimulation. The heart and other important viscera were normal; urine examination being likewise negative. The bowels were obstinately constipated and the tongue had a white coating. Control of the bladder was somewhat impaired, though this could not be determined well on account of the mental state. No hardening could be detected in the peripheral arteries. The mental state was one of universal reduction of all the psychic aptitudes. Patient was unable to tell where he was or anything about his situation. On attempting to answer questions, there was an overplay of the facial muscles of expression and articulation, and the effort would almost invariably end in a fit of crying. Words were enunciated in a clumsy way, amounting to dysarthria. The tendency to weeping obviously did not signify affective depression but the emotional instability seen in cases of gross lesions of the basal structures, especially the optic thalamus and striate bodies. The patient had no care for personal cleanliness. These and numerous other faults of behavior seemingly have their explanation in the mental state of bewilderment and negativism present. Specific treatment was given, but was so poorly tolerated that it had to be used very mildly. The digestive functions seemed to be in abeyance, constipation was obstinate and the general state grew worse.

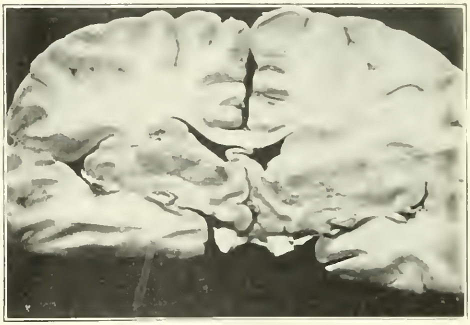


Fig. 1 Syphilitic endarteritis.

Subsequent Course of Disease—May 4, 1908: General state somewhat worse than on last observation; patient required careful nursing, drooled saliva and refused food. Emotional instability continued; patient articulated badly; the gait was now somewhat more spastic; condition of the eye fundus remained the same; Babinski sign was present on both sides. Specific medication increased in quantity.

June 9, 1908: The general state was observed to be improved; patient would now articulate his words better, knew that he was in the hospital, took his food better and gained in weight; spasticity in extremities was much diminished. Babinski sign present on both sides; deep reflexes greatly plus, most pronounced on left.

June 16 1908. Condition quite the same as on previous observation, possibly a bit better. Patient left the hospital.

During the month of October, 1908 patient was seen casually on the street and seemed almost normal. The gait was unimpaired and he asserted that he could use his extremities as well as ever. He felt strong and expressed intention of resuming his occupation He was readmitted Aug. 15, 1909, having become practically helpless in all four extremities.

October 2, 1909 the following observations were made: Patient's condition was worse than when first seen. He cried almost continually, signs of the old left hemiplegia were again prominent, and the right side was also weak and spastic; the arms were stiff and awkward on voluntary movement; pronounced weakness in both arms and legs, but most pronounced in left; deep reflexes greatly exaggerated on the left, less so on the right; sustained ankle-clonus on the left; Babinski sign present on both sides. Sensation could not be tested on account of mental state. No athetoid movements or tremors present. The mental state was the same in kind as that seen on first observation, though of greater depth. The patient lay quietly and discharged the functions of his body without concern, requiring to be fed like a child. Articulation was scarcely intelligible, and he had great difficulty in swallowing. Specific treatment was again instituted, but totally disagreed and had to be withdrawn.

Nov. 28, 1909: Patient was bedridden and could scarcely swallow food from involvement of deglutitory muscles. The mental state was one of negativism, due to the profound reduction of all cerebral functions. He still continued to cry when aroused. Babinski sign was present on both sides; sustained ankle-clonus on left. The optic disks remained partially obscured as noted on previous observations. The patient moved his extremities in an awkward, ataxic, spastic manner; was obstinately constipated and abdomen was retracted. Patient was unable to swallow and seemed not to assimilate nourishment given by stomach-tube.

He died December, 1909, from inanition.

Clinical Diagnosis.—Syphilitic endarteritis of the central nervous system, with focus of hemorrhage or softening at first in the right internal capsule; later similar involvement of the left capsule. Probably multiple small foci about the hemispheres from rupture or obliteration of the smaller terminal vessels.

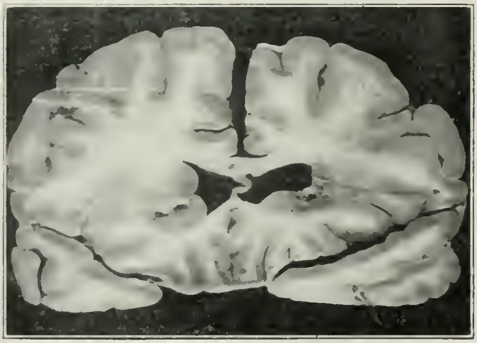


Fig. 2.—Syphilitic endarteritis.

Post-Mortem Findings.—There were found slight universal thickening of the dura, and wide-spread opacities of the pia with cystic formations in places. The walls of the large vessels at the base were observed to be thickened, especially the middle cerebral and its branches. Areas of softening were seen in the region of the two striate bodies, most marked on the right, where the lesion appeared older and involved the thalamus and practically all structures in the lenticulo-striate region, apparently destroying the majority of the fibers of the capsule. These were the two chief gross lesions, but numerous minute foci of necrobiosis were seen in the cortex and subcortical substance of the hemispheres.

Transverse sections of the spinal cord showed the left half of this organ to be distinctly less in volume than the right. The pyramidal tracts were seen to be greatly atrophied on naked eye inspection, apparently from secondary degeneration alone.

On account of the difficulties under which our observations were made, no Wassermann reaction could be done and no search for spirochetes made; but the clinical history and appearances of the lesions found were so overwhelmingly in favor of syphilis as to leave no reasonable doubt.

I realize the great interest that might have attached to a more detailed observation of the symptoms in the case and the exhibition of microscopic sections of the brain and cord in further illustration of the interesting pathologic lesions present. Lack of opportunity prevented my doing the former. I hope to complete the pathologic work later.

I have the pleasure to express my thanks to Drs. Daspit, Duval, and Couret, who have so kindly assisted me in securing and preparing the specimens.

1328 Second Street.

ABSTRACT OF DISCUSSION

Dr. William W. Graves, St. Louis: Dr. Hummel referred to the frequency of early arterial degenerations as a manifestation of syphilis, especially as pointed out by Nonne in recent years. This great clinical fact is one which is not appreciated. Early arterial degeneration after a syphilitic infection, no matter how carefully treated, is the one preeminent clinical fact on which one may oftentimes hinge a provisional diagnosis. Signs of arterial degeneration, occurring in a man before his time, and one being able to exclude metallic and other poisons as the cause, are in the majority of cases due to a former syphilitic infection. I base this conclusion not on that finding alone, but there are other clinical findings demonstrable in cases of syphilis two or more years after the infection, which are almost as constant as the arterial changes.

During the last few years I have given much attention to syphilis of the nervous system and post syphilitic conditions, and I have made careful studies not only of the arterial systems of syphilitics, but also of their nervous systems; and from these studies it may be stated, though I may be considered radical when I do state it, that there are but few patients, however carefully we may treat them, who two years after a syphilitic infection will not show organic changes as demonstrable by a clinical consideration of the nervous system. Indeed during the secondary manifestations of syphilis in some cases which I have had the opportunity of studying, I have found distinct sensory loss, especially to pin pricks. This loss may and probably does remain throughout the life of the individual. A syphilitic may lead a healthful life, but he reacts badly. The individual who has had a syphilitic infection must be regarded as a blighted individual, reacting poorly to stresses and strains. Such individuals when studied, in addition to cardiovascular changes, show in the majority of cases changes in the oculo-pupillary apparatus and in the nervous system.

Dr. George A. Moleen, Denver: I have been greatly pleased with the case report that has just been made, and I believe that this condition is too often neglected by reason of its frequent occurrence. The first phase that appeals to me in this paper is the evidence of neglected syphilis which has been the cause of the arterial degeneration. I have seen quite a number of cases of cerebral arterial degeneration in Colorado, and almost invariably the history of the syphilitic infection carries with it an incompleted treatment, or a treatment extending usually not over two or three months. The length of time of specific treatment, I think, is often in direct relation to the occurrence of an arteritis. I have seen in one instance the occurrence of a syphilitic arteritis within three months of the initial sore. In other cases they have gone, as has been the experience of others, as long as fifteen or twenty or more years. The mental confusion in the case just cited, I take it, is an expression of the general toxic effect of the syphilitic virus, which is further evidenced by the neuritis and the retinitis, and these are not commonly, if ever, present in pure arterial lesions. I do not believe that many such cases should occur if the proper mercurial treatment were established and continued, and particularly continued when once established. I think with Osler that it is lamentable that we should find arterial lesions in specific cases like these, which are so amenable to mercurial treatment.

Dr. Theodore Diller, Pittsburg: There is a good deal of thickening of arteries, a good deal of arteriosclerosis, that is not syphilitic. For instance, I very often find thickening of arteries in boys with dementia præcox, and I believe that there is a good deal in the inheritance of bad arteries, arteries which degenerate early, and I feel that we ought to be not too hasty in concluding that thickened arteries indicate specific disease, even in young persons.

DR. E. M. HUMMEL, New Orleans: Fourteen months elapsed between the time of the initial sore and the stroke of hemiplegia which this man suffered, which in the light of subsequent developments was undoubtedly assignable to softening in the right capsule due to obliterating endarteritis. I wish to insist again on the early occurrence of signs of specific endarteritis, dating from the time of the initial sore. Dr. Nonne in his comprehensive treatise, "*Syphilis und Nerven-System*," insists on this repeatedly, and comes to the conclusion that syphilitic processes of this kind always occur practically within three years of the time of the infection. I did not wish to be understood as confusing specific endarteritis with arteritis of other causation, and I quite agree with Dr. Diller that there are numbers of other kinds of endarteritis, but I think, everything considered, there is no doubting the specific character of the arteritic process in this case. There is one point that I should like to mention further in connection with the case, and that is that it is noted in the clinical symptoms that this man underwent great improvement under specific treatment and got practically well. The explanation of that is interesting. It is probable that there was a large exudate around the site of the original softening, and that it was absorbed under specific treatment. One thing further in this connection and of interest here is that when a person under the age of 40 sustains a stroke of hemiplegia or any other sign of gross focal, brain or spinal cord trouble, coming on suddenly, indicating either hemorrhage or softening, the presumption is very strong that such an accident at so early an age indicates the presence of arterial disease of specific causation and the case ought not to be deprived of a therapeutic trial with antisyphilitic agents.

A NEW METHOD OF VACCINATION

SIGMUND WASSERMANN, M.D.
CLEVELAND

All physicians will agree that with the vaccination method now in vogue, using the scarifier (*Impf-Lanzette*), we can never measure the extent of the trauma and therefore the resulting lesion. As a rule, with experience, we may strike just about the right thing, but in the case of a restless child an unexpected motion on our part or on the part of the patient makes us go beyond the intentional limits. A further point, which has not been considered sufficiently, is that such a large abraded area is a receptacle of a large quantity of vaccine lymph causing too strong a local reaction. Such and other drawbacks can be prevented by a new method, which I herewith present. This method revolves around the instrument to be used, which is the scarifier devised by Professor von Pirquet for his cutaneous tuberculin test. It is a small chisel with the sharpened edge of which the drilling of the skin is surprisingly painless, hardly perceptible by children.

MODUS OPERANDI

1. Clean the arm with water and soap, and then rub it thoroughly with alcohol.

2. Apply the vaccine lymph (pulp) on the skin by expressing a capillary tube or by smearing the lymph, in case one prefers the points.

3. Point the chisel perpendicularly to the surface of the skin and press against it with a few rotary movements or, as a child said, "use it like a screw-driver."

These few rotary movements suffice to produce both an abrasion of the skin and an implantation of a minimum amount of vaccine virus.

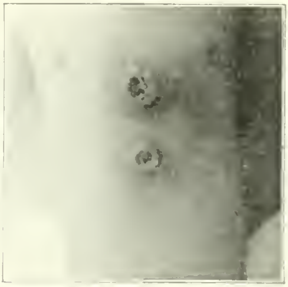
Within a minute a little wheal, a typical, reddish urticarial papule with a central depression, is formed. It is a vasomotor reaction produced by the blunt pressure of the instrument.

I always cease the operation when the superficial layers of the epidermis appear to be removed and a pinkish hue shines through from beneath (vessels of the pars papillaris corii). I have never seen a trace of blood oozing from the scarified skin, which is by no means an attribute of a successful vaccination, as some believe.

DEVELOPMENT OF THE PUSTULE

The course of development is as follows: The traumatic papule spoken of fades away in a few hours and the incubation period begins. Nothing is seen or felt until about the end of the first week, when a little elevation is formed around the point of trauma. A very small area of redness may be seen at this time. This papule transforms itself into a vesicle within the second week, and becomes mature at the end of second or the beginning of the third week.

The most striking peculiarity of this form of vaccination is the mild and slow development, so that neither children nor parents are aware of the effects of the vaccination until the pustule is well formed. In the majority of cases, no subjective symptoms worthy of being mentioned are complained of during the first week (itching). During the second and third week, when the pustule is ripening and the area congested, there is seldom felt a pain in the axillary region. I have not yet witnessed an involvement of the whole arm, as the reactive congestion is small and keeps within the nearest boundaries of the pustule; neither does a bacterial infection take place readily. I have not had a single case showing these little accidents, as in previous years, although the vaccinations performed this year surpassed all those of previous years, on account of the smallpox scare in Cleveland. I explain this in the following way:



Vaccine pustules (new method). Strictly circular, of geometric accuracy. Although very close, their individual halo can be distinguished, no confluence having taken place. Surrounding tissue is only slightly involved.

Scarifying, especially crosswise, means dissemination of little traumatic lesions over an unlimited area. After the inunction a crop of little pustules will sprout, and a confluence takes place to form a large unbounded pustular surface with an extensive area (halo). The crust later formed cannot completely cover the wound. It is not uniformly thick to resist the exuberant fluid; the [illegible] cracks; matter overflows, sometimes resulting in an unnecessary secondary vaccination, and (what is of more importance; making an open door for a bacterial invasion. "A scarification produced by rotary movements is more advantageous than scarification by incisions, as it gives a very small superficial wound."[1] These advantages of the drilling method, emphasized by Von Pirquet in his cutaneous tuberculin test, hold equally good of the ordinary vaccination. With this new method, only a single traumatic circumscribed lesion is formed. A minimum of vaccine material is used, and an almost geometrically circular pustule ripens sharply. A crust is formed and covers the underground completely and cover and contents dry down slowly without breaking—the main issue in any uneventful vaccination.

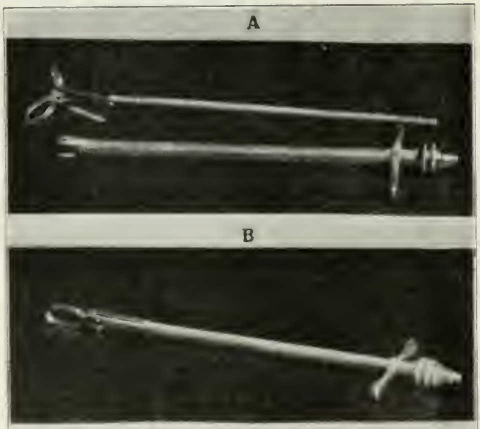
The Majestic, E. Fifty-fifth Street.

A MODIFICATION OF THE YOUNG PROSTATIC TRACTOR

HARVEY A. MOORE, M.D.
Clinical Professor Genito-Urinary Surgery, Indiana University School of Medicine; Attending Surgeon, Indianapolis City Hospital
INDIANAPOLIS

I have used Dr. Hugh H. Young's prostatic tractor successfully in a number of perineal prostatectomies, yet I have found it very difficult of introduction in a few cases and have therefore devised the instrument here illustrated, which is straight and has the advantage of being easily introduced through the perineal opening in the urethra. By turning the thumb-screw the blades are opened at right angles to the shaft, giving the shape and the tractile advantages of the original instrument.

316 Newton Claypool Building



Modification of the Young prostatic tractor: A, parts separated for cleansing and sterilizing; B, instrument closed for introduction; C, instrument open for traction.

COBWEB BRAIN

A CONTRIBUTION TO THE PATHOLOGY OF IDIOCY

EDWARD LIVINGSTON HUNT, M.D.
Instructor in Neurology, Columbia University; Visiting Neurologist to New York City Home for the Aged; Neurologist to the Penitentiary and Workhouse Hospitals; Senior Visiting Neurologist to the Hospital for Nervous Diseases of the City of New York
NEW YORK

The following case occurred in the service of Dr. Robert Abbe at St. Luke's Hospital, New York City. I was called to see the child in the capacity of acting neurologist.

The family were most insistent that something be done to investigate the condition of the child's brain, and therefore urged an exploratory operation.

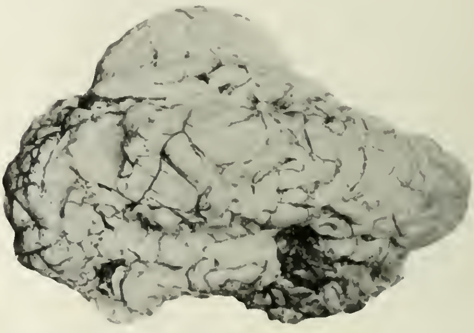


Fig. 1.—Anterior view, showing the appearance of the frontal lobes; cerebellum is above and behind.

History.—Dorothy C., born Nov. 6, 1906, admitted to St. Luke's Hospital Feb. 27, 1910. The labor began on the morning of November 6; the premonitory symptoms were those of placenta prævia. The delivery, hastened by high forceps, was completed the same afternoon. The child was rendered conscious only after considerable efforts. The examination made at the time of birth showed an extensive cut over the right eye, and on both right and left sides an immense swelling at the back of the top of the head. The one on the right side was the larger. During the first month the child was kept in an incubator and sustained by nutrient enemas, gavage, and oxygen. For several days after birth the child had periodical convulsions, as was shown by facial distortions and rigidity of the muscles of the face and arms. These convulsions, which were accompanied by cries, lasted three or four minutes and occurred several times in a day. They lasted several days and then gradually disappeared. The child was apathetic, unobservant, and apparently without emotion. The hands were constantly kept clenched. An external stimulus would elicit a cry; it was thought that sight was present. The child gave every appearance, however, of being an idiot.

Physical Examination.—Well nourished child of 3. The symptoms on admission were as follows: The child did not talk—never had. If laid on her back she would kick vigorously. Sight was undoubtedly impaired, although there was a distinct realization of the change from extreme darkness to light; the sense of hearing was very acute; the sense of pleasure was apparent, as was shown when a familiar voice spoke; the sense of taste was present, as the child rejected certain things and enjoyed others. The legs showed equal development; the use of the right hand and arm seemed to be better developed than that of the left. The color was good. The child could not sit up; if held up the head fell to the side. The skull was asymmetrical, the diameter from the right cheek being greater than that from the left. There was no depression on the surface; the fontanelles were closed. A lighted match produced a spasm of the entire body and for a brief moment caused the eyes to follow it. Immediately after, however, they began to roam and continued to do so aimlessly. Drooling was frequent. The jaw was constantly in motion as if chewing. Sixteen teeth were present; they projected very little from the gums. There was no glandular enlargement. The ears were normal. The heart, lungs, and abdomen were normal. There was no rigidity of the neck. The limbs were stiff and spastic, showing occasional aimless movements, without apparent coördination. The kneejerks were exaggerated. There was no Babinski and no Kernig sign. A pin prick caused no pain. Temperature 101.3, pulse 120, respirations 22.

---

[1] Von Pirquet: Therap. Monatsh., November, 1907.

Ophthalmoscopic Examination.—This, made by Dr. C. W. Cutler, showed that both pupils were dilated; the left reacted to light, the right did not. The media was clear; there was a temporal atrophy of both nerves; an irregularity of the chorioidal ring and a sharpness of the edges of the nerves. There was no exudate. There were some diffuse signs of an old chorioid retinitis. There was no nystagmus.

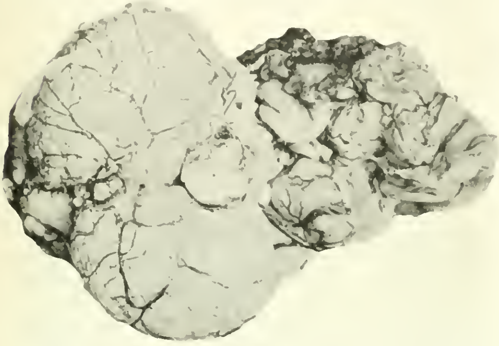


Fig. 2.—Posterior view, showing normal size of cerebellum as compared with the very small shriveled appearance of the frontal lobes.

Operation.—On March 1, 1910, Dr. Abbe did an exploratory craniotomy. A curved incision 4 inches long was made in the right parietal region. The periosteum was elevated and the opening enlarged with rongeur forceps. The dura mater was bulging but on incision collapsed. The entire right hemisphere was replaced by a reticulum of cobweb-like tissue filled with clear watery fluid. No cerebral substance could be seen at operation, and the wound was closed. This cavity was evidently the result of an old clot, as many adhesive bands were left behind. The patient survived a few hours.

Autopsy.—Performed by Dr. Zinsner. There was a marked asymmetry of the skull, the right side bulging forward especially over the right parietal surface. The sagittal suture ran backward and to the left and there was a slight protuberance of about 1 cm. in extent over the right frontal region. The external appearance of the skull was otherwise normal. Under the incision made at the operation, that is, on the posterior half of the right parietal bone, a disk of skull had beer removed. On the removal of the skull-cap a considerable escape of fluid took place where apparently the saw had penetrated the dura The lateral hemispheres were considerably contracted, leaving a large space between brain and skull. The right hemisphere of the brain showed a very great and marked degree of shrinkage. It was practically a complete atrophy of the hemisphere. There was considerable dense connective tissue, which apparently drew the convolutions together. The cortical substance was extremely thin. The lateral ventricles were very much dilated. The left hemisphere had been converted into a large cystic mass, the cortex in some places being as thin as paper, transparent and distended with fluid The remaining cortical substance was very thin, showing an attentuated layer of brain substance. The basal portions of the brain were well developed and apparently normal

Acknowledgement is due the House Staff of St. Luke's Hospital, especially to Dr. Heaton, for the courtesy afforded me and for the assistance in collecting these facts.

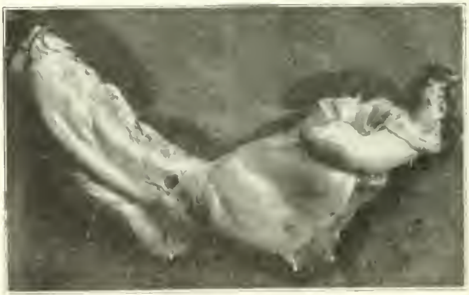
54 West Fiftieth Street.

UNUSUAL SITE OF TYPHOID PERFORATION

N. C. BLEDSOE, M.D.
BISBEE, ARIZONA

History.—July 8, 1910, J. H. M., a hoisting engineer, married, aged 37, came to see me, giving a history of trouble with his stomach. His temperature was 102.6 F., pulse 100. A diagnosis of typhoid fever was made and he was sent to the hospital, where he ran a very high temperature. He was put on a milk diet, given phenyl salicylate ($2\frac{1}{2}$ grs.) every three hours and sponged for temperature above 102.5. He was blue, so he was given whisky ($\frac{1}{2}$ oz.) after each sponging. Rose spots appeared on the fifth day in the hospital; on the seventh day he had a severe hemorrhage from the bowels. The patient was given morphin ($\frac{1}{4}$ gr.), and all food withheld for forty eight hours. He was given all the ice-cold normal salt solution that he would drink (he never made any complaint about it). In twelve hours his temperature dropped to 98, pulse 98, slower than it had been at any previous time. From that time until the tenth day he passed in all 73 ounces of blood. The abdomen was never distended, nor did the patient complain of any discomfort whatever. On the twelfth day at 3 a. m. he suddenly complained of severe pain in his stomach, radiating across the abdomen just under the costal arch. He was given codein ($\frac{1}{2}$ gr.) hypodermatically, and I went to the hospital as soon as I could. The codein quieted him a little. At 5 a. m. he had a chill and had very severe pain. Just previous to his attack of pain his condition was, temperature 101.6, pulse 104. When I examined him his pulse was 126, temperature 103 F., face drawn and anxious, both recti tense, but no distention. A diagnosis of perforation was made, relatives called, and all preparations made for operation. The family wanted consultation. A consultant was called and confirmed the diagnosis, but wanted to put off operating, as the patient was resting easily. One hour later his condition was decidedly worse; pulse 130, temperature 103, respiration 36. The relatives were told his condition. They decided, with the consent of the patient, not to operate.

The distention became very marked across the upper part of the abdomen above the transverse colon. The lower part of the abdomen remained flat, but more tense than ever. At 7 p. m. the patient died.



Perforation at the junction of pylorus and duodenum.

Autopsy.—This revealed typhoid ulcers over the whole of the intestinal tract, abdomen full of thin fecal matter; no perforation in the small intestine, or in the colon, but at the junction of the duodenum and the pylorus, as shown in the illustration, was the fatal perforation. On closer examination the perforation was found to be in the center of radiating bands of adhesions looking like an old duodenal ulcer; it had healed and the typhoid infection had attacked this portion of the intestinal tract causing the perforation and death.

I can find no record in my medical literature of a perforation in this region, hence this report. We see so few perforations that it is hard to say definitely from the symptoms just where a given perforation is located. In this case a median-line or a semilunar-line incision would have revealed to us nothing that we did not already know. We should have been compelled to admit our failure to find the perforation and would have been blamed for his death. Let us observe these symptoms of perforation more closely and see if we can arrive at some definite conclusion as to its seat.

SPOROTRICHOSIS

RICHARD L. SUTTON, M.D.
KANSAS CITY, MO.

Since the publication of Schenck's[1] article, in 1898, less than a dozen instances of sporotrichal infection in man have been reported from America. France has furnished a vast majority of the cases up to the present, a fact which probably is due as much to the interest that the affection has aroused among French medical men (and the consequent recognition of the disease when encountered) as to any excessive prevalence of the disorder in that particular part of the world.

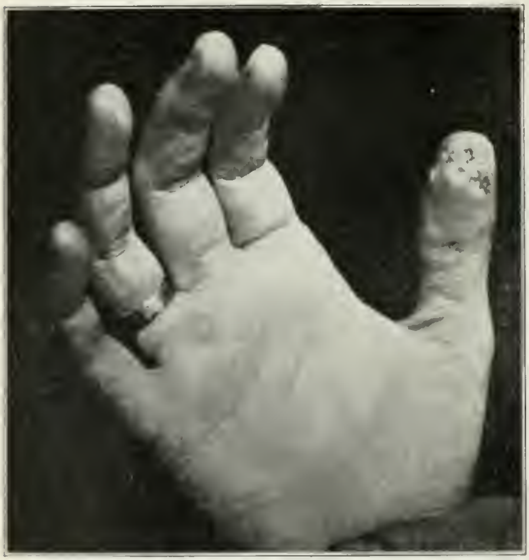


Fig. 1.—Initial lesion on thumb.

CASE REPORTS IN THE LITERATURE

Case 1.—Schenck's patient (whose case was the first in which the infecting agent was isolated and provisionally classified) was a male laborer, aged 36 years. The course of the disease was typical. Three months previous to the date of examination the patient had sustained a slight scratch wound (from an iron nail) on the dorsal surface of the index-finger of the right hand. Shortly afterward, an abscess developed. This was opened, but refused to heal. Three weeks later an ulcer appeared between the second and third metacarpophalangeal joints. Within a period of less than two months a series of cutaneous abscesses (seven in number) developed on the hand and the radial side of the forearm. These were incised, and a brownish, gelatinous, puriform material escaped, but the lesions persisted in spite of treatment. The epitrochlear glands were not involved. The axillary glands were palpable, but not especially enlarged. The subjective symptoms were practically nil.

Schenck obtained the organism in pure cultures from one of the lesions. It was an aerobe, grew readily on ordinary culture media at room temperature (although it flourished best at 37 C.), and was found to be pathogenic to dogs and white mice.

The morphology and development of the parasite were studied jointly by E. F. Smith, of the United States Department of Agriculture, and Schenck. Cover-glass preparations, from agar and bouillon cultures, showed thread-like mycelia (from 1.5 to 2 microns in diameter), with oval conidia (varying in length from 3 to 5 microns). The organism stained well in all the basic dyes, and was not decolorized by the Gram method. Smith tentatively assigned the fungus to the genus *Sporotrichum* (following Saccardo, in his "Sylloge Fungorum").

An examination of the affected tissues failed to show any characteristic changes other than those commonly found in chronic abscesses. Sections stained by special methods failed to reveal any micro-organisms whatever. The disease proved very refractory to treatment (the usual surgical measures being employed).

Case 2.—Brayton's[2] case also occurred in a male, and followed a puncture wound (wire) of the finger. The succeeding chain of refractory, chronic abscesses extended from the finger to the elbow, and finally healed with considerable scarring. There was no bacteriologic examination.

Case 3.—Perkins'[3] case, in which the diagnosis was made and the cultural work done by Hektoen, followed a slight abrasion (from a hammer) of the index-finger of the left hand. The patient was a boy, aged 5. When first seen, ten days after the accident, the affected finger was greatly swollen, and a deep, well-defined, undermined ulcer marked the site of the wound. The dorsal surface of the hand and the extensor surface of the forearm presented a chain of swollen lymphatics along which were about twenty nodules from the size of a small pea to a large hazel-nut. At this time there was no evidence of suppuration. About two weeks later the nodules began to break down, and, when some of them were incised and drained, it was found that a sinus, 4 inches long, connected two of the larger ones. The pus from the abscesses was of a mahogany color, and thick and gelatinous. Hektoen confirmed Schenck's findings, and, in addition, demonstrated the pathogenicity of the organism to gray mice, white rats, and guinea-pigs. He was able to find spores in the abscesses, but no mycelia.

In 1906, de Beurmann and Gougerot[4] published their first paper, adding three new cases to the list already reported, together with an additional one which had been recorded by de Beurmann, in 1903, as an instance of "multiple subcutaneous abscesses of mycotic origin." During the past four years these two investigators have reported other examples of the affection, and have done much experimental work with the parasite. They have endeavored to separate the disease into two clinical types, a "syphiloid" type and a "tuberculoid" type, according to the resemblance of the lesions to syphilitic gummata or to the warty, papillary growths seen in tuberculosis verrucosis cutis. In some respects the French cases differ clinically from those seen in this country. The affected areas are more numerous, and the abscesses are commonly hypodermic, although dermic, epidermic, and mixed examples have been recorded. It is probable that the organism as met in that country possesses some morphologic and cultural peculiarities not found in the *Sporothrix schenckii*, and it may be that Matruchot[5] is in the right when he suggests for it the designation *Sporotrichum beurmannii*. In some instances, as in Dor's[6] case, the pus-containing cavities may be very large. Rarely, lesions are to be found on the mucous membranes (de Beurmann and Gougerot,[7] Letulle[8]); and even more exceptional are the instances of visceral infection (probable in the case reported by Massary, Doury and Monier-Vinard).[9] Monier-Vinard[10] found the sporotrichum in the expectoration of a patient who was at the same time suffering from pulmonary tuberculosis. Widal and Weill[11] have demonstrated the presence of the parasite in the blood, and have also shown the possibility of diagnosing the affection by means of the sporo-agglutination method (a point more fully described by Widal and Abrami,[12] in a later article).

---

[1] Schenck, B. R.: Bull. Johns Hopkins Hosp., ix, 286.

[2] Brayton, A. W.: Indianapolis Med. Jour., xviii, 272.

[3] Hektoen and Perkins: Jour. Exper. Med., v, 77.

[4] De Beurmann and Gougerot: Ann. de dermat., 1906, pp. 837, 911, 993.

[5] Matruchot and Ramond: Compt. rend. Soc. de biol., 1905, p. 379.

Practically all of the recorded cases have followed infection through an open wound, but an external lesion is not absolutely essential. De Beurmann found the organism in a tonsillar crypt in one of his cases, and, in one instance, he succeeded in inoculating a very young guinea-pig by feeding it milk in which cultures of sporothrix had been placed (Mewborn).[13] In the seventy-four cases in which I have been able to obtain data, the average age of the patients was 43. The youngest was 5 (Hektoen and Perkins), and the oldest 78 years (Kren and Schramek).[14] There were fourteen females, and sixty males. In thirty instances the initial lesion occurred on the hand or forearm, and in eleven instances on the foot, leg or thigh.

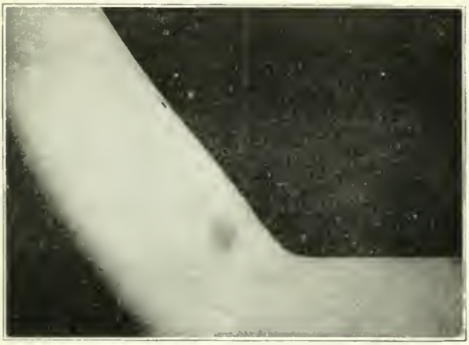


Fig. 2.—Cutaneous (dermic) abscess near right elbow.

In addition to the five cases of sporotrichal infection in man that I have found recorded from this country (Schenck, Hektoen and Perkins, Brayton, Burlew,[15] Trimble and Shaw),[16] I desire to report the clinical history and laboratory findings in a new example of this affection which has recently been under my observation.

REPORT OF AUTHOR'S CASE

Patient.—E. R., a woman aged 30, housewife, seen in consultation with Dr. Willis L. Jacobus, of Ottawa, Kan. The cutaneous history of the family is negative. The patient is a native Kansan, and a resident of Ottawa, Kan. Her general health has always been exceptionally good, and there is no history of a serious illness. She has no children.

Present Illness.—Five months prior to the time of consultation, the patient experienced a prickling sensation in the ball of her right thumb. She thought it was due to the presence of a small splinter, and, after a fruitless search for the irritating fragment, dismissed the matter from her mind. A few days later, however, a painless, reddened papule developed on the area. The lesion slowly increased in size until it was as large as a small pea. Applications of a mud poultice were employed, and finally the epidermis exfoliated, with the development of a sharply outlined, oval ulcer, measuring 1 by 2 cm., and having a rough, bright red base. The entire lesion was covered with grayish pus. There was practically no pain. At this time the patient consulted Dr. Jacobus. He thoroughly cleansed the part, and ordered the use of antiseptic dressings, frequently renewed. Four weeks after the appearance of the papule on the ball of the limb, a hard, cutaneous nodule developed near the base of the digit. Three days later, a second nodule appeared a few centimeters back of the first. At intervals of a few days, other lesions developed, until finally a chain of seven, extending from the thumb to the shoulder, was present. There was no involvement of the epitrochlear or axillary glands, and no elevation of temperature.

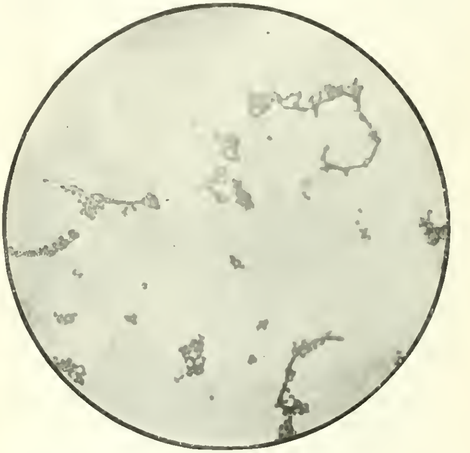


Fig. 3.—Mycelia and spores from a 18-hour agar culture (1/12 oil immersion, Spencer).

Physical Examination.—The patient was an intelligent young woman, a blonde, with a thin, smooth skin. A thorough general examination failed to reveal any abnormal condition of the internal organs. The mucous membrane of the mouth and pharynx was not affected. The first phalanx of the thumb of the right hand was considerably swollen. On its palmar surface was a well-defined, oval ulcer, with a rough, bright red, granulating base (Fig. 1.) The surrounding epidermal wall was undermined, and there was an abundance of grayish, tenacious pus. There were two small, excoriated papules, one on either side of the thumb, midway between the ulcer and the first joint. The nail was not involved. The areola of hyperemia which usually surrounds an inflamed wound was here quite narrow, and there were no red streaks extending up the arm. Just over the first carpometacarpal articulation was a hard nodule, the size of a large pea. It was not adherent to the underlying subcutaneous structures, and gave rise to no subjective symptoms. The overlying epidermis was normal in color. Two centimeters farther back was a second lesion, smaller than the first, and of a purplish hue. It was quite soft to the touch. Immediately below the anterior fold of the elbow-joint was a larger tumor (Fig. 2) (1.5 by 2 cm. in diameter, and 1 cm. in height), which was also purplish in color, and soft and compressible. Higher up, on the inner surface of the upper arm, were four more nodules, arranged in an irregular chain. In only one of these could fluctuation be obtained. The epitrochlear and axillary glands were not palpable. The signs which commonly mark the presence of an ascending cellulitis were absolutely lacking. The patient's temperature was normal, and she stated that if she had not seen the nodules on the wrist she would not know they were present. Permission to excise one of the smaller lesions was firmly refused.

---

[6] Dor: Presse méd., 1906, No. 30, p. 234.

[7] De Beurmann and Gougerot: Bull. Soc. méd. d. hôp. de Paris, 1907, p. 585.

[8] Letulle: Presse méd., 1908, No. 23, p. 182.

[9] Massary, Doury and Monier Vinard: Bull. Soc. méd. d. hôp de Paris, 1907, p. 476.

[10] Hudelo and Monier Vinard: Bull. Soc. méd. de Paris, 1908, xxv, 914

[11] Widal and Weill: Bull. Soc. méd. d. hôp. de Paris, 1908, p. 944.

[12] Widal and Abrami: Bull. Soc. méd. d. hôp. de Paris, 1908, p. 947.

[13] Mewborn: Excellent review, Jour. Cutan. Dis., 1908, p. 140.

[14] Kren and Schramek: Wien. klin. Wchnschr., 1909, xxii, 1519.

[15] Burlew: South. California Prac., January, 1909.

[16] Trimble and Shaw: Kansas Med. Jour., September, 1909.

Bacteriologic Examination.—A clinical diagnosis of sporotrichosis was made, and the case referred to Dr. W. K. Trimble, of this city, for bacteriologic examination. The large lesion near the elbow-joint was incised, under the usual precautions, and two agar and four glycerin-agar tubes inoculated. The pus was of a mahogany color, thick, stringy, and of the consistency of syrup. The tubes were placed in an incubator at 37 C. Four days later, there were abundant growths on all six. On investigation, it was found that pure cultures of the organism had developed on five of the slants (Fig. 3) (one glycerin-agar tube having become contaminated). Some of the patient's blood was secured, and an effort made to prove the feasibility of the sporo-agglutination test. The method was found, however, to be of more theoretical than practical value.

Treatment.—Potassium iodid, in doses of from 2.0 to 3.0 gm. per day, has been found to be almost a specific in this disease (I am unable to discover who first suggested its use). Locally, a saturated aqueous solution of the same salt, or one of the iodin, potassium iodid, and oil mixtures, is of great value. The patient was placed on this line of treatment with extremely satisfactory results. When I last saw her, ten days after the first consultation, the lesions had almost entirely disappeared.

610 Commerce Building.

A CONTRIBUTION TO THE SUBJECT OF TUMORS OF THE HYPOPHYSIS

DEAN D. LEWIS, M.D.
CHICAGO

I. TUMORS DEVELOPING FROM CRANIO-PHARYNGEAL DUCT INCLUSIONS

In 1902 Saxer described an epithelial tumor which replaced the infundibulum of the hypophysis, filled up and distended the recessus infundibuli and the recessus opticus, and extended into the third ventricle so as to form a part of its floor, also into the lateral ventricle through the foramen of Monro. The anterior lobe of the hypophysis was normal and the tumor was unconnected with the choroid plexus. The nodular, free surface of the tumor, especially that projecting into the third ventricle, had a definite papillary structure. The papillæ consisted of a fairly thick connective tissue ground work, which was covered by epithelial masses, the general arrangement of which corresponded to that of stratified flat epithelium. The most superficial epithelial layers consisted of flattened cells which were fusiform on cross section. The deeper layers were cubical or cylindrical and the cytoplasm of cells was markedly vacuolated. The vacuolation was one of the most striking features of the histologic picture.

In discussing the origin of this tumor Saxer states that he believed at first that the position of the tumor, especially its relation to the floor of the third ventricle, which formed a considerable part of the upper surface of the growth, warranted him in concluding that it developed from the epithelium of the ventricle or its recess. He later changed his opinion regarding the origin of the growth, because of the character and arrangement of the connective tissue and the appearance of the epithelium, which resembled closely stratified, flat epithelium. He came to the conclusion that the cells of which this tumor was composed resembled morphologically the cells surrounding the infundibulum, which form what is now known as the pars intermedia. The relation of the pars intermedia to tumor formation will be discussed later.

Saxer in closing the discussion of this tumor states that he did not know of a record of a hypophyseal tumor with similar histologic characteristics. Scattered throughout the literature are descriptions of solid and cystic tumors occurring in the position occupied by the one described by Saxer. These have so many common gross and microscopic characteristics that they should undoubtedly be classified together. They appear in the literature under a number of different terms, such as epithelial tumor of the infundibulum and third ventricle, papilloma of the choroid plexus of the third ventricle, cystic endothelioma developing from the pia mater, epithelioma of the Malpighian type, adenoma and adeno-sarcoma of the hypophysis. Before discussing the origin of these tumors, I wish to cite the histologic descriptions of some of the reported cases in order that I may compare the histology of these with that of the growth which I have examined.

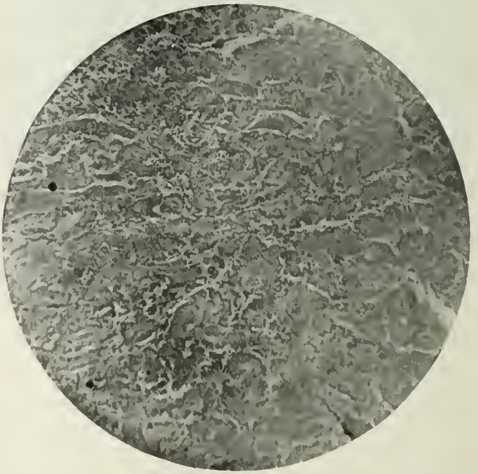


Fig. 1. Photomicrograph of section prepared from tissue removed from Case 1. The tissue has a papillomatous structure. Cylindrical cells rest on the connective tissue stalk of the papillæ, while the succeeding layers of cells vary in form, the difference apparently being due to pressure. Histologically this growth corresponds to a group of tumors which occur about the infundibulum and develop from cranio-pharyngeal duct inclusions.

Wagner in 1861 described a growth situated behind the optic chiasm, which displaced the optic tracts to either side. The tumor was composed of many small cysts separated by thin septa. When the posterior part of the growth was incised a cavity leading into a dilated third ventricle was exposed. The lateral and fourth ventricles were normal; the anterior lobe of the hypophysis intact. The cyst walls were composed of a vascular connective tissue. On the outer surface were numerous long, villus-like bodies which were covered with many layers of epithelium. The cells covering most of the villus-like projections were cylindrical. In some areas they resembled those of mouth epithelium while in others they were irregular in form and grouped in masses. Wagner expressed no opinion concerning the nature of this cyst which contained free cells and cholesterin crystals.

Langer[1] in 1892 reported two cystic growths which surrounded the infundibulum and extended up to the floor of the third ventricle. The walls of these cysts were composed of delicate, cellular connective tissue and supported papillary excrescences, which were covered by cylindrical epithelium. Langer came to the conclusion, after gross and microscopic examination, that these cystic growths took their origin in the infundibulum and that they developed from pieces of tissue constricted off from the anterior extremity of the central canal.

Harbitz describes a tumor which evidently belongs to the same group. It occurred in a woman 58 years of age, who presented none of the symptoms of acromegaly, but other symptoms associated with hypophyseal growths. The tumor occupied the position of the hypophysis. It was as large as a walnut and extended along the infundibulum upward to the floor of the third ventricle, with which it became continuous. The chiasm was stretched over the tumor, the right optic nerve was flat and ribbonlike and the right optic tract could not be distinctly seen. The left optic tract and nerve were normal. Microscopically the tumor presented a fairly uniform structure. The cells were grouped into masses of various shapes and sizes separated by a connective tissue stroma. The cells resting on the stroma were cylindrical with clear cytoplasm, while those occupying the center of the masses were polygonal, round or oval. In many fields the histologic picture resembled that of a papilloma. Harbitz believed that the tumor was an adenoma, although there were evidences of proliferating growths along the periphery.

The histologic characteristics of the tumors mentioned above have been cited at some length in order that they may be compared with those of a growth which, through the kindness of Drs. A. E. Halstead and E. R. LeCount, I have recently had the opportunity of examining. The growth was removed by Dr. Halstead at St. Luke's Hospital, Chicago, from a patient presenting the symptoms associated with hypophyseal growths but without acromegaly.

CASE 1.—The patient, a man aged 39, gave a history extending over a period of two years. He complained first of a frontal headache of a peculiar pricking or sticking character. A year later his eyesight began to fail. A perforated nasal septum and aortic regurgitation suggested the possibility of cerebral syphilis and vigorous antisyphilitic treatment was therefore instituted. It was continued for a number of months without improvement. There were no symptoms of acromegaly. The patient had been impotent for eighteen months. The external genitalia were, however, well developed; there was no adiposity or suggestion of the feminine type.

The diagnosis of an hypophyseal tumor was not made until bitemporal hemianopsia was added to narrowing of the visual fields and bilateral optic atrophy developed.

The diagnosis was verified by an *x*-ray picture which revealed a shadow occupying the sella turcica and apparently extending upward toward the floor of the third ventricle. The detailed history and postoperative course of this case have been reported by Dr. Halstead.[2]

Microscopic Examination.—Several fragments of tissue removed during the operation were submitted to me for examination. The tissue was fixed in Zenker's fluid and imbedded in paraffin. The sections were stained with hematoxylin and eosin, Van Gieson's picro-fuchsin, iron-hematoxylin and neutral gentian. The last two stains were used to determine whether or not intercellular bridges and specific granules were present.

Microscopically the growth presents a fairly uniform structure. It is quite cellular, the cells being grouped in masses of various shapes and sizes, which are separated by a delicate connective tissue stroma. In some regions the epithelium has a definite arrangement, a number of layers of cells resting on connective tissue forming the stalk of a papilla. The cells resting on the connective tissue are cylindrical; the cells of the superimposed layers are polygonal or fusiform, being considerably modified by pressure. The cylindrical cells stain differently. In some fields the part of the cell adjacent to the stroma is clear and vacuolated, the distal part staining heavily with eosin; the polygonal and fusiform cells, as a rule, have a clear cytoplasm which is vacuolated.

One of the most conspicuous features of the tumor is its papillomatous structure, but this is not found in all regions. In some the cells covering the connective tissue stalk are not separated from each other, the epithelial masses appearing to be fused. Histologically it appears as if the epithelial masses have been sunken into the connective tissue stroma, the picture often resembling that of a carcinoma, although there are no other cellular changes characteristic of malignancy. Secondary papillæ have developed from the primary. In some areas these seem to be connected with the parent papilla by a narrow pedicle; in others they lie free. The tissue, because of the peculiar arrangement of the secondary outgrowths, presents in many fields an alveolar structure. In some regions the lumen appears to be the result of the degeneration and subsequent liquefaction of cells, in other places masses of what appear to be colloid are present in the lumen of these cellular outgrowths.

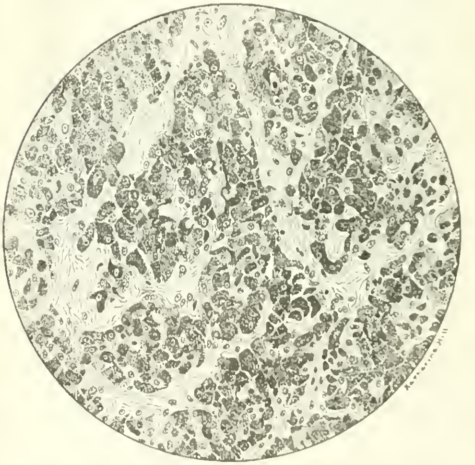


Fig. 2.—Section of tissue removed from Case 2. The cell columns have fused. The cells found in this tissue are almost entirely of the eosinophil type. Hyperplasia is indicated by the large, irregular, fused cell columns, the preponderances of eosinophil cells and karyokinesis, which can be seen with the oil immersion lens (Zeiss Compens. Oc. 6, obj. 8 mm.).

I have been unable to demonstrate cells in these sections which resemble those of the anterior lobe of the hypophysis. Delicate granules can be demonstrated in some of the cells by the neutral gentian stain, but they do not have the characteristics of the chromophile cells of the anterior lobe. They correspond to nodal points in the spongioplasm of the cell. There is no evidence of keratohyalin or of psammoma granules. The endothelial cells of the blood vessels, which are abundant, are not proliferating and the cells composing the tumor do not have the radiating, mantle-like arrangement of a perithelioma, so I believe that the tumor cannot be regarded as of either endothelial or perithelial origin. It presents none of the characteristics of a glioma or ependymal tumor. Nothing definite can be said concerning the topographical relations of this growth as the field of operation is so deep and restricted in such cases. I believe, however, that it may justly be assumed from the *x*-ray findings that the tumor lay beneath the floor of the third ventricle and extended downward into the sella—a position occupied by the group of tumors under consideration.

---

[1] Langer, F.: Ueber cystische Tumoren in Bereiche des Infundibulum Cerebri, Ztschr. f. Heilk., 1892, xiii, 57.
[2] Surg., Gynec. and Obst., May, 1910.

There have appeared in the literature reports of several tumors in this position which have presented clinical as well as histologic similarities. None of these has contained elements peculiar to the anterior lobe of the hypophysis and as a consequence there has arisen considerable confusion as to their classification and origin. Because these growths are not associated with acromegaly, considerable doubt has arisen concerning the causal relationship between tumors of the hypophysis and this disease.

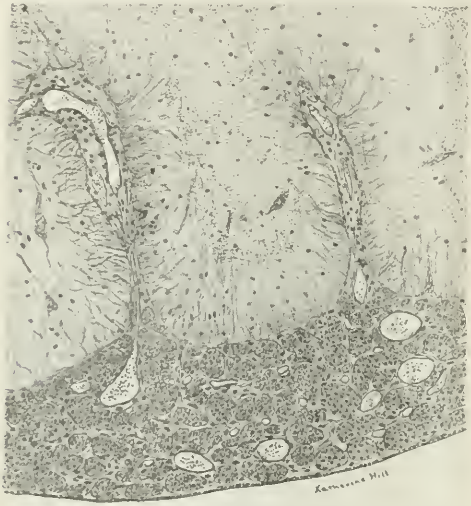


Fig. 3.—Pars intermedia of the ox.

As previously mentioned, Saxer believed that the tumor observed by him took origin from a group of cells which are normally found about the infundibulum. These cells are regarded by a number of investigators as chief cells of the anterior lobe, which have invaded the infundibulum. This is apparently the view of Lowenstein. He states that his observations support the view of a number of other investigators who have found that in almost every adult the cells of the anterior lobe have invaded the posterior lobe. These cells in man lie in small groups surrounded by well developed connective tissue. They may be collected in solid cords or arranged in the form of a vesicle containing material resembling colloid. Those occurring in solid cords differ morphologically from the chief cells found in the anterior lobe, as the cytoplasm is more dense and stains more deeply. As far as I can determine these cells are not so often vacuolated as those of the anterior lobe. The vesicles containing a colloid material are lined by a low cubical epithelium, the cells of which generally have a clearer cytoplasm than the other cells occurring in this region.

These cells are not to be regarded as invasions from the anterior lobe, but as distinct cellular elements of the hypophysis, forming what has been called by Herring the pars intermedia. In man the development of this portion of the gland has apparently been somewhat suppressed. In the pig and ox, however, the pars intermedia has attained a much greater development, forming a large group of cells, which lie posterior to the hypophyseal cleft, the remains of the cavity of the hypophyseal vesicle. The cells of the pars intermedia in both the ox and the pig have a clear non-stainable cytoplasm and are grouped in cell columns with and without a lumen, the columns resting on the walls of numerous capillaries. The cells of the human hypophysis—which are regarded by many as ingrowths of the anterior lobe—undoubtedly correspond to those of the well developed pars intermedia of the pig and ox. Morphologically these cells are distinct, differentiation being well established, in a pig measuring 5 cm. Tumors with distinct morphological characteristics arise from the pars intermedia. The cases which have been observed will be mentioned later.

The tumor removed by Dr. Halstead does not contain any of the cellular elements peculiar to the anterior lobe and the pars intermedia. It corresponds in many respects to the descriptions of tumors given by Saxer, Harbitz, Babinski and Onanoff and others, which have been observed about the infundibulum. Some of these have been solid growths, the majority have been cystic. I believe that Saxer was wrong in thinking that the tumor described by him developed from the cells of the pars intermedia. His statements that the epithelium occurring in the tumor observed by him resembled stratified, flat epithelium is sufficient to exclude origin from these cells.

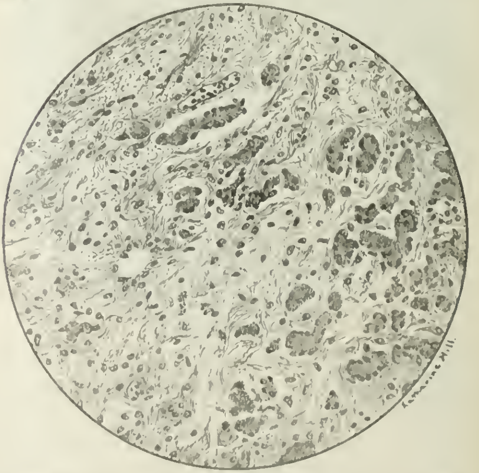


Fig. 4.—Cells of the pars intermedia of the human hypophysis showing their distribution in nervous tissue.

Erdheim[1] was the first to recognize that a number of growths which had been found about the infundibulum, and had appeared in the literature under a number of different terms, belonged to one group. In 1904 he published a monograph dealing with seven cases which he had studied personally and with twelve cases collected from the literature which had appeared under a number of different terms. Among the twelve tumors found in the literature, four were solid and eight cystic. Erdheim in examining his cases found cells with distinct intercellular bridges and epithelium which resembled closely stratified epithelium. In order to determine the frequency with which islands of undifferentiated cranio-pharyngeal epithelium occur in the hypophysis, he made serial sections of twenty glands. As islands of cranio-pharyngeal epithelium cannot be accurately determined in the fetus and newborn, because of the failure of complete differentiation, but thirteen glands were used in his studies. In ten of the thirteen cases he found islands of undifferentiated cranio-pharyngeal epithelium within the gland. The epithelial islands were situated in the infundibulum and the upper surface of the anterior lobe adjacent to it: also on the anterior surface of the posterior lobe. This peculiar distribution of this type of epithelium is due to the position of the cranio-pharyngeal duct in the final development of the gland.

---

[1] Erdheim, J.: Ueber Hypophysengangsgeschwülste und Hirncholesteatome, Wien., 1904.

While I have been unable to demonstrate intercellular bridges in the tumor under discussion I believe that it has enough of the characteristics common to this group to warrant one in placing it here. The epithelium of the cranio-pharyngeal duct is capable of forming adult cellular elements which differ markedly morphologically. The growth just described corresponds more closely to those arising from cranio-pharyngeal epithelium than to any other.

Some twenty-nine tumors have been described which belong to this group. The sex has been mentioned in twenty-eight, the tumor occurring nineteen times in the female and nine times in the male. The average age at which the tumor has developed is 32. The youngest patient was 9 years of age, the oldest 63.

The clinical courses of these cases have had fairly wide limits. Some cases have run a course of six or eight years, while others have been extremely acute. The patient observed by Bregmann and Steinhaus[5] had been perfectly well four weeks before entering the hospital. Her illness began with severe pain about the left eye and convulsive movements of the left eyelid. Three weeks later she became apathetic, desired nothing to eat, gave no reply when talked to and showed no concern about her condition. General weakness was a marked feature of the clinical picture. She could not sit upright in bed without considerable difficulty and could not stand without assistance. The gait was ataxic, the left pupil dilated and immobile. Ptosis of the left lid, limitations of movements of the left eye upward and inward, spasm of the left orbicularis oculi, paresis of the lower branches of the right facial, paresis of the right side, especially of the lower extremity, ataxia of the right upper extremity, nasal twang to the voice and some difficulty in swallowing completed the clinical picture. The ophthalmoscopic examination was negative. The clinical diagnosis rested between brain tumor and encephalitis about the crura. The rapid clinical course and absence of pressure symptoms favored the diagnosis of encephalitis.

In Bartels' case the usual symptoms of brain tumor—dizziness, headache, vomiting and mental dullness—were absent and the pulse was constantly rapid. In this case the boy developed normally until 14 years of age, when the changes associated with dystrophia adiposo-genitalis developed rapidly—the clinical course of the tumor extending over a period of seven years.

No definite symptom-complex accompanies the development of these growths. Most of them have been associated with the usual symptoms of brain tumor, but these may be wanting or not pronounced as in the two cases cited above. The most striking clinical feature, also perhaps the most constant, is the early loss of eyesight, optic atrophy developing in most of the cases without preceding choking of the disk. Choked disk is apparently much less common with hypophyseal than other intracranial growths. Bartels[6] has collected forty cases of tumors of the hypophysis and studied their relation to choked disk. In twenty of these, 50 per cent., there was simple bilateral atrophy, one unilateral atrophy, in 15 per cent., double choked disk, in 15 per cent. neuritis with subsequent atrophy and in 10 per cent. there was no change at all. These statistics do not support Berger's statement that a very considerable percentage of the tumors of the hypophysis are accompanied by choked disk instead of optic atrophy.

In the clinical histories of nine of the recorded cases of tumor involving the infundibulum—only cases are included which apparently developed from cranio-pharyngeal inclusions—it is noted that the patient was fleshy or had some evidence of interference with genital development, such as small external genitalia or the absence of or falling out of pubic and axillary hair. About 32 per cent. of the cases, then, have had some or all of the features associated with dystrophia adiposo-genitalis.

It has been recognized for a long time that deposition of fat and the development of the feminine type were frequently associated with hypophyseal tumors.

The cause of these trophic disturbances has been variously interpreted. Erdheim believes that the adiposity with genital atrophy, and in the male, with the development of the feminine type, the syndrome described by Fröhlich, is not due to any interference with the function of the hypophysis, but that it is the result of pressure exerted on certain centers at the base of the brain by the enlarging tumor. He has noticed that this syndrome has been most frequently associated with those tumors which grow out of the sella and extend to the base of the brain, and with those in which the tumor has not developed in the sella or the hypophysis proper, but from the infundibulum. In support of his view he cites a number of cases, such as those of Selke, Boyce and Beadles,[7] Babinski, Cestan and Halberstadt and Gläser. The view advanced by Erdheim is supported by Bartels. It is an interesting fact that in all of these cases the tumor was so situated that it could easily interfere with the function and viability of the cells of the pars intermedia, even if the anterior lobe of the hypophysis were intact.

Fat may be taken on rapidly with brain tumors not occupying the sella or occurring about the infundibulum. The rapid deposition of fat is explained in these cases by the sedentary habits which the patients are obliged to lead as the result of loss of vision or to the apathy attendant on increased intracranial pressure. There is, however, no group of intracranial tumors so frequently associated with the Frohlich syndrome as those occurring about the infundibulum, which during growth must interfere with the function of the cells of the pars intermedia. As previously mentioned, these cells are entirely distinct from those of the anterior lobe, and while one cannot assume that differences in morphology indicate differences in function, one cannot help being struck with the frequency with which these infundibular tumors—composed of a type of epithelium foreign to the hypophysis—are associated with Fröhlich's syndrome.

---

[5] Bregmann, L., and Steinhaus, G.: Zur Kenntniss der Geschwülste der Hypophysis u. der Hypophysisgegend, Arch. f. path. Anat. u. Physiol. u. f. klin. Med., 1907, clxxxvii, 360.

[6] Bartels, M.: Ueber platten Geschwülste der Hypophysengegend. (des Infundibulums), Ztschr. f. Augenh., 1906, xvi, 407.

[7] Boyce, R., and Beadles, C. F.: A Further Contribution to the Study of the Pathology of the Hypophysis., Jour. Path. and Bacteriol., 1893, i, 359.

The association is so common that one is justified in making a diagnosis of an infundibular growth—probably of cranio-pharyngeal origin—when this syndrome, accompanied by eye changes, develops without any symptoms of acromegaly.

Cushing's[8] experimental work would seem to indicate that hypopituitarism is the cause of dystrophia adiposogenitalis. This syndrome may be associated in acromegaly. It is difficult to explain this combination of symptoms, if acromegaly is dependent on hyperactivity of the gland, unless we assume that the growth associated with the acromegalic symptoms has interfered with the activity of another part of the gland with a different function.

Creutzfeldt's table, published in 1908, shows that tumors developing from inclusions of the cranio-pharyngeal duct are the most common of the growths of the hypophysis unassociated with acromegaly. The following table indicates the frequency of different varieties of tumors in 55 cases of tumor of the hypophysis without acromegaly which came to autopsy:

No. Cases	Character	Per Cent.
19	Cranio-pharyngeal duct tumors	34.54
15	Sarcomas	27.27
5	Hyperplasiae	9.09
3	Strumas	5.45
10	Adenomas	18.18
1	Metastatic growth from thyroid tumor	1.818
1	Teratoma	1.818
1	Lipoma	1.818

II. TUMORS DEVELOPING FROM THE PARS INTERMEDIA

Three cases are found in the literature in which the tumor originated in the cells of the pars intermedia.

Boyce and Beadles describe a small tumor at the base of the brain, which rested on the pituitary body but was entirely outside of the sella turcica. The tumor, which was round, firm, and as large as a medium-sized pea, appeared to be an accessory pituitary body. The gland was of about normal size and appearance and was quite independent of the tumor, except for a slender connection passing up to the infundibulum, from which the accessory body appeared to take origin. Microscopic examination showed that the infundibulum enlarged just above the hypophysis to form a small tumor which measured ¼ inch in diameter and projected posteriorly. The tumor was composed of large polygonal cells, larger than those met with in the anterior lobe. A few cells were polynuclear. In some instances the nuclear staining was poor. A definite, acinar grouping of the cells was only slightly apparent at the periphery, but numerous capillaries tended to produce a certain amount of lobulation. One must conclude from the description of the growth and the accompanying figure that it developed from the pars intermedia.

Erdheim describes a growth which apparently originated in the pars intermedia. It occurred in the infundibulum of a woman 86 years of age and was about as large as a hemp seed. Histologically it consisted of large cells with heavily granular cytoplasm which had grown into the fibrous tissue of the infundibulum as the normal cells of the anterior lobe so frequently do, as Erdheim states.

Cushing in a recent article states that Crowe, while studying sections of a large adenomatous tumor at the base of the brain removed from an excessively obese individual who had died of pressure effects, found a normal though compressed anterior hypophyseal lobe with undoubted evidence that the growth originated from the pars intermedia alone. The vesicles contained colloid and the tumor resembled in its arrangement one which might have originated from the thyroid gland.

These are the only undoubted examples of tumors arising in the pars intermedia. I believe it quite possible, however, that some of the peculiar types of sarcoma and adenoma may have arisen from this portion of the gland, for mistakes in anatomic diagnosis could easily be made if the structure of this part of the gland were not recognized.

The tumors described by Boyce and Beadles and Erdheim occurred in women aged 74 and 86 respectively. Neither tumor had given rise to symptoms, being discovered accidentally during routine post-mortem examinations. The age and sex of the case observed by Cushing are not given. It is to be noted, however, that in this instance the patient was excessively obese.

III. HYPERPLASIA OF THE ANTERIOR LOBE OF THE HYPOPHYSIS WITH ACROMEGALY

Case 2.—The patient was an unmarried woman aged 32. Her illness began two years ago with eye symptoms. Various diagnoses of these were made, until bitemporal hemianopsia, optic atrophy, severe headaches and vomiting, indicating enlargement of the hypophysis, developed. Unmistakable signs of acromegaly now manifested themselves. The diagnosis of a tumor of the hypophysis was verified by the x-ray findings. Menstruation had been irregular for over twelve years, but the flow was not diminished in amount. There had been no polyuria. No adiposity or change in the external genital characteristics had been noted. The technic employed in exposing the hypophysis has already been described by Dr. Halstead. After the fat surrounding the hypophysis had been removed a cyst like mass with gelatinous contents, not unlike soft granulation tissue, was curetted away. The patient did not recover from the partial hypophysectomy. After the operation she presented a peculiar train of symptoms, which Dr. Hamburger has suggested may have been due to the rapid absorption of hypophyseal secretion. These symptoms had some features in common with those which so often follow partial thyroidectomies for the relief of Basedow's disease.

Microscopic Examination.—The tissues were fixed in Zenker's fluid, imbedded in paraffin and stained with neutral gentian, hematoxylin and eosin, copper-chrome-hematoxylin and Van Gieson's picro-fuchsin. In studying sections of the hypophysis in cases of acromegaly it is necessary to use fixing fluids which will preserve the granules, and stains which will differentiate them. Zenker's fluid gives very satisfactory results, as the chrome salt gives the best results with neutral gentian technic.

Iron hematoxylin, copper-chrome-hematoxylin and Bensley's mitochondria stains give good results after fixation in Zenker's fluid. The importance of fixing the granules and of using stains which differentiate them cannot be insisted on too strongly. Hypophyseal cells when proliferating tend to reproduce the structure of a sarcoma and mistakes in anatomic diagnosis have often been made because of the failure to use fixatives and stains which preserve and differentiate the granules. Benda[9] was the first to call attention to the possibility of interpreting a hyperplasia or an adenoma of the hypophysis as a sarcoma. Mendel then reexamined some cases which had been regarded by him as sarcomas and when granule stains were employed he could demonstrate the granules peculiar to the cells of the anterior lobe of the hypophysis, thus confirming Benda's view.

The histologic appearance of the tissue from this case differs in the various fields. In some, the cell columns are cut parallel to their long axes and appear as long strands between a rather heavy fibrous tissue. The cells appear to be normal and their arrangement does not differ from that usually found in the gland. In other fields the connective tissue between the cell columns is markedly reduced in amount, the cell masses being larger than is normally the case and separated from each other by delicate strands of connective tissue, the histologic picture indicating fusion of adjacent cell columns. In these areas karyokinetic figures are quite frequently encountered in the cells, karyokinesis being most active in the cells with a light brown cytoplasm with few granules, as they appear in copper chrome preparation.

---

[8] Cushing, H.: The Functions of the Pituitary Body, Am. Jour. Med. Sc., 1910, cxxxix, 47[illegible].

[9] Benda: Deutsch. med. Wchnschr., 1901, xxiii, 536.

The fusion in some fields becomes so marked that large cell masses without definite boundaries are formed. The histologic picture is that of hyperplasia ending in adenoma formation. I have attempted to determine whether the chromophobe or chromophile cells predominate. So many transitional phases are present that it is impossible to determine accurately the relative proportions of the different cells. Eosinophil cells predominate in the field represented in Figure 2. It is difficult to estimate the relative proportion of the different cellular elements in all of the fields. None of the large vesicular type of cell, largely free from granules, which Cushing is inclined to believe represents the active or at least discharged phase of the gland, is present.

Notwithstanding the number of articles which have appeared dealing with the relation existing between tumors of the hypophysis and acromegaly, there is still considerable diversity of opinion regarding it. Cagnetto[10] believes that acromegaly is not the result of hypophyseal changes, but that the latter are the result of some obscure general disease. In support of this view he cites the following observations: 1. Cases of acromegaly have been observed without a tumor of the hypophysis. 2. Adenomas composed entirely of chromophobe elements but associated with acromegaly have been found. 3. Adenomas composed entirely of chromophil elements (regarded by many as the actively secreting cells of the glands), without acromegaly have been observed.

Those cases in which no changes have been found in acromegaly are open to doubt, for in some instances a careful histologic examination has not been made, and besides the possibility of a *Rachendach* or pharyngeal hypophysis has been overlooked. Haberfeld's[11] observations in this connection are exceedingly important. He has found almost constantly in patients of advanced age hypophyseal tissue in the vault of the pharynx, which is not to be regarded as embryonal rests which have undergone partial regressive changes, but as active hypophyseal tissue which is able to perform a function similar to the gland occupying the sella. Those cases in which no changes in the hypophysis have been described cannot be used as an argument against the hypophyseal origin of the disease, for even in the cases in which a careful histologic examination has revealed no changes a search for and examination of the pharyngeal hypophysis have not been made.

Our knowledge concerning the functional stages of the different cellular elements of the hypophysis is still imperfect. I believe that the histologic evidence favors the theory that the different cells of the anterior lobe are functional stages of each other and that the eosinophil elements represent the most actively functioning type. It is difficult to determine this, however, as it is practically impossible to exhaust the gland by repeated pilocarpin injections—a method which has yielded such good results in the study of the functional stages of glands with an external secretion. I attempted some five years ago to exhaust the cells of the anterior lobe by repeated pilocarpin injections without success.

Cagnetto and Modena have reported cases of acromegaly in which adenomas of the hypophysis were found, which were composed entirely of chromophobe elements, which are regarded by many as the least actively functioning cells of the gland. It is difficult to determine what effect such a growth may have on the remaining cells of such a gland as the hypophysis. The similarity between hypophyseal and thyroid changes have been emphasized for some time. Hyperthyroidism may be associated with cystadenomas and even chondromas, and although actively functioning cells are not found in the tumors the symptoms subside when the growth is removed. The same relation may exist between an adenoma of the hypophysis composed entirely of chromophobe elements and acromegaly as may exist between fetal adenomas of the thyroid and hyperthyroidism. Zak has reported a tumor of the hypophysis occurring in a patient 52 years of age, which was composed almost entirely of eosinophil elements but was unassociated with acromegaly.

Creutzfeldt in a recent article dealing with lesions of the hypophysis gives the following statistics concerning the changes found in the hypophysis in 56 cases of acromegaly:

No. Cases.	Character of Lesion	Per Cent
5	Without hypophyseal changes or changes not mentioned	8.9
15	Sarcoma	26.7
12	Hyperplasia	21.4
8	Struma	14.2
12	Adenoma	21.4
4	No anatomic diagnosis	7.1

It will be seen from the above table that hyperplasia, struma or adenoma of the hypophysis was found in 57 per cent. of the cases of acromegaly. It is quite probable that most of the cases regarded as sarcoma were actually adenomas of the hypophysis, the possibilities of error in anatomic diagnosis having been previously discussed. It seems probable, then, that definite evidence of increased hypophyseal function can be found in about 83 per cent. of these cases of acromegaly. The constancy of hypophyseal changes and the frequency with which the same lesion is repeated cannot be overlooked in determining the etiologic relationship between hyperpituitarism and acromegaly. This relationship is still more strikingly emphasized by the improvement noted by Cushing and Hochenegg in acromegalic patients following partial hypophysectomy.

CONCLUSIONS

1. The most common tumor of the infundibulum is that developing from inclusions of the cranio-pharyngeal duct. These may be cystic or solid. They are more frequently associated with Frohlich's syndrome than any other type of intracranial tumor.

2. The most common lesion of the hypophysis in cases of acromegaly is the struma or adenoma of the anterior lobe. In the early stages of the disease, the course having been interrupted by an intercurrent affection, a hyperplasia of the anterior lobe may be found.

3. In cases of acromegaly in which there is no enlargement of the hypophysis careful histologic examination as to the character of the cells should be made. In cases of acromegaly in which no gross or microscopic changes are found in the gland the examination should not be regarded as complete unless a careful search for and study of the pharyngeal hypophysis has been made.

4. Tumors developing from the pars intermedia are rare, but three cases being reported. Two of these gave rise to no symptoms, the tumor being discovered during routine post-mortem examinations. Cushing's patient died as the result of increased intracranial pressure. It

---

[10] Cagnetto, G.: Neuer Beitrag z. Studium der Akromegalie mit besonderer Berücksichtigung der Frage nach der Zusammenhang der Akromegalie mit Hypophysen-Geschwülsten, Arch. f. path. Anat. u. Physiol. u. f. klin. Med., 1907, clxxxvii, 197.

[11] Haberfeld, W.: Die Rachendach Hypophyse; andere Hypophysengangreste u. deren Bedeutung f. die Path. (Beitr. z. path. Anat. u. z. allg. Path., 1909, lxiv, 133.

should be noted in this case that the patient was excessively obese.

5. It is probable that some of the tumors arising from the pars intermedia may have been regarded as peculiar types of adenoma or sarcoma.

6. Stains which differentiate granules should be used in examining all growths of the hypophysis in order that incorrect anatomic diagnosis may be avoided, for hypophyseal cells tend to reproduce the morphology of a sarcoma when proliferating. The specific granules will differentiate the hypophyseal cells from those of a sarcoma.

7. Failure to recognize the morphology of the different elements in the hypophysis and their relation to tumor formation accounts for much of the confusion concerning the relation of the gland to acromegaly.

150 Michigan Avenue.

THE ESSENTIAL DIFFERENCES BETWEEN THE PHYSICAL FINDINGS IN CHILDHOOD AND ADULT LIFE

A CLINICAL AND ROENTGENOGRAPHIC STUDY*

LOUIS A. LEVISON, M.D.
AND
HARRY DACHTLER
Roentgenologist to Toledo and St. Vincent's Hospitals
TOLEDO, O.

It has not been our purpose to compare seriatim all the physical findings of infancy and childhood with those in later life, as this would be both long and without advantage. This paper originated rather in the difficulty which we experienced and which has doubtless been duplicated by every diagnostician, in interpreting properly many of the physical findings of childhood, even in normal children. This interpretation of signs in childhood might be compared to those in adult life as the examination of a moving train is to the examination of one stationary. There can be no permanency at any stage of the child's development; there can be no entirely definite and satisfactory standard at any age; there can, indeed, be no certainty of what constitutes the norm in a child, as the abnormal is so frequent and the differentiation so delicate.

It would seem that, with such unlimited material in the hands of nearly every practitioner of medicine, with such abundant opportunities for observation, there would be at this time little difference of opinion in regard to many signs in childhood. Yet this is not true. The ideal method of acquiring skill and accuracy in physical diagnosis is by the checking up process of the autopsy table, but this is unfortunate in that it has to do with pathologic conditions. The acquisition of accuracy in physical diagnosis cannot possibly come from observation of others, reading, or lectures, but must be obtained by the individual on the living body. The autopsy control is clearly impossible to the vast majority and, for the reason above mentioned, not entirely satisfactory to the remaining small minority.

The replacement of this control in diagnosis on the unhealthy dead by another control on the healthy living is made possible with the Roentgen examination, a means that we have used with much satisfaction. The Roentgen ray can never be a substitute for the eye and the hand and the ear, because it is too often unavailable at the time needed, because it is impossible for poor patients in their homes, and for other very obvious reasons. All of the Roentgen work in this connection has been done by one of us. It has been our aim to check up the physical findings, especially percussion findings, with the Roentgen ray and to pay especial attention to a number of points concerning which there is still much discussion and uncertainty.

EXAMINATION OF THE CHEST

The roentgenographic examination of the thorax in infants is difficult. This is particularly true with the orthodiagraphic method. Fortunately, improvements in apparatus and technic allow young children to be examined by means of the teleoroentgenographic method with accuracy and dispatch. This has been the method utilized by us. In order to make the exposures within the time limit necessary to secure good results, a tube distance of 1 meter was adopted. Observations made by us showed that, with children at the ages studied (under 12 years), this distance allowed more accuracy than a distance of 2 meters in adults, a distance which has been generally accepted and proved of such accuracy as to replace the orthodiagraph in routine work. All children old enough to stand upright were examined in this position with face to the plate. This method reduces the apparent enlargement of the heart and great vessels to a minimum, so that it can be virtually disregarded. Seventy children under the age of 12 have been studied by us with this method. Our material has been derived from the St. Vincent Orphanage, the Toledo Juvenile Home, and the private practice of each of us.

The general points of difference in the thorax of childhood and adult life are at once distinctive. The younger the child, the greater is the distinction. The shape of the thorax in the new-born is obtusely conical, with the greatest circumference at the base. The circumference decreases gradually toward the upper aperture, but not with a cone-like regularity. The anteroposterior diameter at birth is practically that of the transverse dimension. This cylinder-like chest has a direct bearing on certain physical findings, especially cardiac, to be touched on at another point. The figures of Rauchfuss show that these dimensions change with some constancy as development progresses. The ratio of the antero-posterior diameter to the transverse is as 14 to 18 at the sixth year and as 11.5 to 20 at the twelfth. The sternum in childhood shows a marked difference in position relative to the vertebral column. It may be fully two vertebræ higher in early life, with a corresponding rise of the anterior border of the upper thoracic aperture, with the result that this aperture lies in a more nearly horizontal plane.

The ribs in childhood vary distinctively from their position in after life. It is this fact which is responsible for the error incurred in considering ribs and interspaces as landmarks comparable to those of adult life. In childhood the projection of the ribs from the spinal column is transverse rather than the oblique direction of later life. A given point on the thoracic wall in childhood would not correspond to a similar point in adult life measured in terms of spinal vertebræ, which is our most fixed and stable means of comparison. The ribs not only project more transversely at their beginning, but continue around the chest without the downward inclination of adult life, resulting in a chest contour resembling the adult chest at the height of inspiration. The transverse direction of the ribs allows more room for the lungs posteriorly and this fact is not without significance in the interpretation of signs under the sternum, where the anterior lung borders constitute a factor. The epigastric angle in consequence of the horizontally placed ribs is, of course, more obtuse than in adult life.

---

* Read in the Section on Diseases of Children of the American Medical Association at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The examination of the chest in childhood is all too frequently by auscultation alone. This is due to the difficulty of obtaining satisfactory results from percussion. The great number of methods recommended for accurately outlining the thoracic organ borders attest the more or less unsatisfactory nature of most of them. There is a practical unanimity of belief in the greater advantage of light over strong percussion, but a considerable difference of opinion as to the degree of lightness. Strong percussion will not uncommonly produce a tense, involuntary, muscular contraction, which tends to cloud the actual note of the underlying structures. Hein showed by his experiments that with light percussion he could demonstrate the presence of airless organs through layers of lung tissue up to 7 cm. thick. In reality, the edges of the lung which cover the heart in children never reach this thickness.

It is not at all probable that one will percuss too lightly in children, so the care should be taken in the other direction. That form of percussion known as Goldscheider's or "threshold percussion" is peculiarly adapted to children. Here the lightest stroke possible is employed and the note produced is at the extreme limit of audibility. The percussion stroke by this method does not disturb tissue structures except under the percussing finger. No one can be sure that the tone produced by ordinary percussion is not a transmitted one or is influenced by adjacent organs or structures. Ideal conditions of quietness are absolutely essential in order to hear and to interpret properly a note at the extreme limit of audibility. Practically such a degree of quietness is not always attainable and to use Goldscheider's method under other conditions means failure. It is difficult to understand from purely theoretical reasons Goldscheider's statement that by this method only the axial waves produced in the direction of the finger stroke are perceived, and that all divergent, radiating waves are imperceptible.

The vibrations produced by a percussion stroke of the body wall, the underlying tissues, and contained air does not extend only along one line and that a prolongation of the axis of the percussing finger, but radiates in all directions. Any area of resonance or tympany that is reached by these centrifugal lines of vibration may mask, cloud or disturb a non-resonant note produced immediately under the percussing finger. It is on account of this fact that we should tend to percuss a point rather than an area. In order to do this, the smaller the pleximeter area in contact with the body wall, the greater is the likelihood that the note produced will be from the point or area in question and will not include a transmitted sound. The Plesch method of percussing on the terminal phalanx of the finger is good theoretically, if it does not involve an unnatural over-extension of the terminal interphalangeal joint, resulting in an uncomfortable and difficult position. It happens, not uncommonly, that such a method of percussing cannot be carried out without lavishing such a degree of attention on the art of percussion *per se*, that the interpretation will seriously suffer thereby. The technic of percussion becomes to all good diagnosticians, a second nature, and one should be entirely unconscious of the stroke, giving his entire attention to the note produced and the degree of resistance encountered. It is questionable if one who has to weigh the individual percussion stroke can interpret the note accurately. The average clinician learns his percussion technic on adults and neglects, or is unable, to change to another method; it is necessary that one should change with children, and still be unconscious of the change.

It is very doubtful if a single method of percussion is applicable to every one. Certainly, different clinicians get equally good results with different methods. Other things being equal, the smaller the pleximeter finger area is in contact with the body wall in children, the better. This is true, especially in children, because of the greater vibration than in the adult from a blow of equal force. There are a number of factors concerned in this—the thinness of the chest wall, the absence of complete ossification in the costal cartilages, and the greater delicateness of the bony framework. We have found that in extending the last two phalanges of the pleximeter finger on the body wall, it is possible to exert the greatest pressure, comparatively speaking, directly under the terminal interphalangeal joint and still to allow the finger to rest lightly in contact with the body wall. This preserves the natural finger position and has been found satisfactory.

There are many points of difference in gross anatomy between childhood and adult life, which have a direct bearing on the differences in the physical signs. The incomplete development of the heart and lungs, the greater relative size of the thymus, the different position of the diaphragm, the differences in the thoracic wall, all have their influence on the diagnostic findings.

EXAMINATION OF THE THYMUS

The thymus gland is a structure producing in infancy and childhood physical signs which are essentially different from those in adult life. This is an instance in which these differences are due to a complete or almost complete obliteration of an anatomic structure in the change from childhood to adolescence. There has been an interesting difference of opinion among anatomists concerning the thymus, which is well illustrated by the extremes of size given, varying from 2.0 gm. to 31 gm., a variation that is difficult to harmonize with normal body differences. A partial explanation at least may be found in the inability of anatomists to secure normal infants for anatomic measurements. The thymus mirrors or reflects in considerable degree the general nutrition of the child. Poorly nourished children, or those dying after prolonged infections or wasting diseases usually show a small thymus. Friedleben gives the following figures of average thymus weights:

Weight at birth	14.3 gm.
1 to 9 months	20.7 gm.
9 to 24 months	27.3 gm.
2 to 14 years	27.0 gm.
15 to 25 years	22.1 gm.
25 to 35 years	3.4 gm.

The examination of the thymus for physical signs is difficult and very often unsatisfactory. Inspection does not show anything and palpation shows but little. Auscultatory help is questionable and our methods fall back on percussion alone. The dulness produced by the thymus has never been in our experience more than a slight diminution of resonance. The demarcation of borders is very unsatisfactory when the percussion note is not distinctly dull. The differentation of this diminished resonance is peculiarly difficult on account of the close association and relation with the sternum, great vessels of the thorax and occasional enlarged bronchial glands. Typical cases show, according to Blumenreich, an area of diminished resonance that is roughly triangular, with blunted angles. The base of this triangle is a line drawn between the lower edges of the clavicular extremities. The tip of the triangle lies on the sternum on or more often below the angle of Louis. Lines drawn slightly convex outward, which connect the extremities of the base line with the apex, will map out the lateral edges of diminished resonance. These lateral lines, however, are not symmetrical. The left edge of diminished resonance usually projects considerably over the left sternum border, but not so on the right. A large thymus manifests itself by an extension of the area of diminished resonance downward and to the left rather than to the right. This enlarged area tends to merge with dulness produced by the heart and great vessels.

We have given especial attention to the thymus in our roentgenographic work. Basing conclusions on our seventy examined cases, we believe that reports of other investigators that it is possible to determine the normal thymus shadow by the use of the Roentgen rays, are erroneous. Hochsinger states that "the middle shadow thrown by the thymus under normal conditions rests on the shadow thrown by the heart, just as the slender neck of a bottle is fixed on the body of the bottle." This bottleneck shadow, due to the thymus and heart, has come to be a sort of fixture in medical literature, mainly by reiteration and quotation. The roentgenographs published by Hochsinger are far from conclusive. It is to be remembered that the thymus shadow from its anatomic location merges with the shadow produced by the sternum, spinal column, and particularly with the great thoracic vessels. A definite enlargement of the thymus could not be differentiated accurately unless the thymus enlargement extended laterally beyond the great vessels, which is improbable in consideration of the great relative width of these structures in childhood. Anatomic studies have, but uncommonly, shown such a degree of hyperplasia. Furthermore, it is entirely probable that a thymus enlargement may extend antero-posteriorly, rather than laterally, rendering the delineation still more difficult.

A broadening of the shadow above the heart is much more probably due to the thoracic vessels than to an hyperplastic thymus. We have not been able to demonstrate this broadened shadow above the heart, even in cases which gave strong clinical evidence of hyperplasia of the thymus. This has also been the experience of Lange in four cases, in which thymus enlargement was definitely diagnosed clinically.

EXAMINATION OF HEART

The heart in childhood is situated nearer the sternum than in adults, and in the developmental change from childhood to adolescence, there is a gradual displacement to the adult position. This situation near the sternum contracts the retrosternal space between the sternum and the anterior layer of the pericardium. The heart is held in this position by the shorter and tighter inferior and superior sternopericardiac ligaments. This space can be demonstrated distinctly with the Roentgen ray in lateral views. The more transverse or horizontal position of the heart in childhood results in distinct differences in percussion boundaries. In relation to the bony structures, the heart occupies a higher position due to the higher situation of the liver, the position of the diaphragm, the shorter and broader great thoracic vessels. The attachment of the child's heart to adjacent structures is less firm, resulting in greater mobility and easier displacement. The size of the child's heart is relatively large. This is likewise true of the great arteries of the thorax. The heart and the arterial tree gradually decrease in relation to the body weight as the child passes on to adolescence. Baginsky states that the ratio between the heart volume and lumen of the aorta ascendens is as 25 to 20 in the child, 140 to 50 preceding puberty, and 290 to 61 immediately following puberty, during which latter time the heart increases in weight markedly. Anatomists are agreed that the growth and development of the heart occur in an irregular manner. Two points are generally conceded, namely, that the size of the heart is large in relation to the body weight during the first year of life and again at puberty. Von Dusch asserts, however, that in addition to these periods, there is another period of growth from the third to the seventh year, during which the heart becomes again relatively large. Vierordt states (quoted from Hochsinger) that the heart weight is 0.89 per cent. of the body weight during infancy, but only 0.52 per cent. during adult life. The marked difference between the thickness of the ventricular chambers and the heart weight is important anatomically, but does not influence the physical findings as much as the ratio between the size of the great vessels at the base and the heart. This relatively large volume of the great vessels has its bearings on the percussion borders of the heart, and likewise on the differentiation of the heart, great vessels and thymus from one another with the Roentgen ray.

There are a number of factors which make the percussion of the child's heart a difficult procedure. One cannot fairly compare the cardiac percussion dulness in the child with that in the adult. The changed position of the heart in early life, its more horizontal and higher situation results in a different standard of comparison, even after the relative differences in the size of the body has been taken into consideration. This altered situation of the heart brings the right edge of dulness further to the right, a fact which is often ascribed to a disproportion in size between body and heart in childhood. There are particular reasons which make the determination of each heart border peculiarly difficult in the child. The upper heart border has to be demarcated from the great vessels of the thorax, which in the child are relatively large in size and volume, from enlarged bronchial glands, an enlarged thymus, and the dull area described by Hamill. The left cardiac border is difficult of determination for two reasons chiefly. There is a tendency, fixed naturally and by habit, to percuss out the left heart border in children, as well as in adults, with a percussion stroke having its axis perpendicular to the body wall. The more or less circular or cylindrical shape of the child's chest results in a considerable degree of distortion of the cardiac outline, which can be obviated by making the percussion stroke for the left border parallel to that for the right border, regardless of our tendency to percuss at the right angle to the body surface. An impairment of the note along the left edge of the heart, especially along the lower part, may result from gastric or intestinal dilatation, even when it is not apparent. The right border of the heart is peculiarly difficult to map out, because the higher position of the liver on the right side may influence the normal resonance of the lower right front. Two other factors influence the position of the right border, the diminished resonance normally obtained over the sternum and, secondly, what we believe to be an actual slight degree of normal variation, due to the greater and freer mobility of the child's heart.

There is a considerable difference of opinion as to the advisability of attempting to percuss out the superficial heart dulness or the actual size of the heart. In adults, the percussion of the actual borders of the heart is so difficult that it is not ordinarily attempted. In children, better results can be obtained with the actual heart borders. This does not imply that the determination of the size of the heart in children is easy, either relatively or absolutely. On the contrary, the reverse is true, and to map out the heart percussion borders accurately is truly a difficult procedure. We know from the numerous experiments of Oestreich on the cadaver that the superficial heart dulness in adults can be determined with great accuracy. Superficial dulness maps out simply the lung borders and not at all the shape or size of the heart. It is stated by Mayer and Milchner that there is often a moderate degree of emphysema of the lung edges in young children, which may lead to erroneous conclusions. There are many more objections against the superficial dulness in children than in adults. There are greater numbers of functional disturbances and constitutional anomalies affecting the child's heart than the adult and the superficial dulness helps in no way, or at least but slightly, to determine these. Such disturbances of childhood, which have been described, are the so-called adenoid heart, the *cœur de croissance* of Germain, the relatively small heart of Bouchard, the heart of the narrow-chested of Kraus (*Herz der Engbrustigen*), the constitutionally weak heart of Martius, the dilatative heart weakness of Neumann, and functional disturbances after acute infections.

There are still more important reasons for determining the actual heart size in children. In adult life that part of the heart covered by the chest wall area from the fourth to the sixth costal cartilage and rib is fixed, determined and stable. In childhood this area is changing with the body development, but not with a definite rate of progression. It is impossible at any given age to tell how far the superficial heart dulness is due to the heart itself, or to natural changes of development, which are continually occurring. Likewise, in adults, the relationship between heart and the great vessels, thorax, and mediastinum, are fixed and definite. Not so, however, in childhood, as the bony thorax is constantly developing by a chondro-epiphyseal growth which widens the thorax and, as a result, any bony landmark used to express heart size in children is indefinite and variable.

It is because of this lack of definitely fixed bony landmarks that we should use actual figures of measurement for describing heart borders rather than the relation to a certain variable rib or arbitrarily drawn line. This is true particularly of the lateral borders, if not of the upper. This is one of the points which we desire to emphasize most strongly, and the lack of such custom has, in our opinion, been one of the causes for the present great difference of opinion concerning heart borders in children. A mapped-out area of cardiac dulness expressed in centimeters from the fixed mid sternum, a line not subject to variations due to irregular and varying degrees of growth, expresses the heart size without equivocation or possibility of misinterpretation. Sahli's measurements in terms of relation to ribs and nipples may be taken as average boundaries. He gives the superficial area of dulness as follows: above, the upper border of the third interspace; left border, a line drawn between the parasternal and mammary line; right border, the left border of the sternum. The deep heart borders are as follows: above, the second interspace or the lower border of the second costal cartilage; left border, at or beyond the mammary line; right border, at the right of the parasternal line or beyond. These borders are for children, not infants or very young children. Expressed in centimeters, Sahli's figures are as follows:

Age	Widest diameter	Right	Left
2 to 6 years.	10.5 cm	3 cm	7.5 cm.
7 to 12 years. .	11.5 cm	3 cm	7.5 cm.

Troitzky, summing up various measurements, arrives at the following averages. He has, however, taken the width of dulness at the upper part of the sternum and not at the level of the nipples.

Age	Width	Right	Left
2 to 6 years. . .	7.5 cm	2.5 cm.	5.0 cm
7 to 12 years. . .	9.0 cm.	3.0 cm.	6.0 cm.

This shows the lack of uniformity, a desideratum which is much to be desired, if the average clinician or general practitioner is to have recourse to an accepted standard.

Reyher's figures with the orthodiagraph are as follows:

Age.	Width	Right.	Left
2 to 6 years . .	8.2 cm	3.0 cm.	5.5 cm.
7 to 12 years . .	11.1 cm	3.5 cm	7.6 cm.

In the seventy cases which we have rayed by the teleoroentgenographic method in heart measurements in centimeters were as follows:

Age	Width	Right	Left	Distance to left of median line of broadest vessel shadow
3 months	5.1	2	3.4	3.0
2 to 6 years . .	7.0	2.5	1.5	3.0
7 to 10 years	9.5	3.5	6.0	4.0
11 to 12 years.	10.5	3.5	7.0	4.0

It has not been possible for us to compare the roentgenographic measurements of each of these cases with the measurements obtained by heart percussion, but the average figures obtained by us show that our greatest percussion error has been in determining the breadth of the great vessels of the thorax. The right and left borders of the heart can be determined quite accurately by percussion as checked up by the Roentgen examination. The greatest source of error in determining the left border can be overcome, if the axis of the percussion stroke is kept parallel with the axis of the right border percussion stroke and is not made at right angles to the body wall. These figures show what is rather unexpected and surprising, namely, that it is the right border in children that is most accurately demarcated by physical diagnosis and not the left.

EXAMINATION OF LUNG

It is very desirable that one should have a clear understanding of the factors underlying lung percussion sounds, if their interpretation is to be accurate. There is still some difference of opinion concerning the part played by the thoracic wall in the percussion sound. It is not to be denied that the vibration of the thoracic wall constitutes at least a partial factor of the lung sound. The difference in flexibility and elasticity between the child's thoracic wall and that of the adult accounts in large measure for the normal difference in sound in childhood and adult life. The other factor, the vibration of the bronchial air column, is not subjected to so much difference at the two periods in life, except in the amount of air and the size of the column. If the sound were proportional to the amount of vibrating air alone, with modification by other factors, there would be greater resonance in adult life than in childhood, which is not the case. On the other hand, the great influence of the thoracic wall factor is shown by the change of note in the child when the lateral lying position is assumed and the chest wall is in contact with the bed. The resultant diminution of thoracic wall vibrations produces a distinct dulling of the percussion note. The same great flexibility and elasticity of the thoracic wall in childhood explains the less resonant percussion note at the end of deep inspiration in children old enough to breathe as directed. Full lung expansion increases the tension of the chest wall, lessens its elasticity and vibratory power, and, nothwithstanding the greater amount of air in the lung at the height of inspiration, it is not great enough to counterbalance the diminution in chest wall vibration.

The normal lung sounds in childhood vary from those in adult life, even in other respects than the degree. Posteriorly, the percussion sound in childhood is more resonant than in adult life. This is due to several factors, including the more posterior position of the lung in childhood, relatively speaking. There is a greater volume of air-containing lung tissue nearer the surface of the dorsal body wall. It follows from this that the anterior edges of the lungs should be further separated, relatively, than in adults and this is the case. This is likewise one of the anatomic facts explaining the greater exposure of superficial heart dulness in children. Laterally, the thoracic resonance approaches that obtained over the infraclavicular region anteriorly, until one passes below the sixth rib.

The area of dulness under the inner third of the left clavicle, described by Hamill, has been carefully looked for in every case examined by us, and especial attention has been paid to this area on *x*-ray plates. Hamill states that, contrary to text-book teaching, it is the left and not the right front which shows a relative impairment of resonance. This area of dulness is indefinite in shape and size, but is to be found, according to Hamill, "beneath the inner third of the clavicle, which (area) sometimes extends outward to the midclavicular line, and always downward until it fades into the cardiac dulness." This area of dulness is "constantly present up to the age of 9 or 10 years." Hamill does not give an entirely satisfactory reason for this area of relative dulness, but believes it has to do with the more posterior position of the lungs in childhood and the more exposed condition of the large thoracic vessels. It has not been possible for us to determine this area of dulness as described. We have encountered impaired resonance over this region, but not with sufficient regularity and certainty to consider it a normal condition. Similar to the studies of Blumenreich mentioned above, there is an asymmetrical area of impaired resonance reaching farther to the left than to the right, but only up to the sixth year. The location of that part of the thymus dulness to the left of the sternum and under the inner end of the clavicle corresponds to a part of the area described by Hamill, although it does not extend outward or downward so far. Again, the more posterior position of the lungs in childhood applies equally to both sides, and the measurements by Feer show that at the age of 4 to 5 the right chest circumference exceeds the left by as much as 1.5 cm. The possibility of enlarged bronchial glands necessitating a differentiation will be touched on below. It is our belief, after a careful investigation of this point, that there is no normal impaired resonance directly under the left clavicle. It has been our experience, however, that dulness from the heart and great vessels rises to the upper edge of the left second costal cartilage in young children, and that between this point and the clavicle there is an area, which, while normally resonant to the lightest percussion, may appear relatively impaired in resonance, if the percussion stroke is at all strong. The high position of dulness at the second left costal cartilage in young children is in full harmony with the results obtained with the Roentgen examination. Furthermore, in the area between the great vessels and the clavicle, the Roentgen examination has not revealed anything which could reasonably account for impaired resonance over this area. It is much to be desired that this observation of Hamill be further confirmed. It would seem that such an area of impaired resonance at such an accessible point would not have escaped general observation and acceptance. The diagnostic significance of relative dulness at this point is considerable and the differentiation from the various pathologic conditions that can cause such dulness is of sufficient importance to merit close observation by others.

EXAMINATION OF BRONCHIAL GLANDS

The great frequency of enlarged bronchial glands in childhood makes a trustworthy method of diagnosis very desirable. No method of physical diagnosis can compare with the Roentgen rays. The value of the hitherto described methods of diagnosis have been, as a rule, dependent on the size of the glandular mass. The anatomic landmarks of the bronchial glands are the lower end of the manubrium sterni anteriorly and the fifth dorsal vertebra posteriorly. Dulness or impaired resonance in this region would be therefore in the region of the thymus, the impaired resonance produced by the sternum, the great vessels of the thorax, and the area of Hamill. Localized patches of dulness in the second interspace suggests enlarged bronchial glands, and the tendency of this form of dulness is to extend transversely. It has been advised that attempts to demonstrate such patches of bronchial gland dulness should be made at the end of forced expiration. Curschman and Schlayer found dulness due to enlarged bronchial glands in adults, but this is certainly an uncommon finding. There have been a number of signs described to aid in the diagnosis of enlarged bronchial glands, but which have only a secondary value. Camp described relative dulness over the spinal processes of the fifth and sixth thoracic vertebrae. Petruschky's spinalgia is an area of tenderness between the shoulder-blades, but has not been found to be of great value. The better known sign described by Eustace Smith is not trustworthy. This sign consists in a venous hum audible over the manubrium during hyperextension of the neck. Thus, if the child in the erect posture bends the head backward so that the eyes look toward the ceiling, the hum will appear in the positive cases, owing to the compression of the left innominate vein between the manubrium and the glandular mass. The great frequency of venous hums in children without glandular enlargement render the interpretation of this sign particularly difficult.

CONCLUSIONS

The following conclusions are drawn from this work:

1. The Roentgen examination affords an unexcelled method of controlling the results obtained by physical diagnosis.

2. The teleoroentgenographic method reduces the error by distortion to a negligible quantity and is well adapted to routine work.

3. The anatomic location of the normal thymus renders its differentiation by means of the Roentgen rays improbable.

4. The demarcation of heart-borders in terms of bony landmarks does not offer a fair comparison with adults, owing to the continual change in the development of the bony structures.

5. Absolute heart dulness in children can be quite accurately determined by very light percussion, and the results confirmed by the Roentgen rays.

6. The relatively great volume of the great thoracic vessels in young children offers the greatest difficulty in determining the size of the heart by physical methods only.

7. Extremely light percussion has not given us normal impaired resonance between the upper borders of the great vessels and the clavicle. The Roentgen examination has confirmed the absence of a density of tissue which would produce such dulness.

Sparks Building, 237 Michigan Street.

ABSTRACT OF DISCUSSION

Dr. Frank Smithies, Ann Arbor, Mich.: From my experience in teaching physical diagnosis to medical students I have long felt the need of such a piece of work as this. The literature abounds in generalities. There is little said in the text books or in monographs with respect to the findings spoken of. I was particularly interested in the roentgenographic findings in respect to the thymus. Three cases of thymus death have impressed on me the need of thorough physical examination of the child's thorax before such a simple operation as one on the tonsils or adenoids. In two cases the physician had entirely neglected the examination of the child's thorax except putting the stethoscope over the visible heart beat and saying that that organ was all right. Sometimes a radiograph will give admirable information in regard to the thymus, but it has been my experience that the thymus could be mapped out very readily in infants and in the newborn when the attempt is made. I urge on every one to make careful examination of the thorax before operating on children. The heart is infrequently examined and, where it is examined, unless done systematically, the findings are practically worthless. As to the findings in the mediastinal region, I think often anomalous conditions of the heart and blood-vessels can be traced to glandular conditions in the mediastinum.

Etiology of Intussusception. H. J. Morganthaler states that the essential cause of intussusception is irregular peristalsis, particularly atony of one part with increased activity of adjoining parts of intestine. It may thus follow any limited, sudden, and severe peristalsis.—*Am. Jour. Obstet. and Dis. of Women and Children.*

PATHOLOGY AND BACTERIOLOGY OF ACUTE ANTERIOR POLIOMYELITIS *

H. E. ROBERTSON, M.D., AND A. J. CHESLEY, M.D.
MINNEAPOLIS

I. PATHOLOGY

A review of the literature shows records of about 100 autopsies on cases of poliomyelitis, nearly one half of which were performed years after the acute attack.

Our studies include material from six autopsies performed on cases occurring in the Minnesota epidemic of 1909. In the article the cases are reported in detail.

The process as a whole follows a definite and specific course. Whatever may be finally shown to be the agent of infection, its "optimus locus" is in the perivascular lymph channels of the anterior portions of the cord, especially those located in the gray matter. From this site the reaction spreads on the one hand to the surrounding tissue spaces of the gray matter and on the other to the lymph channels of the white matter and pia, often involving the posterior portions of the cord.

CONCLUSIONS

1. Acute anterior poliomyelitis is a specific infectious disease characterized pathologically by general toxemia affecting the parenchyma of the heart, liver and kidneys and the lymphoid tissues of the body, but spending itself locally on the structures of the spinal cord.

2. Grossly the cord is congested and on transverse section shows softening and often hemorrhages in the gray matter of the anterior horns.

3. In the cord the infectious agent is located in the perivascular lymph channels of the anterior portions, especially invading the gray matter, but extending to the white matter and pia and occasionally the posterior horns. The brain stem and basal ganglia may be involved. In the cord the medulla and cervical and lumbar swellings are particularly affected.

4. The characteristic lesion consists of collections of cells in the perivascular and pial lymph channels and tissue spaces of the anterior horns. Of these cells the polymorphonuclear leukocytes appear early and are relatively few in number. They are soon displaced by endothelial cells arising from proliferation of the lining endothelium and lymphocytes coming from the blood and lymph streams.

5. Edema of the interstitial tissue and degeneration and destruction of the ganglion cells are always present.

6. The vessels are congested, their walls degenerated, and the capillary branches in the gray matter irregularly distended and often ruptured, giving hemorrhages, which always intensify markedly the amount of destruction. Thrombosis was not observed.

7. Early degeneration of nerve fibers from the anterior roots is a constant feature.

8. Stains for micro-organisms were uniformly negative.

II. BACTERIOLOGY

Specimens from twenty cases of poliomyelitis were examined by the laboratory division of the Minnesota State Board of Health during the 1909 epidemic.

The cultural and morphologic characteristics of Geirsvold's diplococcus were found to coincide with the description given by Drs. Fox and Rucker.

Geirsvold's diplococcus was found in purity in the spinal fluids from seven cases (two died, see Dr. Robertson's Cases 1 and 3), and also in cultures from the blood, mouth, lung, spleen, kidney, middle ear and brain substance of Case 3.

The tests to determine the pathogenicity of these pure cultures confirmed the opinion of other observers that Geirsvold's diplococcus is not a causative factor in poliomyelitis.

---

* Authors' abstract of a paper read before the Sections on Nervous and Mental Diseases and on Pathology and Physiology of the American Medical Association, St. Louis, 1910. The complete article will appear in the Transactions of the Sections and in the Archives of Internal Medicine.

The spinal cords of thirty-eight animals experimentally injected failed to show specific lesions of poliomyelitis though in some animals motor disturbances developed which might have been mistaken for the symptoms of poliomyelitis. The presence of specific lesions was regarded as the crucial test.

We believe that symptoms of inoculated animals must be supported by pathologic findings to have any value as experimental evidence.

THE SURGICAL TREATMENT OF INFANTILE SPINAL PARALYSIS *

DAVID SILVER, M.D.
Professor of Orthopedic Surgery, University of Pittsburg
PITTSBURG, PA.

To one who thoroughly appreciates the pathology of anterior poliomyelitis the surgical treatment of the chronic stage of this affection yields satisfactory and gratifying results. A certain amount of irreparable damage has been done the spinal cord, in consequence of which the muscular power of the affected part has been correspondingly diminished. One may not hope to restore such a member to its normal condition; one may hope, however, to overcome deforming tendencies resulting from loss of muscular balance and to establish conditions such as will enable the part to functionate in the most efficient manner permitted by the existing degree of paralysis.

OBJECTS OF OPERATION

The objects of operation in this affection are two:

1. Improvement of form in the deformed member (by forcible correction, tenotomy, fasciotomy, myotomy, osteotomy, wedge-shaped excision of bone, and bone excavation).
2. Improvement of function in the non-deformed, or corrected, member.
    - *a.* Through restoration of power to the paralyzed muscle (by nerve anastomosis).
    - *b.* Through restoration of muscle balance (by muscle and tendon grafting and transplantation).
    - *c.* Through securing greater stability in the paralyzed member (by arthrodesis, astragalectomy, silk ligaments, tenodesis, fasciodesis, and removal of skin flaps).

I. IMPROVEMENT OF FORM IN THE DEFORMED MEMBER

It is a deplorable fact that, while deformity is generally conceded to be, as a rule, preventable by the early, proper and persistent use of passive motion and retention apparatus, the majority of patients consulting the orthopedic surgeon for this affection present malpositions of greater or less degree.

Deformity is most complex in its causation. One of the most essential factors is loss of muscle balance resulting from unequal distribution of paralysis. It is well recognized clinically that a generally affected part may retain an approximately normal form, while paralysis of a single muscle or group of muscles, as, for example, the peroneal, may give rise to a severe malposition. To this loss of balance, which, through unopposed muscular action results in gradual lengthening of the affected and shortening of the unaffected muscles, are added the effects of gravity, of habitual posture and of functional use. Finally structural adaptation takes place, fixing the part in the deformed position. When a malposition has been allowed to persist for some time, whether structural adaptation has taken place or not, a new factor, of great importance in the proper estimation of the degree of the paralysis, is added: this is the overstretching of the weakened muscular tissue. That damaged nerve cells may recover sufficiently to functionate, but in the meantime the affected muscles become incapacitated by overstretching and atrophy from disuse, is a fact[1] which, though well known to specialists, does not seem to be recognized by the mass of the profession and which certainly is very frequently disregarded by all in judging the results of operative measures. It is impossible by any tests at our command to judge accurately of the power of such overstretched muscles[2]; only by maintaining them in a position of maximum relaxation for a sufficient time to permit retraction to take place can we be definitely certain of their condition. Hence, any operation for the correction of deformity necessarily includes long-continued retention in an overcorrected position, and this, furthermore, must obviously precede measures for the improvement of function.

For any cases which have proved intractable to passive motion and mechanical measures a variety of surgical procedures—forcible correction, division of muscles, tendons, ligaments and fasciæ, and operations on the bones—are at our disposal, the choice of which will vary according to the mechanical conditions to be met, a combination of the various procedures being, as a rule, required.

Forcible Correction.—Forcible correction, performed manually or with the aid of various forms of apparatus, yields a uniform stretching of all contracted soft parts, permits the lengthening of deep-lying structures not readily accessible to the knife, and restores the muscle belly to its former length, instead of causing a further shortening and so a further decrease in excursion, as does simple division. With increase in the amount of force used, however, there is increasing danger of injury to soft parts and bones; moreover, under certain conditions one deformity may be increased while another is being corrected. One example of this will suffice: Given a case of talipes equinovarus, any amount of force applied to the sole can have no other than a beneficial effect on the contour of the foot, while in talipes equinovalgus, on the contrary, the force used to correct the equinus will necessarily tend to increase the valgus; hence, in this instance, operative lengthening of the tendo Achillis would be preferred.

Tenotomy.—While subcutaneous tenotomy after the original method of Stromeyer, when practiced in suitable cases, ordinarily yields entirely satisfactory results, yet in infantile spinal paralysis there are certain considerations which favor the choice of other methods. In stating these considerations the tendo Achillis only will be mentioned, as it is the one most frequently requiring division.

Simple tenotomy does not permit control of the extent to which the tendon is lengthened, yet this is a matter of considerable moment, for the strength of a muscle depends very largely on its tension, its strength being markedly decreased when the normal tension is lost, since a certain amount of force must be expended in restoring normal tension before joint movement can take place. Hence, in cases of corrected paralytic talipes equinus in which the tendo Achillis has been divided by the old method, it is not uncommon to find the power of plantar flexion much diminished, so that the patients are unable for months or even years to stand on the toes.[3] In an analysis of eighteen paralytic cases in which simple division of the tendo Achillis had been performed from three to eight years before, Hibbs[4] found serious modification of the function of the calf in eleven; he attributes this to the following factors: First, shortening as a result of the deformity; second, further shortening as a result of the tenotomy, and third, still further shortening from yielding of the bond of union between the divided ends. The control of the amount of lengthening is, therefore, advisable, and this may be secured through lengthening by the open method or by means of the subcutaneous method of Beyer.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Silver, David: Paralysis of the Shoulder, Am. Jour. Orthop. Surg., November, 1908.

[2] Tubby, A. H.: Recent Surgical Methods in the Treatment of Certain Forms of Paralysis, Brit. Med. Jour., March 1, 1906.

Operations on the Bones.—Should bone changes have become so marked that forcible correction and division of soft parts are not sufficient to overcome deformity, this may still be accomplished through osteotomy, wedge-shaped excision, or bone excavation (Ogston's operation[5]).

While the procedures thus far discussed have for their primary object improvement of form, they necessarily contribute through this to improvement of function, and, when combined with the judicious use of apparatus and muscle development and training, will yield in many cases such satisfactory results that no further operative treatment will be indicated.

II. IMPROVEMENT OF FUNCTION IN THE NON-DEFORMED OR CORRECTED MEMBER

A. Through Restoration of Power to the Paralyzed Muscle (by Nerve Anastomosis)

The restoration of normal nerve impulses to the paralyzed muscle or muscles by means of nerve anastomosis would naturally be the operation of choice were it generally applicable to this affection. While the operation must still be regarded as in the experimental stage as regards anterior poliomyelitis, yet enough has been done to justify certain conclusions.

The operation has here evidently a more limited application than at first supposed. It is ten years since nerve anastomosis was first used in anterior poliomyelitis and five years since the subject was presented before this Association;[6] yet the successful cases available in literature are not numerous, in many, as is so often the case, the reports being made too early for the final results to be known. The reason for this limited field is to be found in the fact that the paralysis is rarely confined to a muscle group supplied by only one nerve-root or spinal segment, but is in the large majority of cases spread over several spinal segments, and so no nerve or nerve-root anastomosis can be beneficial. For a case to be suitable the lesion must affect an entire nerve-center, while other centers remain free.[7] Hence, cases in which the operation is indicated are undoubtedly fewer than previously considered.

While in the first burst of enthusiasm the procedure may seem to offer the possibility of ideal results, yet a study of the literature indicates that such is not the case. There is admittedly a certain danger of injury to the healthy nerve, and so, in the event of failure of the anastomosis, a danger that the condition following operation may be worse than that before; this may result from traumatism at the time of operation, failure of cut fibers to repair, or subsequent impairment from scar formation. Spitzy[8] admits that there is a loss in the power-giving nerve, but asserts that it is not permanent. Stoffel,[9] in operating for restoration of the deltoid chose for the power-giving nerve the branch to the middle head of the triceps, since this could be sacrificed in the event of failure without great loss. Results further fall short of the ideal in that complete restoration of power, so far at least, has not been the usual result; this may be due to choosing a nerve that has itself been slightly affected, to imperfect regeneration in the power-receiving nerve, to injury from scar formation, or to failure of the new center to learn its function.

Early operation offers the best chance of success; the longer the duration and the fewer the signs of life in the affected muscle, the less the chance of recovery, for the muscle finally becomes changed into a fibrous, fatty mass from which restitution to the highly organized nerve-muscle organ is no longer possible.[8] Four to six months, in some cases nine months, is usually given as the most favorable time, yet operation as early as this is open to the objection that the greatest possible degree of recovery has not yet been attained. Spitzy, perhaps the most ardent advocate of the procedure, admits that in a few cases recovery might have occurred without the anastomosis.

The newly developing function should encounter as little resistance as possible; hence overcorrection of deformity is a necessity, and this should be performed at a preliminary sitting for the reasons already stated. The combination of correction of deformity, lengthening and shortening of tendons, and even tendon grafting with nerve anastomosis at the same sitting, as has been reported, must be regarded as unscientific, since it is difficult under these circumstances to determine accurately to which procedure improvement is due; where nerve anastomosis is used tendon transplantation should be held in reserve as a secondary operation in the event of failure or of partial success of the anastomosis. As a further step in diminishing resistance to the returning function, alcoholization of the nerve-supply to the active opponents has been used by Allison and Schwab.

The upper extremity at present apparently offers the most promising field for nerve anastomosis. The hand, which on account of its highly differentiated function has not yielded such successful results after tendon transplantation as has the foot, seems for this same reason to offer more from a successful nerve anastomosis. At the shoulder, also, where there is no muscle capable of fully replacing the deltoid, conditions are admirable for anastomosis on account of the accessibility of the nerves, and a study of the recorded cases shows that the operation in this region has given a relatively high degree of improvement.[9]

B. Through Restoration of Muscle Balance (by Muscle and Tendon Grafting or Transplantation)

The restoration of muscle balance by means of tendon and muscle grafting or transplantation has been so thoroughly tested that its efficacy in the treatment of the chronic stage of anterior poliomyelitis is to-day beyond question.

---

[3] Lange, F.: Joachimsthal's Handbuch der Orthop. Chir., 1905-1907.

[4] Hibbs, R. A.: Subcutaneous Division of the Tendo Achillis, etc., New York Med. Jour., July 19, 1902.

[5] Bartow, B.: Operative Remodelling of the Tarsus, etc., Am. Jour. Orthop. Surg., vii, No. 4.

[6] Spiller, W. G., and Frazier, C. H.: Treatment of Acute Anterior Poliomyelitis by Nerve Transplantation, The Journal A. M. A., Jan. 21, 1905, p. 169.

[7] Tubby, A. H.: Surgical Treatment of Infantile Paralysis, Brit. Med. Jour., Sept. 26, 1908 (Discussion).

[8] Spitzy, H.: Fortschritte auf dem Gebiete der Chirurgie der peripheren Nerven, Wien. klin. Wchnschr., 1909, No. 46.

[9] Stoffel, A.: Neue Gesichtspunkte auf dem Gebiete der Nerventransplantationen, Ztschr. f. orthop. Chir., 1910, xxv.

Tendon transplantation is no exception to the rule that every operative procedure has its limitations. In the beginning too much was expected of it. It brings no increase of power, except through subsequent muscular development; it merely permits the restoration of an important lost function at the expense of one or more less important ones, thus securing improved action in a part which is still a paralyzed one. If the paralysis be extensive the muscular tissue remaining will not be sufficient to ensure control after balance is restored; hence the method is obviously not applicable to cases of this character except when combined with other procedures.

In the early operations the use of slips of tendons often yielded nothing more than the benefit to be derived from their action as "additional ligaments," since independent action, without which there can be no restoration of function, was rarely obtained; moreover, relapse through gradual yielding of the bond of union or stretching of the weakened receiving tendon was common.[10] Not only have these causes of failure been overcome, but the usefulness of the method has been further extended through the transplantation of whole muscles or of parts of muscles readily divisable (triceps suræ, extensor digitorum, etc.), the use of silk extensions where the tendons are not of sufficient length, and insertion directly into the periosteum or bone at the most advantageous point.

The operative technic is comparatively simple and easily mastered by anyone acquainted with modern surgical methods, but the planning of the operation requires an intimate knowledge of the disease and an acquaintance with human mechanics which can be acquired only by special study. The lack of ability properly to determine the extent and the degree of the paralysis, definitely to estimate the amount of muscular tissue which must be transplanted in order to restore balance, and wisely to combine other operative procedures[11] with that of tendon transplantation, fully explain the failure of many surgeons to secure satisfactory results and make it certain that there will always be bad results.

The importance of an extended period of postoperative treatment, including especially protection of the transplanted tendon and careful muscle training,[12] has been so frequently emphasized that it needs no further mention.

As regards the adaptability of the operation to the various regions, the foot is preeminently the domain of tendon transplantation. Here the movements which are absolutely essential are few in number and relatively simple in character; of those required, plantar and dorsal flexion are of first importance, supination and pronation next, while control of the toes is not necessary in shoe-wearing people.[9] Hence, it will usually be possible, except where plantar flexion is lost, to secure a normally balanced foot; with lost plantar flexion, however, full restoration is impossible, since the combined strength of all the muscles on the back of the leg is only one-fourth that of the calf (gastrocnemius and soleus). Peroneal paralysis, one of the most common types, which gives rise to a talipes varus or equinovarus, is perhaps the most favorable condition in the foot for transplantation. In mild cases the extensor proprius hallucis may be transferred to the outer border of the foot, being attached to the cuboid; in marked cases, where the balance is more severely disturbed, the tibialis anticus may be used, if the posticus is normal; in this deformity weight-bearing is an aid in protection against relapse. Talipes valgus is not so favorable as varus on account of the greater power required for adduction and the deforming tendency of weight-bearing. In paralysis of the calf, transplantation alone will rarely do more than prevent a severe degree of calcaneus, but when combined with procedures which enable the muscles to act at a greater mechanical advantage excellent results are secured.[13]

At the knee the final results of substitution for the paralyzed quadriceps have been reported by Böcker,[14] as follows: Transplantation of the biceps and either the semitendinosus or semimembranosus, one flexor being left to prevent a genu recurvatum, gave the best results, almost normal extension with a good and steady gait being secured in most cases; the combination of the sartorius or the tensor vaginæ femoris with the semitendinosus or semimembranosus was less efficient, yielding only 100 to 130 degrees of active extension; the use of the sartorius or the tensor alone gave only moderate improvement, for, while it was possible for the patient to take a few steps on an even surface, apparatus was required for long distances.

In the region of the hip the results obtained by transplantation have so far been slight. Lange[15] has restored the power of abduction in complete paralysis of the gluteus medius and minimus by attaching the upper end of the vastus externus by means of silk strands, arranged in a fan-shaped manner, to the crest of the ilium; three out of four patients so treated were able to lift the leg when lying on the unaffected side, and the gait was greatly improved.

In the hand, where each muscle plays a definite part in the movements of precision here required, the restoration of any lost function can be purchased only at a high price; furthermore, independent action of the transplanted muscle is essential and a longer period of muscle training is required than is the case in the restoration of the coarser movements of the lower extremity. This is sufficient explanation of the lessened efficiency of transplantation in this region. Moreover, on account of the less frequent affection of the upper extremity (one to eight as compared with the upper), opportunity for working out the problems here involved is much less.

The chief attempt in the upper extremity has been to replace the paralyzed deltoid. The difficulties to be met consist, first, in the fact that the different portions of the deltoid have different functions, and, second, in the lack of sufficient muscular tissue for substitution. A portion of the trapezius, the muscle usually chosen, will obviously replace the action of only one part of the deltoid; when this is supplemented by a portion of the pectoralis major a better result may be obtained, but full replacement would seem to be an impossibility. While the operation, therefore, has resulted in considerable improvement, even in some cases enabling the patient to elevate the arm above the shoulder, it falls far short of full function.

---

[10] Silver, David: Causes of Failure in Tendon Grafting, Pennsylvania Med. Jour., August, 1907 (References).

[11] Whitman, R.: The Importance of Supplementing Tendon Transplantation in the Treatment of Paralytic Talipes by Other Procedures Designed to Assure Stability, Am. Jour. Orthop. Surg., August, [illegible].

[12] Lovett, R. W.: Treatment of Paralytic Deformities, Boston Med. and Surg. Jour., April 14, 1910 (Bibliography).

[13] Whitman, R.: Further Observations on the Treatment of Paralytic Talipes Calcaneus by Astragalectomy, etc., Ann. Surg., February, 1908.

[14] Böcker, W.: Endresultate der Sehnentransplantationen bei Quadricepslähmung, Arch. f. klin. Chir., 1909, xci, No. 1.

[15] Lange, F.: Der plastische Ersatz der Glutaeus medius und minimus, Ztschr. f. orthop. Chir., 1906, xvii.

C. Through Securing Greater Stability in the Paralyzed Member (by Arthrodesis, Astragalectomy, Silk Ligaments, Tenodesis, Fasciodesis, Removal of Skin Flaps, etc.)

Arthrodesis.—When all the muscles controlling a joint are paralyzed, or in some instances in which the remaining power is not sufficient to ensure control, the operation of arthrodesis, in which the production of an artificial ankylosis is sought, is advisable in order to free the patient of all apparatus or permit the use of a less cumbersome form. Arthrodesis should never be considered until the use of those conservative measures known to be essential have been persisted in for a sufficient time to remove all doubt that the paralysis is permanent, nor should it ever be performed unless it is certain that the expected result will exceed the damage; that is, that the stiff joint will be a lesser evil than the flail joint.[16]

The adaptability of the various joints for the operation is in the order of ankle, knee, shoulder, hip, elbow, wrist; operation on the last two is seldom performed.

The operation is peculiarly suited to the ankle, on account of the character of its articulations and its weight-bearing function. It may be performed between the tibia and the astragalus alone, the usual procedure, or with this may be combined arthrodesis between the astragalus and the os calcis,[17] or at the mid-tarsus, the rigidity of the foot being thus varied according to the needs of the case. Bony ankylosis or strong fibrous union is necessary: the latter gives a more elastic foot but carries with it the danger of yielding under use. Operation on patients under 10 is not so likely to yield satisfactory ankylosis on account of the amount of cartilage present in the joints of those under this age.[18] When proper precautions are taken the number of failures is small, and results are both gratifying and permanent, the disadvantages being only those incident to the rigidity; that is, a lack of elasticity in the gait, some difficulty in walking on an uneven surface, and perhaps more early tire. In cases in which there is some muscle power left, but not enough to ensure control of the foot after transplantation alone, arthrodesis of one or the other joint may be combined with transplantation and will be of especial service where only fibrous ankylosis is secured.

At the knee pathologic ankylosis is so common that the advantages and the disadvantages of an arthrodesis of this joint will be apparent to all. The decision should be left to the patient; hence it is best not to perform the operation in children. The condition is so well controlled by apparatus which will permit bending of the knee in sitting that this will usually be preferred, except in the very poor. Where both sides are affected, arthrodesis of one knee only is indicated.

While arthrodesis of the hip is not common, yet under certain conditions it is of distinct value, since muscle and tendon transplantation does not offer much in this region. Where both hips are paralyzed the production of ankylosis in one, which will usually be fibrous, will enable the patient to get on his feet. The method suggested by Albee for operation in osteo-arthritis should be a distinct addition to the technic of arthrodesis of the hip.

The shoulder, when the scapular muscles are unaffected, yields excellent results from arthrodesis. Vulpius,[19] who reports twelve cases, had only two failures and obtained bony ankylosis, which is to be sought in 60 per cent. The average active motion possible in his case was 75 degrees of forward elevation, 60 degrees of side elevation and 25 degrees of backward elevation; marked improvement in the atrophied biceps and triceps was observed.

Astragalectomy.—On account of its lack of muscular attachment the astragalus is a factor in instability at the ankle, and hence its removal may be indicated. Astragalectomy is one step in Whitman's operation for paralytic talipes calcaneus; when this is done the foot can be displaced backward, a procedure which gives improved stability and better leverage for the muscles which are transplanted into the heel.

Silk Ligaments, Tenodesis, Fasciodesis.—The chief objection to the older method of tendon grafting lies, as has been mentioned, in the fact that the improvement gained is often only that due to the action of the grafted muscle as an "additional ligament," independent action not being secured. Following out this idea, several methods have been suggested for directly utilizing the tendons of paralyzed muscles as ligaments, both as a supplementary operation and to obviate the necessity for an arthrodesis. The proximal ends of the tendons have been sutured to the bone (tenodesis of Codavilla-Reiner) or to the fascia (fasciodesis of Vulpius). The obvious objection to this is that the degenerated tendons will stretch and the method thus give only temporary improvement. The use of silk ligaments, a method at once simple and efficacious, yields a permanent fixation. These silk ligaments are of service in various joints but are in most common use at the ankle, where they are especially valuable in preventing toe-drop. In this condition, which may be taken as the type, the foot is simply suspended from the tibia by two double strands of silk: one double strand is quilted into the periosteum on the front of the tibia and then carried to the scaphoid, where it is sutured directly to the bone, while the other double strand passes from the same point to the cuboid.[20] Nature encapsulates the strands of silk and thus the ligaments are formed. Insertion directly into the bone must be at one end only to allow for adaptation in growth. This method of fixation may be used early in treatment, before other measures are indicated, for the purpose of removing all strain from weakened muscles and so giving them a better chance to recover; later in the course of treatment it may be employed when no muscle available for transplantation is present and as a substitute for arthrodesis; it is also of frequent service as an aid to other procedures.

Skin Flaps.—A very useful operation for overcoming the tendency to deformity is the removal of skin flaps,[21] which recommends itself on account of its simplicity. If the anterior muscles of the leg are weak, an oval piece of skin is removed from the top of the foot of such size that when the edges are approximated and accurately sutured the foot will be held in the desired position of dorsal flexion; by slightly varying the location of the flap to one or the other side the foot may be inclined toward pronation or supination. This procedure has the advantage of not interfering in any way with any subsequent operation; as a means of retaining the foot constantly in the desired position and obviating the objections incident to brace treatment it is, therefore, applicable early in treatment and in very young children where other procedures are contraindicated. It may also be combined in other cases with tendon shortening and lengthening, and with transplantation or nerve anastomosis, as an aid in holding the part in an overcorrected position. Similarly, at the elbow the removal of a skin flap is of service in holding the joint in flexion, being in this region preferred by its originator to arthrodesis.

---

[16] Vulpius, O.: Über den Wert der Arthrodese, München. med. Wchnschr., Feb. 18, 1908.

[17] Goldthwait, J. E.: An Operation for Stiffening the Ankle Joint in Infantile Paralysis, Am. Jour. Orthop. Surg., v, No. 3.

[18] Jones, R.: Official Report on Arthrodesis, Internat. Cong. Med., Budapest, September, 1909.

[19] Vulpius, O.: Die Arthrodese der Schultergelenks, Ztschr. f. orthop. Chir., 1908, xix.

[20] Scutter, R.: The Use of Silk Ligaments, etc., Boston Med. and Surg. Jour., June 4, 1908.

[21] Jones, R.: Arthrodesis and Tendon Transplantation, Brit. Med. Jour., March 28, 1908.

CONCLUSION

With all these measures for the improvement of function, orthopedic surgery of the present has much to offer the sufferers from this pitiable condition of infantile spinal paralysis, and it is rare indeed to find an untreated case in which some benefit cannot be given. Fortunately for us, treatment is most efficacious in the region most frequently affected—the foot. Yet in all regions enough can be gained to more than repay us for all our labor. To secure the maximum improvement a wise combination of the various procedures will usually be required.

326 South Highland Avenue.

Note.—In addition to the authorities already cited, the following have been used:

Auerbach, R. V.: Der heutige Stand der Sehnentransplantation, Wien. klin. Wchnschr., 1909, No. 17.
Ashhurst, A. P. C.: Infantile Paralysis Treated by Tendon Transplantation and Nerve Anastomosis, Ann. Surg., September, 1908.
Bradford, E. H., and Soutter, R.: Muscle and Tendon Transference, Boston Med. and Surg. Jour., Nov. 14, 1907.
Hildebrandt, A.: Über die Sehnentransplantation, Berl. klin. Wchnschr., 1908, No. 47.
Hohman, G.: Der heutige Stand der Sehnentransplantation, Wien. klin. Wchnschr., 1909, No. 25.
Lange, F.: Eine Verbesserung der künstlichen Sehnen, Ztschr. f. orthop. Chir., 1906, xvii.
Machol: Die Chirurgisch-orthopädische Behandlung der spinalen Kinderlähmung, München med. Wchnschr., Jan. 11, 1910.
Murphy, J. B.: Neurological Surgery, Surg., Gynec. and Obst., April, 1907.
Reiner, M.: Die Tenodese, Ztschr. f. orthop. Chir., 1904, xii.
Townsend, W. R.: Treatment of Paralytic Club-foot by Arthrodesis, Am. Jour. Orthop. Surg., April, 1906.
Truslow, W.: Treatment of the Deformities of Infantile Paralysis, Long Island Med. Jour., September, 1908.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SILVER AND ROBERTSON AND CHESLEY

Dr. Archibald Church, Chicago: Every general practitioner must hail with delight the renewed activity of our surgical friends in the treatment of these very trying cases. My own experience is not very gratifying in the recommendations I have made for surgical operations in the correction of the deformities secondary to the inflammation of the cord of a poliomyelitic nature.

It has been the almost invariable result that after one or two operations either the patient, or his friends or the surgeon becomes discouraged, and these operations have not been applied with sufficient frequency perhaps, to give the general operating surgeon much experience with, or much interest in them. The surgical fixation of a joint sometimes results very satisfactorily especially in the knee or the ankle, yet I think astragalectomy unnecessary, because with very slight orthopedic apparatus the ankle joint can usually be retained in a satisfactory position.

The recent recommendations of Dr. Schwab, carried out especially by Dr. Allison, seem to promise something more satisfactory. They are not mutilating or destructive. By temporarily annihilating the function by the injection of alcohol into the nerve supplying the muscles which have retained their function and which tend to overact and so to produce the contracture deformities one is enabled, according to the observations and experience of Allison and Schwab, to build up the power of the more or less atrophic, or completely paralyzed and atrophic muscles, and to secure better positions of the joints. This gives the opportunity for therapeutic massage and passive and active movements; so that the patient is led to put into play that fraction of power which has been preserved and which under ordinary circumstances is entirely overmastered by the contracture tendency in the stronger group of muscles. The technic is particularly simple. A nerve supplying the given muscles is exposed and alcohol in various strengths, 50 to 90 per cent., is injected directly into them.

With the transplantation of muscles my experience has been decidedly unfortunate. The functional gain has been of minimal value; but if we can in many of these cases obtain the enthusiastic assistance of a manipulator or massage operator, who will devote himself every day for a number of years to necessary manipulations, apparently severe and hopeless cases will frequently present a degree of recovery almost marvelous. I recall the case of a young girl who suffered quite extensive involvement of the upper extremities, trunk and lower extremities. Yet in the hands of an empirical rubber who calls himself a doctor, who has devoted himself to this case for five or six years, this girl has recovered practically after a time when I supposed recovery was out of the question. She now has a fairly plump pair of lower extremities, walks readily and sits up without orthopedic assistance. Some of her friends do not even know that she has been afflicted with a grave disorder. I attribute the results to the physician's attention and the local manipulations of the muscles by massage. Of course orthopedic apparatus had been applied and modified from time to time; various splints and braces have been devised; but the absolute devotion of this man to this case has produced results which I wish we might parallel in others, and thus gives me the courage to say that under such treatment, perhaps with the assistance of the alcohol injections, we may look for better results than we have attained hitherto, and without the necessity of serious surgical intervention.

Dr. L. H. Mettler, Chicago: I congratulate Drs. Robertson and Silver on their thoroughly scientific presentation of this subject. Dr. Robertson's paper indicates the beautifully logical way in which our knowledge has grown in regard to the nature of anterior poliomyelitis. We all remember how the disease used to be regarded as primarily an atrophic condition. In a word, the emphasis used to be laid on the wasting of the muscles and of the associated neurons. Then followed the suggestion that embolic and thrombotic obstructions in the terminal branches of the anterior spinal artery were probably the cause, with or without an accompanying inflammation, of the wasting of the anterior cornual cells. Now we have reached the point of recognizing the condition as a form of infective hemorrhagic myelitis, with the most destructive center of the inflammation located in the anterior horns. And finally we are beginning to suspect, on the strongest sort of grounds, that the infection is more or less specific in character.

It seems to me that this calls for a rewriting and reclassification of the disease in most of our text-books. Instead of referring to it as a systemic affection under the general impression that it is a unique and distinct trouble belonging to a particular functional tract of the cord, we should recognize it as merely a variety of myelitis. Abroad they are suggesting the advisability of dropping the "polio" from the name of the disease and calling it "focal myelitis." Whether we are prepared to make so radical a change in a name that has been so long in use may well be questioned. The use of the term "poliomyelitis" for general clinical purposes can do no very great harm if we are careful to keep always in mind that the disease is nothing but a form of infectious myelitis, with involvement, in some cases at certain stages of the process, of other parts of the cord beside the anterior horns, namely, the white matter and the meninges. The atrophic changes, and their disastrous results, which so dominate the clinical manifestations of the disease later on, are more or less secondary or subordinate phenomena in the sum total of its pathology. These atrophic manifestations (and I am speaking especially of the lower motor neurons whose cell bodies nest in the anterior horns) are in all probability analogous to the pyramidal degenerations that occur in the cerebral palsies of childhood. The essential pathology of the infantile cerebral and spinal palsies, especially when due to infective hemorrhagic inflammation in the gray matter of the brain and cord, is in all likelihood the same and affords strong ground for the contention of Strümpell, more popular in Europe than in this country, that the differentiation of cerebral from spinal infantile palsy is a mere clinical differentiation dependent on the particular functional characteristics of the parts involved.

It seems to me very practical thus to lay the emphasis in infantile palsy on the infective hemorrhagic inflammation rather than on the later and subordinate degenerative processes. The former condition suggests some better hope of managing the disease than the latter conditions. Infectious and vascular troubles are always somewhat more amenable to treatment than are progressive degenerations. An early diagnosis, therefore, is more imperatively demanded under the newer conception of the pathology of anterior poliomyelitis; and if the theory be ultimately confirmed that the disease is due to some special germ or toxin, all the more imperative will be the demand for an early etiologic diagnosis; for in the early recognition of the nature and cause of the disease will rest the highest hopes of preventing its spread and further progress both in the individual and in the community. And finally, if we succeed in discovering a serum or other means of overcoming the specific toxin in this form of myelitis, infantile spinal palsy—and perhaps likewise infantile cerebral palsy in some post natal cases at least—will not be regarded so hopelessly as it has heretofore been under the old atrophic conceptions of the disease handed down to us by Charcot, who was able to study it pathologically only in the late stages. Much will be accomplished in the future in the prevention and treatment of these cases if the bright indications in the newer conception of their pathology and etiology continue to develop.

DR. P. BASSOE, Chicago: I am not surprised that Dr. Robertson finds no thrombosis in his cases, as that condition is exceptional. The question of meningeal involvement brings up the most interesting controversy that is now going on as to the mode in which the disease extends. Of course it is well recognized that in most of the fatal cases there is either an ascending or a descending infection. Most of the fatal cases present the picture of Landry's paralysis. According to Harbitz and Scheel there is a primary meningitis, very slight, with infection of the spinal fluid, and a secondary involvement of the cord along the vessels. Now, Wickmann of Sweden, who has examined about an equal number of patients, does not agree with this, although his findings are principally the same, but he interprets them in an entirely different manner. In all cases the extent of the inflammation is much greater in the cord than it is in the meninges, and it is greater in the central part of the cord, in the gray matter, and in the adjacent white matter, than at the periphery. So Wickmann says that inflammation occurs primarily in the gray matter of the cord. It is an infection with round-cell infiltration in the perivascular lymphatics, and it extends along the lymphatics up and down, so that the cause of the ascent or descent is not a successive involvement of different levels from the meninges, but an extension along the perivascular channels. Harbitz says that there are not enough lymphatic channels to account for that. The extension must be from the meninges. Now if in Dr. Robertson's cases there is a sufficient degree of meningeal infiltration to account for the extension, that would be of course in favor of Harbitz's theory; but if there are many cord segments in which the meningeal changes are minimal, it would be hard to account for the extension at all levels.

There seems to be no doubt that there are cases of this disease due to the same contagium in which we have only a meningitis; it is also true that there are cases of meningitis due to other organisms in which cord changes may be produced that are exactly like those in poliomyelitis. Attention has quite recently been called to that fact by Claude and Lejonne of Paris, and I have seen a man taken simultaneously with symptoms of meningitis and a flaccid paraplegia. That was three years ago, and I saw the man a week ago and he looked like a patient with an old case of poliomyelitis. If it had not been for the presence of the diplococcus found in the acute stage, I would say that it was an old case of poliomyelitis in which there had been considerable meningeal involvement.

DR. A. L. SKOOG, Kansas City, Mo.: I observed a number of cases last summer, while under appointment of the Kansas State Board of Health to investigate the Kansas epidemic of poliomyelitis acuta, both clinically and pathologically. One striking feature of the epidemic in Kansas was a grouping chiefly in bordering portions of two counties in the northwestern part of the state. There were also isolated cases throughout different regions of the state. One of the noticeable points of this epidemic was the high mortality rate, about 33 per cent. of the patients dying. All told there were about forty cases in these two counties. Another interesting feature was the number of cases in adults. Adult cases have been reported, especially by Wickmann and others. Wickmann reports a patient aged 67. In this epidemic I was in consultation on one case, that of a woman aged 45, who also had marked cerebral symptoms. She died on the sixth or seventh day of the illness and I was unable to obtain permission to make an autopsy, but I did examine the cerebrospinal fluid, which showed a lymphocytosis and a few polymorphonuclear cells, with a count of about 30 or 40 to the field of centrifuged sediment. The fluid was absolutely clear and contained no bacteria. No bacteria appeared on culture, on injection of guinea-pigs, rabbits, chickens and two rhesus monkeys. Another feature about this epidemic was the number of cases which puzzled the local physicians in making differential diagnoses from Landry's paralysis. In fact two physicians did diagnose Landry's paralysis; although from observation of this epidemic I believe Landry's paralysis may be considered as a form of poliomyelitis acuta.

In regard to lumbar puncture, it seems to me very important that we should obtain or look for some means of making an earlier diagnosis than we have in the past, and to me the examination of the cerebrospinal fluid has been attractive. I did a lumbar puncture in all the cases in which I could obtain consent, and that was about 7 cases out of 25. In all of them that I examined there was a mild increase in lymphocytes, ranging usually from 5 to 20 per centrifuge or sedimented specimen. The fluid was absolutely clear in all the cases examined, and I could find no bacteria.

DR. ARTHUR S. HAMILTON, Minneapolis: The Section is to be congratulated on having the opportunity of listening to these two papers.

As Dr. Bassoe has suggested, it has been shown that the cell changes found in poliomyelitis may be found also in other conditions in which there is an acute intoxication. In fact, as far as I know, it is quite impossible to tell the changes which occur in the large cells of the cord in one intoxication from those that occur in another. I have no doubt that in poliomyelitis most of the changes that occur in the cells are due to mechanical disturbance in the circulation, and the consequent upsetting of the nutritional balance of the cells; but I think we are safe in assuming that some of these changes are due to toxins, especially since the same changes can be found in other conditions where there is intoxication without mechanical disturbance in the circulation.

Six weeks ago there was admitted to the Minneapolis City Hospital a young man of 24, who passed through a very ordinary attack of lobar pneumonia, except that it was rather more severe than the average case. Aside from that there were no unusual features until, at the time when the man was about to sit up in a chair, it was discovered that he had no power in his legs. The physician had not observed it before, and the patient himself, though he had recognized the condition, had thought nothing about it, assuming that it was a natural consequence of his illness. When he came to get up he could not flex his thighs on the abdomen and had but slight power of flexion of the foot on the leg. There was no history of pain and, so far as I could make out, there was no disturbance of sensation. The patellar reflex and the Achilles jerk was absent. It did not look to me like a case of peripheral neuritis, although I find a few such cases have been reported as associated with pneumonia. There was very little subsequently of interest in the case and the man recovered quite rapidly. At the end of two weeks the reflexes had returned; he had obtained fair power in his legs; could stand without assistance, and in three weeks could walk out of the hospital, and has since fully recovered. It seems to me that this is a case of poliomyelitis, not in a technical sense, but in the sense that the lesion is much more likely in the anterior horn cells than in the peripheral nerves.

In reference to the change of name of poliomyelitis, it does seem that the present term is rather misleading. At the same time I think we should hesitate to apply the term myelitis. It is true that the gross manifestation, as we see it, is a myelitis; but all the recent evidences show that we are dealing with a general intoxication, an infection ot some sort. Dr. Robertson has brought that out in his statement of the post mortem findings that there was evidence of acute intoxication in various other organs in addition to the changes which occurred in the cord. It seems to me, therefore, that we should wait for further light on the subject before we attempt another designation.

Dr. Nathaniel Allison, St. Louis: As orthopedic surgeons we are interested in these cases chiefly as the final results of a disease and we deal with final results, or hope to deal with them. The investigations recently made in the pathology of this disease makes it seem quite possible that in a few years there will be no more cases of poliomyelitis and no results of this disease to treat. This is a consummation much to be desired. Dr. Silver has gone over in a most systematic and complete way all the things that have been done surgically for the relief of poliomyelitis. He has taken the subject up in such a way as to leave very little to say about it, except in one particular, and that is the use of nerve anastomosis as a relief.

The selection of any operation for the relief of poliomyelitis must be based on a pretty wide experience and knowledge of the mechanical conditions to be brought about after the operation; many papers have appeared on this subject, and many reasons have been given for failure in tendon transplantation, for failure in arthrodesis, etc., and for failure following anastomosis. The work of Kilvington and other English experimenters shows that nerve anastomoses will regenerate and quite extensively. Dr. Schwab and myself have been working on these problems with the combined point of view of the neurologist and the orthopedic surgeon. We started to alcoholize the nerves in cases of poliomyelitis following the success we had in alcoholizing the nerves supplying muscle groups in spastic paraplegias and spastic quadriplegias. We have had some very successful cases in which there was overaction of the hamstrings, in which the alcoholization of the particular nerves supplying the overacting muscle group caused the overacting muscle group to cease to overact, and gave the weaker antagonistic group in spastic palsy a chance to pick up power.

Where there is sufficient power in a muscle or muscle group in the foot to produce a deformity, such for instance, as the deformity of club foot, then there are active nervous elements in the leg. The question is to select these nerve elements and make what can be made out of them by nerve anastomoses, leaving the tendons and joints untouched. This should be considered always first as a procedure, because if regeneration is established the result will be better than that obtained by fixing a joint or by tendon or muscle transplantation.

We have done several operations of this nature, one for instance in two cases of isolated quadriceps paralysis. The branch of the quadriceps was severed from the anterior crural trunk and put under the vessels into the obturator nerve. This has been followed by regeneration in both instances, and the opposing group to this return of power in this weakened quadriceps, is the hamstrings. The sciatic nerve was exposed down the back of the thigh and the branches to the hamstring muscles were injected with alcohol, thereby throwing out the opposing group for a more or less definite period of time.

The relative value of all the procedures properly performed has been clearly demonstrated in Dr. Silver's paper. Dr. Lovett has written a paper recently, in which he showed that failure was due to neglect on the surgeon's part of the after-treatment of these cases. The patients are not cured when the operation is done. These are cases on which some one must put time, patience and much physical energy in order to secure the improvement that should be expected.

Dr. Frank R. Fry, St. Louis: We have all been hammering away at various modes of treatment for many years, and, as Dr. Church has intimated, with very little encouragement. In more recent times it seems to me the important function of the neurologist in these cases is to impress on the patient and those who have charge of them the fact that they have a chronic situation on hand for the treatment of which they must stir up as much enthusiasm among themselves as they possibly can in the midst of adverse circumstances. For instance, massage, I believe, is uniformly accepted by neurologists as the only rational routine method. We should tell our patients that massage must be practiced not for a few months but for several years. Many patients cannot afford to have the services of a professional rubber; we must educate somebody in connection with the case to carry on this work effectively.

Some years ago Dr. Hammond, of New York, taking a lot of old cases of poliomyelitis in which muscles showed no reactions whatever to electrical current, was able, continuing the current with persistency, to develop reactions in these muscles. He published this fact, but he never published the sequel of it, which I obtained in personal conversation with him, namely, that afterward these muscles lapsed to their former condition. That is the kind of discouragement to which we have become used. It is on account of that fact that neurologists to-day are more interested in what the orthopedists are doing, than in anything they feel capable of accomplishing themselves. I personally feel no comfort in trying to take care of a poliomyelitis patient without being in contact with a reliable orthopedist all the time.

Dr. C. R. Woodson, St. Joseph, Mo.: I believe that the lack of success of orthopedic measures is due largely to the fact that too many men undertake to do this work, who are not familiar with the nervous system, especially its anatomy and the function of various nerves. There are few men who do this work well, and there should be a specializing along that line.

There is one thing that every physician who sees a case of poliomyelitis can do and should do, and that is, to make an early diagnosis. A lack of effort to diagnose is responsible in many instances for a failure to diagnose, but the important thing to do is to prevent deformities. It can be diagnosed before paralysis appears. It may not be diagnosed of course, until afterward, as has been stated, but the important thing is to retain a proper temperature and prevent deformity and institute early treatment of massage and electrotherapeutics. It is easy to prevent deformities if the case is taken early. In some cases treatment does not restore function, but the prevention of a deformity makes the cure much more easy.

Dr. C. H. Hughes, St. Louis: Having had a rather extensive experience in the direction of poliomyelitis anterior, as you may probably guess from the color of my hair, I wish to make an addition of something that has not been contributed to this subject.

Two instances are now in my mind of recoveries from poliomyelitis anterior. One child was brought to me in the arms of the nurse, sent to me by a very able physician down there in southern Illinois, where malaria is said by the inhabitants to be so thick that you could cut it with a knife. I noted that there were no cerebral symptoms connected with the case, this absence is to be expected in a typical case of poliomyelitis. There was no delirium; there had been no coma at any time; it was not a case of cerebral apoplexy; both lower limbs were paralyzed, and it occurred to me, being familiar with the practice of medical men in this section of the country and below, that I would add to my treatment a vigorous course of quinin. Quinin and protoiodid of mercury were sufficient to bring about a complete restoration in that case of poliomyelitis anterior within six weeks without deformity. I considered the cure complete in ten weeks and permitted the child to go home. That girl is now a grown woman, free from any evidence of any sort of the after-consequences, contracture deformities, etc., that so often confront us, to our dismay, in the management of poliomyelitis anterior. Unfortunately I have not had the good fortune in the majority of my cases to see such satisfactory results effected.

In the other case the child was placed by the nurse on the steps on a hot summer day and fell asleep; and when the nurse came to it again the child had no use of its lower limbs, but had not lost consciousness, had no mental impairment, and no evidences of anything else except the involvement of the anterior horns of the spinal cord. That child recovered, and that is all the recoveries out of a good many cases that I might record.

Notwithstanding the microbic invasion in poliomyelitis acuta, we generally believe that its attack is somewhat similar to that of pneumonia. Now the common impression is that the pneumonia develops the chill. My impression is that the chill permits the microbic invasion, and then we have the work done by the pneumococcus in pneumonia and the infective agent in this essential paralysis of children thus gets in its damaging work.

Dr. H. E. Robertson, Minneapolis: In regard to the involvement of the pia mater I am unable to agree with the authorities who urge that such involvement is primary. I have always found the involvement of the cord more marked in any particular region than that of the corresponding pia. The place of infection is the perivascular lymph-channels, extending to the interstitial portions of the gray matter of the cord, and second, to the lymph-channels in the pia mater, and even to the gray and white matter of the posterior columns.

Dr. David Silver, Pittsburg: My paper was intended as a review of the literature of the present-day surgical treatment of this affection. Regarding Dr. Hammond's results, cited by Dr. Fry, one would naturally expect relapse, because, while muscular tissue was present, it was not sufficient to meet the demands of functional use. In such cases some procedure is obviously required to decrease the amount of work demanded of the muscles, as for example, arthrodesis.

An unusual amount of patience is required in dealing with these cases. I mentioned several procedures which seem to me of distinct value and I wish again to emphasize them. My first point is that in a drop foot, for example, it is obviously of much greater value, early in the treatment, to fix the foot by taking out a skin flap or by making an artificial ligament, which does not interfere with any subsequent operation, than to fix it with a brace, because the brace not only interferes with the function of the part but its daily removal is a disadvantage; the part must be retained constantly in the position of maximum relaxation, if a return of power in the weakened muscles is to be secured. The second point is that in every case deformity must be overcome a long time before any operation for the restoration of function is attempted. Usually when the patient consults the surgeon, some operation like nerve anastomosis or tendon transplantation is at once proposed, instead of preliminary treatment being instituted to determine accurately the degree and the extent of the paralysis and to put the part in the most favorable condition for such operation. If such preliminary treatment is carefully carried out, I am sure our results will be very much more favorable.

BRONCHIAL ASTHMA AS A PHENOMENON OF ANAPHYLAXIS *

S. J. MELTZER, M.D., LL.D.
NEW YORK

It is now generally accepted that bronchial or idiopathic asthma is due primarily to a stenosis of the bronchioli. It is not necessary to dwell here on the particulars of this disease. For the purpose of this paper, however, the following facts may be mentioned. Asthmatic attacks occur only in individuals who are especially subject to it, that is in asthmatics. Furthermore, onset and disappearance of the attacks bear the character of capriciousness. Heredity, also, seems to be an influential element in some instances. Finally, there is practically no pathologic anatomy in this disease. On the basis of these facts, bronchial asthma is considered as a functional disease which, according to the prevailing view, means a neurosis; hence also the term nervous asthma. From the symptomatology we shall mention here only the following points: By percussion it can be established that during an attack of asthma the lungs are overdistended. The auscultation reveals that there is a considerable decrease of the respiratory exchange of air despite the greatly increased efforts of the respiratory muscles.

There are two theories regarding the nature of the nervous origin of the bronchostenosis in asthma. One theory assumes that the stenosis is due to a vasomotor disturbance, which brings about a swelling of the mucous membranes or of the submucous tissues of the bronchioli, causing thereby a narrowing of their lumen. The other theory assumes that the stenosis is due to a tonic contraction of the muscle fibers surrounding the finest bronchial tubes. At present, the latter theory is accepted by most of the clinical writers, especially since it was established by the careful physiologic investigations of Einthoven[1] and of Brodie and Dixon,[2] that by stimulation of the peripheral end of the pneumogastric nerves a stenosis of the bronchi takes place which is due exclusively to a contraction of the muscle fibers and not to the production of circulatory changes of any kind. According to this theory an attack is brought on by a stimulation of the broncho-constrictor nerve fibers which run in the pneumogastric nerves. It is assumed that the stimulation takes place, in some obscure way, mostly in the medulla oblongata; in some cases, however, it may be brought about in a reflex way from some peripheral organ. At any rate, asthma, according to this view, is a nervous affection and has its origin in the central nervous system.

It is my intention to attempt to interpret the asthmatic paroxysm as a phenomenon of anaphylaxis, assuming at the same time that the process is a peripheral one. This attempt is based on some very interesting facts recently discovered by Drs. Aner and Lewis[3] in the Department of Physiology and Pharmacology of the Rockefeller Institute. In order to understand clearly the points I wish to bring forward, permit me to make a few elementary remarks on the subject of anaphylaxis or hypersusceptibility.

ANAPHYLAXIS

Anaphylaxis is in an essential point the reverse of immunity. All know what immunity means. Every physician is familiar with the fact that a patient who has recovered from an infectious disease, typhoid, for instance, is less susceptible to a second infection from the same disease. The same applies to the effects of toxins. The experimental work of the last two decades has furnished ample evidence that the injections into an animal of non-fatal doses of toxins, for instance the toxins of diphtheria or tetanus, make this animal more resistant—it immunizes it—against this very toxin. In other words, the passing through a definite infection or intoxication is the means of a decrease of the susceptibility of that animal to the specific infection or intoxication. There were, however, scattered facts which indicated also that the reverse of immunization may occur; that is, that instead of a decrease of susceptibility, an increase may

---

* Read at the Annual Meeting of the Association of American Physicians, Washington, D. C., May 4, 1910.

[1] Einthoven: Arch. f. d. ges. Physiol. (Pflüger's), 1892, li, 367.
[2] Brodie and Dixon: Jour. Physiol., 1903, xxix, 97.
[3] Aner and Lewis: Jour. Exper. Med., 1910, xii, 151. See also The Journal A. M. A., 1909, lii, 458.

occur. For instance, the passing through an attack of erysipelas seems to prepare the individual for recurrent attacks of this disease. The same is perhaps also true of pneumonia. In the extensive work on the immunization against toxins, several investigators recorded observations to the effect that an immunization led up to a hypersusceptibility.[4] However, about five years ago, striking experiments became known which all at once raised this issue to a problem of considerable importance. Our president told us that the present annual meeting is the twenty-fifth of our Society, and pointed with pride to the good work which the members have contributed to medical science. Permit me therefore the historical remark that the striking and fundamental facts on which the very interesting chapter of anaphylaxis rests were first observed and developed by members of our Association. In the course of his studies of the effects of diphtheria toxin and antitoxin on guinea pigs, Theobald Smith observed (1903) that by repeated injections of toxins, these animals instead of becoming immunized sometimes manifested rather a definite increase of their susceptibility to the poisonous effects of the diphtheria toxin. These observations Dr. Smith communicated orally to Paul Ehrlich during his sojourn in this country. On his return to his Institute in Germany, Ehrlich caused one of his pupils, Otto, to investigate systematically this observation, who, in publishing his results, designated the fact of the hypersusceptibility as Theobald Smith's phenomenon. Simultaneously, and independently of any other observer, the striking phenomenon was observed and extensively investigated by Dr. Rosenau in conjunction with Anderson.[5]

EXPERIMENT

The fundamental experiment which brings out this phenomenon in a striking manner is as follows:

A guinea-pig receives a subcutaneous or intraperitoneal injection, let us say, of a small dose of horse serum. The injection produces apparently no effect; the animal remains perfectly normal. When, however, a few weeks later a second injection of horse serum is given to this animal, let us say one c.c. of the serum, given intravenously, the animal dies within a few minutes with striking manifestations. This is an absolutely reliable experiment which never fails. Now you observe that the result as described here was accomplished not with a bacterial secretion, a diphtheria or tetanus toxin, or an endotoxin of any other bacteria, but simply with normal horse serum, which seems to be innocuous in its first injection. In fact, this hypersusceptibility can be produced with such harmless proteins as egg albumin, milk or some vegetable protein, edestin, for instance.[6] A striking feature of this phenomenon is that it is strictly specific. If the first injection was made with horse serum, the phenomenon will occur only when horse serum is used in the second injection, or if edestin was used in the first injection only a second injection of edestin is capable of producing the fatal phenomenon.

Let me now say a word about the origin of the term anaphylaxis. It was created by Richet some eight years ago. In studying the effects of a poison which he isolated from actinia he distinguished two opposite actions: one which produces prophylaxis (immunity) and another which produces anaphylaxis (hypersusceptibility). The term anaphylaxis found general acceptance.

Now let us remember first of all that for the production of anaphylaxis two stages, two separate processes are necessary. The first part consists simply in an injection into the animal body of some foreign proteid. It produces practically no visible effect, but it sensitizes the organism; we call it therefore the sensitizing injection. It need not be an intravenous injection; an incorporation of the proteid in any other manner will have the same effect. The quantity of the proteid is also of no special importance; a very minute dose of the proteid sensitizes an animal. The second part consists, as stated before, in a repeated injection of the same proteid; this is the toxic injection. The effect of this injection is, indeed, most striking, especially when it is given intravenously. The quantity is also of some importance; the larger the dose, the more prompt is the effect. The second injection should not be given too soon after the sensitizing injection; the interval between the two injections should be at least twelve or fourteen days.

The sensitizing effect may be transmitted from the mother to the offspring which, however, may gradually dwindle away. The acquired sensitization leaves a long-lasting impression; even after years a second injection is capable of producing a definite toxic effect. The effect, however, is not always fatal and as striking as described above. When the second dose is not sufficiently large, or when administered in a less effective manner, the guinea-pigs may recover from the "anaphylactic shock" (as the violent attack is often designated), or the attack may set in with less violence.

PHENOMENA OF ANAPHYLACTIC SHOCK

We now come to a discussion of the point which interests us here mostly, namely the character of the attack. From the start, all observers agreed that the death of a guinea-pig in an anaphylactic attack is due to respiratory failure. The attack consists in exaggerated respiratory efforts and manifestations of profound dyspnea. Most of the writers assumed that the cause of this fatal respiratory disorder is located within the respiratory center in the medulla oblongata. Gay and Southard,[7] who have done meritorious work on the problem of anaphylaxis, are emphatic in their claim that the fatal respiratory phenomenon is due to a hyperstimulation of the respiratory center. Although Gay and Southard noticed that the lungs of guinea-pigs dying in anaphylactic shock are "emphysematous" they considered this condition as being only a secondary effect of the violent inspiratory contractions of the diaphragm, the primary cause of the attack being, as stated before, the over-stimulation of the respiratory center.

The recent investigations of Auer and Lewis, however, have in my opinion definitely established the true cause of the anaphylactic shock in guinea-pigs. In the first place, they have established that the lungs, which become greatly distended with the onset of the attack, remain in a distended state even after their complete removal from the thoracic cavity after the death of the animal; in fact, the lungs do not collapse even when cut into pieces. An anatomic study of the lungs demonstrated that the distention is due neither to emphysema nor to pulmonary edema. Furthermore, the typical condition of the lungs remained the same even if the second, toxic injection of the serum was administered while the animal was under the influence of curare (and the life kept up by artificial respiration); that shows that the distended state of the lungs cannot be simply a secondary effect of the violent contractions of the diaphragm. The real character of the dyspnea was revealed by the fact that during the anaphylactic attack the lungs could not be further inflated by artificial respiration; that is, air could not pass through the bronchi into the alveoli while the respiratory efforts produced at the same time a strong negative pressure in the pleural cavities. Finally, Auer and Lewis have established that the anaphylactic attack takes place in animals with a destroyed central nervous system, exactly in the same way as in normal animals, which proves that the process is of peripheral origin. In other words, Auer and Lewis have definitely proved that the cause of the acute anaphylactic death of guinea-pigs is a stenosis of the bronchi due to a peripheral process. This process consists, Auer and Lewis believe, in a constriction of the bronchi due to a tonic contraction of their muscle fibers. It is sure that these contractions are not brought about by central impulses. Whether these contractions are brought about by a stimulation of the muscle fibers themselves or of the nerve endings, this question Auer and Lewis have not attempted to decide for the present. They have discovered the important fact that in many cases the anaphylactic attack can be prevented by a previous injection of atropin. This fact would indicate, according to the accepted view, that the nerve endings are responsible for the attack. On the other hand, Auer[8] recently found that the attack would set in even in animals in which the vagus nerves were cut a long time before the second injection. The nerve-endings therefore must have been degenerated previous to the anaphylactic attack. We may add here that the important results of Auer and Lewis were confirmed by Anderson and Schultz[9] and by Biedl and Kraus.[10]

---

[4] We may mention here Behring (1893), Richet (1902), Arthus (1903), Wolff-Eisner (1904), v. Pirquet and Schick (1905).

[5] The publications of Otto as well as those of Rosenau and Anderson appeared in 1906, and I am at present unable to state which one of the publications was ahead of the other. But I can [illegible] to the absolute independence of the observations of Rosenau and Anderson, [illegible] in December, 1905. Dr. Rosenau was [illegible] their remarkable experience and [illegible] of the phenomenon.

[6] [illegible] carefully [illegible] by P. A. Lewis.

[7] Gay and Southard: Jour. Med. Research, 1908, xix, 22.

SIMILARITY TO NERVOUS ASTHMA

The following facts, observed by Auer and Lewis, are of special interest to us here. In an anaphylactic attack the bronchi are constricted; no air can pass into the alveoli, nor can it escape from them; and the lungs are greatly distended and cannot collapse. It was shown that the constriction of the bronchi is of peripheral and not of central origin. Now exactly similar symptoms are met with in so-called nervous asthma. During the attack the bronchi are constricted, air passes through them only with great difficulty. Is asthma a nervous process and of central origin, as is generally assumed, or is it an anaphylactic phenomenon and essentially of peripheral origin? That is, may we not assume that asthmatics are individuals who are sensitized to a definite proteid substance and that the asthmatic attack takes place when the same proteid substance invades the body in the same manner? For one form of asthma this has been established experimentally, and that is for hay fever asthma. As is now well-known, hay-fever is due to the toxalbumins of the pollen of some plants. When such a toxin is injected subcutaneously into a normal individual, it causes no effect whatsoever. If, however, a minute quantity of it is injected into an individual who is subject to hay-fever, in a short time all the symptoms of hay-fever appear, and among them a definite attack of asthma. This can mean only that hay-fever subjects are sensitized to a specific proteid of the pollen of a definite plant, and that whenever the same proteid invades these individuals in some way or other the result is an anaphylactic attack, which, among other phenomena manifests itself in the form of asthma. May we not explain all other forms of asthma in the same manner?

According to this view, to repeat again, an asthmatic is an individual who is sensitized to a definite substance and an asthmatic attack sets in every time this substance manages in some way to enter into the circulation of that individual. We must bear in mind that even in the crude manner of our experiments a very minute quantity of the specific proteid is sufficient for the sensitization as well as for the intoxication. In the actual processes which take place in Nature the effective doses may be infinitely small, and it may well be possible that the minute quantities contained in the emanations from horses, cats or guinea pigs are sufficient to act as a toxic dose and call forth the non-fatal stenosis of the bronchi evidently present in an asthmatic attack in the human. Perhaps certain digestion products of the proteins become now and then absorbed into the circulation from the alimentary canal in some cases in an abnormal stage.

Such an absorption may have little or no influence on normal individuals, but will call forth an anaphylactic attack, that is, an attack of asthma, in an individual sensitized to this protein product. We need not attempt to work out the details of our theory. Our knowledge of the anaphylactic process is yet too young and too scanty for such an undertaking; any application in detail will surely soon have to be rearranged. But with our theory in mind, a future study of cases of asthma might bring to light definite causal relations, just as happened in the studies of hay-fever. For the present, the following parallel facts may be recalled to mind. The sensitization to anaphylaxis may be hereditary or acquired; so is the disposition to asthma either hereditary or acquired. Anaphylaxis is specific; animals sensitized to a definite proteid can be intoxicated only by that proteid. The same seems to be true also for asthma. This is certainly true for the hay-fever asthma. Individuals who suffer from hay-fever in the spring due to the grass pollen are not subject to the autumnal attacks which are caused by the ragweed pollen. But the specificity seems to hold good also for other cases of asthma. For instance, individuals who get attacks of asthma in the presence of cats do not get it by the emanations from horses or from guinea-pigs. A most interesting and valuable point is the fact that atropin, which relieves asthma, relieves, as it was discovered by Auer and Lewis, also the anaphylactic attack. On the basis of the identification of the two phenomena there is an encouraging outlook for the therapeutics of anaphylaxis as well as for asthma. But I shall not indulge in a further discussion of the details of our subject.

SUMMARY

It is generally agreed that the so-called nervous asthma is due to a stenosis of the bronchioli. It was discovered that the so-called anaphylactic shock is due also to a stenosis of the fine bronchi. The theory is here offered that asthma is an anaphylactic phenomenon; that is, that asthmatics are individuals who are "sensitized" to a specific substance and the attack of asthma sets in whenever they are "intoxicated" by that substance.

It has been proved that the anaphylactic attack is of peripheral and not of central origin. It is therefore suggested that the so-called nervous asthma is also due to a peripheral and not a central cause; in other words, "nervous" asthma is not a neurosis.

---

[8] Auer: Proc. Soc. Exper. Biol. and Med., 1910, vii, No. 4.

[9] Anderson and Schultz: Proc. Soc. Exper. Biol. and Med., 1910, vii, 32.

[10] Biedl and Kraus: Wien. klin. Wchnschr., 1910, xxiii, 385.

On account of the capriciousness of the onset and courses of asthmatic attacks, as well as on account of the absence of pathological-anatomical changes in this affection, asthma was considered a functional disease and hence a neurosis. From our point of view asthma is still a functional disease but not a neurosis. We have therefore a significant instance in which a functional disease need not be of nervous origin.

Rockefeller Institute for Medical Research.

VOMITING OF GALL-STONE

J. M. PFEIFFENBERGER, M.D.
ALTON, ILL.

The following is herewith reported to place on record a case which I believe is rare enough to be of some interest:

History.—Mrs. S., aged 40, was seen on July 3, 1910, at which time she complained of nausea and "feelings of distress" in the epigastric regin. There was no rise in pulse-rate or temperature. Palpation over gastric and hepatic region elicited no tenderness. The patient had been constipated for several days and gave a history of three attacks of similar nature while traveling in the west, one on April 7, another April 15 and the third about May 1, the attack on May 1 being diagnosed as appendicitis. She was given one grain of mild mercurous chlorid every hour for three doses, the evening of July 3. Early the next morning, July 4, the nausea became very distressing and the patient vomited about 6 to 8 ounces of mucus and gastric juice, after which she took a glass of champagne to relieve the distress. About twenty minutes after taking the champagne she vomited (in my presence) a drachm or more of what looked to be pure bile and a small dark substance which made an audible click when it struck the side of the vessel. On closer examination of the substance it was found to be a gall-stone of the cholesterin and bilirubin-calcium variety, with two facets on it. Following the expulsion of the stone and bile the patient seemed to obtain immediate relief and did not vomit again. On deep palpation I could now find some tenderness over the gall bladder area.

Dr. O. H. Elbrecht of St. Louis saw the case in the evening with me.

Operation.—July 6, the gall bladder was exposed through a right rectus incision and found irregular in shape, of normal size with walls in a healthy condition and no adhesions present. The appendix was looked at and found to be held down with a few adhesions which were separated and the organ removed by the usual method of crushing and invaginating the stump with purse-string suture. The area around the gall bladder was walled off with gauze and the organ incised at the fundus, allowing the escape of a small quantity of bile and seven medium-sized stones ranging in size from a grain of wheat to a hazel nut; then one large stone the size of a large Brazil nut was removed with a spoon curette, the gall bladder thoroughly sponged out and the cystic, common, and hepatic ducts palpated but no stones felt. The packing was next removed and the gall bladder drained with a rubber tube placed in the fundus and fixed by a purse-string suture to the parietal peritoneum, the wound closed by tier suture and the patient dressed and placed in bed.

Postoperative History.—The patient was nauseated for some time afterward and next morning vomited a large quantity of bile and passed a quantity by tube. The tube was removed on the tenth day, the stool was bile stained on the seventh day. There was no rise of temperature or pulse following the operation. The patient was removed to her home on twelfth day and her bowels moved of own accord on fourteenth day. The wound was entirely healed on the fifteenth day. A very interesting and extremely satisfactory result to the patient, who had been dependent on cathartics and enemas for the last eighteen years, is that since two weeks following the operation her bowels have been moving daily and sometimes twice daily without assistance.

I am preparing a paper on the records of all cases reported of vomited gall-stones and I should be pleased to hear from physicians who have had such cases to report.

Special Article

EPIDEMIC POLIOMYELITIS

A DISCUSSION OF THE PREVALENT INFANTILE PARALYSIS

Epidemic poliomyelitis has long been known under the name of infantile paralysis and under this name its symptomatology has been described in the text-books. Small outbreaks have been described, one occurring in the United States as early as 1841, but epidemics were not frequently noticed until about 15 years ago. The prevalence of the disease appears to have been increasing since that time. An extensive outbreak occurred in Sweden in 1905 and two have occurred in Australia, one in 1903 and the other in 1908. An extensive epidemic occurred last year in Prussia, especially in Westphalia. The principal epidemics in this country during the last 3 years have occurred in Boston, New York, Minnesota, Kansas, etc., and the disease has been unusually prevalent during the past summer in many states.

The interest excited by these epidemics has led to a great deal of investigation which has advanced our knowledge of the nature of the disease.

The disease is a general infection, attacking chiefly the nervous system and localizing itself in the anterior horns of the spinal cord.

ETIOLOGY

July, August, September and October are the months in which most cases occur. Both sporadic cases and those in epidemics have been noted to occur after hot dry weather. The disease is more prevalent in cold than in warm countries. Clinical experience has shown that the disease is contagious, though it is perhaps not highly so. The way in which it is communicated is not certainly known. Dust has been suggested as one means of conveying the contagium. In the Massachusetts epidemic out of 150 cases investigated 62, or nearly half, had been swimming or wading in water contaminated by sewage, just before the onset of the disease. The experiments of Flexner give some reason to believe that the virus is contained in the mucous membrane of the pharynx to an unusual degree. On the other hand, careful autopsies have shown that lesions of the tonsils or of the pharyngeal mucosa are not constant.

The nature of the virus is not known. That it is a living organism is rendered probable by the fact that it can be transmitted from man to the ape and from this ape to a second ape, as shown by experiments of Flexner and Lewis and Römer. The disease was first communicated to apes by intradural injection of the substance of the spinal cord. Subsequent experiments of Flexner have shown that the same results can be obtained by intraperitoneal and even by subcutaneous injection of the filterable virus. The germ, if such there be, is so small as to pass through a Berkefeld filter. No micro-organism has been discovered that can be regarded as the cause of the disease.

PATHOLOGY

The pathologic changes are thus summed up by Hochhaus: There is a vascular inflammation of the anterior horns (gray matter) throughout the whole axis of the spinal cord; in addition the inflammation often extends to the posterior cornua, the white substance and to the meninges. In many cases the medulla and the pons are affected as also the brain. This appears to be constantly the case in the severe cases.

SYMPTOMATOLOGY AND COURSE

The disease varies as to degree of severity, type and structures most prominently involved, and for convenience in description may be divided into the following forms: The abortive form, those of moderate severity, the acute ascending poliomyelitis of severe type, the bulbar and the encephalic. Abortive cases may not be recognized by one not familiar with the condition even during epidemics. The incubation period is from five to thirty-three days, the average being about ten days in the experimental cases of Flexner and Lewis. Beneke found in some experiments on rabbits that the animals showed no symptoms for from eight to eleven days. The first symptoms usually observed in all forms are connected with the gastro-intestinal tract; in 90 per cent. of cases as found by Krause. In two-thirds of these there was diarrhea and in the remainder constipation. Rarely the disease begins with angina or with inflammation in the respiratory tract. In the mild or abortive cases there may be a moderate degree of fever, sweating, some headache, the patient is restless and complains of neckache and backache, with pains down the legs, and in young infants there may be muscular twitchings and sensitiveness when handled. Leucopenia is an important initial symptom, as noted by E. Müller. In many cases the child cries with the slightest movement. Delirium rarely occurs. The sensorium is usually unaffected. Symptoms occurring during the course of the fever, at first interpreted as weakness, may be the signs of the beginning paralysis, and should be watched for. The child may not be able to sit up or hold up its head. According to some authors, there is no forcible retraction of the head, but a falling backward of the head from paretic relaxation of the muscles. The symptoms subside in a few days and then it may be noted for the first time that the patient is disinclined to use the legs, or complains of muscular weakness and fatigue to a greater extent than would be warranted by the length of the illness, but no actual paralysis develops and recovery is complete in a week or two.

In the moderately severe form the symptoms are similar, but more severe. There may be rigidity of the neck and retraction of the head, the temperature is higher, running up to 101 to 103 F., with vomiting, sweating, prostration, restlessness and severe pains in the back and extremities, and in some cases with inability to empty the bladder or to control the bowels. In three or four days a flaccid paralysis occurs involving a group of muscles, one extremity, or both, or may involve the trunk or upper extremities. This paralysis reaches its maximum in a few hours, or perhaps in three or four days, and in a week or ten days begins to improve, which improvement continues until only a small amount of paralysis remains, but this is usually permanent. Recovery may, however, be complete even in severe cases during epidemics. The ganglion cells controlling many muscles do not degenerate. These recover in a short time, while the muscles corresponding to permanent lesions in the spinal cord remain permanently paralyzed. This permanent paralysis usually affects the legs; rarely the arms. Paralysis of the thighs is uncommon, and usually only a group of the leg muscles is permanently affected. Anesthesia has been observed.

The acute ascending type is like that last described, but the lower extremities, bladder, rectum, abdomen, diaphragm, back, chest, upper extremities, throat, etc., are involved in succession until the paralysis reaches the medulla when respiratory paralysis and death ensue.

In the bulbar form, aside from the other general symptoms, the paralysis first attacks the bulbar region, causing paralysis of the throat, eyes, face, tongue, with strabismus in various forms, difficulty in deglutition and phonation, choking and other related symptoms. Respiratory paralysis may also occur in this form as in the ascending type. Recovery may be complete or partial.

In the severer forms in which death does not occur there may be a period in which the patient remains in about the same condition and then improvement in the paralysis occurs rapidly to a certain point, and then slowly for a period of about two years, after which any remaining paralysis is permanent.

IMMUNITY

Flexner and Lewis have found in their experiments that one attack probably confers immunity from subsequent attacks. They have also established immunity by repeated injections of the filterable virus in gradually increased quantities.

DIAGNOSIS

The prospect of efficient treatment of this disease depends on early diagnosis. No treatment can accomplish much after paralysis has supervened. It is during the period of fever and initial paralysis that an antitoxin or immune serum if one were available would need to be applied in order to do any good. It is therefore of the utmost importance that the earliest symptoms of illness—especially in children during the prevalence of poliomyelitis—should be closely scrutinized with a view to discovering diagnostic points that may make the early recognition of the disease possible. At present little positive aid can be obtained from our knowledge of the symptomatology. It must be differentiated from cerebrospinal meningitis. In the latter disease the cerebral symptoms are more pronounced, the retraction of the head and stiffness of the spine more characteristic, and there is absence of paralysis. Examination of the cerebrospinal fluid would also help to differentiate the two conditions. The conjunction of diarrhea, fever, and sweating is suggestive and should afford reason for investigating the case carefully. Such a patient, especially a child, should be visited at frequent intervals and examined for the first symptoms of paralysis. The examination of the blood will show leucopenia. Some observers have found an increase of lymphocytes in the cerebrospinal fluid. The occurrence of the general paralysis manifesting itself in the form of weakness, together with pain in the limbs and tenderness on moving the spine, is confirmatory. The predominance of a flaccid paralysis in one or more groups of muscles in the lower extremity completes the diagnosis.

PROGNOSIS

The mortality has varied considerably; in various epidemics from 5 to 20 per cent., in some cases being as high as 40 per cent. It is usually not very great. Evidence of abortive cases is afforded by the fact that in many instances other members of the family have suffered from diarrhea without the paralytic symptoms (Krause). There are probably also cases in which death occurs, sometimes suddenly, from the general infection without any symptoms of paralysis. Beneke noted such results in two of the rabbits inoculated by him. The possibility of complete recovery from the paralysis is admitted, but Krause met only one such case in the Westphal epidemic. In the Boston epidemic 10 per cent. of 628 patients recovered completely. In a smaller group of 150 patients who were carefully examined 25 or 16.7 per cent. recovered completely (R. W. Lovett). The prospect of improvement in the paralyzed limbs is good, although regeneration of the destroyed ganglion cells is not to be hoped for. The causes of death are the toxemia, cerebral complications, such as meningitis, and respiratory paralysis.

TREATMENT

As no specific is known, treatment must be symptomatic. Treatment suitable to an infection and toxemia should be promptly instituted. The bowels should be emptied by calomel and a saline and by colonic flushing, whether diarrhea or constipation be present. Elimination by the kidneys should be stimulated by a suitable alkaline diuretic, such as liquor potassii citratis. Salicylates may be given both for the relief of the pain and as being antagonistic in a general way to infections. The patient should be confined to bed and kept warm and comfortable. In view of the marked tenderness, Hohmann has recommended the application of a plaster cast. Gowers recommends that the patient be not permitted to lie on the back on account of the danger of increasing the congestion in the spinal cord. If a position on one or the other side is impracticable, pillows against the back will raise the spine from the lowest position and save the possible hyperemia from being augmented by the effect of gravitation. Strychnin should not be given until after the first two or three weeks. Electricity should be deferred a little longer. Gentle massage may be commenced sooner by upward rubbing with such pressure as causes no pain. Kneading of the muscles is better avoided. Re-education of the muscles by encouraging the child to use the paralyzed limbs should be begun after the acute symptoms have subsided. In this way other groups of muscles may be made to perform more or less perfectly the functions of those permanently paralyzed.

Therapeutics

CHRONIC ARTHRITIS

Whether one or more joints are in chronic trouble, or whether the disease is more general as in arthritis deformans, or whether the trouble with the joints is due to gout, chronic arthritis is one of the most troublesome, unsatisfactory, and discouraging conditions to treat. Anything that will cause a better understanding of the etiology of the condition will not only lead to its prevention before actual lesions of the joints have occurred, but will often aid in producing a cure or stay of the disease if the etiologic factor can be removed.

Dr. Hermann W. Marshall (*Johns Hopkins Hospital Bulletin*, July 1910) discusses this troublesome subject, and reminds us "that joint symptoms occur in constitutional infections and nervous diseases, and that their causes are manifold, and moreover the various etiologic elements do not act on a simple tissue, but on a complex structure including bone, cartilage, connective tissue, nerves, synovial membranes, blood capillaries, and lymphatics." As a result the bone may atrophy or hypertrophy, cartilage may be destroyed, there may be thickening of the fibrous tissue, there may be localized edemas or actual effusion into the joints, there is always stiffening and pain, and there may be ankylosis.

Marshall emphasizes the importance of the character of the blood, as it by bringing irritants to the joints, becomes an important factor in the cause of joint disturbances. Besides these chemical irritants, disturbances in the nervous system can reflexly affect joints, and the joints may be disturbed by physical conditions, pressure, sprains, etc. In any particular instance any one of these three factors may act in varying degree, and also Marshall believes that one or more joints may have their vital resistance reduced so as to be susceptible to what another joint may withstand.

Irritating substances in the blood that may injure joints are "chemical products of bacterial growth, chemical products derived from the gastro-intestinal tract, metabolic products of organ activities, and drugs such as lead." Bacteria may locally infect a joint and produce substances that are irritant. Ptomains circulating in the blood may irritate joints as seems proved by the fact that eradication of ptomain infection from the gastro-intestinal tract and a modification of the diet to prevent further ptomain poisoning or ptomain production has immediately relieved joint pains. While we cannot exactly define or chemically describe a toxin, Marshall states that these are formed by the action of bacteria on nitrogenous food materials, and certainly it has been shown that the removal of all such toxins from the system has many times entirely removed and prevented joint pains. In other words, there seems to be no question that irritants (whether the actual chemical substance produced by bacteria, or whether toxins from bacterial activity, or ptomains absorbed from the intestines) can cause joint pains often general, perhaps localized in joints that are physically disabled, and have their withstand power temporarily reduced. The removal of such intestinal malproducts cures the joint pains.

Marshall believes that the products absorbed from bacterial action in the colon, and from the stomach and intestines under pathologic conditions without bacteria, are causes of joint-irritations. Certainly clinically, as he states, many a chronic arthritis patient gives no antecedent except chronic indigestion. Visceral displacements causing indigestion without any apparent bacterial infection have been accompanied by joint disturbances and the joint disturbances have become better when the displacements were corrected. Marshall states that when chronic indigestion seems to be an etiologic factor in joint inflammations generally the bone hypertrophies, which seems to indicate a different kind of irritant from that produced by bacterial toxins which lead to destructive atrophic bone changes.

Hyperactivities or disturbed activities of the organs or glands of the body seem to frequently be the cause of joint irritations. This is sometimes noted after pregnancy, in thyroid disturbances, and pancreatic disturbances. It is certainly true that the beginning of gouty joints and sometimes of arthritis deformans dates from the cessation of ovarian activity.

When disturbances of the nervous system affect the joints, as Marshall well says, it can hardly be a simple proposition. If an individual nerve to a particular joint or set of joints is in trouble it can readily be understood how tropic changes in the joints take place; or if a particular portion of the spinal cord is affected how the joints that are ennervated by that portion may become so disturbed as to show signs of irritation and inflammation. In general nervous conditions, however, the organs concerned in digestion are greatly disturbed, intestinal indigestion occurs and the absorption of irritants may take place, and these irritants may be the cause of joint disturbances in many nervous diseases.

Mechanical injury to the joints whether irritation, pressure, over-work, or insufficient circulation from some old injury, or anything that disturbs the nutrition of a particular joint or set of joints may become causes of chronic arthritis.

A thorough investigation of an individual patient who has chronic arthritis, with all of these etiologic suggestions in mind, will discover the best possible treatment and the treatment that promises most for the individual. It certainly is useless to direct a local treatment or even a general treatment without first endeavoring to remove the etiologic factor, if such a factor can be removed. If the diseased joints incapacitate a patient for work or exercise, compelling him to live a sedentary life, maldigestions are bound to take place, and irritants in the blood will be ever present, if not actually on the increase, and the arthritis must progress. Prevention, then, of gastro-intestinal indigestion and the regulation of the diet in such a way as to assure the least possible absorption of toxins or chemical irritants is of primary importance. Although not mentioned by Marshall, it seems very necessary to study, by examinations of the feces and examination of the twenty-four hours' urine, the ability of the patient to digest the different kinds of food and properly to excrete the various salts, and to limit his diet to those which he properly cares for and to remove a food or salt, or diminish it at least, that he did not normally digest, metabolize or excrete. The amount of water a patient should drink seems to be another important factor in aiding the cure or prevention of progress of the joint affection. A blood count is also necessary. Many patients are anemic; many not. Many such patients have disturbances of the white blood corpuscles which should be noted. Worry, nervous frets, and all excitement that tends to neurotic conditions should be prevented, if possible. Here is one of the greatest values of temporarily removing a patient who has a number of joints affected, showing that there is a general cause for the trouble, to a private hospital or sanatorium for treatment. Serious nervous affections give, of course, a serious prognosis to the joints affected.

Various measures for producing local hyperemia are valuable. If the disease is more or less general nothing is any more valuable than body baking, the so-called hot air treatment. It increases elimination through the skin, promotes the circulation on the surface of the body, relieves pain, and increases the activity of the circulation in the joints. It also relieves the congestion of the internal organs and therefore is an aid to digestion. If the general circulation is poor the baking should be done under careful supervision, to promote the circulation, and not to have the baking so frequent or so prolonged as to debilitate the patient. If properly managed this baking is of the greatest and in helping these patients. If the disease is localized in one or more joints repeated local baking may be valuable, but often does no good, and may do harm. If there is no improvement after a certain length of time certainly the treatment should be discontinued.

The production of localized hyperemia in certain joints by bandaging, the Bier's treatment, may be of value, but often in chronic conditions it is of no value. Active massage and passive movements may be of great value. Various electric stimulations to the spine may be of value in individual patients, but often probably do more good psychically than physically. Electric light bath treatments and various hydrotherapeutic measures all have their value and all do good. Whether a joint should be immobilized or not is a question for careful decision. If there is acute inflammation it should probably be temporarily immobilized. Sometimes such immobilization will almost produce a cure, and again a joint becomes stiff and is really injured. Such fixation treatments, then, should be carefully considered before they are inaugurated.

Medicinal treatment, except such treatment as is aimed to promote digestion, proper bowel activity, proper circulation, and proper character of the blood, is of little value. If there is thought to be hyperacidity of the secretions or at least decreased alkalinity, alkalies may be of value, but certainly alkalies should not be pushed to the point of interfering with stomach digestion. Salicylates are of but little value in chronic joint disturbances. Iodids in large doses will produce waste, and may be what a fat patient needs. Small doses of iodid stimulate the thyroid to extra activity, promote general metabolism, and may be of value in the individual case. Colchicum in chronic arthritis is probably of little value except as it may increase intestinal activity. All of the various lithia salts, and all of the various laxative and alkaline waters have no specific action, but if combined with increased muscular activity, increased activity of the skin, increased drinking of water in proper selected cases, a regulated diet and a regulated life, in other words, proper regime, they may be of apparent benefit. It is the regime, however, and not the particular kind of lithium or other salt that works the cure.

Let it be urged that a physician cannot spend too much time in the study of a patient who shows beginning chronic arthritis, to endeavor to prevent the progress of the disease and to prevent a life of more or less invalidism. No matter how tedious, and no matter how expensive it is for the patient to be scientifically studied in this condition, it will pay him and his physician for the outlay to arrive at the best management of his disease.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 17, 1910

THE CHARACTERISTICS OF IMMUNITY IN SYPHILIS

Before the discovery of the *Spirochaeta pallida* (*Treponema pallidum*) by Schaudinn there exists a reasonable suspicion that the then unknown parasite of syphilis was one which passed through distinct cycles of development within the human host, thus accounting for the differences in the lesions observed in the classical three stages of the disease. This explanation for the variations in the lesions of syphilis collapsed with the earliest investigations made after the causative organism had been identified, for it was at once found that there was no difference in its appearance and characteristics whether it was examined in chancres, secondary eruptions, congenital lesions in deep-seated organs, or even in tertiary lesions, where it can be found sparsely distributed. Later investigations supplemented the evidence of morphologic identity by showing that biologically the organism is the same, since syphilitic material from lesions of any stage when inoculated into susceptible anthropoids gives rise always to the same sort of lesion, the primary chancre. From an extensive study of the historical facts and experimental investigations, with particular reference to the immunologic process of the disease, Levaditi of the Paris Pasteur Institute has developed an interesting and plausible conception of the processes which follow infection with syphilis, and which cause the peculiar development in stages that characterize its course in man.[1]

While it is universally recognized that a strong degree of immunity is developed in syphilis, yet it is also recognized that this immunity is not absolutely protective and that it manifests itself in various ways. Persons with a definite history of syphilis may again acquire a primary lesion and develop the usual sequence of manifestations, and an individual may have multiple primary lesions, but neither of these occurrences is common. As a rule the existence of syphilitic lesions, whether active, quiescent or apparently healed, guarantees the individual against a new infection, and numerous actual experiments have established this protection. Now this condition of resistance to infection in syphilis is somewhat peculiar, in that at the same time the protected individual may be, and usually is, harboring living organisms which may even be actively engaged in causing injury to his tissues. This is quite different from the ordinary conception of immunity, which implies that the immunity is the result of a refractory state incompatible with the life of the infectious agent. As a matter of fact, the immunity in syphilis is really not absolute but relative; during the period of incubation, and during the early stages of the history of the chancre, a second inoculation may result in the formation of more or less typical primary lesions; the later in the disease the less frequently and less typically will successful results be obtained. After the chancre is well developed, and during the secondary stage, inoculation with active virus under the skin may produce atypical lesions, or lesions resembling those of the secondary stage, although to such doses of virus as are commonly received by natural means of infection there will usually be no reaction. In the tertiary stage there is almost absolute insusceptibility to infection by inoculation, either natural or artificial, in spite of the fact that at the same time within the tissues a localization of a very small number of organisms coming from the patient's blood will produce large, rapidly spreading lesions, with great destruction of tissues, the gummas.

These apparently contradictory facts Levaditi explains in the following hypothesis: During the period of incubation, and before the primary sore appears, the parasites invade the body, for during this stage in experimental animals the virus can be found in the internal organs, particularly the spleen. This invasion causes the development of immune bodies, which soon are manifested by a partial refractory condition of the skin to further infection by natural exposure to syphilitic virus; this resistance is slight during the early stages of chancre formation, but is well developed by the time of the onset of secondary lesions, although not usually so complete that it may not be overcome by inoculation with a sufficiently large quantity of active virus. During the secondary stage we find that the lesions are chiefly of an inflammatory character, with evidence of great resistance by the tissues, which suffer comparatively little injury, in spite of the presence in these lesions of very great numbers of parasites; whereas in the tertiary stage, when the resistance to infection coming from without is highly developed, the lesions show great tissue destruction produced by an extremely small number of parasites.

Since the parasite seems to be the same in all conditions and stages of the disease, the differences in the effects produced are to be accounted for by differences in the resistance of the host to the invading organism. Levaditi suggests that the resistance developed during the primary stage may be sufficient to hold the parasites in check for a time, until they acquire a certain degree of immunity of their own to the antibodies of the host; they then enter the blood and set up a generalized infection, characteristic of the secondary stage. In reaction to the infection of this stage greater quantities of antibodies are formed, which suppress the growth of the parasites to a large degree, although not destroying all of them. In the course of time the tissues themselves, however, may acquire a hypersensitive condition, so that even a few spirochetes may be able to cause extensive local necrosis, characteristic of the gumma of the tertiary stage. It is of course possible for the host to develop sufficiently great amounts of antibodies to destroy all the infecting organisms, thus accounting for those cases in which one or both of the last two stages of the disease are not manifested. Tertiary lesions as a rule, however, develop in spite of a highly developed resistance to the parasites of syphilis, which is shown by the difficulty or impossibility of producing a new infection by inoculation with new virus; presumably, therefore, the lesions of the tertiary stage are produced by organisms which are refractory to the antibodies of the host, but which are growing in tissues that have become hypersensitive or anaphylactic to the syphilitic virus. On this basis the efficiency of iodids in the tertiary stage would be ascribable to their action on the tissues, which they render less sensitive, or antianaphylactic, rather than to an action on the parasite comparable to that of mercury in the earlier stages.

---

[1] Levaditi, C.: De l'immunité acquise dans la syphilis, Ztschr. f. Immunitätsforsch., Referate, 1910, ii, 277.

These speculations of Levaditi have much to commend them as worthy of serious consideration, and to those who are familiar with the features of infection and immunity manifested in the trypanosome and spirillary diseases, on which much of Levaditi's reasoning is based, they will seem to be well grounded and far from visionary.

A NATIONAL DEPARTMENT OF HEALTH

Since the introduction in the Senate, by Senator Owen, of the bill providing for the establishment of a federal department of health, there has been much discussion in both the scientific and the secular press regarding the proposed measure. Several congressional committee meetings have been held at which appeared those favoring and those opposing the measure. Both proponents and opponents, however, at the committee meetings and in the public press, have dealt largely in general statements. No definite scheme has been submitted as a basis of discussion or action; and only general—and in the main irrelevant—objections have been advanced. This week we publish an article by Dr. Young, who for twenty years has been connected with one branch of the government health work. In this article the question is presented in its broader aspect. So far as we are aware, this is the first attempt that has been made to bring together and to present in concrete form the various activities, relating directly or indirectly to public health, carried on in the several departments of the government.

A careful reading of the paper reveals two important points. First, while the government is doing a large amount of excellent health work, its efforts are scattered and more or less duplicated, and, in the interest of economy and of far more effective ultimate results, the various enterprises, so far as practicable, should be coordinated and brought under one general head. Second, the problem of unifying all these enterprises and bringing them into one department or bureau is not so complex as some suppose, and yet it is a problem whose solution should not be attempted without careful study of existing conditions in order that reorganization may not result in halting or hindering some of the good work now being done.

As the first definite outline of a national department of health, Dr. Young's article is deserving of careful and critical study. Probably few will agree with him in all his conclusions, but the paper will serve as a basis for that common-sense, dispassionate and logical discussion of the problems involved which is needed if we are to secure satisfactory constructive legislation. The importance of the subject and the necessity of a provision for the health of the public are admitted by all—all, that is, except those having a faddistic or mercenary interest in the perpetuation of existing conditions. The only question on which there is any room for a difference of opinion is: In what way should the government's health activities be organized so as to result in the highest good to all the people?

The organization of a new department of our national government is an administrative problem of great importance, which can scarcely be solved by sweeping general statements. Dr. Young's contribution is of great value, especially in that it offers a tangible basis for discussion and can be taken as a starting point for actual constructive efforts.

THE PURIFICATION OF WATER BY STORAGE

It has long been known that when cholera vibrios or typhoid bacilli are added to raw river water under laboratory conditions of experiment these pathogenic microbes die off rather rapidly; over 99 per cent. of the two species mentioned are destroyed within the first week. The inference seems justified that the longer a contaminated water can be kept from reaching the consumer the less likely is it to be the bearer of infection. The time element is probably more important than any other in the familiar process of the self-purification of streams, and its effect is particularly marked when water is retained for any considerable period in storage reservoirs.

In some cases the principle of purification by storage has been recognized and taken advantage of by the officials in charge of municipal water-supplies, but, on the other hand, storage has been looked on often merely as a safeguard against drought and has not been utilized to its full value as a protection against water-brone infection.

This seems, for example, to have been until recently the case in London where, it is stated, the two large Staines reservoirs with a total capacity of 3,338 million gallons had their inlet and outlet pipes in the same towers, thus rendering impossible any proper circulation of the water. The work of Houston,[1] however, has drawn attention to the influence of storage on the character of the London supply, and should go far to make the beneficial effect of water storage more generally appreciated.

Briefly speaking, storage reduces the amount of suspended matter, the amount of "free ammonia" and of "oxygen absorbed" and removes some of the color; the hardness also is usually decreased. The number of bacteria of all sorts is diminished by storage, and this diminution is especially marked in case of the excremental bacteria, including the typical *Bacillus coli.* Indeed, Houston's work demonstrates that storage "reduces the number of typical *B. coli* to a proportionately greater extent than it reduces the number of bacteria of all sorts." As a prefiltration process it lengthens the life of the filter and produces uniformity in the character of the water delivered to the filtration beds.

The important fact is brought out also in the Report of the Metropolitan Water Board that London is not really drinking filtered raw river water, but river water which by storage processes has been bacterially purified to a remarkable extent antecedent to filtration. In spite, therefore, of the somewhat unsavory origin of much of the river water which serves as the source of the London supply, the water actually distributed to the consumers is of a high degree of bacterial purity. It seems very unlikely that any noteworthy portion of the typhoid fever in London at the present time is water-borne. At all events the death-rate from this disease is as low (3 per 100,000 inhabitants in 1909!) as in those cities that are provided with a supply of known and unexceptionable purity.

Curiously enough, some of the English authorities now appear inclined to attribute more importance to storage than to filtration in the purification of polluted river water. It does not seem necessary, however, to place the two processes in antithesis. Sand filtration, even when a raw and rather highly contaminated water is directly applied to the filter bed, has abundantly demonstrated its efficiency as a means of reducing typhoid infection. But it is indeed true that the beneficial effects of storage need to be just as widely known, as in many cases this important process of purification can be taken advantage of with safety and economy.

Current Comment

THE DISINFECTION OF THE HANDS OF TYPHOID CARRIERS

The well-known difficulty of checking completely and permanently the excretion of typhoid bacilli from the bodies of "carriers" is leading to a search for other measures likely to avoid or lessen the danger to the community which is involved in the existence of these "walking germ-factories." Obvious measures are the prohibition to them of certain occupations, and instruction in habits of personal cleanliness. The motive for the latter precaution is readily found in the high degree of peril to which the family and immediate associates of the carriers are exposed. Clear and emphatic descriptions of the consequences to family and friends likely to follow from neglect will in many cases lead to willing compliance with instructions. The most effective method of obtaining hand-disinfection is made the subject of a recent study by Gaehtgens,[1] a writer well known for his researches in connection with the intensive campaign against typhoid in the Rhine provinces. In this study, hands soiled with the infectious material have been subjected to various cleansing processes and then carefully tested for the survival of typhoid and colon bacilli. Thorough washing with soap and water, especially when followed by rinsing in fresh water and wiping on a clean individual towel, diminishes enormously the danger of infection and may in some cases lead to entire removal of the intestinal microbes from the infected hands. Since in some cases, however, this procedure does not effect complete removal of the adhering germs, Gaehtgens recommends for greater security the use of some disinfectant. In his experiments formaldehyd soap solution, alkaline hypochlorite solution, hydrogen peroxid and even phenol proved unsuitable for the purpose, but good results were obtained with alcohol, especially in the form of eau de cologne and the ordinary cooking alcohol (*Brennspiritus*).

FISH AS FOOD

The enhanced cost of living in all civilized countries has directed attention to the less expensive forms of food. It has been said that the production of wheat is not keeping pace with the increase in population and that some more productive substitute must be found for it. Meat, likewise, for reasons not to be discussed here, is becoming relatively scarcer, and consequently so much more expensive as to portend at no distant time its compulsory partial abandonment as an article of diet by the poorer portion of the population. A more extensive use of fish has been suggested as one way out of the difficulty. As reported in our London Letter, at a recent meeting of the Sanitary Inspectors' Association in London, Sir James Crichton-Browne remarked on the value of fish as food, especially for the poor; from a physiologic standpoint it ranks second only to meat, containing somewhat less of protein but often more fat, while being far less expensive. Salmon is found the equal of lean meat in food value, and a pound and a half of cod is equal in nutritive value to a pound of lean beef, while the cost is very much less. Improved transportation facilities and methods of distribution make fish available as food to a much wider extent than formerly. At present, on account of fashion, prejudice, taste, etc., many of the coarser kinds of fish are tabooed, although of equal or greater nutritive value than those that are more popular. With present measures of conservation of fish and fisheries extended, along with the conservation of our other natural resources, and with proper encouragement in the use of this form of nitrogenous food, there would be an enormous development in the fishing industry and an accompanying economic saving to the people, while still maintaining the public health by a high plane of living in the presence of a waning meat supply.

---

[1] Report of the Metropolitan Water Board, 1905-1910.

[1] Arch. f. Hyg., 1910, 73, p. 233.

TWO REMEDIES FOR RACE SUICIDE

"The best crop is the baby crop," said Mr. Roosevelt at Ames, Iowa, recently. True, but what shall it profit a nation if it produce ever so large a crop of babies but fail to keep them alive until they grow to years of maturity and usefulness? That nation is the strongest which has the largest number of mature, healthy and capable men and women. Mr. Roosevelt has done great service in decrying race suicide and urging a larger birth-rate. There are, however, two ways in which a nation can annihilate itself. One is by a diminishing birth-rate and the other is by an increasing death-rate among infants and young adults. The child which dies before it reaches maturity is a dead loss to the community. If Mr. Roosevelt will take up, with his accustomed vigor, the conservation of existing lives, in conjunction with his campaign for an increase in the number of new lives, as a combined remedy for race suicide, he will aid a growing and inevitable reform and will vastly increase the obligations of the country to him for his services.

ITALIAN IMMIGRANTS AND TUBERCULOSIS

It is reported that tuberculosis is increasing in Italy, and the reason given is that many of the immigrants returning from the United States are consumptive. How much increase there is, and how much truth there is in the statement that the increase is due to the immigrants from America, we do not know. It would not be at all strange, however, if there were some foundation of facts to warrant the statement. Most of the immigrants from southern Italy have been country laborers at home. When they reach this country, they swarm to the slums of our large cities, and naturally become easy prey to tuberculosis and to other diseases favored by the new conditions and modes of life. In their native country they lived chiefly in the open air under a mild and equable climate, where they were less subject to direct infection, to artificial conditions of life, and to violent extremes of temperature; their new life in all its phases is conducive to the changing of healthy men into consumptives. It would be better for these Italian immigrants, as well as for us, if they would go into the agricultural districts, where they are really more needed and where they would be better off physically and in every other way. That the Italian immigrant, established in a suitable rural environment, and in a climate not too unlike that of his native country, is capable of becoming, with little assistance, a self-sustaining and useful citizen, is shown by the success of the Italian colony of St. Helena in North Carolina.

UNHYGIENIC CIGAR MAKING

A matter worth the attention of health authorities is afforded by the custom among cigar-makers of biting off the tobacco at the end with their teeth and finishing the cigar by plastering down the outside leaves with saliva. We cannot say how extensive this custom is, but from our acquaintance with cigar-makers it appears to be not uncommon. The excuse given for this insanitary method is that, while the managers do not actually demand it, it is practically impossible to finish a cigar to meet the demands of the foremen without resorting to it. The practice if generally known ought to diminish the sale of cigars on esthetic considerations alone, to say nothing of the very obvious danger of the transmission of disease—tuberculosis, for example, which is quite prevalent among cigar-makers. The practice is injurious not only to the customer, but to the workman as well. The frequent occurrence of functional stomach disease among them, chiefly hyperchlorhydria, is at least greatly favored by this practice.

EPIDEMIC POLIOMYELITIS INFANTILE PARALYSIS

We have received many requests for information on various points regarding poliomyelitis, showing the desire for more information than is to be found in the majority of text-books. These requests have come from all parts of the country, emphasizing what is known to be a fact—that this disease is epidemic in many localities. On account of this desire for information, we have prepared, and publish this week, a short article on the subject. In addition there is in this issue an abstract of a paper by Robertson and Chesley on the pathology and bacteriology, and an article by Silver on the surgical treatment, together with the discussion which took place thereon, in the Section on Nervous and Mental Diseases at the St. Louis session of the Association. From the history of the past few years it would seem that the disease is increasing in frequency; it is certainly a subject that needs the most careful thought on the part of the hygienist and of the family physician. The public should be taught that the disease is a contagious one. While this contagiousness may not be great—probably one-quarter as great as that of scarlet fever—the danger is sufficient to justify the isolation of actual and suspected cases. The disease should be reported, and health officers should endeavor to make clear the dangers which are sufficient to warrant moderate quarantine. Probably the infectious period does not extend much beyond the acute period. The observations of

Flexner that the mucosa of the pharynx contains an unusual proportion of the virus would indicate that the secretions of the throat may form one of the sources of the infectious material. Further investigation should be directed to the possibility of conveyance of the virus by the feces, urine and perspiration. Physicians should impress on their clientele the importance of prompt medical supervision in cases of acute intestinal disturbances in children in localities in which the epidemic is prevailing. Careful records of such cases should be kept, so that if poliomyelitis develops, the preliminary symptoms could be carefully reviewed. It is by such careful observation of the preliminary symptoms by a large number of observers that we may hope to learn more of the initial symptoms than is now known; this will assist in the early diagnosis of the disease. Next week we shall publish a paper from Dr. Flexner, in which he reviews the experimental work on the disease and what it has revealed.

Medical News

CALIFORNIA

Personal.—Dr. A. Miles Taylor, San Francisco, chief surgeon of the Northwestern Pacific Railroad, gave a dinner August 27 to the surgeons of the road who had been in attendance at the meeting of the Pacific Railway Surgeons' Association.——Dr. Charles W. Decker, Palo Alto, is said to be seriously ill with rheumatism in San Francisco.——Dr. Louis P. Howe, San Francisco, has been appointed local surgeon of the Western Pacific Railroad for San Francisco and vicinity.

Stanford Adds to Medical School.—A number of additions are being made to the medical school at Stanford University. Last year one wing of the museum building was set aside for an anatomy building, and this year two additional wings are being used, one to be devoted to bacteriology under the charge of Dr. Hans Zinsser, a newly appointed member of the faculty, and the other to pharmacology under the charge of another new member of the faculty, Dr. Albert C. Crawford.

Items About Hospitals.—A new hospital is to be erected on the east side of Stockton by the San Joaquin Hospital Association, to cost about $75,000. The hospital will occupy a site of eight or nine acres, and it is said subscriptions amounting to $50,000 have already been secured.——A new hospital is soon to be opened at Visalia in the former home of Dr Neame. It has been purchased and remodeled at a cost of about $30,000.——Articles incorporating the Oakland Maternity Hospital, with a capital stock of $15,000, have been filed with the county clerk of Tulare county.——The work of construction on the Kings County Hospital, Hanford, was started August 1.——Dr. Albert J. Elliott has formed a company with a capital stock of $50,000 to build and conduct a hospital for helpless invalids, under the name of the San Diego General Hospital Company.——The Pacific Lumber Hospital, Scotia, was incorporated August 20.——The King's Daughters of Oakland are making earnest efforts to secure the $12,000 required to build the new building of the California King's Daughters' Home for Incurables.

COLORADO

Personal.—Dr Henry W Rover, Denver, has returned after six months' travel in Europe.——Dr. and Mrs. Horace G. Wetherill, Denver, left September 3 to attend the International Congress of Obstetrics and Gynecology in St Petersburg.——Dr Thomas Danahey has resigned as resident physician at the Denver County Hospital.——Dr Robert S Allen, physician of Denver County, is recovering from appendicitis for which he was operated on August 23 at St Luke's Hospital.

GEORGIA

District Society Meeting.—The sixth semi-annual meeting of the Fourth District Medical Society will be held in Pinedale, September 20, under the presidency of Dr. T. Neal Kitchens, Columbus. The program shows several interesting titles, such as "Christian Science, the Religio-Medical Masquerade," "Why a Physician Should Identify Himself with the Medical Society," "Professional Courtesy," and "What a General Practitioner Ought to Be."

The La Grange Sanatorium.—The legislature of Georgia has appropriated $30,000 for completing the buildings of the La Grange Sanatorium, and $20,000 for maintenance of the institution for 1911. At the meeting of the executive committee of the trustees, held in Atlanta August 27, plans were perfected for completing the buildings and preparing for patients. They hope to have the institution ready to receive patients January 1, and expect to be able to accommodate 100.

ILLINOIS

Patten Helps Hospital.—George W. Patten, Evanston, has donated $500,000 to the Evanston Hospital Association. The gift creates the "Agnes and Louisa Patten Fund" and is to make up a part of the endowment fund of the institution, only the income of which can be used.

Personal.—Dr. and Mrs. A. D. Bridgman, Decatur, celebrated their golden wedding anniversary August 31.——Dr. Herbert C. Jones, Decatur, has returned from Europe.——Dr. Porter W. Hopkins, Cullom, has sailed for England.——Dr. Hiram T. Hardy, Kaneville, who was operated on for the removal of gall-stones August 27, is reported to be doing well.

The New Cook County Hospital.—A plaster cast model of the new Cook County Hospital, for which $3,000,000 has been appropriated, shows the twelve proposed new structures, six medical buildings, two surgical buildings, one administration building, a detention building, a pathologic building, and a morgue. Among the features of the plans submitted by the committee are roof gardens on the ward buildings and outdoor camps for tuberculosis patients.

Chicago

Personal.—Dr. and Mrs. Arthur Dean Bevan have returned from Europe.——Dr John Edwin Rhodes has returned from a month's outing in British Columbia.——Dr. and Mrs. David Fiske have returned from Europe.

Increases Requirements.—Northwestern University announces that the requirements for admission to its medical school hereafter will be two years in college. Under present conditions students registering for the medical department are required to show only one year of college work. The new plan is expected to go into effect next year.

Increased Death Rate.—The report of the Department of Health for the first eight months of 1910 shows 22,808 deaths as compared with 20,822 in the first eight months of 1909, an increase for the year 1910 of 1986 or 6 per cent., the respective annual death rates per 1,000 being 15 and 14.1. The chief increases noted were pneumonia from 3,372 to 4,133, an increase of 761, and diarrheal diseases of infants, from 1,876 to 2,265, an increase of 389.——During the week ended September 9, 27 new cases of diphtheria were received at the Isolation hospital and 100 cases were reported.

Ground Broken for Jewish Hospital.—Orthodox Jews raised a sum estimated at $10,000, September 11, at the ground breaking ceremony for the establishment of the Maimonides Kosher Hospital, at South California and Ogden avenues. The chief privileges sold were turning of the first clod of earth, placing the name on the golden scroll, and burning the mortgage. The building is to be six stories high, will cost about $175,000, and will accommodate 175 patients, 75 of whom will be free patients. The first wing of the hospital is expected to be completed in less than a year.

IOWA

Hospital News.—The Sisters of St. Francis of the Home for the Aged, Dubuque, are having constructed a new chapel and hospital addition which will be completed in about two months. The hospital will be for the use of sick sisters of the order and for those advanced in years and unable to work.——The lease of the LeMars Hospital having expired, the hospital has been closed.

Personal.—Dr George Donohoe, assistant physician at the State Hospital, Independence, has been appointed superintendent of the State Hospital for Inebriates, Knoxville, vice Dr.

Herbert S. Miner, resigned.——Dr. John A. White, Olin, who was operated on at a sanitarium at Anamosa, August 18, for gall-stones, is reported to be doing well.——Dr. Henry G. Langworthy is building a private infirmary at Dubuque.

KENTUCKY

Personal.—Dr. Ernest B. Bradley, Lexington, city bacteriologist, has been appointed health officer of Fayette County, vice Dr. William J. Foley, deceased.——Dr. Porter Prather, Lexington, has been elected a representative of the fiscal court of Fayette county.——Dr. John B. House, Scottsville, is reported to be critically ill.

Will Label Adulterations.—As a result of the prosecutions of the local ice cream dealers charged with alleged violations of the pure food law a compromise has been effected between R. M. Allen, chief of the State Pure Food Department, and the attorneys for the ice cream dealers by which the dealers agree to label all of their products which contain gelatin, coloring matter, etc.

Convicted of Manslaughter.—In the case of the state against Dr. Fred D. Marcum, Louisa, charged with killing John Whittaker, the jury is said to have brought in a verdict of manslaughter and fixed the punishment at seven years' imprisonment in the penitentiary. The killing occurred on a train two years ago, when Dr. Marcum was marshal of Louisa, and was requested by the conductor to arrest Whittaker and three companions for alleged disorderly conduct. They resisted arrest and in the fight which followed, Whittaker was fatally shot. At the first trial the jury disagreed.

Asks Modification of Ruling.—The Shelby County Dairymen's Association has passed resolutions asking the State Board of Health to modify its recent ruling which requires a dairyman in whose barn cows affected with tuberculosis have been found to have it disinfected by an inspector selected by the State Board of Health and paid for by the dairymen at the rate of $10.00 per day for the time so employed. The dairymen claim that they are willing to do all the necessary disinfecting, but protest against the employment of the State Board of Health inspectors as an unnecessary expense. They contend that the work can be done just as thoroughly and at much less cost by the county boards of health. Their resolutions state that they are willing to have their barns disinfected according to the rules laid down by the State Board of Health, by and under the direction of the county board.

Water Supply and Typhoid.—An interesting report has been published by the superintendent of the Louisville Water Works which shows the percentage, for the past four years, of deaths from typhoid fever in the city. The filter plant of the Louisville Water Works was put in operation in August, 1909. The deaths from typhoid fever in 1906 were 137, for 1907, 168, for 1908, 109, and for 1909, 96, the average death rate for the four years being 128. For the year ended August 1, 1910, in which the filter was in operation the total number of deaths from typhoid fever was 73. It is estimated that the mains of the water works system were fairly well cleaned by November, 1909, and that only filtered water circulated through them. The total number of deaths from November 1, 1909, to August 1, 1910, was 38. Comparing these figures with previous years shows a reduction of 60 per cent. in the number of deaths from typhoid fever over the average of the preceding years.

Proposed New City Hospital.—The Hospital Commission of Louisville has submitted a report to the mayor in regard to their plans for the proposed new million-dollar hospital for the city. It recommends the present site of the hospital for the new building because of the central location and easy access, and condemns the present hospital as being far below a modern public institution. With an estimated population of 240,000 the commission recommends a building of not less than 350 beds. The present location comprises about 6 acres. The new building is to be provided with well equipped laboratories; of fire proof construction; roofs arranged for out-door air and sunlight for convalescents and the building to be a modification of the condensed and pavilion plans. A special department is to be provided for insane patients pending their commitment to asylums. Ample accommodations for the out-patient department with baths and lockers is planned. A mortuary chapel and pathologic building are also arranged. A separate power house and nurses' home will be provided for in the plans. Ample arrangements will be made for the housing and care of patients at present in the hospital before the building is demolished.

MARYLAND

Personal.—Dr. Lewis Mines Allen, associate professor of obstetrics in the University of Maryland, has resigned to engage in general practice in Winchester, Va.——Dr. Francis E. Harrington has been appointed secretary of the board of health of Cumberland.

Better Medical Practice Act Wanted.—The *Bulletin of the Medical and Chirurgical Faculty of Maryland* discusses the evils of the medical practice act in Maryland, and starts an agitation for "a new model practice law the central plank of which should be the single-board idea" . . . "After the brilliant series of successes achieved by the faculty during the last session of the legislature, there can be little doubt that the lawmakers who will assemble at Annapolis in 1912 will enact into law any essentially good medical practice act which has the support of a united medical profession."

Baltimore

The Floating Hospital for Sick Babies.—Dr. P. Martin Bruns has arranged to deliver a series of illustrated lectures on the need of a floating hospital for sick babies. His idea is to have one or two barges for this purpose towed by tugs, and estimates the initial expense at $20,000 and the annual expense at $20,000.

Personal.—Dr. James Bordley has returned from a thousand-mile automobile trip through the middle states.——Dr. John T. Powers has resigned from the staff of the Bayview Hospital.——Dr. G. Milton Linthicum, who has been ill with typhoid fever, has had a relapse and returned from Atlantic City to the Maryland General Hospital, September 5.

MASSACHUSETTS

New Ruling on Liquor Law.—In the District Court of Middleboro, August 20, Judge Allan gave a new interpretation of the liquor law of the state, when he decided that a Middleboro druggist who sold liquor on a prescription from a Bridgewater physician had violated the law, and that the Bridgewater physician could not be held to be practicing in Middleboro unless he had an office in the latter town.

Personal.—Dr. Charles H. Fessenden, Newton Center, has been elected director for the New England Division of the North American Esperanto Association.——Dr. Thomas F. Harrington, Boston, director of school hygiene, has returned from Europe.——Dr. John T. Cahill has been elected mayor of Lawrence.——Dr. G. S. Dodds of the biologic laboratory, Woods Hole, has been appointed a member of the faculty of the Medical Department of St. Louis University.——Dr. Francis H. Slack, director of the bacteriologic laboratory of the Boston Health Department, has resigned to accept an appointment as instructor of bacteriology of the Kansas State College, Manhattan.——Dr. Winfred O. Wilder has been appointed medical inspector of schools of Pittsfield.

MICHIGAN

Personal.—Dr. Herbert W. Yemans, Detroit, has been elected vice president of the North American Esperanto Association.——Dr. R. Grace Hendrick, Jackson, is going to Europe.

Work of County Antituberculosis Society.—The Houghton County Antituberculosis Society, which is making a request for funds for the furtherance of its work, states that the visiting nurse employed now has 82 patients under her care. Of these 25 are sleeping in the open air under the advice and direction of the society. Since the establishment of the service in February, 20 patients have died, 5 families have been moved to more sanitary homes, and 12 families are receiving daily from one to two quarts of milk provided by the society or by the Associated Charities of Calumet.

NEW JERSEY

Personal.—Dr. and Mrs. Walter Reynolds, Atlantic City, sailed for Europe September 10.——Dr. M. Jones Luffbary, Glassboro is reported to be seriously ill with tuberculosis.——Dr. M. A. Davis, Vineland, was operated on in Cooper Hospital, Camden, September 9, for appendicitis.

Money for New Children's Seashore Home.—Mr. Max Bamberger, Philadelphia, who died at Kissengen, Germany, August 5, left a bequest of $10,000, "to erect and maintain at Atlantic City, or at some point in the vicinity thereof, a home similar to the Children's Seashore Home, for the accommodation and treatment of invalid Jewish women and children, to be known as the Max and Sarah Bamberger Seashore

Home." It is the desire of the testator that children of Philadelphia be given the preference.

NEW YORK

Personal.—Dr. E. S. McClellan of Saranac Lake, president of the local Board of Health, was struck by a train and severely injured. There is slight hope of his recovery.——Dr. John H. Martin has been elected president and Dr. John C. S. Lappeus, secretary of the newly organized Mutual Protective Association of Doctors of the City of Binghamton.

New Tuberculosis Hospitals.—An institution for the treatment of tuberculosis has been completed and was to be opened in East Bloomfield, Ontario county, September 15. This sanitarium was built at a cost of $15,000.——The Board of Supervisors of Canandaigua on September 3 voted $3,000 for the finishing and equipment of the new tuberculosis hospital, and $1,200 for maintenance of the present institution for October, November and December.

New York City

Personal.—Dr. Mariano Scimeca has recovered his son who was kidnaped June 21.—Dr. Aaron B. Cohen, who severed his connection with the Eastern District Hospital, Brooklyn, September 1, was presented with a silver loving-cup and a set of surgical instruments at a dinner given in his honor August 31.

Clinic for Italian Consumptives.—The Board of Health maintains a clinic for Italian consumptives at 339 East 109th Street. Although this clinic has been in existence for three years, the Italian public has not been made aware of the fact to any extent, and a request has been made that the existence of this institution should be more widely published.

Plan for Better Health Work.—Dr. Lederle has asked the Board of Estimate and Apportionment for a sum which is $1,328,855 in excess of the allowance for this year. This request has brought to light the fact that there are in this city fewer inspectors than there were ten years ago and that there exist three times the number of contagious diseases. The largest increase asked for is $486,056, in the division of hospitals, while the division of child hygiene has asked for an increase of $320,545. This increase is asked so that every school in the city, including kindergartens, parochial schools, industrial schools and the school of correction may all be brought under the supervision of the health board. It is also planned to open winter headquarters corresponding to the recreation piers and summer vacation schools, where mothers will be taught the year round to care for their babies.

Buffalo

Memorial to Sanitarian.—It is proposed to name the new hospital for contagious diseases after the late Dr. Ernest Wende, as a memorial of his services as a sanitarian and health officer.

Addition to Medical Building.—A new addition to the medical building of the University of Buffalo Medical Department is being constructed and will cost, when completed, about $20,000. The first floor of this addition will be occupied by the chemical laboratory and the second floor will be given over to rooms for research. Larger quarters in the old building will also be provided for the department of pathology.

OHIO

New Location for College.—Following the adoption of a resolution of the new Cincinnati Hospital Commission, declaring its intention of appropriating the property between Eden Avenue and Vine Street, it was announced September 1, that the commission, after acquiring the property, would donate a hilltop site for the new buildings for the Ohio-Miami Medical School.

Personal.—Dr. Martin H. Fischer has been appointed professor of physiology, Dr. H. Knower of Johns Hopkins Medical School, professor of practical anatomy, and Dr. Julius H. Eichberg professor of pharmacology in the Medical Department of the University of Cincinnati.——Dr. James E. Ter[illegible], Hamilton, has returned after two months in St. Ignace, Mich., greatly improved in health.

Addition to College.—The Starling-Ohio Medical College is erecting an addition to the college building to be used for laboratories at a cost of about $10,000. Mr. Roy Graham Hoskins, Ph.D., formerly teaching fellow in physiology at Harvard Medical School, has been elected as professor of physiology and will devote all of his time to teaching. He will be assisted by Dr. Clayton C. McPeck.

PENNSYLVANIA

Personal.—Dr. John W. Luther, chief surgeon of the Palmerton Hospital, Mauch Chunk, was operated on in the University Hospital for appendicitis, September 8.——Dr. and Mrs. Wm. J. Hickson, Pittsburg, are going to Europe.——Dr. Allan W. Urmson, New Castle, has been appointed squadron surgeon with the rank of captain in the Pennsylvania National Guard.——Dr. Francis N. Baker, of Media, sailed September 3 for an extended trip through Europe.

Philadelphia

Another Public Bath House.—A permit has been granted for the erection of a public bath house for the city of Philadelphia at the corner of Montrose and Darien Streets. The building will measure 34x95 feet and will cost $15,000.

Soothing Syrup Maker Held.—Mrs. M. M. Harvey, maker of "Mother's Comfort," for whom a warrant was sworn out several weeks ago, was finally arrested and given a hearing before Magistrate Beaton on September 6. She was held in $500 bail for court.

Vaccination Rule Changed.—Under revision of the compulsory vaccination law, children who have been vaccinated within five years may be admitted to the public schools. Heretofore a certificate of vaccination was required every three years. This change was made after a careful investigation and on an authoritative statement that the period of five years was sufficient.

Personal.—Dr. Charles F. Judson sailed for Europe September 10.——Dr. H. G. Wetherill, Denver, who sailed for Europe September 10 to attend the Gynecologic Congress, in St. Petersburg, was given a dinner at the University Club, September 6, by Dr. Montgomery.——Dr. Sidney Stephenson, of England, who is to make an address before the American Academy of Ophthalmology and Otolaryngology in Cincinnati, has been a guest of Dr. Wendell Reber.

Facts Brought Out by Milk Inquiry.—At the milk inquiry held in the mayor's office on September 3, Dr. Neff showed that 89.2 per cent. of the milk coming to Philadelphia is over 55 degrees on the platform and 98.2 per cent. is over 50 degrees. Mr. Boyd of the Pennsylvania Railroad reported that refrigerator cars and the refrigeration of the milk in transit would cost a mill a quart, or less. Farmers testified that refrigerating milk had saved its cost for them by preventing milk from souring.

Health Report.—There has been an increase of 77 in the number of cases of typhoid fever reported to the health bureau in the seven days ending September 10. Ten deaths were reported as compared with 4 for the preceding week. These cases are not limited to the city proper as 29 cases have been reported from the York Road, Main Line and Lansdowne suburbs. There is a decrease in the number of cases of whooping cough, 16 being reported this week as compared with 27 last. There were also 11 cases of infantile paralysis reported, an increase of 4.

New Playground for City's Poor.—Plans for the transformation of Starr Garden Park into a model recreation center have been made. A building will be erected 44x141 feet. This will contain shower baths for both sexes, gymnasium, club, class, reading and game rooms and also administrative and teachers' quarters. The building will be of colonial architecture, of Flemish bond brick with limestone trimmings and the floors will be of cement and the building fireproof throughout. The structure will be erected on a plot of ground 400 feet long, at a cost of $40,000. Improvements to the grounds, including the establishment of track, a wading pool, tennis courts and every facility for play and recreation will cost $15,000.

Arrests in Pure Food Crusade.—Eleven ice cream manufacturers were arrested and arraigned before Magistrate Beaton, September 9. They were charged with adulterating their products and ten of the eleven pleaded guilty and paid fines of $25 and costs each. Samples of their products examined by Professor LaWall, chemist for the department, and Dr. Randall Rosenberger, of Jefferson Hospital, were found to contain amyl acetate, ethyl acetate, butryic acid and furniture glue. The last was used instead of gelatin and on analysis was found to contain sulphurous acid or sulphur dioxid, and a bacteriologic examination showed each cubic centimeter of the glue contained 350,000 colonies of bacteria.——On September 9, Judge McPherson granted an order in the United States District Court directing the destruction of 822 cans of tomatoes, 9 barrels of catsup and 114 packages of ice cream cones recently seized by federal pure food authorities.

GENERAL NEWS

American Physicians in Mexico to Meet.—The International Medical Association of Mexico, an organization of American physicians residing and practicing in the republic, will be held in Juarez or El Paso the first week in November, under the presidency of Dr. C. E. Husk, Santa Barbara, Chihuahua.

Health Association Election.—At the thirty-eighth annual meeting of the American Public Health Association, held in Milwaukee, September 6 to 9, the following officers were elected: President, Dr. Robert M. Simpson, Winnipeg, Man.; vice-presidents, Drs. Fernando Lopez, Mexico City, Mexico; John Anderson, Washington, D. C., and Gerhard A. Bading, Milwaukee; secretary, Dr. William C. Woodward, Washington, D. C., and treasurer, T. H. Wine, New Haven, Conn.

Missouri Valley Physicians Elect.—At the annual meeting of the Missouri Valley Medical Association held in Council Bluffs, Iowa, September 1 and 2, Dr. Donald Macrae, Council Bluffs, was elected president; Dr. John M. Bell, St. Joseph, Mo., first vice-president; Dr. John M. Banister, Omaha, second vice-president; and Drs. Charles Wood Fassett, St. Joseph, Mo., and Thomas B. Lacey, Council Bluffs, were reelected secretary and treasurer respectively. The next semi-annual meeting will be held in St. Joseph, Mo., March 23.

The Cumberland Valley Meeting.—The eighth annual meeting of the Cumberland Valley Medical Association was held at Blue Mountain House, September 1. The following officers were elected: President, Dr. John B. McCreary, Shippensburg, Pa.; vice-president for Washington county, Md., Dr. C. J. Wingard, Funkstown; for Franklin county, Pa., Dr. John C. Gilland, Greencastle; for Cumberland county, Pa., Dr. Harry A. Spangler, Carlisle; secretary, Dr. John J. Coffman, Scotland, Pa. (reelected); assistant secretaries, Drs. John R. Laughlin, Hagerstown, Md., E. Roberts Plank, Carlisle, Pa., and Henry C. Devilbiss, Chambersburg, Pa., and treasurer, Dr. John J. Koser, Shippensburg, Pa.

Health of the Canal Zone.—The report of the Department of Sanitation of the Isthmian Canal Commission for July shows a death rate of 11.80 per 1,000 per annum, which is a little larger than that of July, 1909, but much smaller than that of the previous four years. There were 12 deaths of white employees, an annual rate per 1,000 of 10.37, while of the colored employees, 39 died, equivalent to an annual mortality of 12.32 per 1,000. Malaria caused 11 deaths; violence, 11; lobar pneumonia, 8; tuberculosis, 5; dysentery, 3; typhoid fever and hemoglobinuric fever, each 1, and other diseases, 11. No case of yellow fever, smallpox, or plague was brought to or originated on the isthmus during the month. As prophylactics 43,159 gallons of crude oil, 9,890 gallons of larvacide, 11.25 pounds of arsenic, 32 pounds of pyrethrum, 541 pounds of sulphate of copper, and 216 pounds of phenol were expended by the department during July.

LONDON LETTER

(From Our Regular Correspondent)

London, Sept. 3, 1910.

Irish Vital Statistics

The official figures for 1909 which have just been issued, show that the population of Ireland is still decreasing, the loss by emigration more than wiping out the excess of births over deaths. In 1908 there was a slight gain of population (1853), the first for more than half a century. In 1909 the figures were as follows: Births, 102,759; deaths, 74,973; emigration, 28,676; decrease of population, 890. It is satisfactory that the deaths from tuberculosis continue to decrease; they numbered 10,594, which are 699 less than in 1908, in which year there was a decrease of 386. This result is attributed to the work of the Women's National Health Association, which has been described in previous letters.

Killed by Tattooing

An inquest has been held on a soldier, aged 21, who died from tuberculous meningitis, the result of tattooing on the right arm, which was followed by a tuberculous scar. The medical evidence was to the effect that tuberculosis might have been inoculated in consequence of the tattooist using a needle with which he had previously tattooed a person suffering from the disease, without proper disinfection of the needle, or that the tattooist might have been consumptive and put the needle in his mouth during the operation. Such a result from tattooing must be extremely rare. A few cases have been observed in this country in which local tuberculosis in the form of lupus has followed tattooing.

Outbreak of Cerebrospinal Meningitis

An outbreak of cerebrospinal meningitis has occurred at certain villages in Leicestershire. In all, 35 cases have so far been observed in an area of 50 square miles, the patients being mostly children between the ages of 2 and 11 years; 4 deaths are reported. As a precautionary measure, the schools have been closed. Three years ago a similar outbreak occurred in the neighboring town of Nottingham.

The Value of Fish as a Food

At the annual meeting of the Sanitary Inspectors' Association held at the Fishmongers' Hall, the president, Sir James Crichton Browne, delivered an address on "Food and Fish Supply" in which he emphasized the value of fish as a food, especially for the poor. Away from our coast towns fish hitherto has been regarded too much as an accessory, and too little as a staple article of diet. Many artisans and people of the middle class might with economic advantage raise their expenditure on fish. They fail to realize the comparative food value of the cheaper, or as they are unfortunately called, the coarser kinds of fish. From a physiologic standpoint fish is the next best thing to meat: 1½ pounds of cod are equal in food value to 1 pound of beef and cost not half the former. If a general call for fish would arise a vast development of the fishing industry would result and good digestible food would be made accessible to the poorest. This might prove a useful auxiliary in the campaign against tuberculosis. We have, as it were, lived on the wild life of the ocean, as our forefathers did on the wild life of the forest. But on the sea, as on the land, we must exchange the chase in a large measure for the ranch and the fold. We should have marine stock farms bordering all our coasts and be able to pride ourselves on our prize turbot and pedigreed cod.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Sept. 2, 1910.

The Campaign Against Alcoholism in the Army

Alcoholism and criminality due thereto, which are in general increasing among the civil population, are, on the contrary, diminishing in most of the European armies. This is notably so in France, where a series of official measures promulgated from 1892 to 1909 tends toward the prophylaxis of alcoholism in the army. All official distribution of brandy or rum has been suppressed in time of peace, and on campaign the distribution of a ration of 0.0625 liter of brandy per man per day is permitted only exceptionally and under rare circumstances, prescribed by the regulation. It is, moreover, absolutely forbidden to sell any brandy or alcoholic distilled liquor in the canteens or on the fields of maneuver. Fermented drinks, however, are still in general use. The moderate use of wine, beer or cider, according to the region, is even recommended and regulated as a hygienic measure and a national custom by the ministerial circulars. Although, thanks to these measures, the French soldier never indulges in alcohol in barracks, unfortunately alcohol still continues to permeate the army. The cause of the evil is outside of the barracks, in those "blind pigs," so numerous near the barracks and camps, where the soldier obtains alcoholic drinks, and contracts syphilis and gonorrhea. For a few years, official instruction in regard to the distribution of alcohol has been given to commissioned and non commissioned officers and soldiers through lectures, pictures, etc., posted in the messes and dining-rooms. But this is not always sufficient to protect the soldier against the attraction of the saloon. The Red Cross, therefore, has begun to organize "soldiers' firesides," or clubhouses—places where the soldier is, so to speak, at home, where he may deposit his personal belongings, find paper and ink for correspondence, books, games and no alcohol. The military administration has authorized such establishments on condition that they shall be free from religious and political influences.

The Medical Studies of Rabelais

The important place held by the medical sciences in the work of Rabelais is well known. "Gargantua and Pantagruel" abounds in anatomic descriptions and dissertations on pathologic and therapeutic matters. What was the source of the medical knowledge of the great sixteenth-century writer? In a recent thesis for the *doctorat es lettres* devoted to the work of Rabelais and defended before the Paris college of letters, M. Jean Plattard devoted a whole chapter to the medical studies of Rabelais and to the place of the medical sciences in his work. M. Flattard showed that the medical bent of Rabelais was due to the fact that at the beginning of the sixteenth century theoretical medicine was entirely founded on treatises of the Greeks and Latins. Whoever knew Greek well could give an authoritative opinion on the interpretation of Galen and Hippocrates. The most technical works were studied by the philologists or "humanists," who had a better knowledge of ancient languages than practicing physicians had. Medicine was founded on "philosophy," in the large sense assigned to the word at that time. Rabelais came to study medicine through the example of his masters and through the natural operation of his humanistic curiosity. He brought to it an enthusiasm of his own and the extraordinary learning thus acquired was put to use in his writings.

New Press for Books for the Blind

M. E. Vaughan, director of the Hospice national des Quinze-Vingts, a hospital for the blind, has invented a little press which permits a 10-year-old child to print in the Braille alphabet without even knowing that alphabet. The operator touches ordinary characters; the machine automatically prints Braille characters. The number of books for the blind and especially for blind children is far too small; therefore this press is capable of rendering valuable service to libraries for the blind.

Employment of Dogs to Seek the Wounded

Lately, during the course of instruction of the sanitary service at Paris, some interesting experiments were made in regard to the finding of the wounded by dogs. The wounded were hidden among high bushes, behind bundles of hay, etc. Dogs brought to the field by the Société national du chien sanitaire found the wounded with surprising certainty and rapidity. The dogs worked even better and more quickly by night than by day. When a well-trained dog has gone over a field, even a difficult one, by night or by day, he leaves no wounded person overlooked, which is a point of the greatest importance.

The Renovation of Old Corks

About ten years ago the council of hygiene of the department of the Seine attempted to forbid all employment of old corks, even when cleaned, for bottles or containers of liquids to be taken internally. There exists, however, a trade in the renovation of corks, and the protests of the merchants affected compelled the council of hygiene to modify the order so as merely to impose on the renovators certain conditions, such as the boiling of the corks for a quarter of an hour in 2 per cent. sodium carbonate, followed by immersion for some hours in 1 per cent. sulphuric acid. These precautions appeared, however, insufficient and on the report of M. Guignard, director of the superior school of pharmacy at Paris, and member of the Académie de Médecine, the following rules for the sale of renovated corks have just been adopted: Corks gathered from the streets, from the Seine, from gutters, etc., must not be sold until they have been submitted to the action of live steam under a pressure of at least two atmospheres, the time of sterilization being not less than twenty minutes. Sterilized corks may be decolorized, provided the chemical used for whitening them shall be completely eliminated. Corks so treated may be put on sale only as renovated sterilized corks."

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Sept. 2, 1910.

Death of Professor Henoch

A few weeks after the celebration of his ninetieth birthday the senior of pediatrics, Professor Henoch of Dresden, died. Senile weakness which compelled him even on his birthday to limit the reception of delegates as much as possible was increased by the excitement inseparable from the celebration, and in a short time led to fatal results. Henoch was not only one of the founders of modern pediatrics but a distinguished clinician and physician, a remarkable teacher and a striking personality. His academic activity began as assistant to his uncle, the renowned neurologist, Professor Romberg of Berlin. At this time he published his first notable work "Clinical Results from the University Policlinic" (*Klinische Ergebnisse aus der Poliklinik der Universität*). As privatdocent (after 1850) he published the "Clinic of Abdominal Diseases" (*Die Klinik der Unterleibs-Krankheiten*) which in spite of the fact that it embraces three volumes has appeared in three editions. His most noted work is "Lectures on Children's Diseases" which has appeared in a large number of editions and has been translated into many languages. He resigned his direction of the Berlin Children's Clinic in 1893. It distressed him not a little that he could not succeed in getting his extraordinary professorship converted into a regular one, and this dissatisfaction was greatly increased by the fact that what was refused him was assured to his successor, Professor Heubner, on his nomination. There can be little doubt that the Israelitish faith of Henoch was a marked factor in causing the refusal of his request.

Death of Professor von Recklinghausen

On the same day as Henoch, namely, August 26, the distinguished professor of pathology of Strasburg, von Recklinghausen died at the age of 76. He was the earliest assistant of Rudolf Virchow in Berlin, was then appointed as regular professor at Königsberg and six months later went from there to Würzburg. From here he was transferred in 1872 to the newly founded university of Strasburg. The most important of his investigations are the discovery of the wandering connective tissue cells and the establishment of the functions of lymph vessels. Of his monographs his "Handbook of General Pathology, Circulation and Nutrition" is worthy of special mention.

The Cholera

As was to be expected the cholera has also reached us. August 26 a man and wife in our neighboring city, Spandau, sickened of cholera and the woman died the next day. The source of this infection has not yet been determined. Other cases have not yet occurred; the suspicion of cholera in several cases of vomiting and diarrhea was not sustained. August 27 the department of education in conjunction with representatives of the imperial and Prussian provincial authorities adopted further measures for the prevention of an invasion of cholera. In view of the increasing spread of cholera in Russia, the passengers coming by vessels and rafts from Russia have not only been inspected by physicians but their excretions have been bacteriologically examined for the presence of cholera. In this way it was possible to arrest three persons on the Vistula river who seemed perfectly healthy but nevertheless harbored cholera germs in their intestinal contents that might easily cause contamination of a stream by their excretions. These persons were immediately removed and placed under observation. For more careful supervision of commerce along this river as it emerges from Russia into German territory, the establishment of a supervising station at Thorn has been ordered in addition to those already established at Schillno, Schulitz and Einlage. The Russian raftsmen discharged at Thorn are returned by the railroad to Alexandrowo just over the border in Russia. Necessary measures have also been taken against the danger of an invasion of cholera from Italy or Austria. As was to be assumed, the cholera was imported to Italy from the Black Sea. In Russia up to August 19, about 115,000 were attacked, of whom 50,000 died. According to the statement of a Russian journal, thousands of localities are affected. As usual the people oppose the orders of the physicians and the authorities and recognize only brandy as the single remedy for cholera.

Personal

Professor Gaffky, director of the Berlin institute for infectious diseases, has been appointed a regular honorary professor. Professor Payr, of Greifswald, has declined the call to Zurich as successor to Krönlein. Professor Perthes, of Leipsic, has been appointed successor to Professor von Bruns, of Tübingen. Professor Schwartze, the distinguished otologist of Halle, died August 22, at the age of 72. He has been director of the ear clinic in that place since 1881. The most important of his numerous works are "Pathologic Anatomy of the Ear," in the unfinished "Handbook of Pathologic Anatomy" by Klebs, the "Text book of Surgical Diseases of the Ear," the fiftieth number of "Deutsche Chirurgie" and the "Handbook of Ear Diseases." For a long time he was editor of the *Archiv für Ohrenheilkunde*.

Disbursements for Wage-Earners' Insurance

In 1909 the German Empire, according to the recently published report, expended $12,500,000 (51,500,000 marks) for disability and old age insurance, $250,000 (1,000,000 marks) more than in the previous year.

Quackery in Prussia

According to a report published by the department of education, the number of quacks inscribed in the lists of the official physicians in the year 1908 was 7,549. The number has constantly risen in recent years. The proportion of quacks to the number of physicians and dentists in the same year was 36.29 per cent., while in the previous year it was 32.72. In spite of the care of the officials to enlighten the public and in spite of the judicial punishment of quacks for fraud and physical injury, even with fatal results, the activity of the quacks is scarcely diminished. For this reason the government is contemplating again the introduction into the Reichstag of a bill for a German law against quackery. Meanwhile it is being discussed by the upper house.

Nursing Premiums

Especially good results are reported from a district of Wurtemberg from the introduction of nursing premiums. In that district the infant mortality in the country is very remarkable; in one community in late years on the average about 30 per cent. of the children died in the first year of life. After a philanthropic society offered a daily premium of from 25 to 50 pfennigs (6 to 12 cents) for all needy mothers who nurse their children after the first six weeks, more than two-thirds of the children were nursed during the first 3 months, and only 3 died, while of the rest who were artificially fed during the same time, 26 died.

Instruction in Biology in the Higher Schools

As a result of repeated efforts by a committee appointed at the German Naturforscher annual meeting, biologic instruction was introduced a few years ago into the higher schools, gymnasia, etc. Especially exercises in natural science have been more and more introduced and have given good results. The Prussian minister of education has for that reason made an announcement in which he holds it very desirable to continue these exercises because great value must be attributed to practical methods of instruction for stimulating observation and independent thought as well as for a recognition of the peculiar importance and limited applicability of scientific methods of work. The instruction consists of laboratory exercises in chemistry, instruction in natural history, observation in the school garden, terrariums and aquariums, experiments in plant physiology and exercises in simple macroscopic and microscopic preparations. Schools which are unable to provide for such exercises from their own means are assured aid from the department.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, August 29, 1910.

Sporadic Cholera in Vienna

As pointed out in the last Vienna letter, the spread of cholera toward central Europe has been energetically combated. Only two cases have appeared in this city; one patient died, the other survived. Isolation and disinfection, promptly applied, proved efficient, and these two cases remain as yet the only ones reported. Wide publicity has been given to the fact that the disease has found its way into the heart of the empire. But the Board of Public Health thought it wisest to let the people know the actual conditions, so as to justify the very strict measures and restrictions of commerce which modern hygiene and prophylaxis require. In Hungary, too, sporadic cases have been reported, but here also, the authorities have succeeded so far in stamping out any extension of the infection.

University Students in Austria

Statistical data are now available about the students inscribed at the Austrian universities during the summer term, 1910. Altogether there are eight universities in this country, with a little less than 25,000 students, or an increase of 8 per cent. over the figures of 1909. Ninety-two per cent. were men, 8 per cent. women. The medical students numbered 4,098, an increase of 14 per cent. when compared with last year's figures; while nearly 11,000, or 47 per cent. of all, studied jurisprudence, the increase in the latter group being only 8 per cent. The medical course was taken up by only 16 per cent. of the total. This is explained by the necessity of producing a diploma of jurisprudence for appointment in the civil service. Two hundred and twenty-one women, constituting 5 per cent. of the total number of medical students, took up medicine. As the number of female students was altogether 1,950, this means that over 11 per cent. of all women studying at the universities want to become doctors of medicine. There is a decrease, both relative and absolute, of the number of female medical students, and an increase of male medical students. The reasons are as yet obscure, for the expectations and openings for female practitioners are rather more numerous and better than before. More puzzling still is the increase in numbers of men taking up medicine. In spite of the warnings to the graduates of colleges and gymnasiums, the admonitions of medical associations, the explanations published often in the dailies as to the hardships and difficulties of a general practitioner, the output of doctors is still increasing. In Vienna alone, last year, there were 1,813 students in hospitals, laboratories and clinics, while the remaining seven universities each had between 300 and 500 medical students to provide for. The teaching is uniform all over the empire as far as possible. Therefore, there is no distinction whatever made between diplomas gained at any of our seats of learning. On the contrary, students are encouraged to frequent as many universities as possible, preferably those of their own language. The age at entrance to university has been fixed at 18 years, but there were seventy-two persons younger than that, while there is no upper age limit. The final medical examinations, however, must be passed within seven years after the first examination to be regarded as valid. The oldest medical students were a man of 64, a retired judge, and a man of 60, who thus prepares himself for his arduous career as a missionary.

The attempt has been made to obtain reliable figures showing how many students were non-consumers of alcohol, and also as regards the general health. In Vienna it was found that not only pulmonary troubles, but also genital diseases, especially gonorrhea, were not infrequent. Exact figures will be forthcoming shortly.

Discontinuation of Weak Diphtheria Antitoxin

The results obtained in treatment of diphtheria with antitoxin are still not recognized uniformly, but it is the opinion of the majority of doctors that only strong doses are really useful. Therefore, the ministry of the interior has ordered the serotherapeutic institute in Vienna (the only authorized serum factory here) to discontinue the production of serum containing less than 1,000 units. This has been received with great satisfaction by practitioners.

The Health of Austria

Every three months a report is issued by the board of health on the health conditions in the empire. Thus for the spring of 1910, it appears that we have had exceptionally favorable conditions. With the exception of diphtheria (with 11 per cent. mortality) and typhoid (7 per cent. mortality) all infectious diseases have diminished in severity and frequency. Especially measles, cerebrospinal meningitis, scarlet fever and poliomyelitis have gone down; smallpox was reported only in ten cases altogether. Anthrax (eleven cases with three deaths) appeared sporadically. In every instance the infection was traced to occupation with hides and hair. Altogether there is constant decline in morbidity since the spring of 1909, in spite of the very changeable weather prevailing in Central Europe.

Miscellany

Parasitic Culture.—That the general culture ideal that certain courses of physical or mental discipline will give a fund of physical or mental energy potentially available for all the demands of subsequent life, may be a mistaken one, is a proposition advanced by George E. Dawson, Ph.D. (*Pop. Sc. Monthly*, September, 1910). The term "general culture" as applied to the organic life is probably a misnomer. The culture we get from gymnastic training and from the athletic field is really special in character and is applicable mainly or solely to the types of physical activity that constitute the training, and unless organs continue to perform the functions for which they were trained they become useless and a detriment to life. They become parasitic. The same proposition holds true with regard to the brain and the intellect and applies to the unused organs of the mind that have been trained through stunts in mathematics and the classical languages, though the evidence may seem less tangible and compulsive. Functionless physical structures derived through artificial exercises of any kind thus fall under the general biologic law of atrophy with all its attendant consequences of waste and disease. The only really economical form of physical culture, biologically speaking, is the culture derived through performing activities associated with the natural, fundamental and long-established functions of life. These are, in general, the spontaneous play-activities of childhood and the productive work-activities of manhood, each performed under normal conditions of stimulus and environment. Dawson quotes Payot, who says that the qualities of vital resistance are in no way dependent on muscular strength. A man may be an athlete in a circus and yet have very poor health, while a man who lives in his study may have an iron constitution with mediocre muscular power. Applying this to mental culture, Dawson lays down the proposition that the intellectual culture derived through standardized branches of education, as mathematics and Latin, for example, instead of having a general mental economy for those who study them, in reality becomes parasitic in the nervous and mental life, and thus a cause of wasted energy and possibly of disease. This has been proved by the test of exact experiments by psychologists, and neurology supplies additional indirect evidence. The study of the development of the cortical neurones and association fibers makes it probable that every mental process modifies these nervous elements. Thus the study of mathematics means, on the neurologic side, the building up of neurons that constitute a mathematical nervous mechanism, and the study of Latin or Greek means the building up of nervous structures specifically adapted for those languages, and those nervous organs when unused become parasitic on the nervous vitality, just as the unused muscles of the athlete become parasitic on the general organic vitality. Dawson therefore summarizes his conclusions as follows: 1. It is a law of the biologic world that unused organs become parasitic and tend toward disease. 2. Physical culture which leads to the hypertrophy of special muscles entails a drain on general vitality. 3. Experimental psychology shows that culture of particular intellectual organs and functions cannot be transferred to other organs and functions, except where there are elements in common. The histology and pathology of the nervous system confirm these conclusions. 4. Intellectual culture, not being transferable, must become parasitic and a cause of mental disorganization when it fails of application in the form or channel in which it is acquired. Illustrations are found in the overrefinements of culture in academic communities, in the nervous instability frequently encountered among educated men and women, and in the religious and social vagaries and perversions that crop out in the older and more highly cultivated centers of population. 5. This artificial culture is likely to develop a cultured proletariat, unbalanced and inefficient as individuals, and a source of danger in our civilization.

Pharmacologic Fetishisms; Another Challenge to the Iconoclast. The *Journal-Record of Medicine* (Atlanta) protests in its August number as follows: Barton (The Journal A. M. A., July 23, 1910) makes an attack on a number of well-known drugs, such as calomel, aconite, ammonium chlorid, sweet spirits of niter, veratrum viride, etc. The matter seems to have been considered exclusively from the standpoint of animal experimentation or at least one would judge so from the [illegible] views expressed. So at variance are Barton's [illegible] with those of thousands of practitioners who are daily using these remedies that a protest hardly seems necessary. Whether calomel acts as a cholagogue or as an intestinal antiseptic matters not at all to the patient with intestinal [illegible] or the so-called biliousness. Incontestable [illegible] have proved calomel to be the best remedy to make the patient well under such circumstances, so why [illegible] [illegible] the physician who already has few enough drugs with positive effects that may be relied on? Have we not all seen the diuretic effect of sweet spirits of niter? Are there [illegible] millions of animals to prove it [illegible] action in human beings who are being treated with it? Digitalis is maligned as being a worthless cardiac stimulant, but not a word said of its value as a renal stimulant; given hypodermically in 1 to 2 grain doses, the writer knows of no more dependable drug when suppression of the urine is feared—especially if it be given early, for instance, twelve hours before an operation where suppression is a danger. It is not to fight the individual battles of these separate drugs that this editorial is written, but rather is it intended to condemn the indiscriminate nihilism underlying the above article. For the sake of hyper-scientific accuracy, Barton marshals before us an array of petty points of weakness of our most valuable drugs, and thus he weakens our faith in our best and most reliable friends and makes us all the easier prey to the alleged virtues of many worthless proprietary preparations so scientifically (?) heralded before us. If we are not to use these drugs which are condemned, in part if not totally, then what should we use in their stead? Can Barton provide for us more reliable drugs than those he declares so worthless?

The Etiology and Biology of Tumors. The present communication is the last of a series of ten articles dealing with the etiology and biology of tumors of different types. In it E. Saul (*Centralbl. f. Bakteriol., Parasitenk. u. Infektionskr.*, Orig., 1909, lii, 235) gives a summary of the principal results obtained from a long series of experiments and observations. He finds that in fibromas, cystomas, carcinomas and sarcomas, a special class of parasitic organisms exist. These same organisms may occur extracellularly, either as ameboid or encysted forms, or intracellularly, when they appear as granules or vacuoles. The ameboid and encysted forms are destroyed by fixation and imbedding. Protozoa, says Saul, which give rise to chronic infections, may, under the influence of the living organism, acquire such developmental forms that it is impossible to demonstrate them within the tissues. There are parasitic protozoa, which are infectious in the ameboid stage only, which infiltrate embryonic cells only and which appear as granules or vacuoles in the cells thus infiltrated. By inoculating the ordinary experimental animals with a certain type of cancer parasite, Saul asserts that it is possible to bring about in these animals acute fatal intoxication, granulation tumors, interstitial lymphatic and connective-tissue proliferation in the kidney and the lung (which present the typical picture of chronic interstitial nephritis and fibrous peribronchitis) and cachexia which takes the form of extreme emaciation, ending with death. As in the case of tuberculosis, carcinoma shows a tendency to follow certain chosen paths. Regarding metastases, it is believed that carcinoma fluid is avirulent in the blood-stream, while sarcoma fluid is avirulent in the lymph stream. From subcutaneous implantation of parts of *Cysticercus fascicularis* either acute fatal intoxication resulted in the experimental animals or neoplasms developed, which were on the boundary zone of fibroma, sarcoma and granulation tumors.

The Rôle of Streptococci in Scarlet-Fever Infections.—F. Schleissner finds (*Folia Serologica*, 1909, iii, 221) that the blood of scarlet fever patients always contains antibodies for streptococci. By the method of complement fixation he attempted to determine whatever etiologic significance streptococci possess in scarlet-fever infections. Various strains of streptococci from the blood of scarlet fever patients were cultivated and emulsions of these strains were used, according to the method of Bordet-Gengou, with a series of scarlet fever cases for the fixation of the complement. Two sets of controls were also employed: on the one hand, serums from various classes of diseases which were not in any way connected with streptococcus infection, and on the other hand streptococcus strains from erysipelas, sepsis puerperalis and panophthalmia. In the majority of cases of scarlet fever (2 to 3 weeks), the serum gave a positive reaction with scarlet fever streptococcus cultures. With streptococci from erysipelas the reaction was always negative, while with other streptococci there was usually a retarding of hemolysis. From his experiments Schleissner concludes that the constant occurrence of antibodies in the blood of scarlet fever patients indicates that streptococci stand in some biological relationship to the disease processes in scarlet fever. This relationship, however, is, at present so obscure that it furnishes no certain proof that streptococci have a definite etiologic significance in the disease

Deaths

James Nevins Hyde, M.D. University of Pennsylvania, Philadelphia, 1869; a member of the American Medical Association; twice president of the Chicago Dermatological Association; second president of the American Dermatological Association; and an honorary, active or corresponding member of the leading dermatologic associations of Europe; assistant surgeon in the Navy for two years during the Civil War and for three years thereafter; for thirty one years professor of skin, venereal and genito-urinary diseases in Rush Medical College and secretary of the council administration and faculty of the institution; professorial lecturer on dermatology at the University of Chicago since 1902; a notable contributor to the literature of dermatology; and the author of a standard text-book which is already in its eighth edition; dermatologist to the Presbyterian, Augustana and Michael Reese hospitals, and the Chicago Orphan Asylum; a member of the Mayflower Society, the Society of Colonial Wars, and the Sons of the American Revolution; one of the most prominent specialists on skin and venereal diseases of America; died suddenly September 6, at his summer home, Prout's Neck, Maine, aged 70.

Dr. Hyde was one of the best known of American medical men. Not only was he highly regarded by his coworkers in his chosen field of professional work on account of that work, but because of his interest in medical affairs and the medical profession generally. All who knew him loved him for his liberality and for his kindness toward all who approached him, young men especially.

JAMES NEVINS HYDE, 1840 1910

William Bailey Sanford, M.D. University of Nashville, Tenn., 1880; of Memphis; a member of the Tennessee State Medical Association; for ten years health officer of Alcorn county, Miss.; surgeon to the Memphis and Charleston Railroad; vice-president of the Mississippi Medical Association, and surgeon and chief of the North Mississippi Medical and Surgical Infirmary; professor of medical economics and life insurance in the College of Physicians and Surgeons, Memphis; died in Colorado Springs, September 2, from erysipelas, aged 59.

David D. Bramble, M.D. Medical College of Ohio, Cincinnati, 1862; a member of the Ohio State Medical Association and Cincinnati Academy of Medicine; for many years professor of surgery and dean of the Cincinnati College of Medicine and Surgery; health officer of the city in 1883 and 1884; died at his home in Avondale, September 2, from nephritis, aged 70.

Frank Fleury, (years of practice, Ill., 1887); of Springfield; from 1881 to 1885 secretary of the State Board of Pharmacy; secretary of the Illinois State Pharmaceutical Association in 1880; died at the home of his daughter in Springfield, August 29, from uremia, aged 68.

Emily Blackwell, M.D. Western Reserve University, Cleveland, 1854; of Montclair, N. J.; who with her sister, the late Dr. Elizabeth Blackwell, founded the New York Infirmary for Women and Children, the first hospital for women in America; died at her summer home in York Cliffs, Maine, September 8, aged 84.

Otto Clarence Baird, M.D. University of Iowa, Iowa City, 1910; of Lockridge, Iowa; while attempting to board a moving train at that place, August 19, was thrown under the wheels and had both legs cut off just above the ankle, and died in the Burlington (Iowa) Hospital, August 21, aged 21.

Parley Howard Eaton, M.D. Howard University, Washington, D. C., 1881; chief of the Division of Issue, Treasury Department, Washington, D. C.; died in Georgetown University Hospital, Washington, February 12, thirty six hours after an operation for ulcer of the stomach, aged 67.

Joseph Theodore Green, M.D. Kentucky School of Medicine, Louisville, 1893; a member of the American Medical Association; local pension examining surgeon and surgeon of the Illinois Central Railway; died in St. Anthony's Hospital, Louisville, August 30, from pneumonia, aged 43.

Alfred Hamilton Iddings, M.D. Bellevue Medical College, 1866; for several terms health officer of Dayton, Ohio, and for two terms a member of the board of education; local United States pension examiner; died at his home August 20, from chronic interstitial nephritis, aged 70.

Harry Vroom Day, M.D. New York University, New York City, 1877; a member of the American Medical Association; president of the Borough council of Butler, N. J., and vice-president of the First National Bank; died at his home in Butler, August 30, from cancer, aged 58.

George F. Perry, M.D. Washington University, St. Louis, 1875; of Ochiltree; a member of the State Medical Association of Texas; in 1890, representative in the state legislature; died in St. Francis Hospital, Colorado Springs, August 30, from uremia, aged 63.

Ernest Douglas Powell, M. D. Vanderbilt University, Nashville, 1900; one of the inspectors of public schools of Memphis, Tenn.; died in his office from the effects of a gunshot wound of the head believed to have been self-inflicted while despondent, aged 36.

Edmund Livingstone Moodie, M.D. Baltimore Medical College, 1902; of Chatham, Ohio; a member of the American Medical Association; died in Harper Hospital, Detroit, July 8, from sepsis, following an operation for hemorrhoids, aged 36.

William J. W. Cornwell, M. D. Medical College of the State of South Carolina, Charleston, 1866; a member of the South Carolina Medical Association, and a Confederate veteran; died at his home in Cornwell, July 16, from gastritis, aged 69.

T. Frank Keys, M.D. University of Pennsylvania, Philadelphia, 1883; died at his home in Chicago, September 6, from inanition following operations necessitated by pyloric stenosis of long standing, aged 50.

Chancellor Yager, M.D. Kentucky School of Medicine, 1877; a member of the Kentucky State Medical Association; died at his home in Shelbyville, September 4, from typhoid fever, aged 53.

George Barstow Richmond, M.D. New York University, New York City, 1879; formerly of Salinas, Cal.; died at his home in Westboro, Mass., July 31, from pulmonary hemorrhage, aged 52

Harold Lee Barnum, M.D. Hahnemann Medical College of Philadelphia, 1902; city physician of Sedalia, Mo., for two years; died at his home, August 30, from cerebral hemorrhage, aged 35.

Umberto Buffo, M.D. University of Turin, Italy, 1904; a member of the American Medical Association; of McAlester, Okla.; died in New York City, August 31, from nephritis, aged 31.

Tobie Lucien Lougarre, M.D. Tulane University, New Orleans, 1876; a member of the Louisiana State Medical Society; died at his home in Moreauville, August 29, aged 72.

Charles T. Buckholtz, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874; died at his home near Murphysboro, Ill., August 30, from angina pectoris, aged 69.

Harry Hunter Fox, M.D. Southern Homeopathic Medical College, Baltimore, 1904; died at his home in Baltimore, August 29, from nervous breakdown, aged 30.

John Allan Batton, M.D. Jefferson Medical College, 1882; a member of the American Medical Association; died at his home in Uniontown, Pa., March 14, aged 53.

Samuel C. Johnson, M.D. Jefferson Medical College, 1879; of Sharon, Pa., died from angina pectoris while sitting at the bedside of a patient, August 28, aged 57.

John Wilson, M.R.C.S. England, 1858; of Detroit; died at the home of his son in St. Joseph, Mich., August 19, from myocarditis, aged 71.

Harrison McFadden, M.D. Medical College of Ohio, Cincinnati, 1862; died at his home in Magnetic Springs, Ohio, August 31, aged 70.

Jane Howarth Bowker, M.D. Tufts Medical College, Boston, 1896; died at her home in Cambridge, Mass., August 5, from paralysis, aged 69.

Marshall Job Brown, M.D. University of Maryland, Baltimore, 1907; died in Baltimore, September 4, from acute gastritis, aged 27.

Marion D. Ditzler, M.D. Cincinnati College of Medicine and Surgery, 1876; died at his home in Lewistown, Ohio, August 31, aged 56.

Jennie E. Barrows, M.D. Eclectic Medical College of the city of New York, 1872; died at her home in Berkeley, Cal., August 27.

Henry B Arnold, M.D. Jefferson Medical College; died at his home in California, Pa., January 5, from senile debility, aged 83.

Melvin Rhorer, M.D. University of Louisville, 1871; died at his home in Lexington, September 5, from tuberculosis, aged 68.

James Monroe Carver, (license, Ind., 1897); died at his home in Winchester, March 16, from chronic nephritis, aged 55.

Marriages

H. A. Born, M.D., to Miss Elizabeth T. Blankner, at Baltimore, August 31.

Milo Goss Sloo, M.D., Topeka, Kan., to Miss Louise Fuerst of Chicago, August 27.

John R. Buser, M.D., Delavan, Minn., to Miss Alma Rosine Arnold of St. Louis, Mo., September 1.

Henry Neill Whitelaw, M.D., Oakesdale, Wash., to Miss Mary Macklin of Pasadena, Cal., September 7.

Samuel Stuart Hackwell, M.D., Blaney, Mich., to Miss Jean Beulah MacTaggart of Bad Axe, Mich., August 31.

Theodore Gawn Finley, M.D., Los Angeles, Cal., to Miss Bertha Madelaine Vilas of Berkeley, Cal., September 1.

Harry Pidock Knowles, M.D., South Haven, Kan., to Miss Eleanor Malinda Porter of Sterling, Kan., September 1.

John Walker Carter Jones, M.D., Newport News, Va., to Miss Charlotte Wilson Stephenson of Warm Springs, Va., August 31.

Charles Knickerbocker Winne, Jr., M.D., Albany, N. Y., to Miss Sarah Foster Merrall of Baltimore at New York City, September 1.

Japanese Medical Archives. The first number of the ninth volume of the archives published in the German language by the medical department of the Tokyo University maintains the high standard of the preceding volumes. It is a work of [illegible] pages, and contains also the total list of contents from the inception of the *Mitteilungen*. The leading article is on the pathologic anatomy of the nerves and muscles in beriberi, with fine illustrations and tabulation of the findings compared with those of fourteen other workers in this line at home and abroad.

Pharmacology

KEPHALOSE

A French Headache Remedy That Has Been Declared Misbranded

The following communication from Dr. J. R. Hurley, a district health officer at Iloilo, P. I., throws an interesting light on the "patent medicine" business in the Philippine Islands:

"I believe that you are keeping a record of the prosecutions and judgments obtained under the Food and Drugs act. I don't know whether you are interested in such matters in the Philippines or not, but I am reporting the following case for your information. The case was brought against the firm known as 'The Estrella del Norte' doing a general retail business, and which imports and distributes a French proprietary remedy known as 'Kephalose.' All sorts of impossible claims are advertised for this nostrum, including those for which acetanilid is recognized as being useful when intelligently prescribed by a physician. In fact it was the intention of the manufacturers and exploiters to introduce this nostrum in this country as a common household remedy.

"The nostrum was advertised as being harmless, and rules for dosage were contained in a circular which goes with each box, also setting forth the manifold ailments in which it is a 'sure cure.'

"Apparently to comply with the customs regulations, on a small yellow label on the box it states that each dose (one tablet) contains 2 grs. of acetanilid. Inasmuch as it was obviously to be sold broadcast to the native Filipinos, a small proportion of whom can read English at all, much less know what acetanilid is, and on account of the well-known toxic effects of acetanilid, unless prescribed intelligently and with discretion where it is indicated by a physician, it was decided to prosecute the distributing firm under two counts.

"To prove that the nostrum was misbranded, and that the company was selling dangerous drugs without a pharmacist's license, samples were bought in the open market, and, properly labeled, sent to the Bureau of Science, Manila, for analysis. The analysis showed Kephalose to be composed of the following:

Moisture	5.0
Antipyrin and caffein	75.9
Acetanilid	trace
Potassium bromid	3.8
Sodium carbonate	3.3
Sugar	12.0
	100.0

Colored with an anilin dye

"This fact was brought forward at the trial, together with such other evidence necessary to show that the nostrum contained a dangerous drug, and could not be considered as a household remedy, which proved that the nostrum was misbranded, and that the company was therein selling a dangerous drug, without a physician's prescription, and without a licensed druggist to put it up.

"The court found the Estrella del Norte guilty, and fined the company fifty pesos, an amount equal to twenty-five dollars, gold."

Comment.—Dr. Hurley's letter goes to show that the American government safeguards the health of the Filipinos more jealously than it does that of the native American. If the manufacturers of the thousand and one acetanilid- or antipyrin-containing nostrums sold to the laity in this country should be fined for selling a dangerous drug as a household remedy what a howl of protest would go up. Doubtless Dr. F. S. Boone of St. Louis, the Antikamnia people or the Proprietary Association of America would at once set to work collecting "statistics" to prove the innocuousness of antipyrin and acetanilid.

Association News

DATE OF NEXT SESSION

Suggestions Desired by Board of Trustees Concerning Los Angeles Session, 1911

The date of the next session of the American Medical Association, to be held in Los Angeles, California, is a matter of considerable importance. The great distance which a majority of those who attend will be obliged to travel, and the length of time necessarily consumed in the journey, make it more essential than usual that the date be the one which shall accommodate the greatest number of those who desire to attend. That several of the members are already taking an interest in the matter is evidenced by a number of letters on the subject which the Chairman of the Board of Trustees has received recently and he takes this opportunity not only to acknowledge their receipt but also to express his thanks to the writers thereof for their views thus presented.

It seems to be generally recognized that the first week in June is not a desirable time for the session for the reason that it conflicts with the examinations and the commencement exercises of a large majority of the medical colleges throughout the country.

The question, then, is whether the session should be held early enough in May or April to permit those living in the east to attend and to return in time to close up their college work for the year, or late in June after the college work is over.

If held during the college term it means that many who desire to attend will be unable to do so, perhaps, and that others will be obliged to make a flying trip, while in favor of a later date it may be said that we shall probably secure very favorable railroad rates, with long time extension and choice of diverse route returning with liberal stop-over privileges. This will enable those who so desire to spend their summer vacations in the west or northwest where there are many beautiful and interesting places to visit.

It has been suggested by some that the weather in Los Angeles late in June might be uncomfortably hot. In order to have some reliable information on the subject, the Chairman of the Board of Trustees has secured, from the director of the government weather bureau at Los Angeles, extensive data concerning the weather—temperature, humidity, winds, etc. at that point for several years past. The following extracts from a letter received from A. B. Wollaber, local forecaster at Los Angeles, indicate very well what may be expected in the line of weather:

"I take pleasure in stating that a careful examination of the records of this office covering a period of 33 years shows that the temperature conditions here are very equable and, with the exception of an occasional warm spell that might occur at any time throughout the year, not at all unpleasant. The highest minimum temperature on record for May is 70 degrees, the average minimum being 52 degrees. For June the highest minimum on record is 70 degrees, the average minimum is 56 degrees and for July the highest minimum is 76 degrees, average minimum 59 degrees. The minimum temperature may be said to fairly represent the night temperature. The average maximum or day temperature during May is 73 degrees, June 78 degrees and July 82 degrees.

"There is one important factor in our temperature conditions here in Los Angeles not easily shown by figures. I refer to the comparatively short duration of the extremes of both heat and cold. It is very rare for the temperature to stay at a maximum for over two hours at a time and the maximum, as a rule, occurs shortly before or shortly after noon. The temperature rises gradually with the advance of the day, until it reaches the maximum when, under the influence of the daily ocean breeze it drops gradually downward until it reaches the minimum during the early morning hours.

"Another and most important factor to be considered is the low humidity which always prevails during the heat of the day. During heated terms it is not unusual for the humidity to drop as low as 6 per cent. while the average humidity during the heat of an ordinary summer day ranges between 35 and 50 per cent."

Thermograph and hydrograph trace sheets showing the actual temperature and humidity during this period were received, fully confirming the statements above mentioned. It will thus be seen that the fear of meeting with excessively hot weather, even though the session should be held as late as the last week in June or the first in July, are entirely without foundation.

In setting the date of the meeting the Board of Trustees desires solely to accommodate the greatest number and the Chairman of the Board will be very grateful if all who are interested in the date of the session will indicate to him by postal or letter the date on which it will be most convenient for them to attend.

M. L. Harris, Chairman, Board of Trustees,
100 State Street, Chicago.

Correspondence

Registration of Foreign Physicians

To the Editor: To elucidate further the matter of "Registration of Foreign Physicians," I beg leave to comment on the remarks of the writers of the letters in The Journal, September 3 and 10. Dr. Honeij is right: I am a Canadian, but again he is wrong, I have no friends who wish to register in the United States in the near future or at any other time. If I did have, I should not need to apologize for them, as I am sure that they would acquit themselves honorably.

He is also wrong when he says that I do injustice to American physicians. I reiterate my letter of August 27, and as I spoke truthfully, wherein lieth the injustice? I am sure that the American physician (and not every practitioner is a physician) would rightly resent being classed among the ill trained aspirants for license to practice in Canada or elsewhere who admit their inability to qualify. That the best colleges of the United States are A1 I will not deny, but that the graduates from the best colleges find the expressed difficulty in obtaining license to practice in Canada, I question. I could easily qualify the remarks as to the thoroughness of the various state board examinations, but I will pass them over, only saying that they are relatively hard, *i. e.* comparing one state with another. I do not know the requirements of all foreign countries. I was talking about Canada.

A word about the requirements of Great Britain. The conjoint and other boards require a statement of the time spent in each subject, with an examination in that subject in which the candidate passed successfully, certified to by the professor of the subject, before he is permitted to take the examination. The medical council in London accepts the proper credentials from the best American schools, but not from "diploma mills." The examination is both oral and written.

The only reason I can put forth for Dr. Honeij being referred to the Nova Scotia school is that, poor as is its standing, it came nearer the standard required by the licensing board than did the school from which he graduated. I knew several graduates of American universities when I was in London and these had no difficulty in qualifying for and passing the examination. The fact that Dr. Honeij was a citizen of South Africa is no reason why less should be required of him in order to practice medicine there. I would rather suggest raising the standard of examination, requirements, etc., as a means toward keeping foreign physicians out, than by making appeals for legislation whereby the public must suffer. Possibly in the future the foreign countries in question will lower their standards and then the poorly informed "Doc." will be able to shake hands with his friend from abroad and feel himself an equal.

D. Nathan, Norristown, Pa.

Fleming Test in Serodiagnosis of Syphilis

To the Editor: A communication from Dr. Bernard Oettinger calls my attention to an omission in my article on serum diagnosis of syphilis (THE JOURNAL, August 27, 1910). I quoted Bassett Smith as having found the Fleming modification unsatisfactory. In a later communication Bassett Smith revises his previous opinion of the Fleming test as the result of further experience (*Brit. Med. Jour.*, 1910, March 12, p. 632). From a series of 500 cases his results were indefinite in only 10 per cent. "A positive result was always reliable, in fact it was obtained in some cases earlier in the disease than with the other methods tried."

HOWARD FOX, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DATA WANTED ON POSTOPERATIVE TETANY

Dr. Francis D. Patterson, 2103 Locust St., Philadelphia, is anxious to secure the details of any hitherto unreported cases of postoperative tetany.

PRAIRIE ITCH

To the Editor:—What is the medical term for what is known in the northwest as "prairie itch"? J. F. KENNEDY, New York.

ANSWER.—"Prairie itch" is a term applied in the west and northwest to a number of forms of pruritus, the most frequent of which is a pruritus described under the name of pruritus hiemalis. Similar conditions exist in various parts of the country among farmers, lumbermen, miners and others and are variously called "Texas mange," "Ohio scratches," "swamp itch," "lumberman's itch," etc. Many cases of so-called "prairie itch" are undoubtedly scabies.

PALATABLE COUGH MIXTURES

To the Editor:—I do not like the idea of having to use "patent medicines," consequently I would like to know of a cough mixture that is serviceable and palatable, and also a good anodyne liniment which is not obnoxious to the patient. E. J. G. S.

ANSWER.—The Physicians' Manual of the Pharmacopeia and the National Formulary refers to thirteen official cough mixtures, a sufficient variety from which to select one suitable to almost any case, so that there seems no need of resorting to nostrums. They are:

Elixir pini compositum
Elixir terpini hydratis
Mistura glycyrrhizæ composita
Mistura ammonii chloridi
Mistura olei picis
Mistura pectoralis
Species pectorales
Syrupus chondri compositus
Syrupus pectoralis
Syrupus pini strobi compositus
Syrupus scillæ compositus
Trochisci ammonii chloridi
Trochisci glycyrrhizæ et opii

The following anodyne liniments may be used singly or in mixture:

Linimentum belladonnæ, N. F.
Linimentum camphoræ, N. F.
Linimentum opii compositum, N. F.

TECHNIC OF ELABORATING AUTOGENOUS VACCINES

To the Editor:—Please give me the detailed technic of elaborating autogenous vaccines. After pure culture is obtained, how are the germs killed, counted and put up in the sealed tubes?

J. S. WEBER, Davenport, Iowa.

ANSWER.—The bacteria are killed by exposure to a temperature of [illegible] C. for an hour. They may be counted by Wright's method which is as follows: Equal quantities of the culture are mixed with normal blood; after staining a preparation on a slide, the ratio of bacteria to the red blood cells is determined by counting. Since there are about 5,000,000 red blood cells to the cubic millimeter in normal blood the number of bacteria is easily calculated from the ratio which has been found. The culture may now be diluted so as to contain the requisite number of bacteria per cubic centimeter and placed in a sterile container which may be hermetically sealed in the flame, if desirable.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Sept. 10, 1910.

Stallman, Geo. E., D.S., Aug. 27, returned to Ft. Sam Houston, Texas, from Leon Springs, Texas.

Harris, H. S. T., lieut. col., Aug. 23, ordered to proceed from San Francisco, to Camp of Instruction, Atascadero, Cal., for duty.

Bevans, James L., capt., Aug. 30, ordered to proceed from San Francisco with one-half of Co. B Hospital Corps, to the Camp of Instructions at Atascadero, Cal., for duty.

Clarke, Jos. T., maj. and Fisk, Owen C., lieut., Aug. 25, ordered to proceed with the troops from Ft. Crook, Neb., to the fair grounds, Des Moines, Iowa, for duty during the military tournament at that city, Sept. 26 to Oct. 1, 1910.

Rand, I. W., maj., September 3, left Fort Hancock, New Jersey, on ten days leave of absence.

Bourke, James, capt., August 25, order to proceed with troops from Fort Leavenworth, Kansas, to the Des Moines Military Tournament; etc.

Murtaugh, John A., maj.; Van Dusen, James W., capt.; and Fuller, Leigh, maj.; August 25, ordered to proceed with troops from Fort Riley, Kansas, to the Des Moines Military Tournament, etc.

Barney, Charles N., maj., September 6, left Fort Wadsworth, N. Y., enroute home awaiting retirement, being granted leave of absence to December 31, 1910.

Grubbs, Robert B., maj., September 1, reported on detached duty at Fort Sam Houston, Texas, from Camp at Leon Springs, Texas.

Hallett, Harley J., M.R.C., September 6, granted 30 days leave of absence terminating not later than November 3, 1910.

Baker, Charles L., M.R.C., September 2, now on duty in Sequoia, and the General Grant National Parks, will accompany Troop A, 1st Cavalry to the Presidio of San Francisco, and on arrival will report to the commanding officer of that post for duty.

Reynolds, Royal, lieut., Sept. 7, ordered to Presidio of San Francisco, for temporary duty.

Allen, John H., maj., Sept. 7, left Fort Myer, Virginia, on ten days leave of absence.

Walker, Thomas C., M.R.C., September 7, granted leave of absence for two months to take effect on arrival in the United States.

Casaday, George H., D.S., September 3, left from duty at Fort Baker, California, enroute to the Philippine Islands, for duty.

Medical Corps, U. S. Navy

Changes for the week ended Sept. 3, 1910:

Pitts, H. B., medical inspector, placed on the retired list from Aug. 23, 1910.

Grove, W. B., surgeon, detached from the Naval Training Station, Newport, R. I., and ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Leys, J. F., surgeon, detached from temporary duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Training Station, Newport, R. I.

Cather, D. C., P. A. surgeon, detached from the Naval Academy and ordered to the *Iowa*.

Pryor, J. C., surgeon, detached from the Navy Yard, Pensacola, Fla., and ordered to the Bureau of Medicine and Surgery, Navy Department.

Jenkins, H. E., asst.-surgeon, detached from the *Franklin* and ordered to the *Montana*.

Hermesch, H. R., asst. surgeon, detached from the *Montana* and ordered to temporary recruiting duty at Knoxville, Tenn.

Thomas, G. E., asst.-surgeon, detached from the *Dubuque* and ordered to temporary duty at the Naval Hospital, Mare Island, Cal.

Changes for the week ended Sept. 10, 1910.

McDonnell, W. N., passed asst. surgeon, detached from the Naval Academy and ordered to the *Massachusetts*.

Boyd, J. C., medical director, detached from command of the Naval Medical School, Washington, D. C., and ordered to duty as a member of the naval retiring board, navy yard, Washington, D. C.

Wise, J. C., medical director, detached from duty as a member of the naval retiring board, navy yard, Washington, D. C., and directed to wait orders.

Gatewood, J. D., medical inspector, detached from duty on board the *California* as fleet surgeon of the Pacific Fleet and ordered home to wait orders.

Norton, O. D., medical inspector, detached from the navy and marine recruiting station, New York, and directed to wait orders.

Wieber, F. W. F., medical inspector, detached from the naval recruiting station, Baltimore, and ordered to duty at the naval and marine recruiting station, New York.

Lowndes, C. H. T., surgeon, detached from the naval dispensary, Naval Medical School Hospital, Washington, D. C., and ordered to the Baltimore Naval Recruiting Station.

Freeman, G. D., surgeon, detached from the *Montana* and ordered to duty at the naval dispensary, Naval Medical School Hospital, Washington, D. C.

Fiske, C. N., surgeon, detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to duty at the Naval Medical School, Washington, D. C.

Smith, C. C., surgeon, detached from the naval hospital, Newport, R. I., and ordered to the *Montana*.

Cohn, I. F., passed asst. surgeon, detached from naval hospital, Philadelphia, Pa., and ordered to the *Castine*.

[illegible], H. F., passed asst. surgeon, detached from the *Paducah* and ordered to the *Panther*.

[illegible], C. C., passed asst. surgeon, detached from the navy recruiting station, Chicago, and ordered to the *Prairie*.

Dean, F. W. S., passed asst.-surgeon, detached from the *Prairie* and ordered to the naval magazine, Iona Island, N. Y.

Manchester, J. D., passed asst.-surgeon, detached from the *Panther* and ordered to the navy recruiting station, Chicago.

Foster, P. G., passed asst. surgeon, detached from the naval hospital Mare Island, Cal., and ordered to duty at the naval hospital, Canacao, P. I.

White, E. C., passed asst surgeon, detached from the navy recruiting station, St. Louis, and ordered to temporary duty at the naval hospital, Mare Island.

Boland, M., asst.-surgeon, detached from the *Castine* and ordered to duty at the naval hospital, Philadelphia.

Miller, J. T., asst.-surgeon, detached from the *North Carolina* and ordered to the navy recruiting station, St. Louis

Kelley, H. L., asst surgeon, detached from the naval hospital and ordered to the navy yard, Mare Island, Cal

McMullin, J. J. A., asst.-surgeon, detached from the naval magazine, Iona Island, N. Y., and ordered to the *North Carolina*.

Bloedorn, W. A., asst. surgeon, detached from the navy yard, Mare Island, Cal., and ordered to duty at the naval hospital, Canacao, P. I.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended Sept 7, 1910:

Pettus, W. J., asst.-surgeon-general, while on leave in England, directed to proceed to Southampton, Liverpool and Glasgow, on special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States, and then resume leave status.

Kerr, J. W., asst.-surgeon-general, detailed to represent the Service at the annual meeting of the American Public Health Association, to be held in Milwaukee, Wis., Sept. 5-9, 1910.

Carter, H. R., surgeon, detailed to proceed to certain ports in Europe on special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Aug. 22, 1910, on account of sickness.

Cobb, J. O., surgeon, directed to proceed to Manitowoc, Wis., on special temporary duty. Detailed to represent the Service at the annual meeting of the American Public Health Association, to be held in Milwaukee, Wis., Sept. 5-9, 1910.

Geddings, H. D., surgeon, directed to proceed to Marseilles and Genoa, Italy, on special temporary duty relative to measures for the prevention of the introduction of Asiatic cholera into the United States, and then rejoin station at Naples, Italy.

McMullen, John, P. A. surgeon, granted 21 days' leave of absence from Sept. 3, 1910.

Anderson, John F., P. A. surgeon, granted 1 day's leave of absence from Sept. 2, 1910, under paragraph 189 Service Regulations.

Wille, C. W., P. A. surgeon directed to proceed to Ashtabula, Ohio, on special temporary duty.

Lloyd, Bolivar J., P. A. surgeon, granted 29 days' leave of absence from Aug. 20, 1910.

Spratt, R. A. P. A., surgeon, granted 1 day's leave of absence, Aug. 27, 1910, on account of sickness.

Frost, W. H., P. A. surgeon, directed to proceed to Grundy-Center, Iowa, on special temporary duty

Mullan, E. H., P. A. surgeon, granted 5 days' leave of absence from Aug. 1, 1910, under paragraph 191, Service Regulations.

Ashford, F. A., P. A. surgeon, granted 1 month's leave of absence from Aug. 30, 1910.

Kolb, Lawrence, asst.-surgeon, granted 7 days' leave from Aug. 28, 1910, under paragraph 191, Service Regulations.

Drew, A. D., acting asst. surgeon, granted 30 days' leave of absence from Sept. 15, 1910

Marr, H., acting asst. surgeon, granted 15 days' leave of absence from Sept. 5, 1910.

Moorer, M. P., acting asst.-surgeon, granted 6 days' leave of absence from Aug. 14, 1910.

O'Neill, Arthur A., acting asst.-surgeon, granted 10 days' extension of leave of absence from Aug. 9, 1910, on account of sickness.

Ransom, S. W., acting asst. surgeon, granted 30 days' leave of absence from Sept. 1, 1910.

Schuster, B. L., acting asst.-surgeon, granted 3 days' leave of absence from Sept. 7, 1910.

Walker, T. D., acting asst. surgeon, granted 1 day's leave of absence, Sept. 8, 1910.

Wetmore, W. O., acting asst. surgeon, granted 3 days' leave of absence from Aug. 11, 1910, under paragraph 210, Service Regulations.

Society Proceedings

COMING MEETINGS

Amer. Acad. of Ophthalm and Oto-Laryn., Cincinnati, Sept 19-21
Amer. Asso. of Obstetricians and Gynecol., Syracuse, Sept. 20-22
Amer. Roentgen Ray Association, Detroit, September 28—October 1
American Association of Railway Surgeons, Chicago, October 19-21
Medical Association of the Southwest, Wichita, Kan., October 11-12.
Michigan State Medical Society, Bay City, September 28-29
Minnesota State Medical Association, Minneapolis, October 6-7
Nevada State Medical Association, Lake Tahoe, Cal., Sept. 19-21
Pennsylvania, Medical Society of State of, Pittsburg, October 3-6.
Utah State Medical Association, Salt Lake City, October 3-4.
Vermont State Medical Society, St. Albans, October 13-14.
Virginia, Medical Society of, Norfolk, October 25-28
West Virginia State Medical Assn., Parkersburg, Oct. 5-7.
Wyoming State Medical Society, Casper, September 27.

AMERICAN PUBLIC HEALTH ASSOCIATION

Thirty-Eighth Annual Meeting, Held at Milwaukee, Wisconsin, Sept. 6-9, 1910

The President, Dr. Charles O. Probst, Columbus, Ohio, in the Chair

Addresses of Welcome

At the general meeting of the Association, which was open to the public, addresses of welcome were delivered on behalf of the city of Milwaukee, by Hon. Emil Seidel, Mayor; on behalf of the State of Wisconsin, by Judge William J. Turner, and on behalf of the medical profession by Dr. W. A. Batchelor.

The responses to these addresses of welcome were made on behalf of the United States, by Dr. Richard Lewis, Raleigh, N. C.; on behalf of the Dominion of Canada, by Dr. Frederick Montizambert, Director General of Public Health, Ottawa, Canada; on behalf of the Republic of Mexico, by Dr. J. E. Monjaras, Mexico City, Mexico, and on behalf of the Republic of Cuba, by Dr. Frederic Torralbas, Havana, Cuba

Officers Elected

The following officers were elected: President, Dr. Robert M. Simpson, Winnipeg, Manitoba; first vice-president, Dr. Fernando Lopez, Mexico City; second vice-president, Dr. John F. Anderson, Washington, D. C.; third vice-president, Dr. Gerhard A. Bading, Milwaukee, Wisconsin; secretary, Dr. William C. Woodward, Washington, D. C.; treasurer, Dr. Frank W. Wright, New Haven, Connecticut.

Havana, Cuba, was selected as the place for holding the next annual meeting.

Report of the Joint Committee on Mailing Infectious Material

Dr. John F. Anderson, Washington, D. C.: The proposed modifications of the regulations for the mailing of infectious material have finally been promulgated by the postoffice department under date of April 22, 1910. The committee believes that its efforts have resulted in the promulgation of regulations which are a decided improvement over those formerly enforced. The regulations have been considerably simplified. The committee was successful in having the privileges of the mails for the transmission of infectious material extended to include federal, state, municipal and other laboratories on the issuance of a formal permit by the Postmaster General

The report was accepted, and the committee discharged.

Studies on Self-Purification of Streams

Dr. G. F. Ruediger, Grand Forks, N. D., detailed a series of experiments on this subject, and then presented the following conclusions: Colon bacilli and typhoid bacilli disappear much more rapidly from polluted river water during the summer months than during the winter months when the river is covered with ice and snow. The destruction of these organisms in the river water during the summer months is in large measure due to the growth of microscopic plants and other organisms which apparently give off dialyzable substances which are harmful to the *B. coli* and *B. typhosus*. That such substances are given off by the saprophytic bacteria was clearly shown by Frost several years ago, and my experiments confirm this by attacking the problem in a slightly different way. These effects are lost in the winter as no growth takes place at 0 C. The direct rays of the sun also are an important factor and their effects are entirely lost when the river is covered with a thick layer of ice and snow

The practical value of this investigation is evident. It explains why some of our northern cities where sewage polluted river water is used in the water works system are more frequently troubled with outbreaks of typhoid fever during the winter months. This was illustrated at Minneapolis last winter, and I believe was true at Lawrence, Mass., before the installation of the filter. When bacteriologic analyses of sewage-polluted river water are to be made at the site of a proposed water works intake pipe, it is important that samples should be collected and analyzed both in the winter and in the summer. Analyses of samples collected during the summer do not give reliable information in regard to the condition of that water when the river is covered with ice and snow. The analyses show that the pathogenic bacteria from the sewage travel several times as far in the water under the ice, before they are destroyed, as they will in an open river during warm weather.

DISCUSSION

Dr. H. W. Hill, Minneapolis: The experiments which we undertook confirm the observations and conclusions of Dr. Ruediger regarding winter river typhoid and summer typhoid. We have found that typhoid bacili may die out in going down the river in summer under conditions where they would exist during the winter.

Dr. Peter H. Bryce, Ottawa, Canada: I notice that the author seemingly did not take into account the question of sedimentation during the two days in the river. Pettenkofer's tests long ago at Munich showed that about 90 per cent. of all bacteria in water by dilution and by sedimentation had disappeared within a distance of 10 miles.

Dr. E. C. Levy, Richmond Va.: At the Winnipeg meeting of this Association Dr. Freeman and I presented a joint paper on typhoid in the south, with special reference to the disease in Richmond. In that paper we brought out the point which has been explained here today, but made no attempt to explain why water-borne typhoid was especially a disease of winter months, though we proved to our satisfaction that such was the case. Our opinion was arrived at purely and simply from an epidemiologic standpoint; we had no laboratory facts to corroborate it. During the years since that time our views have been confirmed in every way to such an extent that in Richmond, after we have passed the winter months, we do not worry about water typhoid.

Dr. G. F. Ruediger, Grand Forks, N. D.: I do not think that the factor of sedimentation would alter the experiments in any way; so far as I can see, there would be as much sedimentation in winter as in summer. This factor need not be considered in this particular study. Another study might be made based on the factor of sedimentation.

The Sanitary Registration of Houses in Mexico

Dr. J. E. Monjaras, Mexico City: The board of health in Mexico has made great progress in the sanitary records of houses in that city. The plan of the city shows the houses in which persons have died of tuberculosis. Each house is shown on the plan by a number which corresponds to the number of cases observed in that house, and each one has its separate file containing all the details of cases as well as the work which has been ordered to improve the sanitary conditions of the houses. With this plan it is possible to show the number of deaths caused by tuberculosis or any of its allied affections from the year 1891, with the ages and sex of those who died, and the wards in the City of Mexico in which those deaths were recorded. The sanitary registry of the houses, therefore, constitute a necessary institution in all cities by the aid of whom the sanitary and municipal authorities, as well as the general public, can obtain easy and certain knowledge of the houses which constitute foci of infection.

DISCUSSION

Dr. Frederick Torralbas, Havana, Cuba: The work Dr. Monjaras has described has been carried on in Havana for some years. It is the duty of the sanitary inspector to obtain the complete history of houses. An inspection is made of from 1,800 to 2,000 houses a day, so that cases of tuberculosis are easily traced.

Sanitation of Bakeries and Restaurant Kitchens in Chicago

Mr. Charles B. Ball, Chicago: In the Chicago Department of Health's experience with bakeries and restaurant kitchens we are led to the conclusion that new installations of restaurant kitchens are required. Ample space must be provided in which the employees may perform the various operations. The contingency of expansion at a future date should be considered, as the tendency to enlarge the dining room, without providing additional kitchen facilities, is found in a great many cases. The arrangement of the various appliances in their relation to each other should insure the isolation of dishwashing and garbage storage from the handling of food. Adequate provision must be made for the removal of cooking odors, not alone from the ranges, but also from vegetable boilers, so as to avoid nuisance in other parts of the building and in the neighborhood. The Underwriters' Association now requires that ventilation dusts from large ranges be built of heavy iron plate and carried through the top of the building without any other connections, so that the grease and soot may be burned out of them as from a chimney flue, without incurring fire danger to other rooms. Ample toilet facilities and wash-rooms, separate for each sex and apart from those provided for the public, must be furnished. The wash basins should be located outside of the toilet rooms in order that it may be apparent to those in charge that the hands are cleansed after leaving the toilets. Proper locker rooms, with exceptional means of ventilation, must be provided in order to avoid the nuisance of the storage of either street or working clothes in tightly closed cupboards. Well-ventilated refrigerators are required in numbers sufficient to afford separation for the different classes of food and especially for milk and butter. The best examples of the application of these rules of design to new bakeshops and kitchens are to be found in upper stories, preferably the top story, of certain high buildings. Such installations of superior type are at present by no means rare.

Practical Methods of Supervising the Milk Supply of Cities

Mr. J. Bosley Thomas, Baltimore, discussed permits for the sale of milk and cream; methods of keeping records; collecting samples and recording results; methods of transporting and delivering milk; communicable diseases; diseases in houses where milk is delivered in bottles; bovine tuberculosis; supervision of dairy farms; butter-fats standards, and said that while there are many admirable methods used by various authorities in the administrative control of the milk supply, there is little or no standardization of these methods. It therefore seems advisable, he said, that some representative society or body should appoint a committee to establish or recommend standard practical methods that would be capable of universal use.

Saving Children From Milk-Borne Diseases

Mr. Nathan Straus, New York: The old city of New York, now the Borough of Manhattan, has established a new record in the saving of the lives of babies. Notwithstanding unusually severe periods of intensely hot weather the past summer, there have been fewer deaths of childrn under five years than in any preceding summer, and for the first time in the history of the city the summer mortality has fallen to a rate less than 50 per thousand per annum. When I first undertook to protect the babies of New York from milk-borne diseases by supplying pasteurized modified milk in 1892, the summer saw the dying of 6,612 children under 5 years, making the rate per thousand per annum 136.1. With the steadily increasing use of pasteurized milk there has been a steady decline in infant mortality, until the summer just ended showed only 3,900 deaths in a population of children larger by 125,000 than that of 1892. In other words, in 1892, 964 children out of every 1,000 survived the summer, while in 1910 there were 988 who escaped death out of each thousand. In my experience the saving of children from milk-borne diseases warrants the assertion that the pasteurization of milk supplies of our cities, under careful health department supervision, would infallibly reduce the death rate.

President's Address: A Renaissance in Health

Dr. Charles O. Probst, Columbus, Ohio: A renaissance in health is at hand. Never before has the public shown such interest and enthusiasm in health measures. Never has it so nearly reached a realization of the immense possibilities in preventing sickness and prolonging life. The time is ripe for cooperation of the widest sort. Without attempting even to outline a plan for cooperation, I would recommend that by committee or otherwise the question be investigated of the possibility of uniting or concentrating the efforts of the different national organizations in the four countries represented whose work concerns in any large measure the promotion of the public health. If moral prophylaxis comes within the scope of social hygiene, the question of providing suitable amusement for the working people becomes of greatly increased importance. Especially is this true for working girls. The lack of such places in large cities is among the chief causes of the social diseases. The department of child hygiene of the Russell Sage Foundation, established in 1908, occupies a part of this field. Its purpose in part is to conduct researches and promote activities favorable to the physical, moral, and intellectual welfare of children, especially public recreation, and the health and progress of school children. This association stands for the highest possible standards in public health. In various ways it has given weighty support to many health movements for improving general health conditions, and notably in the interest of pure food and the establishment of a national health department. The family physician must long remain the chief instructor and most potent factor in preventing the spread of dangerous infectious diseases. The strongest nation, the one of greatest achievements, will in the end be the one that gives the greatest amount of intelligent care to the health of its subjects. Eventually all health interests should be administered by the government. If the first step towards the centralization, or at least the cooperation, of the many associations devoted to health problems can be taken at this meeting, it may be the means of hastening the day when every individual will be given time and opportunity for the pursuit of health and happiness, and the certain knowledge of how and where to find them.

Organization of the Pennsylvania State Department of Health

Dr. Samuel G. Dixon, Harrisburg, Pa.: From July 22, 1907, to June 30, 1910, 32,247 poor tuberculous sufferers had received the skilled medical aid and the attention of trained nurses which the department's 115 dispensaries provide. The death rate from tuberculosis in Pennsylvania has fallen from 134 to 120 per 100,000 of population in 4 years. This means a saving of 1,000 lives annually. From October, 1905, when the state began its free distribution of diphtheria antitoxin among the poor, down to Dec. 31, 1909, 20,794 patients with this dread disease, mostly little children were treated with the life-saving serum. We know by statistics that without antitoxin 42 out of every 100 of these children would probably have died, but with the aid of the state's antitoxin the death-rate among these poor little sufferers was reduced to 8.48. Free antitoxin was also given to 15,125 patients, mostly children, who had been in contact with the disease. All but a very few of these were absolutely protected against diphtheria. A very low estimate of the saving of child life resulting from the state's free distribution of diphtheria antitoxin since 1905 is about 8,000 lives, a pretty good investment of the tax payer's money. And what of typhoid fever in view of all this work for pure water? In 1906, 56.5 out of every 100,000 people died from this disease; in 1907, 50.3; in 1908, 34.4; and in 1909, 23.9. That is, there are now living 2,363 people who, had the death rate of 1906 prevailed in 1909, would have died from typhoid. In 1906 and 1907, the death rate in Pennsylvania per 1,000 of population was 16.5; in 1908, it had dropped to 15.7 and in 1909 to 15.3.

Executive Methods in Preventive Medicine

Dr. Henry B. Hemenway, Evanston, Ill.: Health administration was formerly local in nature. The science of public health has now advanced far beyond administration, especially in this country. The American law requires a separation of the three branches of government. Health administrators, being of the executive branch, have no legislative power. They may not, therefore, issue any orders, or regulations except as distinctly provided in the laws under which they are acting. All health authority is derived from the police power of the state. Police power is a system of precaution for the prevention of crimes and calamities. It is a necessary but also a dangerous power; and because of the danger to individual liberty, the courts are inclined to scrutinize its operations closely to prevent abuse. The police power of public health starts from the idea of nuisance, and presupposes legislative determination in great detail. Even though administered by municipal officers, public health work is essentially state in nature; and in the absence of special constitutional provisions to the contrary, the state has the right to appoint and regulate the acts of municipal health officers. The protection of the state against damage suits is extended to all health officials, so long as they act within the law even though error has been committed, and damage results to individuals. As compared with other countries, American state executives are ill organized and weak; and one of the weaknesses is shown in the tendency to the appointment of boards, often serving without pay. Since executives have no legislative power, an executive board lacks in responsibility, decision, activity and dispatch, without compensatory advantage. There is no more reason why a physician should donate his public health service than that a lawyer should serve without pay as a judge, or a banker should give the use of the money needed for public improvements. Health laws should be enacted by the state legislature. The entire health administration of a state should be recognized as one body, having a single head to whom all local and district officials are responsible. Every man should be held responsible for a definite portion of the work.

Executive duties are either ministerial or discretionary. If ministerial, the officer may only do that which is required. If discretionary, he may do anything within that discretion; but neither his acts nor legislation for his guidance, may be arbitrary or unreasonable. If the officer acts beyond the provision of the law, he may be sued as a private wrong doer. Health legislation should be definite, not in general terms, best to safeguard individual liberty.

Matters of technical detail in the work of the office may be largely left to subordinate; but the executive must personally and frequently decide on questions of administration. In other words, the head of the department should be a professional administrator with a broad knowledge of sanitary science, not merely a sanitarian or a party politician. At least once a year there should be a conference of state and district officers, at which proposed legislation may be discussed and prepared for presentation to the legislature for enactment.

General Discussion on Public Health Matters

Dr. C. A. Harper, Madison Wis., discussed the relation between state and municipal boards of health, saying that the interchange of ideas, and the knowledge required by each health officer in knowing how other health officers do their work and meet certain emergencies, fully justifies the labor and expense incident to holding state or district conferences. If the health officer expects to impart knowledge to others he must know his subject thoroughly and realize the important rôle which sanitation and public hygiene play in the prevention of diseases.

Prof. E. H. S. Bailey, North Dakota, spoke of the advantages of cooperation between the state board of health and state universities.

Dr. Gustav F. Ruediger, Grand Forks, N. D., spoke of the relation of the state university of North Dakota to the State Board of Health, and favored placing the state board of health laboratory under the control and regulation of the state university, under the direction of the professor of bacteriology and pathology.

Dr. Charles A. Hodgetts, Ottawa, Canada, pointed out the functions of the Canadian Commission of Conservation and Public Health

Dr. H. W. Hill, Minneapolis, spoke of the relations of universities to public health work

Mayor Seidel, Milwaukee, Wis., discussed social economics and public health and said:
and mineral deposits. These, with machinery, are important factors in wealth production, but the most important factor of all in wealth production is human labor. Without labor of hand and labor of brain applied to raw material, there is no civilization thinkable. The greatest of all natural resources is human life with its accompaniment of labor. It is good and excellent work to conserve land and timber and water

Land has a value. Timber has a value, and so have water utilities, but it is far more important, and far more fundamental, to conserve human life and make it more efficient and give it added ability and power to create.

Mr. Frederick Almy, Buffalo, N. Y., spoke of the interrelation of national organizations working in the interest of health.

Dr. Frederick Montizambert, Director-General of Public Health, Canada, said that the administration of public health in Canada is joint between the dominion and the provinces. The administration of the subject of quarantine pertains solely to the Dominion Government, including the inspection and treatment of passengers, crews and vessels from abroad arriving at the different seaports on the Atlantic and Pacific Coasts, and of the persons and trains entering Canada over the international frontier. Leprosy is dealt with by the federal government. The adulteration of foods and drugs is dealt with by the Department of Inland Revenue. Infectious and other diseases occurring within the Dominion are under the administration of the provincial and municipal authorities.

(*To be continued*)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Conservation of Health Through Prevention of Accidents

The National Electric Light Association, desiring to obtain the latest possible information regarding the best methods of preventing accidents to workmen, commissioned Dr. William H. Tolman, director of the American Museum of Safety, to investigate the German governmental system of workman's insurance with special reference to accidents, sickness and invalidity, including old-age pensions. Dr. Tolman's report is summarized in the September number of *Safety*, the bulletin of the American Museum of Safety. After presenting a large array of statistics, Dr. Tolman summarizes his conclusions:

> It requires no prophet to prophecy that problems of accident prevention and workman's compensation are the most important ones confronting our country to-day. Until an harmonious and satisfactory solution has been found for them, there will be unrest and acrimony in American industrialism. There is no getting away from this question. It has got to be met. Germany has worked over this question for six decades and this year is celebrating its silver jubilee of twenty-five years of practical demonstration to her own satisfaction of her system of social insurance."

Statistics furnished by the director of the Imperial Bureau of Statistics of Germany show that in the past twenty-five years German employers have paid for social insurance and accident liability $1,100,000,000. Workmen have paid $981,000,000, and the German Empire has paid $116,000,000. Receipts from interest and other incomes have amounted to $221,000,000, making a total for twenty-five years of $2,419,000,000 for workingmen's insurance. Of this amount insured workmen have received $1,740,000,000, of which [illegible] were paid for care during sickness and restoration to health.

Dr. Tolman says that while Germany is regarded as the exponent of war she is in reality one of the greatest conservators of industrial peace and content. The billions of dollars spent for workmen's insurance and the care of the sick and injured were spent because it paid. In Germany every life saved is a national asset. Dr. Tolman asserts that experience in Germany confirms his statement that 50 per cent. of the accidents in American industries are preventable and that there should be in New York a clearing house for the best world experience for the prevention of accidents and the promotion of sanitation. In contrast to the views and practices prevailing in Germany is the record of 35,000 deaths and 2,000,000 accidents in the United States during 1907, which facts led one of the most influential German trade associations, in a manual on accident prevention to give utterance to the following criticism of American state factory inspection:

> "Everywhere in America, in the railways, factories and building trades, we can see how little regard is paid to human life. It is the cheapest thing in the world. Thousands of times do we read in the American papers, human life is as cheap as dirt. American culture and thought is founded on a purely capitalistic basis. Ours rests on a patriotic foundation. Property and things have the highest value in America and these, before all, are protected by the law. A man must care for his own safety himself."

Dr. Tolman also emphasizes the enormous amount of preventable sickness in the United States, over 3,000,000 people being ill annually from preventable causes of which number 1,000,000 are in the working period of life. A conservative estimate of their loss of wage-earning efficiency every year amounts to $400,000,000. This social and economic waste is caused by occupational diseases, industrial poisons, failure to remove dust and noxious fumes, impure drinking water, poorly ventilated and lighted rooms and generally unsanitary conditions. The unhygienic houses in which many wage-earners are compelled to live, as well as impure foodstuffs, dirty and dusty streets and lack of parks and playgrounds further aggravate the problem. Dr. Tolman states that the elimination of preventable accidents and preventable diseases will result in enormous saving of life and capital.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month—Second Weekly Meeting

VISCERAL SYPHILIS

Syphilis of Nervous System

Brain and Cord: Pathology: (a) Gummata, size, location, number, microscopic changes, occurrence in brain, in cord; (b) arteries, changes in vessels, secondary changes in adjacent structures; (c) sclerosis, degenerative fibroid changes.

Nerves: Changes in sheath, in nerve fiber. Nerves most frequently involved. Diagnostic features of syphilis of central nervous system.

Syphilis of Respiratory System

Nose: Pathologic changes; symptoms.

Larynx: Clinical differentiation from tubercular and cancerous laryngitis.

Trachea and Bronchi: Symptoms, diagnosis.

Lungs: (a) "White pneumonia" of congenital syphilis; (b) acquired syphilis, gummata and chronic interstitial pneumonia. Differentiate from pulmonary tuberculosis.

Syphilis of Circulatory System

Heart: Pathologic changes.

Arteries: (a) Gummata, in large vessels, microscopic changes, relation to aneurism; (b) smaller vessels: (1) nodular periarteritis, (2) gummatous endarteritis, (3) obliterative endarteritis.

Syphilis of Abdominal Organs

Digestive Tract: Stomach, intestines.

Liver: In congenital syphilis, in acquired syphilis.

Spleen.

Syphilis of Genitourinary Tract

Kidneys: Acute nephritis, amyloid degeneration, gummata.

Testicles and Epididymis.

Syphilis of Bones and Joints

Bones: Periostitis, rarefying ostitis, gummatous involvement of bone. Dactylitis.

Joints: Synovitis, acute and chronic. Gummatous arthritis.

State Boards of Registration

COMING EXAMINATIONS

GEORGIA: Regular, The Capitol, Atlanta, October 11. Sec., Dr I. H. Goss, Athens; Homeopathic, Atlanta, October 3. Sec., Dr. R. E. Hinman, 153 Whitehall Street.

IDAHO: Boise, October 4. Sec., Dr. O. J. Allen, Bellevue

ILLINOIS: Coliseum Annex, Chicago, October 19-21. Sec., Dr. James A. Egan, Springfield.

KANSAS: Topeka, October 13. Sec., Dr H. A. Dykes, Lebanon.

LOUISIANA. New Orleans, October 18-19. Sec., Dr. A. B. Brown, 308 Baronne Street

MICHIGAN: Lansing, October 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, Minneapolis, October 4-6. Sec., Dr. W. S. Fullerton, St. Paul.

MISSISSIPPI: Jackson, October 11-12. Sec., Dr. S. H. McLean.

MISSOURI: Capitol Building, Jefferson City, September 20-22. Sec., Dr. Frank B. Hiller.

MONTANA: The Capitol, Helena, October 4. Sec., Dr Wm. C. Riddell.

NEW JERSEY: State House, Trenton, October 18. Sec., Dr. H. G. Norton.

NEW YORK: Albany, September 27-30. Chief of Examinations Division, Dr. Charles F. Wheelock.

WYOMING: State Capitol, Cheyenne, October 12-14. Sec., Dr. S. B. Miller, Laramie.

Is Toxicology Taught in Medical Colleges?

The following is abstracted from the *Bulletin of the Illinois State Board of Health:*

That toxicology, an important branch of medical science, is seriously neglected in the curricula of some medical schools has been more than once evidenced in the examinations of the Illinois State Board of Health. As a case in point, question 5 of the examination on chemistry, given by the State Board of Health, on April 14, 1910, read as follows:

"5. In the examination of stomach contents, in case of suspected poisoning, (a) How may strychnin be recognized? (b) How atropin?"

There were present 125 applicants, representing 26 medical colleges, 10 of Illinois and 16 of other states.

Realizing that a knowledge of the toxic action of strychnin and its determination by a chemical test is of the utmost importance to a physician, it was presumed by the examiner that the majority, if not all, of the applicants would give a correct answer to the question pertaining to this drug.

The question as to atropin was added chiefly for the purpose of determining the applicants' ability to distinguish atropin from strychnin. It was not thought that many would answer this question correctly, although the fact that in one reliable test for atropin the same reagents are used as in a test for strychnin, led the examiner to assume that some, at least, would show a knowledge of the test for atropin.

But the results proved that the examiner's faith was not well-founded. There are five reliable chemical tests for the determination of strychnin and two for atropin. These tests may be found in the Pharmacopeia of the United States, latest revision, and some are published in the "quiz compends," so often in the hands of students.

Surprising as it may be not one applicant described correctly any one of the five tests for strychnin above referred to. Only four named the proper substances or reagents employed in the tests, but even these applicants failed to describe the reaction.

The question as to atropin was "passed up" by the greater number. Some wrote at it, but not one of the 125 physicians gave even an approximately correct answer. Only one applicant named the reagents employed in the tests set forth in the Pharmacopeia, and he failed to describe the reaction.

Several physicians who "wrote at" the question on atropin confined their remarks to physical tests. The most popular answer on these lines was, in substance, as follows:

"Drop some of the filtrate into the eye of a lower animal, and dilation of the pupil will result."

It would appear that not only toxicology, but materia medica, also, was lacking in quite a number of the medical colleges.

In this day, when the laboratory-made physician is being so much exploited, it might be well for colleges to devote time and attention to more of those things that are really "worth while" to the future physician.

Washington January Report

Dr. J. Clinton McFadden, former secretary of the Washington State Board of Medical Examiners, reports the written examination held at Spokane, Jan. 4-6, 1910. The number of subjects examined in was 10; percentage required to pass, 60 in each subject. The total number of candidates examined was 105, of whom 81 passed, including 2 osteopaths, and 24 failed, including 2 osteopaths. The following colleges were represented:

College	Year Grad.	Total No. Examined.
PASSED		
Coll. of Phys. and Surgs., San Francisco	(1907)	1
Coll. of Phys. and Surgs., Los Angeles	(1908)	1
Yale Medical School	(1902)	1
Columbian University, Washington, D. C.	(1902)	1
Medical College of Georgia	(1909)	1
Rush Medical College	(1900) (1902) (1904) (1906) (1908)	5
Coll. of P. & S., Chicago	(1884) (1898) (4, 1909)	6
Northwestern University Medical School	(1899) (1902) (2, 1907) (3, 1908) (1909)	8
American Medical Missionary College	(1904)	1
Keokuk Medical College	(1898)	1
College of Physicians and Surgeons, Keokuk	(1900)	1
University of Iowa, College of Medicine	(1903) (1904) (1908)	3
Kansas Medical College	(1906)	1
Kentucky School of Medicine	(1905) (1908)	2
Louisville and Hospital Medical College	(1908)	3
Louisville Medical College	(1898)	1
Baltimore Medical College	(1896)	1
Coll. of P. & S., Baltimore	(1891)	1
Johns Hopkins University	(1908)	1
Harvard Medical School	(1907) (1908)	2
University of Michigan, Department of Medicine and Surgery	(1877) (1900) (1907) (1908) (1909)	5
University of Minnesota, College of Medicine and Surgery	(2, 1900) (1904) (2, 1906) (1908)	5
Ensworth Central Medical College	(1905)	1
St Louis College of Phys. and Surgs.	(1909)	1
Washington University, St Louis	(1904)	1
Albany Medical College	(1890) (1898)	2
Columbia University, College of Physicians and Surgeons	(1902) (1904)	2
Miami Medical College	(1904)	1
Columbus Medical College	(1889)	1
Medical College of Ohio	(1875) (1896)	1
Western Reserve University	(1889) (1908)	2
University of Oregon	(1908) (2, 1909)	3
Willamette University	(1907)	1
Jefferson Medical College	(1898) (1906)	2
University of Pennsylvania	(1891) (1905)	2
Vanderbilt University	(1908)	1
University of Vermont	(1907)	1
Univ. of Toronto, Ontario	(1900) (1905) (1908)	3
McGill University	(1907)	1
University of Manitoba	(1898)	1
FAILED		
Rush Medical College	(1891) (1899)	2
Bennett Medical College, Chicago	(1896)	1
Keokuk Med. Coll., Coll. of P. & S.	(1907)	1
Hospital College of Medicine, Louisville	(1[illegible]5)	1
Kentucky School of Medicine	(1889) (1906)	2
University of Louisville	(19[illegible])	1
Tufts College Medical School	(19[illegible])	1
University of Michigan, Department of Medicine and Surgery	(2, 1883) (1908)	3
Saginaw Valley Medical College	(1[illegible])	1
Michigan College of Medicine and Surgery	(1896)	1
Marion Sims College of Medicine	(18[illegible]7)	1
University Medical College, Kansas City	(19[illegible])	1
Kansas City Hahnemann Medical College	(1905)	1
Tennessee Medical College	(1898) (1900)	2
University of Nashville	(1902)	1
Coll. of P. & S., Dallas	(1908)	1
Trinity Medical College, Toronto	(1902)	1

Vermont July Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 12-14, 1910. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 17 of whom 16 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Baltimore Medical College	(1910)	81.4
Harvard Medical School	(1909)	85.5
University of Vermont	(1910)	77.4, 80.2, 80.4, 82.8, 83.7, 84, 84.4, 84.4, 84.6, 85.1, 86.8, 88
Laval University, Quebec	(1906)	83.1
Royal College of Physicians and Surgeons, England	(1910)	83.9
FAILED		
University of Vermont	(1910)	70.4

Idaho April Report

Dr. O. J. Allen, secretary of the Idaho State Board of Medical Examiners, reports the written examination held at Boise, April 5-6, 1910. The number of subjects examined in was 11; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 38 of whom 24 passed and 14 failed. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
Denver and Gross Coll. of Med.	(1908) 76; (1909)	80
George Washington University	(1907)	77
Northwestern University Medical School	(1890) 75.9; (1906) 77; (1909) 80.	
American Medical Missionary College	(1904)	77
College of Physicians and Surgeons, Chicago	(1896)	76.6
University of Michigan, Dept. of Med. and Surg.	(1897) 76; (1903) 75, 88.	
Hamline University	(1909)	86
Barnes University	(1906) 75; (1907) 75; (1908)	75
Ensworth Medical College	(1908)	75
St. Louis College of Physicians and Surgeons	(1903)	79
University of Buffalo	(1904)	77
Eclectic Medical Institute, Cincinnati	(1897)	75
Starling-Ohio Medical College	(1909)	75
Willamette University	(1910)	76
Jefferson Medical College	(1906)	82
Medico-Chirurgical College of Philadelphia	(1902)	76
McGill University, Canada	(1889)	79

FAILED

Rush Medical College	(1875)	55
Bennett Medical College	(1907)	62
Northwestern University Medical School	(1909) 54,	73
University of Iowa, College of Medicine	(1898)	59
Kentucky University	(1904)	70
Grand Rapids Medical College	(1899)	59
St. Louis University	(1905)	54
Ensworth Medical College	(1909)	44
University of Nebraska	(1903)	70
Lincoln Medical College	(1909)	68
Memphis Hospital Medical College	(1891)	31
University of Nashville	(1902)	72
University of Tennessee	(1894)	43

The following questions were asked:

HISTOLOGY

1. Define and locate neuroglia, areolar, hyaline, epithelium, adipose. 2. Describe adenoid tissue. 3. Give the histology of voluntary muscle. 4. Describe the structure of the spleen. 5. Describe a cross-section of the spinal cord.

ANATOMY

1. Describe briefly the lymphatic system, giving terminations. 2. Describe the sympathetic nervous system. 3. Name the arteries given off by the abdominal artery. 4. Describe the portal circulation in detail. 5. What is Scarpa's triangle, circle of Willis, Gimbernat's ligament, foramen of Winslow, pineal gland, thymus gland, mediastinum, olecranon, parathyroid, antrum of Highmore?

GYNECOLOGY

1. What important blood-vessels are in close relation to the female ureters, between the bifurcation of the common iliacs and the point where they enter the bladder, and what is their distance from the uterus from each other at that point? 2. Name the most frequent causes of pelvic inflammations, avenues of infection and tissues most likely to be invaded. 3. Give causes, symptoms of and treatment for contraction of the bladder in the female. 4. Describe the operation for eradication of cancer of the mammary gland. 5. Define colpitis, coloptosis, atresia, kraurosis, amenorrhea, menorrhagia, metrorrhagia, dysmenorrhea, salpingitis, proliferating. 6. Name the different varieties of dysmenorrhea mentioned in the text-book and differentiate between the membranous form and an early abortion. 7. Describe in detail the examination of a case of suspected pelvic disease. 8. Give etiology, pathology and treatment of acute cystitis. 9. Give treatment for simple catarrhal vaginitis. 10. Differentiate between carcinoma of the cervix uteri and granular inflammation, myoma, polyp and condyloma.

PATHOLOGY

1. State the principal pathologic lesions of senility. 2. [illegible] give etiology and pathology. 3. Give pathology of septicemia and of pyemia. 4. Acute anterior poliomyelitis; give pathology. 5. Describe the pathologic lesions of syphilis. 6. Arteriosclerosis; give etiology and pathology. 7. Describe the process of atrophy and of hypertrophy. Name types of each. 8. Describe the *Staphylococcus pyogenes aureus*. The *Streptococcus lanceolatus*. 9. What are infectious granulomata? Name and describe types. 10. State the pathology of Basedow's disease; of Addison's disease.

PRACTICE OF MEDICINE

1. Differentiate empyema from pulmonary abscess. 2. Differentiate aortic regurgitation from mitral regurgitation. 3. Make a [illegible] of aneurysm of the descending aorta. 4. Describe the symptoms of tubercular meningitis in full. 5. Give the symptoms and treatment of gastric ulcer. 6. Define hydronephrosis. State [illegible] and describe its treatment. 7. Give the symptoms of (a) acute lead poisoning, (b) chronic lead poisoning. 8. Define myxedema and give its treatment. 9. Describe the symptoms of a case of apoplexy due to cerebral hemorrhage. 10. Give the symptoms and treatment of locomotor ataxia.

PHYSIOLOGY

1. What is the chemical reaction of (a) blood, (b) urine, (c) sweat, (d) uterine secretion and (e) vaginal secretion? 2. Describe a complete physiologic revolution of the heart. What is the office of the columnæ carneæ? 3. How is asphyxia produced? What are the causes of death from asphyxia? Locate the respiratory center. 4. Name the secretions of the alimentary canal, their reactions, active principles and functions. 5. Describe by drawing or otherwise the different glands of the stomach. 6. What are the functions of the pancreas? What effect would extirpation of the pancreas have on digestion? 7. Describe the portal circulation. 8. What are the physiologic functions of the liver? 9. Describe the renal circulation. State the function of the (a) vas deferens, (b) the vesiculæ seminales and (c) the prostate gland. 10. Define (a) afferent, (b) efferent, (c) trophic, (d) inhibitory, (e) motor and (f) vasomotor nerve fibers.

OBSTETRICS

1. What is the character of the liquor amnii and what are its sources and uses? 2. Name the fetal envelopes from without inward. 3. Describe the fetal heart-sounds, give their rate, and state when and where they are best heard. 4. Give the etiology, symptoms and management of albuminuria of pregnancy without structural kidney lesions. 5. Describe and give the functions of the perineal body. 6. Describe the mechanism of labor in the R. O. P. presentation. 7. What is inversion of the uterus, what are its causes and symptoms, and how should it be treated? 8. Give the causes, symptoms and prognosis of rupture of the uterus during labor, and state how such an accident should be managed. 9. What are the symptoms and physical signs of ectopic gestation? From what must it be differentiated? What is the etiology? 10. State the causes, symptoms, pathology, treatment and sequelæ of puerperal phlebitis.

DIAGNOSIS

1. What is the practical import of hematuria and how can its source be diagnosed? 2. What conditions might cause alvine discharges containing fat? 3. What is the diagnostic significance of dropsy? 4. Describe the natural heart sounds. 5. Differentiate empyema from pulmonary abscess. 6. Give the causes of vertigo. 7. Give the area of normal heart dulness. What conditions increase the area of heart dulness? 8. In what diseases can we employ the microscope to advantage as an aid in diagnosis? 9. Give the differentiating points between rubeola and rötheln. 10. Give the physical findings in the different stages of lobar pneumonia.

MATERIA MEDICA AND THERAPEUTICS

1. Define and describe alkaloids. 2. Name five changes of the official Latin titles in the eighth revision of the U. S. P. 3. Give the official names of wahoo, pennyroyal, corn silk, oxgall, nutmeg, chamomile, hemlock, yellow jasmine and Rochelle salts. 4. Name the official preparations and doses of digitalis, cascara sagrada, ipecacuanha and strophanthus. 5. Give the official name, name the ingredients in and dose of Tully's powder. 6. State the composition and method of preparing liquor potassi citratis. Should it be freshly prepared? Has the strength of liquor ferri et ammonii acetatis been increased or decreased in the eighth revision of the U. S. P. and to what extent? 7. What is incompatibility in medicine, and what are the different kinds of incompatibles? Give an example of each. 8. Give the physiologic action and therapy of saline purgatives. 9. What therapeutic uses has chloroform other than as an anesthetic? 10. Explain the distinction between physiologic action and the therapeutic use of medicinal agents.

CHEMISTRY AND TOXICOLOGY

1. Give symbol, atomic weight and source of bismuth. (b) Name official preparations. (c) State how citrate of bismuth is prepared without giving proportions. 2. Give chemical formula, correct name and source of black oxid of manganese. 3. Give formula for chromic acid. (b) What is its appearance and solubility? (c) How used medicinally? (d) How is it affected by alcohol, ether, glycerin and other organic solvents? 4. Explain the chemical reaction that takes place in the preparation of spts. mindereri. (b) Also in the preparation of liquor potassii citratis. 5. Give common name for $ZnSO_4$, KNO_3, KBr, $KClO_3$, $Zn(OH)_2$, $Zn(C_2H_3O_2)_2$. 6. What would you do if you were called to a case of poisoning supposed to be caused by arsenic? (b) Strychnin? (c) By formaldehyd? 7. How is chloral made? (b) What is the best treatment of poisoning by it? 8. Give the antidote for poisoning by iodin, aqua ammoniæ, codein. 9. What is the source of creosote, its dose, purpose used and antidote? 10. Should or should not oil be used in phosphorus poisoning? Give reason for your answer.

HYGIENE

1. What relation do ground air and ground water bear to each other and to disease? 2. Name four diseases reduced to their minimum of frequency by the lowering of the ground water and purification of the soil? 3. What property do those pathogenic germs possess, which retain their existence for long periods, outside a natural medium of growth? 4. What are the purposes fulfilled by food, and under what heads are the proximate constituents of food and the various food substances classified? 5. How many ounces (1) of water free food are required for daily subsidence, (2) for ordinary work, (3) for laborious work? 6. What are the most favorable conditions for the care and preservation of milk? 7. Explain the germ theory of the contagia and how immunity is produced by the disease itself. 8. What are the objections to tent life for consumptive patients during the summer, and how can they be met by tent construction? 9. What beneficial effect has domestic cooking on tuberculous meat and milk? 10. Define zymotic, contagion, intoxication, specific, communicable, calorie, hygienic, sanitary.

Book Notices

Studies in Relation to Malaria. By Samuel T. Darling, M.D., Chief of Laboratory of the Board of Health, Department of Sanitation, Isthmian Canal Commission. Paper. Pp. 38. Washington: (Superintendent of Documents) Government Printing Office, 1910.

In many malarial regions it is important that the varieties of mosquitoes common to such regions should be recognized, their breeding-habits studied and a determination made of the species of anophelines capable of transmitting the disease. This is explained by Samuel T. Darling, chief of the laboratory of the board of health of the Canal Zone, in a pamphlet issued by the Isthmian Canal Commission. The anophelines insusceptible to malaria may be more limited in their choice of breeding-places than the other varieties, so that in the work of malarial mosquito destruction the latter may be disregarded, and attention given wholly to the breeding places of those varieties responsible for the transmission of malarial fever. With regard to man as a host it is necessary to have some knowledge of the limits of his infectiousness, i. e., the number of the sexual forms of the parasite in the blood necessary to infect susceptible mosquitoes. Other matters of importance are latent malaria, the effect of quinin on the parasites in man, the value of larvacides, algaecides, agents destructive of ditch-grass, the size of screen mesh necessary to keep out mosquitoes, etc. After giving a minute description of the different species of anophelines and naming those susceptible to infection with the malarial parasites as shown by his experiments, together with the methods of conducting the experiments, collecting the larvæ, breeding, biting and infection experiments, estimation of gametes, care of the mosquitoes after biting, examining for zygotes, description of the malarial parasites in the mosquitoes, blood examinations, etc., Darling states that it was noticed that patients were discharged from the hospital after the temperature was normal but while the peripheral blood still contained more than a sufficient number of gametes to infect susceptible mosquitoes. Experiments were therefore carried out to determine the limit of infectiousness of such individuals, and it was found that persons with more than 2 gametes per centimeter must be regarded as gamete-carriers, and should not be discharged or treatment discontinued until the gametes were reduced well below the limit of infectiousness, which was determined to be 1 gamete for every 500 leukocytes. This question of the complete destruction of the sexual forms in man is generally overlooked, but is important in delimiting malaria, and may be accomplished by appropriate quinin treatment of all gamete carriers. Thirty grains of quinin sulphate daily is an efficient dosage for the purpose, although this quantity had no effect on the development of the parasites in infected mosquitoes fed on the blood of individuals taking this amount of quinin. The effect of quinin administration is to make the gametes in the tertian form, at least, gradually disappear from the peripheral blood of the patient by the destruction of the young forms, the gametes being phagocyted by splenic and hepatic endothelium; this will occur in from a few days to a few weeks, depending on the severity of the infection. There are never as many gametes in the peripheral blood in the tertian form as in the estivo-autumnal form. In the investigations to determine latent malaria among laborers at work it was found that from 8 to 13 per cent. were carriers of the parasites, chiefly of the tertian variety, or in the proportion of four to one of the estivo-autumnal. It is this latent, untreated malaria in every tropical community which contributes largely to the infection of anophelines when, after the onset of the rainy season, mosquitoes have begun to breed in numbers. Many other points concerning the disease, the parasite and the mosquito, are taken up, the whole making an interesting and valuable contribution to the subject.

Manual of Tropical Medicine. By Aldo Castellani, M.D., Director of the Clinique for Tropical Diseases, Ceylon, and Albert J. Chalmers, M.D., Registrar and Lecturer on Pathology and Animal Parasitology, Ceylon Medical College. University Series. Cloth. Price, $6 net. Pp. 1242, with 373 illustrations. New York: William Wood & Co., 1910.

This book represents, according to the authors, the knowledge found actually necessary to acquire and use in their work in tropical medicine. A mere glance at the volume of 1,200 pages shows the wide scope taken by tropical medicine at the present day. This department of medical science may be said to be based on the agency of animals in the conveyance of disease, and consequently a very large section of the work, covering nearly 400 pages, is devoted to a description of the biologic causes of disease, including animal parasites and disease-carriers and a short chapter on the vegetable parasites, omitting bacteria, which are sufficiently described in other text books. The animal parasites and carriers are arranged according to their zoologic order, and a very complete description is given. The following section of about 600 pages treats of the diseases of the tropics, including those which are in any way characteristic, chiefly the infections. The authors have, however, not neglected other affections which present any unusual features in tropical countries. Thus we find certain monsters described because these births occur in tropical countries more frequently, according to the authors' experience, than in cooler climates.

Treatment has been described in detail, which adds value to the book, as it may be the only authority which the worker in a tropical climate has at hand. Specific directions for the administration of medicines are given in such diseases as dysentery, ankylostomiasis, malaria, etc.

The work shows great research and presents a mine of valuable information. Its value is much enhanced by the abundant illustrations, numbering 373, besides 14 colored plates. The usefulness of such a work is by no means limited to those practicing in tropical countries, for a large proportion of the subjects treated find examples in temperate climates, as for instance, malaria, plague, amebic dysentery, pellagra, etc., while those more closely confined to tropical regions may be brought unexpectedly to the notice of the American or European physician by returned travelers or soldiers. To the physician who recognizes the need of acquainting himself with tropical diseases this work will present a welcome aid.

Die Orthopädie des praktischen Arztes. Von San Rat Dr Georg Müller, Berlin. Paper. Price, 8 marks. Pp. 258, with 151 illustrations. Vienna: Urban & Schwarzenberg, 1910.

This practical little volume of 258 pages is written, as its title indicates, for the express purpose of diffusing among general practitioners knowledge of such later developments and methods in the realm of special practice as they are not only quite competent to understand, but are well able to follow out in practice, once it is brought to their notice in a plain and logical manner. The author covers a rather complete range of orthopedic treatment with necessarily short discussions of etiology. The directions are practical and clear and their execution may be within the range of the general practitioner if he is fairly ingenious. It is interesting to note, however, a conspicuous absence of our practically indispensable Bradford frame in the treatment of Pott's disease, and complete obliviousness of the name of Grattan when mentioning instruments for osteoclasis; nor is it any less surprising to know that the author removes all dressings ten days after a myotomy for correction of torticollis, depending on massage, gymnastics, and similar therapeutic measures to maintain the correction. In the etiology of spondylitis deformans, while mentioning gonorrhea, rheumatism and uric acid, he omits the pyogenic factor so familiar to us in our later experiences. Possibly we are expecting too much in a book of such limited scope, but there is so much in it that is direct and practical that it should be gratefully welcomed by those whom it is specially designed to serve. The mechanical features of the book are good and the illustrations well chosen and instructive.

Nursing in Diseases of the Eye, Ear, Nose and Throat. By the Committee on Nurses of the Manhattan Eye, Ear and Throat Hospital, New York. Cloth. Price, $1.50 net. Pp. 281, with 81 illustrations. Philadelphia: W. B. Saunders Co., 1910.

In this book the opening chapters on the germ theory of disease, antiseptics and disinfection of rooms and clothing, sterilization, preparation of operating-room, duties of the nurse at operations, duties in emergencies, feeding and care of infants, etc., do not differ materially from other works on nursing not intended especially for nurses in eye, nose, throat, and ear cases. The anatomic descriptions of the organs and structures included in the scope of the book are sufficiently full and clear for the purposes of the work;

and they are well illustrated; but in the descriptions of diseases and operations or procedures, their application or pertinence to the work of the nurse is not always set out or clearly manifest, although the authors assert that it has been their purpose to keep that relation in mind, as, for instance, in the descriptions of the tuning fork and other diagnostic methods of determining the condition of the hearing apparatus. For the most part, however, such things are avoided, and only such information presented as to give the nurse an intelligent understanding of the duties required of her. It may be questioned by many, however, whether works on nursing giving the general principles would not answer the purpose without requiring a special work for these branches.

SERUMS, VACCINES AND TOXINS IN TREATMENT AND DIAGNOSIS. By W. Cecil Bosanquet, M.D., Assistant Physician to the Charing Cross Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton, and John W. H. Eyre, M.D., Bacteriologist to Guy's Hospital and in Charge of the Vaccine Department. Second Edition. Cloth. Price, $2 net. Pp. 362, with illustrations. New York: Funk and Wagnalls Co., 1910.

This is a pocket manual of 360 thin-paper pages. The authors devote 60 pages to a consideration of the general principles of immunity and susceptibility and the relation of specific bodies thereto. They then take up about a score of diseases or syndromes for which serums, vaccines and antitoxins have been advocated. With some of these substances the authors have had experience and have written from that point of view. In connection with most of them, however, they review the literature and give more space to American literature than is usual in English or European books. The book would be more valuable if the authors spoke with more of personal conviction on many points.

The subjects discussed are too new for anyone to write a really satisfying book on them. Certainly views have not crystallized enough for the purposes of a manual of a certain type. There is a field for a book that gathers together references for those who want to know of the subjects treated in this volume and have not the time or the training to go deeply into them. Such a manual as this should be revised at short intervals.

HYGIENE AND PUBLIC HEALTH. By B. Arthur Whitelegge, M.D., late County Medical Officer of Health for the West Riding of Yorkshire, and George Newman, M.D., Lecturer on Public Health at St. Bartholomew's Hospital (University of London). Cloth. Price, $1.75 net. Pp. 650, with illustrations. New York: Funk and Wagnalls Co., 1910.

The book covers a wider range of subjects than is customary in American books. The terms used occasionally differ from those in use in this country. A good deal of space is occupied by laws and rules, many of which are not adaptable to this country. Nevertheless, in the absence of standards in America, these rules constitute a most valuable part of the book. This is one of best manuals in any language.

Medicolegal

Validity and Construction of Contract for Medical Treatment for Life; Payment to Be Out of Estate—Licensed Physician of One State Treating Patient Temporarily in Another State

The Supreme Court of Illinois had in Zeigler vs. Illinois Trust and Savings Bank (91 N. E. R. 1041) a case wherein it was sought to enforce a contract providing for payment for medical services for life by a patient's estate. The contract stated that the patient had entered into an agreement for professional services to be rendered by the claimant, a physician, at any time or place during any spell of indisposition to which the patient might be subjected during the remainder of her natural lifetime; that in the event of sickness such methods were to be employed or adopted as seemed best and most expedient; that all medicine or other paraphernalia necessary to the discharge of duties in cases of indisposition were to be provided by the physician; that when the critical moment arose when it was thought that the patient would pass away the physician might call another physician or physicians as judgment might dictate, and that it was voluntarily contracted to pay for the services thus rendered [illegible] payable immediately or as soon as possible by the patient's estate. The contract was made in Chicago, in December, 1899, and re-executed or confirmed in July, 1901, the patient being at the former date about 78 or 79 years of age, and living until August 25, 1904, when she died, in California. Her estate was valued at $270,000.

The Appellate Court, First District of Illinois, held that the contract was void, as being against sound public policy. But the Supreme Court of the State reversed its judgment and holds otherwise. That this contract did not in any of its expressed provisions violate the constitution or any statute of the state, the Supreme Court says, did not admit of argument. The making of such a contract is not prohibited either by the express terms or any fair implication of the constitution or of any statute of the state. Neither does the court deem it to be contrary to the judicial decisions of the state. The laws and the public policy of the state permit and require that utmost freedom of contracting between competent parties, and it is only when a contract expressly contravenes the law or the known public policy of the state that courts will hold it void.

It was urged that this contract was void chiefly for the reason that it furnished an incentive to the physician to shorten the life of the patient by neglect or improper treatment or by the commission of the crime of murder. Each argument made in support of that contention involved a breach of the contract, and was not founded on the performance of it. It could not be seriously contended but that, in order to comply with the terms of this contract and be entitled to receive the benefits of it, the physician was bound to give the patient the best treatment within his power and skill and to prolong her life as long as possible. Should he fail to do this, either through neglect, by willfully treating her in an improper manner or by directly causing her death, he would be unable to recover on the contract.

There can be no doubt that a contract to commit murder or any other crime, or a contract to give a reward to one for the commission of a crime, is void, as against public policy. But this contract did not contemplate the commission of a crime or the doing of anything which was unlawful or contrary to good public morals. Even if it be conceded that the contract, under its terms, offered some incentive to the physician to commit a crime, that would not necessarily render it void. There are numerous decisions involving contracts entered into whereby one party has agreed that on his death his property, or certain specific portions of it, shall go to and become the property of the other party for considerations named, being usually the caring for and maintaining of the grantor during his or her lifetime by the other party, or whereby one party conveyed his property to the other for the consideration of the care, maintenance and support of the grantor during the remainder of his or her natural life, and these contracts have universally been held to be valid and binding. In every such case, the incentive to hasten the death of the grantor was present to the same extent as in this case.

The contention that this contract was void for the reason that it was a wagering contract was also not well founded. As this court views it, it had none of the elements which would bring it within the designation of a wagering contract.

There was a sufficient consideration moving between the parties to support the contract.

The interposition of the further defense that the fiduciary relation of physician and patient having existed between the parties at the time of the execution of the original and supplemental contracts they were presumptively fraudulent and prima facie void, merely made it necessary for the physician to show, by a preponderance of the evidence, that the patient entered into this contract voluntarily, deliberately and advisedly, knowing its nature and effect, and that her consent was not obtained by reason of the power and influence to which the relationship between them might be supposed to give rise.

About four months before her death, the patient, accompanied by the physician, went to California, where she died. The physician accompanied her and attended her there, under a special arrangement made with her. It was conceded that he was not licensed to practice medicine in the state of California, and it was insisted that for that reason he was not entitled to recover anything for his services performed in the state of California, whether rendered pursuant to a contract or otherwise. But the physician, when in attendance on the patient, under the terms of his contract, while she was sojourning temporarily in the state of California, was licensed to practice medicine in the state of Illinois, and, so far as the determination of the questions involved here was concerned, it was immaterial whether he had authority to practice medicine in the state of California, or whether the medical attention he gave to this patient while in the state of California was in violation of the laws of that state. He was not engaged in the general practice of medicine in California, but was simply in attendance on his patient, who was a resident of Illinois, while she was temporarily in California.

Then, it was contended that the physician violated the terms of his contract in refusing to accompany the patient to California in 1903, and for that reason was not entitled to recover on the contract. But a fair and reasonable interpretation of the contract would not require him to accompany her to any place she might see fit to go temporarily, for the purpose of treating her professionally, but only bound him to treat her at her permanent place of abode. That the parties so understood the terms of the contract was evidenced by the fact that when he did accompany her to California, in 1904, it was under a special arrangement whereby he was to receive extra compensation for doing so.

From a consideration of the whole record the Supreme Court is of the opinion that the contract was a valid and binding one, and that the physician, having fully performed it on his part, was entitled to an affirmance of the judgment of the circuit court in his favor.

License Need Be Filed in County of Residence Only

The Supreme Court of Washington says, in State vs. Dechmann (107 Pac. R. 858), that, in prosecutions under the statute of that state for practicing medicine without a license, evidence that the defendant has failed to file a license with the county clerk, as required, is prima facia evidence that he is not a legally licensed practitioner. But, under the law, the failure to file the license in a county other than the county in which the defendant resides will not be proof of the violation of the law or the commission of the crime charged, because it is not one of the requirements of the statute that the practitioner shall file the license in counties other than the one in which he resides, even though he may be called to another county for the purpose of practicing his profession temporarily. Hence a conviction cannot be sustained by evidence showing merely that the defendant practiced medicine in a given county, and that no license had been filed in such county, without any proof that he was at the time a resident of the county.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

September 3

1 Circulation as a Factor which Determines the Effects of Microbic Invasion. A Haig, London.
2 Open Questions in Tuberculosis. T. E. Satterthwaite, New York.
3 Special Dangers Associated with Operations on the Biliary Passages and Their Avoidance. B. T. Tilton, New York.
4 Use of Day Camps and Night Camps in the Home Treatment of Tuberculosis. N. G Seymour, New York
5 *Simplified Method for the Transfusion of Blood. A. M. Fauntleroy, U. S. Navy
6 Juvenile Form of General Paresis, with Report of a Case. J V May, Binghamton, N Y
7 Anemia: Its Pathogeny and Hypodermic Treatment. G. K Dickinson, Jersey City
8 Dengue. N Ardati, Beirut, Syria
9 Measles and German Measles: Characteristics of the Present Outbreak in Philadelphia. M. Ostheimer, Philadelphia.

5. **Simplified Method for the Transfusion of Blood.**—This method devised by Fauntleroy consists in a vein-to-vein anastomosis by means of a curved glass tube, $\frac{1}{8}$ inch inner diameter and 3 inches in a straight line from tip to tip. Each end of the tube is slightly flanged to prevent slipping out of vein after ligature is tied. The veins at the elbow are the ones selected for use in both donor and recipient and, depending on the position occupied by the individuals, a full curved or an S shaped tube is used, the former being known as the "hand-to shoulder" tube and the latter as the "shoulder to shoulder" tube. In other words, when the transfusion is done with the donor and the recipient lying in the same direction, with their shoulders touching, or nearly so, the S shaped or "shoulder to-shoulder" tube is used, as the direction of the venous current in this position is the same in each individual. If for any reason the reverse position is selected, such as where the head of the donor is near the lower extremity of the recipient and where the hands of each are near the other's shoulder, the U-shaped or "hand-to-shoulder" tube is used as, in order to effect an anastomosis, the venous current from the donor has to be switched around into the venous current of the recipient which is running in the opposite direction. In making this tube, which is curved to represent the arc of a circle 3 inches in diameter, one arm extends below the semi circle $\frac{3}{4}$ inch, and it is this end of the tube which is inserted into the recipient's vein.

New York Medical Journal

September 3

10 *Treatment of Syphilis with Ehrlich's "606" Dioxydiamidoarsenobenzol. W Wechselmann, Berlin, Germany
11 Psychopathic Wards at Bellevue; Their Functions and Aims. M S Gregory, New York
12 Evolution of Hygiene and Sanitation. J. J Walsh, New York.
13 Twilight Talks by the Doctor. G. F. Butler, Chicago
14 Treatment of Epilepsy with Hypodermic Injections of Rattlesnake Venom. R. H. Spangler, Philadelphia.
15 Ichthyol. R. H M. Dawbarn, New York.
16 Causes of Failures in Adenoidectomies J. V White, Detroit.
17 Practical Suggestions for Facilitation of an Earlier Diagnosis in Tuberculosis. F M Pottenger, Monrovia, Cal.
18 Diagnosis of Tuberculosis in Doubtful Cases. G. Wilson, Baltimore.
19 Alcoholic Amnesia with Clinical Report of a Case. N. S. Yawger, Philadelphia.

10. **Treatment of Syphilis with Dioxydiamidoarsenobenzol.**—So far, Wechselmann has treated over 600 cases of syphilis with this remedy. He says that the erosive chancres become clean after from 12 to 24 hours and heal rapidly; in pronounced sclerosis the cleaning process is of the same rapidity, but absorption takes longer. In 4 cases there appeared after the healing of the primary lesion an exanthem which healed spontaneously in 2 cases in which it appeared on the first and seventh day after the injection; the 2 other patients received a second injection. Mucous patches of the mouth heal in from 24 to 48 hours, even if the patient is an inveterate smoker. The roseola disappears in a few days, as do also the malign ulcerous syphilides, the rupia, the watery papules, the small papulous syphilides, which are otherwise so pertinaceous, and the gummata. Slower is the disappearance of the large papulous syphilides, and for these a second injection becomes sometimes necessary. Favorable are the effects on syphilis of the bones; especially the night pains of the bones disappear as by magic. In view of experience with other arsenical preparations Wechselmann sees that every patient has his eyes examined by a specialist before giving the injection. In cases in which there are changes in the optic nerve—a circumstance which frequently occurs—he has not given an injection. Visceral lues also shows quick recovery, especially syphilis of the testicles and of the brain (epileptoid attacks). Icterus which has existed for a considerable time disappears in 10 days. Syphilitic growths of the larynx which had produced such severe dyspnea and stridor that the case was received as one for tracheotomy disappeared quickly and remained only as solid infiltrations, which were treated 4 weeks later with a second injection; and edema of the larynx, of which he was very much afraid at first, did not occur. Two patients with tumors from cerebral lues stood the injections well, although the symptoms were very severe. The same was the case with 2 patients

who had only lately suffered a luetic apoplexy and a patient with a luetic apoplexy a few weeks old: these 3 patients plainly showed improvement. As to the parasyphilitic diseases, Wechselmann has not observed clear results in cases of progressive paralysis, although he is of the opinion of Alt, that a trial should be made in early cases. At all events, a favorable influence will be produced on the symptoms of lassitude, depression, and abnormal irritability which occur early and quite threateningly. In tabes also a quick improvement has been plainly noticeable. Altogether, the tabetics are very well satisfied. Some symptoms seem to improve in some cases, for example, the girdle sensation; the dull headache which had existed for years; very severe intercostal neuralgias; in one case weakness of the muscles of deglutition, which had existed for a number of years and which produced difficulty in swallowing dry nourishment. Diminished potentia cœundi was in one case so improved that daily intercourse was accomplished. A debility of the sphincter vesicæ which had existed for 8 years, and on account of which diurnal incontinence occurred, while on a sudden impulse immediate evacuation of the bladder took place, disappeared a few days after the injection. In 2 cases an improvement of the rigor pupillæ was shown, also an improvement of the disturbances of sensibility. Furthermore, some patients state that the gait is improved. In advanced cases, Wechselmann says that one cannot hope for success, but we must not forget that there exist in paralysis and especially in tabes, besides the process which cannot be repaired, such as scleroses of certain systems, syphilitic lesions, especially of single vessels, gummata, meningitic growths, particularly in the atypical forms of tabes, pseudotabes, in which an improvement is possible. It is evident that such an improvement is of the greatest import for the patient even if the improvement occurs in small, circumscribed locations in an organ, as, for example, the spinal column where so many important nerve courses are crowded together in the smallest space. Several observers, such as Trulli, Pazini, and especially Wechselmann's assistant, Dr. Siesskind, have proved that the spirochetes disappear from papules and primary lesions, in some cases after 24 hours, while in other cases they still exist after days, even if they are swollen and very little movable. Iversen has lately made similar observations in preparations of glands.

The Wassermann reaction usually disappears, as has been stated by Alt, and Lange has found that a time from 8 to 10 days is necessary to produce this effect, according to the primary severity of the reaction.

Wechselmann has not observed bad after effects of importance, but it has been found that otherwise light infections, such as those with coryza or angina, even if they appear on the ninth day, are accompanied with very high fever, with a temperature from 104 to 105.8 F. A patient with a weak heart should therefore be carefully guarded; besides, in such cases the injection seems not to be without danger. Otherwise, the influence of the remedy appears generally to be of an exciting and invigorating nature. It can therefore be given with benefit to very miserable patients, as, for example, to the tuberculous in contradistinction to mercury. Nor has he observed widespread and severe recurrences, such as occur after mercurial treatment. Isolated cases have remained refractory and made a second injection necessary, which was then successful as in cases of recurrence. Although, naturally, it cannot be positively stated whether it will be possible to cure syphilis permanently, Wechselmann hopes that we shall be able to do this in certain cases.

Boston Medical and Surgical Journal

September 1

20 *Results of 168 Operations for Hernia. C. L. Scudder, Boston.
21 Educational Methods in the Antituberculosis Campaign. J. B. Hawes, Boston.
22 Personal Relation of the Physician to his Patients. O. H. Howe, Cohasset, Mass.
23 Necessity of the General Practice of Medicine as a Preliminary Training for Those Engaged in Special Work. C. M. Cobb, Boston.

20. **Results Following Operation for Hernia.**—Scudder reports 244 operations done by him for hernia of all kinds. There have been no deaths following operation in uncomplicated cases. The only deaths were in the strangulated group. There were 25 patients with strangulated hernia; 10 of these died: 3 hernias were inguinal, 1 hernia was ventral, 1 was femoral, and 5 of the 10 fatal cases were umbilical. These 10 deaths make a mortality of 40 per cent in the strangulated group.

Scudder succeeded in obtaining the present condition of 158 of these cases. Of the 158 operations, 143 wounds are solid and without recurrence. That is, 90.6 per cent. of the patients operated on in whom the returns were known were cured. There were 165 patients with inguinal hernia: 53 did not report; in 3 strangulated cases the patients died; 10 of the 109 in whom the end-result is known recurred. That is, 90.9 per cent. of the patients in the inguinal group were known to be cured.

There were 27 cases of ventral hernia: 11 patients did not report; in 1 the hernia recurred; 1 died of strangulation; 14 of the patients in whom the end-result was known were all right. That is, in 93.33 per cent. of the cases reported the patients were cured.

There were 13 umbilical cases. There was no report from 3 cases. Of the remainder, 5 patients died of strangulation; 5 had no recurrence.

There were 5 epigastric hernias. All of these patients reported, and each is well.

There were 2 congenital cases, in each of which the patient died.

It will thus be seen after a careful analysis of the returns from these cases of hernia that there are comparatively few recurrences following the procedures employed. This investigation into the condition of these hernia cases was undertaken primarily to determine whether any material change might be necessary in the technic of the operation to secure better results. In analyzing the 10 cases in which recurrence is known to have occurred in the inguinal hernia group, conditions were present which precluded, perhaps, the possibility of cure. In certain (2) of these cases a chronic cough which had persisted for years contributed to the recurrence. One case was a strangulated case, and it is very likely that the operation was done with such haste on account of the condition of the patient that the technic was not so satisfactory as it might have been. In the other 7 cases there is no explanation apparent for the recurrence. Scudder thinks it fair to say that the Bassini operation for inguinal hernia is most satisfactory and that if carefully performed gives at least a cure in 90 per cent. of the cases and possibly in 95 per cent. (Coley). There was no mortality attending these operations for hernia. In certain of the strangulated cases the patients recovered; in 10 strangulated cases the patients died.

Lancet-Clinic, Cincinnati

August 27

24 Surgery of Aneurism of Aortic Arch and Its Branches. B. M. Ricketts, Cincinnati.
25 Lacerations of Cervix and Perineum. D. D. Deneen, Cincinnati.

September 3

26 The Owen Bill for the Establishment of a Federal Department of Health and Its Opponents. S. A. Knopf, New York.
27 Myasthenia Gravis. L. O. Allen, Richmond, Ind.
28 Consecutive Examinations of Life-Insurance Risks. F. O. Kinne.

American Journal of the Medical Sciences, Philadelphia

September

29 *Therapeutic Action of Digitalis. V. E. Henderson, Toronto, Canada.
30 *Digestive or Alimentary Hypersecretion of Gastric Juice. J. Friedenwald, Baltimore, Md.
31 Chronic Pancreatitis. J. Sailer, Philadelphia.
32 *Congenital Heart Block Occurring in a Father and Two Children, One an Infant. Z. M. K. Fulton, C. F. Judson and G. W. Norris, Philadelphia.
33 *Duration of Pregnancy, with a New Rule for Its Estimation. E. McDonald, New York.
34 Further Studies of Sarcoma of Bone. L. Buerger, New York.
35 Cases Illustrating the Origin of Hysterical and Pseudo-hysterical Symptoms. T. A. Williams, Washington, D. C.
36 *Psychasthenic Attacks Resembling Epilepsy. T. J. Orbison, Los Angeles.
37 Fatality Following the Removal of Tonsils and an Adenoid Growth. F. R. Packard, Philadelphia.
38 Metabolism after Parathyroidectomy. J. V. Cooke, New York.
39 Electrocardiogram in Clinical Medicine. W. B. James and H. B. Williams, New York.
40 *Effects of Injection of Killed Streptococci. G. H. Weaver, Chicago.

29. **Therapeutic Action of Digitalis.**—Henderson is convinced that Fraenkel's method of intravenous administration of strophanthin puts into the hands of the physician a valuable means of overcoming cardiac weakness promptly. The mode of application is so certain, its effect so striking, that it might almost awaken suspicion that such drastic action might damage the heart. It might be felt that, in order to maintain the circulation when the cardiac rate is so suddenly decreased, a very great increase of work must be done by the heart. This is certainly true for each individual beat, but if one takes the total amount of work done during a unit of time, this is by no means necessarily the case. We must remember, however, that even if the heart is doing a greater amount of work in each interval of time, we have increased its ability to do work owing to the increase in the contractibility of the muscle cells, and have also decreased the danger of cardiac failure by increasing the tone of the heart muscle. We have also probably improved the nutrient conditions of the muscle, as digitalis increases the flow through the coronary vessels.

30. **Hypersecretion of Gastric Juice.**—Friedenwald's observations extend over a series of 14 cases. Of these, there are 12 males and 2 females, ages varying between 18 and 61 years. The symptoms are largely those of gastric neurasthenia, consisting of fullness, pressure, distention, eructations and pains in the region of the stomach, together with occasional attacks of nausea and vomiting, rarely of heartburn, and usually with extreme constipation. In all cases general nervous symptoms are manifested, as lassitude, headache, insomnia, irritability and depression. A marked feature of the cases is the variability of symptoms; periods of discomfort alternating with unaccountable periods of well-being, the periods of discomfort apparently often being induced by nervous influences, such as shock or anxiety. A symptom present in all instances is the emaciation; a loss of weight of from 15 to 32 pounds is observed in his cases. This is especially striking, as the appetite and amount of nourishment consumed were not abnormally diminished in any instance. Localized areas tender to pressure were observed in only 2 cases, but were inconstant. A marked succussion sound was detected in all cases long after meals, and even after small meals. Three of the cases were complicated with an enteroptosis; in none was the stomach dilated. The following examinations were made in all instances: (1) Extraction and examination of the gastric contents one hour after taking an Ewald Boas test breakfast; (2) an examination of the gastric contents made one hour after taking a dry test breakfast; and (3) an attempt was made to extract and examine the contents from the fasting stomach. At least 3 examinations were made in all instances. In these 14 patients, 8 presented hyperacidity, 5 normal acidity ranged between 94 and 70; free hydrochloric acid between 74 and 44; in the normal cases, the total acidity varied between 64 and 42; free hydrochloric acid between 42 and 32; in the subacidity case the total acidity was 28; free hydrochloric acid. In the hyperacidity cases there was a marked interference with the amylolysis with the formation of amidulin. In the cases with a normal percentage of acid erythrodextrin was formed; while in the subacidity case, achroodextrin was obtained. With the dry test meal 2 of the patients presented hyperacidity, 4 normal acidity, and one subacidity. In the hyperacidity cases the total acidity varied between 85 and 80, the free hydrochloric acid between 68 and 72. In the normal cases the total acidity ranged between 40 and 58, the free hydrochloric acid between 34 and 46; and in the subacidity case the total acidity was 20; free hydrochloric acid, 5. In the hyperacidity cases there was a formation of amidulin; in the cases with a normal percentage of acid, erythrodextrin; in the subacidity case, achroodextrin. The extraction of contents from the fasting stomach was attempted in all instances. In not one of the cases could more than from 10 to 15 c.c. of contents be obtained. The treatment is largely the treatment of nervous dyspepsia. As most patients have lost much flesh and strength, the best results are obtained by means of the rest cure. In 5 of Friedenwald's cases in which this form of treatment was undertaken, excellent results were obtained. Ordinarily the diet should consist of 3 meals a day, as all food ingested has a tendency to increase the gastric secretion. The nourishment should contain an excess of proteins and fats and a small proportion of carbohydrates. Of the proteins, milk, eggs and fish are to be preferred, as they do not tend to increase the gastric secretion as much as meat. Fats decrease the acid of the gastric secretion and are therefore highly recommended; they should be given as butter, cheese, cream and olive oil. The carbohydrates should only be allowed in the most digestible forms, as vegetables in purée form, dextrinized flour, and stale bread and toast. The quantity of fluids ingested need not be decreased in this affection. Large quantities of milk and alkaline waters may be taken with benefit. Such food as bouillon, meat extracts, coffee, tea and alcohol, as well as all acid and spiced foods, should be avoided. The alkalies, with or without belladonna or its preparations, are often serviceable in the treatment of this disorder. Such measures as hydropathic procedures, massage, etc., which have a tendency to build up and strengthen the nervous system, are of great service in the treatment of this condition.

32. **Congenital Heart-Block.**—The hypothesis which the authors formulate to explain their cases is that they are dealing with a congenital physiologic and perhaps anatomic abnormality in the auriculoventricular bundle or its blood supply, by virtue of which conductivity is restored more slowly than normally.

33. **Duration of Pregnancy.**—The rule employed by McDonald is as follows: The duration of pregnancy in lunar months is equal to the height of the uterus in centimeters divided by 3.5. It depends on the more or less regular growth of the uterus of 3.5 cm. each month of 4 weeks, and is very exact after the sixth month. The measurement is taken with the patient lying flat, and one end of the tape is placed at the upper border of the symphysis, while the other is held by the thumb into the palm of the hand. The fingers of the upper hand are held at right angles to the fundus of the uterus, and the tape follows the contour of the uterus save at the last dip. Multiparæ with lax abdominal walls and thin uteri should be supported at the side, so as to bring the occipitococcygeal axis of the pelvis into the long axis of the mother's body. McDonald says that this method gives satisfactory results and is the most exact means of estimation of the duration of pregnancy. It is strictly an estimation of the size of the fetus; for when the uterus arrives at the height of 35 cm., or full term ($\frac{35}{3.5}$ = 10 lunar months), the fetus is of a weight of 3,300 gm., or average size, as is shown by the measurement in a former paper. Thus an average sized baby usually comes at the average period of pregnancy—hence the rule. After the sixth month this rule is extraordinarily exact, he asserts, and is most useful in determining the date of labor and the size of the fetus, when the date of the last menstruation has been forgotten. It has been in use by McDonald since 1904, and he has had good reports of it from many obstetricians. It may be said that 35 cm. is the usual height of the uterus at full term with a fetus of 3,300 gm. For every centimeter of height above this measurement approximately 200 gm. should be added to the weight of the fetus. Thus, a uterus measuring 37 cm. would contain a fetus weighing 3,700 gm. The measurements are more exact below 35 centimeters than above that height. The so-called sinking of the fetus in the last 2 weeks of pregnancy causes but little error in the measurement, as the head, when the patient is recumbent, rides upward on the pelvic bones and the sinking is not a factor. Sinking in his experience is not common in primiparæ, and its supposed presence is often due to the stretching of the abdominal muscles and not to descent of the head into the pelvis. The fundus thus comes lower in the erect position, and no diminution of the fundal height is noted in the recumbent. Sinking does, however, in multiparæ sometimes complicate the measurement, but not often. Hydramnios also causes but small error, as the excess of liquid does not affect the fundus, but the body of the uterus

leaving the height of the fundus to be determined by the occipitococcygeal measurement and the size of the fetus. The rule gives the most exact means at hand of prognosticating the date of labor. Thus, if the fundus measures 26 centimeters from the symphysis, the duration of pregnancy is 26 divided by 3.5, or 7 3/7 lunar months, and the patient has 2 4/7 lunar months to go to term, or 10 weeks and 2 days. This rule, combined with the estimation of pregnancy by reckoning from the last menstruation, gives a fairly exact determination of the probable date of labor.

36. **Psychasthenic Attacks.**—All Orbison's patients were females with an asthenic mental condition that is unquestionable. Ignoring the attacks themselves, every case would be diagnosticated psychasthenia. All the patients feared epilepsy or insanity, and the assurance that these fears were groundless was a great boon. The treatment consisted in mental and physical hygiene, together with rest or exercise, as seemed to be indicated.

40. **Effects of Injections of Killed Streptococci.**—Weaver says that destruction of streptococci within the body is accomplished through phagocytosis, for which opsonin is essential. In estimating the ability of the individual to cope with streptococcic infections, the leukocytes as well as the serum must be taken into account. Killed streptococci when injected into an animal may raise its resistance to living, virulent streptococci. It is desirable that injections of killed streptococci as a prophylactic against scarlet fever be tried under conditions favorable for control. Heating interferes with the antigenic properties of streptococci. These properties are preserved when streptococci are killed by a strong galactose solution. Injections of galactose-killed streptococci early in the course of scarlet fever do not prevent later streptococci complications. Injections of galactose-killed streptococci in cases of acute erysipelas and in the acute stage of streptococcic complications of contagious diseases appear not to influence the course of the disease. In subacute and chronic erysipelas and in streptococcic complications of contagious diseases which have become chronic, injections of galactose-killed streptococci are sometimes followed by favorable results, and at other times no appreciable effect is seen. Great caution must be observed in ascribing improvement in these cases to the injections.

Laryngoscope, St. Louis

August

11 The Nose and Accessory Sinuses. H. L. Swain, New Haven, Conn.
12 Knowledge and Treatment of the Upper Respiratory Tract. The Oropharynx and the Nasopharynx. W. K. Simpson, New York.
13 Knowledge and Treatment of the Larynx, Trachea and Bronchi. S. Yankauer, New York.
14 Pediatrics and Otology. E. Gruening, New York.
15 Brain Abscess Formations. S. M. Smith, Philadelphia.
16 A Safe Intracranial Method of Opening the Frontal Sinus. J. A. Thompson, Cincinnati.
17 The Exanthemata. Their Causal Relation to Diseases of the Ear. J. J. Pattee, Pueblo, Colo.

Journal of Infectious Diseases, Chicago

August

48 *The Mills-Reincke Phenomenon and Hazen's Theorem Concerning the Decrease in Mortality from Diseases other than Typhoid Fever Following the Purification of Public Water-Supplies. W. T. Sedgwick, Boston, and J. S. MacNutt, Orange, N. J.
49 *Physiology of Anaphylactic Shock in the Dog. R. M. Pearce and A. B. Eisenbrey, New York.
50 *Influence of Chloral Hydrate on Serum Anaphylaxis. L. J. Banzhaf and L. W. Famulener, New York.
51 *Inhibition, Attenuation and Rejuvenation of *Bacillus Coli*. F. E. Hale and T. W. Melia, Brooklyn, N. Y.
52 *A Hemophilic Bacillus Found in Urinary Infection. D. J. Davis, Chicago.

48. **Mortality Decrease Following Water Purification.**—The authors record in great detail the results of their observations, which confirmed the findings of Mills and Reincke that the mortality from all diseases, not only typhoid, decreased appreciably as the result of water purification.

49. **Anaphylactic Shock in the Dog.**—These observations show that anaphylaxis in the dog is characterized subjectively by a sudden and persistent fall in blood pressure followed by objective symptoms referable to cerebral anemia. Exsanguination and transfusion experiments demonstrate that the disturbance is due to a reaction in the fixed cells and not to changes occurring primarily or secondarily in the circulating blood. Experiments in which the peripheral and central vasomotor mechanisms have been separated by various methods (section, decapitation, destruction of the cord, and isolated circulation) show that the chief influence is exerted on the peripheral vasomotor system. Pharmacologic experiments point to an influence on the nerve endings rather than to one on the muscle of the vessels.

50. **Influence of Chloral Hydrate on Serum Anaphylaxis.**—In a preliminary communication Banzhaf and Famulener stated that they believed that with improved technic in the dosage of chloral hydrate it would be possible to protect 90 per cent. of all fully sensitized guinea pigs. Now, however, they have come to the conclusion that, if the smallest dose of serum which will just kill any animal of a given series of sensitized guinea-pigs regularly, be injected into the remainder of the animals of the same series of sensitized guinea-pigs, when properly under the influence of chloral hydrate, protection will be afforded in practically all cases.

51. **Studies of Bacillus Coli.**—There has been much discussion and uncertainty as to the delicacy and relative value of dextrose broth and lactose bile in testing water of fairly good quality. The present investigation was undertaken by Hale and Melia with a view to throwing light on this subject. They found that the bile salts in lactose bile cause an appreciable degree of inhibition in the development of *B. coli*. This inhibition increases with attenuation. Rejuvenation in suitable media, followed by transplanting to lactose bile, will sometimes prove the presence of *B. coli*, usually attenuated, not shown by the lactose bile in direct tests. In actual practice, covering hundreds of samples of Manhattan and Brooklyn waters, the lactose bile, made with the addition of 1 per cent. peptone, has been shown practically to equal the results obtained by rejuvenation in dextrose broth, made with Liebig's extract, followed by transplanting to lactose bile. The authors hold that if dextrose broth is continued in use, it should be made with fresh beef infusion, since it is then more delicate than when made with Liebig's extract. The formula test is of but little practical value and transplantation to lactose bile should be done as soon as gas appears. Gas formation in lactose bile after transplantation from the plain broth or dextrose broth is not always certain, even when *B. coli* is present, on account of interfering growths in the original medium. Lactose bile gives more reliable presumptive tests for *B. coli* than any other known medium, including esculin broth. Other species of bacteria cause much less interference with gas formation of *B. coli* in lactose bile than in any other media. To rejuvenate and transplant seems too laborious and uncertain in routine work. The information gained assists more especially in interpreting the results obtained with lactose bile. Lactose bile makes a distinction between recent and distant contamination, hence better evidence of the actual relative sanitary quality of a water. The use of lactose bile as a step in the separation of *B. typhosus* from water adds yet weightier reasons for its direct employment in the examination of water.

52. **Hemophilic Bacillus in Urinary Infections.**—In a series of cases of urinary infections, blood media was used by Davis in the routine examination of the urine and other material from the urinary tract with the result that in 3 cases an organism was found which apparently can be cultivated only by this method. The organism is a small non-motile, Gram-negative bacillus whose size varies considerably, but is usually about that of the influenza bacillus. It stains readily with ordinary dyes and is non-acid and non-alcohol fast. With methylen blue it often stains unevenly, sometimes more deeply at the ends, and again fairly distinct granules may be made out, so that it looks not unlike very minute diphtheria bacilli. There is no tendency to form threads or chains, and no characteristic grouping has been made out, though it is common to see the organisms both from urine and from cultures arranged in small irregular clumps consisting of several bacilli. In the urinary sediment they may be seen

clustered about the pus cells, probably having been thus carried in the process of sedimentation. They occur both within and without the leukocytes and at times seem to adhere to epithelial cells. The bacillus does not form spores and does not possess a capsule. Two of the patients had pyuria and the third gave a history of urinary infection some time previously. Two had joint trouble, but there was no evidence to indicate a causal relationship between the bacillus and the joint affection. Davis believes that this bacillus may not be rare and that it has been overlooked because of its hemophilic property.

Medical Fortnightly, St. Louis

August 10

53 Cretinism, Juvenile and Adult Myxedema: Exophthalmic and Simple Goiter. H. E. Jones, Roanoke, Va.
54 A Crux Medicorum. T. G. Stephenn, Sidney, Iowa.

Journal of the Missouri State Medical Association, St. Louis

August

55 Selections from a Lantern Demonstration of Normal and Pathologic Specimens of the Ear. I. K. Guggenheim.
56 *What Is the Best Treatment for Acute Spreading Peritonitis? H. S. Crossen.
57 *Recognition of Lung Tuberculosis. O. H. Brown.
58 Clinical Deductions in the Study of Tuberculosis. W. Porter.
59 Malaria in Infancy and Childhood. J. H. Timberman.
60 *What Should the County Society Do with the Advertising Doctor? B. B. Parrish, Kirksville.
61 Cutaneous Tuberculin Reaction in Children. F. C. Neff, Kansas City.
62 Manner of Postgraduate Teaching of Neurology in America. R. E. Castelaw, Kansas City.

56. **Acute Spreading Peritonitis.**—The combination treatment for acute spreading peritonitis, which to Crossen seems best, is as follows: 1. Withhold all food and cathartics by mouth and empty the stomach with a stomach tube. 2. Drain the infected areas with the least possible intraperitoneal disturbance. 3. The Fowler posture. 4. Proctoclysis. 5. Nourishment by rectum.

57. **Recognition of Lung Tuberculosis.** Brown says that of all cases of lung tuberculosis which show evidence of active processes, between 95 and 100 per cent. of them can be recognized by the simple methods of physical examination which may be found in any text book on diagnosis. When possible the conclusions should be supported by laboratory tests.

60. **The Advertising Doctor.** Parrish is in favor of educating the public thoroughly in regard to the code of ethics, as it will have a wholesome effect on the profession and at the same time place the profession in a better light before the public.

Journal of Ophthalmology and Oto-Laryngology, Chicago

August

63 Staphylococcus and Streptococcus Vaccines in Eye Diseases. W. A. Mann, Chicago.
64 Surgical Treatment of Trachoma. C. S. Ayres, Cincinnati.
65 The Septal Spur and its Removal. F. G. Stubbs, Chicago.

Northwest Medicine, Seattle

August

66 Rational Procedures in the Practice of Medicine. H. A. Hare, Philadelphia.
67 Duties of the Physician of To-day. W. D. Kirkpatrick, Bellingham, Wash.
68 Tuberculosis Immunity. R. C. Matson, Portland, Ore.
69 Congenital Hydronephrosis, with Report of Case. C. Smith, Spokane.
70 General Considerations in Diagnosis of Infantile Diseases. E. W. Janes, Tacoma, Wash.

Journal of Abnormal Psychology, Boston

August-September

71 Psycho-Analysis of a Case of Sensory Automatism. I. H. Coriat, Boston.
72 Hysteria. H. W. Miller, Washington.
73 *Apropos* of Dr. Miller's Case of Lyssophobia. T. A. Williams, Washington, D. C.

The Military Surgeon, Washington

September

74 Ready Means of Increasing the Marching Radius of the Soldier. W. W. Reno, U. S. Army.
75 *Venereal Diseases in the United States Army: Their Prevention and Treatment. L. M. Maus, U. S. Army.
76 Prevalence and Prophylaxis of Venereal Diseases at One Military Post. C. F. Morse, U. S. Army.
77 Rules for the Personal Hygiene of the Soldier. J. H. Weaver, National Guard Pennsylvania.
78 Feeding of Infants in the Tropics. H. Page, U. S. Army.
79 The Establishment of a Provident Volunteer Medical Corps for the Army and Navy: A Problem of the Future. H. Hays, New York City.
80 Syphilis and Its Treatment. M. H. Simons, U. S. Navy.
81 Case of Balantidium Dysentery. L. C. Duncan, U. S. Army.
82 Diseases of the Heart Among Applicants for Enlistment. S. M. DeLoffre, U. S. Army.
83 Case of Intestinal Bilharziosis. T. W. Jackson, U. S. Army.
84 Case of Yaws. J. F. Siler, U. S. Army.

75. **Prevention of Venereal Diseases.**—Observation and experimentation have convinced Maus, he declares, that calomel alone (25 per cent.), in connection with animal fats, benzoated lard (40 per cent.), and refined suet (30 per cent.), is all that is required to prevent infection from either of the 3 venereal diseases (syphilis, gonorrhea or chancroids), if properly used within reasonable time following sexual contact. The calomel is introduced into the urethra and massage employed for a few moments.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

August

85 Further Uses of Solution of Calcium Creosote in Medicine. L. Kolipinski, Washington, D. C.
86 Skin Inunction as a Therapeutic Measure. L. F. Flick, Philadelphia.
87 Treatment of Hypertension Resulting from Alcoholic and Other Excesses by D'Arsonvalization. W. B. Snow, New York City.
88 *Red Indican Urine; Its Clinical Significance; the Metchnikoff Theory. A. Bassler, New York City.

88. **Red Indican Urine.**—From March 1, 1909, to March 1, 1910, Bassler examined 1,371 specimens of urine from patients coming under observation for the first time. Of these, an increased conjugate sulphate partition, represented in the 3 chromogens, was noted 427 times: 171 showed urorosein alone; 67, indican alone; 166 showed urorosein and indican combined; 20, blue and red indican combined, and 3 urohematin alone. The urinary test which he uses is a modification of the Jaffé test, consisting of the addition of an equal part of concentrated hydrochloric acid in the urine (about 5 c.c. of each), then about 2 c.c. of peroxid of hydrogen and about 3 c.c. of chloroform, shaking well, and then centrifuging the whole. This gives the blue and red indican in the chloroform and the urorosein in the supernatant fluid (the red indican and urorosein both being rose-colored). Bassler thinks urohematin is most probably an indoxyl derivative having a clinical significance similar to indican. It is more rarely observed alone than indican, although a purplish color which represents both the blue and the red is a most frequent finding. Red indican urines are often found in extensive disease of the small intestine allowing of resorption, in gastric cancer, and in acute and chronic peritonitis. Like blue indican, it is met with also in ileus and intestinal obstruction, though not so commonly in the malignant and organic strictured states, and in chronic diarrhea. It is present in normal urine in small amounts, and may be demonstrated by shaking the urine with chloroform (about 4 to 1 parts by volume) and decanting it after agitation during several days, when the addition of a drop of concentrated hydrochloric acid to the chloroform will cause the appearance of a rose color—the deeper the color, the greater is the amount of chromogen present. It is probably of albuminoid origin. In the blue indican cases the patients usually present themselves clinically showing depression, relaxation, lowered vitality and persistent anemia. The red indican cases, on the other hand, are more usually of the irritative, anxious, highly neurotic and hysterical types, with good general body and blood conditions, and are not so commonly constipated. Bassler's experience has been that the bacterial and cultural examinations of the feces in the blue and red indican cases show no distinctive differences. Some yield high Gram positive findings, others low. It is almost a daily observation with him that when the proper diet for an indican case has been maintained for a while (essentially proteid free), and the output of indican has been lowered, the individual will develop into a urorosein case for which the diet would be essentially proteid in make-up. Among other things that must be done in the handling of these cases is to put all types on a diet of proper caloric value to meet the weight and work of the individual and to grade the proteins, protein sparers and vegetables to meet the urinary indications. Only in this way can substantial tissue-construction in treatment take place.

Ophthalmic Record, Chicago

August

89 The Operation of Pannus Dissection. T. A. Dickson, Mobile, Ala.
90 A Theory of the Etiology, Prevention, Treatment and Cure of Trachoma. F. B. Eaton, Portland, Ore.
91 Vossius' Lens-Ring. H. Gifford, Omaha.
92 Demonstration of the Hemianopic Prism-Phenomena of Wilbrand. A. Saenger, Hamburg, Germany.
93 Large Piece of Wood Embedded Deeply in Orbit of Child 25 Months Removed with Preservation of Vision. C. A. Veasey, Spokane, Wash.

Ohio State Medical Journal, Columbus

August 15

94 Treatment of Neuralgias by Deep Injections of Alcohol. C. R. Ball, St. Paul, Minn.
95 "Pole Ligation" for Exophthalmic Goiter. J. H. Jackson, Toledo.
96 Nystagmus as Related to Diseases of the Inner Ear and Cerebellum. W. B. Chamberlin, Cleveland.
97 Mastoid Operative Methods and Prognosis as Influenced by Labyrinthine Disease. J. E. Brown, Columbus.
98 Cerebellar Abscess. W. Mithoefer, Cincinnati.

Texas State Journal of Medicine, Fort Worth

August

99 A Year's Progress in Medicine and Pediatrics. W. Shropshire, Yoakum, Tex.
100 Submucous Resection of the Nasal Septum. H. B. Decherd, Dallas, Tex.
101 Need of Sanitary Education in Both Town and Country. W. H. Blythe, Mt. Pleasant, Tex.
102 Classified Delusions of the Insane. R. B. Sellers, Comanche, Tex.
103 Infant Mortality. T. Y. Hull, San Antonio, Tex.
104 Puerperal Eclampsia. B. G. Prestridge, Alvarado, Tex.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

August 20

1 Strain. L. Brunton.
2 *Peptic Ulcer and Dilatation of the Stomach. T. R. Bradshaw.
3 *Case of Migraine Associated with Chlorin Retention. H. Higgins.
4 Rough Bacteriologic Examination of the Condition of Swimming Bath Water. G. H. Pearce.
5 Case of Pernicious Anemia Terminating in Acute Diabetes. J. Parkinson.
6 *The Abuse of Purgatives. H. French.
7 Case of Rheumatic Arthritis Followed by Streptococcus Invasion. G. R. Strong.

2. **Peptic Ulcer and Dilatation of the Stomach.**—An interesting case is cited by Bradshaw, that of a widow, aged 61, who first consulted him in October, 1900. Many years before she had been attended by a well known physician for hematemesis and subsequently for mitral regurgitation. When Bradshaw saw her she had gastric pain, there was vomiting and the stomach was distended. At times the distention was great and was relieved by copious vomitings of watery fluid containing a little blood, sarcinae, and a good deal of free hydrochloric acid. The patient was clearly suffering from temporary complete occlusion of the pylorus. A surgeon who saw her was unwilling to operate on account of her age and the presence of valvular disease. The patient also declined operation and after one trial of lavage resolutely refused to allow Bradshaw to repeat the process. For some days she was fed entirely by the rectum; even then the stomach continued to fill up with its own secretions. On one occasion spontaneous evacuation through the pylorus and the bowels took place. After some days the power of retaining a little food returned, but any slight increase in the amount was liable to be followed by complete occlusion. A small piece of solid food no bigger than a grain of corn seemed capable of blocking the pylorus; any distention of the stomach caused it to drop and the pyloric end to become kinked.

For 8 years she lived on a pint of fluid and 2 or 3 crumbly biscuits *per diem*, and in spite of this care had an attack of complete occlusion every 8 or 12 months, each one of which it was thought would prove to be the last. She wore an abdominal belt which certainly seemed of some service in supporting the stomach. She retained her mental and bodily vigor under this regimen. Two years ago, however, she insisted on consuming meat and vegetables in considerable quantity. An attack of hematemesis took place. However, she persisted with the new and enlarged dietary, and instead of getting worse she improved, and after being confined for eight years to a daily allowance of a pint of liquid she found that she was now able to take ordinary food in normal amounts. She began to put on flesh, and for the last two years she has enjoyed good health, takes her meals as do others, and has no return of vomiting or other serious symptoms of gastric trouble. Apparently the disturbance from the taking of solid food two years ago led to the ulceration or stretching of the adhesions that restrained the pylorus.

3. **Migraine Associated with Chlorin Retention.**—This paper deals with records of observations made in a case of long-standing neurasthenia and migraine in a well-preserved man, aged 43. The chief subjective sensations complained of were as follows: 1. Sensations of exaggerated fatigue, which the French express by the word "*courbature*" and the Italians by "*taglia gambe*" (literally, the legs cut from under one). 2. Mental depression of the overwhelming unreasoning kind, so characteristic of neurasthenia. 3. Headaches, lasting sometimes as long as 3 days, accompanied by the usual migraine symptoms; they usually caused insomnia, as he was obliged to sit up in bed to ease the pain; so soon, however, as he slipped down he was awakened with a fresh exacerbation. Depression and fatigue sensations were always associated, analytically, with "Joulie" hypoacidity and more or less decided increase in the "Jacquemet" reaction; on several occasions the tube used in the latter test could be held upside down for as long as 10 seconds before the layer of colloid would allow it to fall. These symptoms were invariably and quickly removed by means of not more than 70 drops of phosphoric acid. On each occasion there was a decided increase in the indican. When he complained of depression alone hypoacidity was not always associated with the symptoms, the urine being occasionally even hyperacid.

In reviewing the facts of this case in order to decide on the details of treatment, Higgins says that it is quite clear that chlorin retention dominates the clinical picture. The therapeutic measures recommended were the following: A Glénard's belt with gentle abdominal exercises and minute care in emptying the colon, if necessary, by enemata; 100 and 150 gm. respectively of grilled lean meat on alternate days, 3 eggs daily, 1 or 2 tablespoonfuls of sour (lactic acid) milk, the remainder of a ration of 80 gm. of proteid to be made up by fish or casein freshly prepared by citric acid. It was particularly insisted on that no proteid should be taken unless it was quite fresh. The vegetable salts of 500 gm. of fresh vegetables were ordered to be taken, with care. They were to be omitted whenever the depression following their ingestion lasted more than an hour or when the headaches recurred. As during the above observations the blood pressure had already risen to 95 mm., only 0.5 gm. of calcium carbonate was given; this was to be increased or diminished as the blood pressure rose or fell. Two grams of hydrate of magnesium were given, as well as a small ration of iodin in organic combination.

6. **Abuse of Purgatives.** French shows that it is very important to realize that although it is relatively easy to produce an action of the intestine by means of a purge, this is a very different thing from curing constipation. Purgatives are administered far too indiscriminately, he declares, and a great deal of constipation is increased rather than diminished by them, and it may even actually be produced by them. Just as it is a natural instinct of the brain and body to go to sleep for a regular period in each 24 hours, so it is the natural instinct of the large intestine to empty itself periodically once every day. This regular habit should always be encouraged, and if the bowels opened at the same time each day constipation would be almost non-existent. The difficulty is that from carelessness and other causes, the action of the bowels may be postponed or responded to irregularly, with the result that, as time goes on the bowel, brought up irregularly, shows its desire to act irregularly; some days there will be an action, other days not.

Thereupon, those who do not think sufficiently, or do not know what they are doing at once either take or prescribe some purgative dose, such as castor oil, salt or even calomel, with the result that the contents of the bowel are driven through, it is true, and there is an apparent relief of the constipation; but the mere fact that there has been an overaction of the bowel to-day makes it all the more likely that there will be no action at all to-morrow and the next day, so that by that time another dose may seem to be required; and so the condition goes on from bad to worse because, instead of encouraging Nature's natural tendency to act once a day, the bowel is forced periodically and left inactive in the intervals. Purgatives should be used with the greatest caution, and a strong dose should never be given when a mild dose would suffice. If the case is merely one of simple constipation it is better to spend some weeks or months trying to coax back the regular habit by getting the patient to try hard at a regular time each day, at the same time giving him more fluids to drink and some foods with an insoluble residue to eat, than to give laxatives at all. Examples of these kinds of foodstuffs are the fiber of green vegetables and fruits, and proportions of husks in porridge and brown bread.

British Medical Journal, London

August 20

8 Some Pharmacologic Effects of Strong Sulphur Water of Harrogate. D. Brown.
9 *After-History of Forty Cases of Epithelioma of the Lip. A. R. Short.
10 Effect of a Denture After Excision of the Upper Jaw and Septum Nasi. R. Parker.
11 *An Immense Renal Calculus. G. W. Ord.
12 *Simple Method of Removing Sebaceous Cysts. H. Freeth.

9. **After-History of Epithelioma of Lip.**—This report has been drawn up to afford some ground on which opinion may be based in endeavoring to decide whether the more extensive operation is really desirable. The cases are classified according to the method of operation adopted, the operations for recurrence being classed separately.

1. One operation only; removal of growth on lip by a V-incision; glands not removed; 23 patients, of whom 14 are now well, 4 are known to have died of recurrence, and 2 more have probably done so, and 3 are lost sight of.
2. One operation only; removal of growth on lip and of a palpable gland or glands; 6 patients, of whom 1 is probably cured, 3 died of recurrence, and 2 cannot be traced.
3. Removal of growth on lip and complete clearance of all the submaxillary glands on that side at the same time or soon after, although not palpably enlarged; 3 patients; 2 well, 1 recurred. All cases are rather recent.
4. Recurring cases, patients operated on more than once; 7 patients; 2 are well, 1 has probably had recurrence, 1 died of pneumonia without recurrence, and 3 died of recurrence.
5. Recurring cases in which first operation was performed elsewhere, 6 patients; 2, probably 3, are well, 3 died of recurrence.

It will be seen that of those cases in which no glands were removed at the first appearance 16 ended favorably, and 7 terminated fatally as the result of recurrence. When, however, there were already enlarged glands, though perhaps only one, 1 case resulted favorably, and 5 terminated fatally. There is little doubt, in the author's opinion, that an extensive removal of all the glands, besides those enlarged, is indicated in this latter class.

11. **An Immense Renal Calculus.**—Ord's case is of great interest for the following reasons: (1) the presence of calculi in both kidneys; (2) the size of the calculus, 3¼ inches by 2 inches by 2 inches; (3) the comparatively small amount of discomfort and pain, considering the size and irregularity of the stone; (4) the extremely healthy appearance of both the kidneys at the operations; (5) the separation of the calculus into two large fragments and one small one, articulating by facets, and in a way resembling a knee joint with patella. The joint was movable in a front to back direction, and was evidently flexed whenever the patient bent her back. This capacity for flexion doubtless prevented much of the pain.

12. **Removal of Sebaceous Cysts.**—In the method employed by Freeth an incision is made, not over the cyst, but through the healthy skin alongside it, parallel to and the same length as the shortest diameter of the cyst. The hypodermic injection of a little eucain solution along the line of the incision is all the anesthetic required. A small blunt hook is then inserted into the incision and is worked round the cyst, tearing through the adhesions of the cyst wall, first on the superficial aspect, as that is where the cyst wall is thinnest and most liable to burst, and then on the deepest aspect, until the cyst is completely separated, when it can easily be delivered by pressure from above, much in the same way as a cataract is delivered. A dab of collodion on the wound is sufficient dressing. The advantages of this method are said to be:

1. The incision is through healthy skin and is, especially when the cyst is oblong, much shorter than by the usual method.
2. The union is quicker, more satisfactory, and the appearance of the resulting scar much better than that of an incision through the altered skin over the cyst.
3. A minimum amount of anesthetic is used, as only a linear injection is required.
4. In case of cysts situated on the scalp very much less hair need be cut, as all that is required is a single snip of the scissors over the site of the incision.

Australian Medical Journal, Melbourne

July

13 Quinsy. T. K. Hamilton.
14 *Causation of Infantile Paralysis. W. MacKenzie.
15 *Cervical Rib. F. D. Bird and J. Smith.
16 Recent Advances in Obstetrics. G. Rothwell.
17 Recent Work in Treatment of Puerperal Sepsis. H. C. Lloyd.
18 Management of the Normal Puerperium. R. T. Sutherland.
19 Modern Methods in Private Obstetric Practice. R. H. Fetherston.
20 Dystocia; Early Recognition and Surgical Management. R. H. Morrison.
21 *Curative Effects of Radium on Cancer in Mice. H. Lawrence.
22 Case of Chorio-epithelioma of Uterus. W. E. Wilson.

14. **Causation of Infantile Paralysis.**—MacKenzie's paper may be summed up as the recognition of the treatment of the muscle as the all-essential in this disease. Instead of waiting for a chance recovery in the anterior cornua, and treating in a perfunctory way the muscles with massage and electricity, it recognizes the fact that every affected muscle will work, provided that a commencement be made from zero. It recognizes that an affected limb will retain its heat, and show little waste, provided that it be rested and worked within physiologic limitations, even without massage and electricity. Work must not be done for the muscle, it must work. Much patience is required; results are slow in arriving in many cases, but these will merit the time and trouble spent.

15. **Cervical-Rib.**—Bird and Smith review the clinical history of cervical-rib and report 5 cases.

21. **Radium.**—Lawrence advocates the use of large amounts of radium and increasing the length of time of application, the object being to obtain the selective action of the ultra-penetrating rays of the radium on the cancer cells. He records the results of his experiments with mice, which were extremely satisfactory.

Medical Press and Circular, London

August 10

23 Convulsions and Epilepsy in Early Life. L. Guthrie.
24 Treatment of Mental Excitement in Asylums. G. M. Robertson.
25 Varieties of Molluscum Contagiosum. P. S. Abraham.
26 Amputations. W. T. Thomas.
27 Chronic Intestinal Stasis. W. A. Lane.

August 17

28 Convulsions and Epilepsy in Early Life. L. Guthrie.
29 Printers' Palsy. J. C. McWalter.
30 Proposed Sterilization of Certain Degenerates. R. R. Rentoul.
31 Cholera Outbreak Among the Nurses of the Presidency General Hospital, Calcutta. C. R. Macrea.

Journal of Obstetrics and Gynecology of the British Empire, London

August

32 *B. Coli* Infection of Urinary Tract Complicating Pregnancy. E. N. Burnett.
33 The Pelvic Floor Aperture. R. H. Paramore.
34 The Inflammatory Pelvic Mass. W. W. Chipman.

Clinical Journal, London

August 10

35 *Non-Surgical Treatment of Ulcer of the Duodenum. G. Herschell.
36 Retention of Urine. H. Lett.
37 Pitfalls in Diagnosis of Common Diseases of the Eye. A. H. Thompson.

August 17

38 Arthritis Deformans. O. Grunbaum.
39 Small Pox and Its Early History. F. M. Sandwith.
40 Localized Tuberculosis Treated with Tuberculin. C. Riviere.

35. **Non-Surgical Treatment of Ulcer of the Duodenum.**—Herschell is convinced that the chief reason for the want of success so frequently experienced by those attempting to cure a duodenal ulcer by medical means is the half-hearted manner in which the treatment is carried out and the neglect

to make use of the results of recent scientific work. When there is any marked interference to the passage of food along the duodenum, or immediate danger to life from hemorrhage, or perforation, actual or impending, surgical measures are urgently demanded. In their absence one may undertake the medical treatment of a duodenal ulcer with a distinct probability of success, if the patient will cooperate. First, Herschell would eliminate any condition which may possibly account for the deficiency of protecting bodies in the blood. Next, he would remedy the deficiency of antitryptic and antilytic substances in the blood, and reduce the acidity and peptic power of the gastric juice. Then he secures the stomach against distention. One of the chief ways in which a gastro-enterostomy conduces to the healing of a duodenal ulcer is by perventing distention of the stomach. One can secure much the same result (a) by preventing the pyloric spasm by the administration of atropin and alkalies; (b) by giving the food in small amounts at comparatively short intervals; (c) by giving the drink, which should be hot water, not with the meals, but when the stomach is empty. It will then pass quickly out of the stomach, and will incidentally wash and cleanse the surface of the ulcer in the duodenum. Lastly, treat any adhesions.

In order to prevent relapses it is necessary for the patient to observe the following rules for a considerable time after his cure:

1. A proper belt to support the lower abdomen should be constantly worn.

2. A daily dose of olive oil should be taken, fasting every morning, provided that it agrees.

3. A daily dose of normal horse serum should be taken after the principal meal for a month, and then twice a week for another month. In the spring and autumn a dose of serum should be taken twice a week for a month as a prophylactic.

4. All vegetables should be put through a sieve.

5. Preference should be given to white meats, and to boiling or steaming instead of roasting or baking. All made dishes, curry, condiments, pickles and vinegar should be permanently excluded from the diet.

6. The blood should be examined periodically for hemoglobin and steps taken to keep it up to a normal standard.

7. If there has been any melena or occult blood the patient's stools should be examined periodically after a three-days' hemoglobin free diet.

Dublin Journal of Medical Science

August

11 Pathologic Report of the Rotunda Hospital for the Year Ending Oct. 31, 1909. R. J. Rowlette.
12 Dysentery or Dysenteric Diarrhea in West African Prisons. S. G. Gray.
13 *Temperature Curve in Pulmonary Tuberculosis. M. S. Baker.
14 Why Has Small-Pox Declined in Prevalence and Fatality? J. Moore.

13. **Temperature Curve in Pulmonary Tuberculosis.** Despite the fact that the temperature range has no fixed relation to the morbid changes in the lungs, Baker believes that no other clinical feature offers so reliable a criterion on which to form conclusions as to the patient's future. It is usual to regard the absence of fever as a hopeful sign, although occasionally it will be found that rapidly advancing cases remain apyrexial throughout. The significance of a subnormal temperature range may best be considered in relation to the circulatory condition present. So long as the pulse remains good a subnormal oral temperature is not a serious import, but when present in conjunction with a rapid pulse and low intra-arterial pressure it may be regarded as a [illegible] sign. In uncomplicated cases the presence of fever is conclusive evidence of the activity of the disease and if persistent must influence the prognosis unfavorably. Continuous and remittent fevers are often present in rapidly advancing cases and indicate more certainly than any other sign a progressive disease. An intermittent fever of the hectic type is so frequently associated with cavitation that its presence must necessarily darken the outlook, while an intermittent temperature curve whose amplitude of variation is less marked yields more readily to treatment than continuous or remittent fever. Many observers regard an inverse type with anxiety, and the sudden appearance of a high febrile range in afebrile cases is specially significant, being often associated with the onset of a miliary infection.

The behavior of the temperature curve under the influence of sanatorium treatment and rest is a valuable prognostic guide. Cases which exhibit a rapidly subsiding temperature range under treatment are especially hopeful, while those which show a persistent fever aand impaired nutrition under like circumstances hold out little hope of recovery; so long, however, as the nutrition remains good there may eventually occur a subsidence of fever. In charts which show an irregular range where periods of pyrexia occur at intervals a lengthening of the apyrexial periods is to be looked for in favorable cases. A fever suddenly appearing on the second to the fourth day after an hemoptysis, accompanied by dyspnea and cyanosis, and persisting without remission, may always be regarded with the gravest apprehension as indicating the onset of an aspiration-pneumonia, a complication which almost invariably proves fatal.

Annales de l'Institut Pasteur, Paris

July, XXIV, No. 7, pp. 529-608

45 Disease of Silk-Worm Moths. (Le rouge du papillon du ver à soie en Cochinchine.) C. Broquet.
46 Theory and Practice of Cheese Making. (Technique fromagère.) P. Mazé. Concluded.
47 Fowl Diphtheria. (Le microbe de la diphthérie des poules.) J. Bordet and V. Fally.
48 Migration of Alkaloids in Grafts. (Migration des alcaloïdes dans les greffes de Solanées sur Solanées.) M. Javillier.
49 Proteolysis in Anthrax Cultures. (Protéolyse de la bactéridie charbonneuse.) E. Lazarus.
50 Microbes that Produce Phenol. K. Dobrwotski.

Annales de Médecine et Chirurgie Infantiles, Paris

August 1, XIV, No. 15, pp. 465-492

51 *Diphtheritic Cardiopulmonary Paralysis. Mutel.
52 *Ichthyosis and the Thyroid. J. Roux and J. Galippe.
53 Treatment of Severe Forms of Atrophy and Hypotrophy in Infants by Feeding with Milk Heated to 108 C. G. Variot.

51. **Diphtheritic Paralysis.** The paralysis in the case reported came on about the fifteenth day of mild diphtheria notwithstanding that 70 c.c. of antitoxin had been given in 3 days. The paralysis was evidently the work of endotoxins and further injections of antitoxin were consequently of no avail. The paralysis involved the larynx, heart and lungs but the child, a boy of 10, was finally tided past the danger stage under symptomatic measures and the cure was complete by the end of the third month. He was kept sitting up in bed to prevent suffocation and 2 or 3 mg. of strychnin sulphate was injected daily subcutaneously for 15 days and then changed for another form of strychnin.

52. **Ichthyosis and Thyroid Treatment.** Three months of thyroid treatment proved absolutely ineffectual in the 2 typical cases of ichthyosis reported.

Annales des Maladies des Org. Génito-urinaires, Paris

July 15, XXVIII, No. 14, pp. 1249-1344

54 Urinary Disturbances after Various Earthquakes in Italy since 1904. (Les troubles urinaires chez les survivants de la catastrophe Calabro-Sicilienne.) C. Bruni.
55 Cysto-Urethroscope. L. Buerger (New York).
56 Cystitis from Passage of Long Silk Threads into the Bladder 2 Years after Hysterectomy. Successful Removal of ½ yard piece of Silk under Cystoscopy. Le Fur.
57 *Clamping and Ligating the Hilus of the Kidney Instead of the Pedicle in Nephrectomy. (Sur la forcipressure appliquée méthodiquement dans la nephrectomie). S. d'Este.

57. **Clamping and Ligating the Kidney Hilus Instead of the Pedicle in Nephrectomy.** D'Este reports Tansini's successful technic for nephrectomy when there is sclerosis of the hilus and vessels. He applies a clamp to the hilus, including the large vessels and the ureter and ligates here. Among his 47 operations of the kind he lost only 1 patient and this in 1895, his mortality thus being only 2.12 per cent. This technic also materially shortens the operation.

Archives de Médecine des Enfants, Paris

August, XIII, No. 8, pp. 561-640

58 *Diabetes in Children. (Diabète sucré chez l'enfant.) M. Lauritzen.
59 *Characteristic Crying of Infants with Inherited Syphilis. (Les cris chez les nourrissons hérédo-syphilitiques.) G. Sisto.

58. **Diabetes in Children.** A similar article by Lauritzen was summarized in The Journal, August 27, page 813.

59. **Characteristic Crying of Infants with Inherited Syphilis.** Sisto remarks that infants cry from hunger or pain and that an inherited syphilitic taint may cause such pain, generally in the region of the epiphysis, that the children scream

or moan incessantly. This constant crying day and night may be the only manifestation of the constitutional syphilis. Under antisyphilitic treatment the child soon ceases to cry. His statements are based on 8 cases described in detail from his own experience and 5 from Comby's. The children commenced to cry from the second to the fortieth day of life, screaming when they were moved and the crying generally being most severe at night. There was no known history of syphilis in some of the families but the children stopped crying at once under mercurial treatment. Radioscopy generally revealed an osteochondritic process.

Lyon Médical, Lyons

July 24, XLII, No. 30, pp. 101-140

60 *Two Cases of Chronic Retention of Urine without Mechanical Obstacle. Rochet and Müller.

July 31, No. 31, pp. 141-184

61 Cancer of the Thyroid with Exophthalmic Goiter Symptoms. Postoperative Myxedema after Partial Thyroidectomy. X. Delore and H. Alamartine.

60. **Retention of Urine Without Mechanical Obstacle.** The authors report two cases in which cure was effected by stretching the upper urethra through a buttonhole opening in the perineum.

Presse Médicale, Paris

August 13, XVIII, No. 65, pp. 617-624

62 Study of Five Members of a Family with Inherited Syphilis. (Étude d'une famille d'hérédosyphilitiques.) A. Barre and P. Gastinel.

Revue de Chirurgie, Paris

August, XXX, No. 8, pp. 241-464

63 Jaundice with Echinococcus Disease of the Liver. (De l'ictère dans les kystes hydatiques du foie.) E. Quénu.
64 Traumatic Dislocation of the Scaphoid on the Tarsus. (Luxations traumatiques du scaphoide tarsien, en particular luxations doubles.) A. Boeckel.
65 *Stricture of the Lower Intestines from Inflammation Outside, especially in Women. (Rétrécissements péri-coliques pelviens; péri recto-sigmoidiens.) G. Küss. Commenced in No. 2.
66 *Treatment of Arterial Aneurisms. C. Monod and J. Vanverts. Commenced in No. 5.

65. **Stenosis of the Colon from Inflammation Outside.** Küss concludes his long study of what he calls pelvic pericolic stenosis by giving the history in detail of 50 cases, including a number previously unpublished. The inflammation may have originated in the peritoneum, adnexa, or rectum. The strictures in question are characterized by the fact that the mucosa seems to be intact and slides on the subjacent tissues and on the abdominal wall, the latter seeming to form a solid part of the fibrous perirectal mass. The findings suggest cancer except for a history of pain and acute attacks suggesting inflammation in the left half of the abdomen. Hysterectomy, breaking up adhesions, or other suitable intervention is followed as a rule by a complete functional cure; medical measures alone are ineffectual.

66. **Treatment of Arterial Aneurisms.** Monod and Vanverts discuss the aneurisms of the various arteries in turn, classifying them thus under 19 heads and reviewing the experiences recorded in the literature with each type, especially the ultimate outcome after the different methods of treatment followed in each.

Semaine Médicale, Paris

August 17, XXX, No. 33, pp. 385-396

67 Industrial Diseases and Industrial Insurance. (Essai sur les maladies professionelles.) V. Thébault.

Archiv für Gynaekologie, Berlin

XCI, No. 2, pp. 243-478. Last indexed Aug. 6, p. 539

68 Tumors in Pelvis Interfering with Delivery. (Geburtsstorungen durch Beckentumoren.) K. Stern.
69 Retrogression of Corpus Luteum. J. W. Miller.
70 Deliveries with Contracted Pelvis. (Ueber Geburten bei engem Becken.) M. Yamasaki.
71 *Further Experiences with Bossi's Dilator. H. Hofmann.
72 *Conclusions From 85 Pubiotomies. (Ueber die Bewerthung der Hebosteotomie auf Grund von 85 Operationen.) E. Roth.
73 *Comparative Study of Cesarean Section, Pubiotomy and Extraperitoneal Cesarean Section. (Welche Stellung nimmt die klassische Sectio caesarea zur Hebosteotomie und zum extraperitonealen Kaiserschnitt ein?) G. Leopold.
74 *Treatment of Eclampsia according to Stroganoff. E. Roth.
75 Cervical Cesarean Section. (Zur Kritik des cervikalen Kaiserschnittes.) Richter.

71. **Instrumental Dilatation of the Cervix.** At the clinic in charge of Leopold, Bossi's dilator is considered the best instrument for this purpose and it has been used there to start premature spontaneous delivery in 52 cases and in 123 cases as a preliminary to immediate artificial delivery. The indications were mostly eclampsia, nephritis, heart disease, advanced pulmonary tuberculosis or hydramnion. There was no laceration of the cervix in 60 cases, and only such slight injury that there was no bleeding in 35 other cases, tears important enough to require suturing occurred in 28 cases, but the puerperium was febrile in only 8 of these and the fever was briefly transient in all. The dilator must be spread only between the uterine contractions and the instrument should not be used for pluriparae with cicatricial lesions in the cervix, although this was done in several cases in Leopold's clinic without harm. Another important point is to carry the dilatation far enough.

72. **Indications for Pubiotomy.** This communication from the Dresden clinic for women, in charge of Leopold, reports the details of 85 cases in which pubiotomy was done. The puerperium was febrile in 48 of the cases and in 20 the condition was serious. Six of the children died possibly in consequence of the operation but none of the mothers. In 10 of the 40 cases in which the women were examined later there were complaints of pain on long standing or walking or lifting. In 21 of the 38 women examined there was a tendency to prolapse of the vagina or uterus or both. In only 6 of the 20 cases in which the women passed through another pregnancy after the pubiotomy was the pelvis found permanently enlarged. The conclusions from the experiences related are that pubiotomy must be restricted to multiparae, to the aseptic cases and to those free from general disease. Pelves with a true conjugate under 7 cm. should also be excluded from pubiotomy as also all cases in which there is much disproportion between the size of the pelvis and the fetal head.

73. **Cesarean Section.** Leopold reports 300 vaginal Cesarean sections and compares the lessons learned from these and other obstetric operations, his final conclusions being that the classic Cesarean section still retains its preeminence, and that every woman with a much contracted pelvis should be sent to an institution at least two weeks before term so that she can be prepared for any necessary operation, infection warded off, and the most propitious operative technic selected.

74. **Treatment of Eclampsia According to Stroganoff's "Prophylactic" Method.** Roth reports 21 cases of eclampsia in which Stroganoff's method of treatment was applied. It was described in The Journal, July 3, 1909, page 86. Roth expresses surprise that this technic is not more generally followed as he considers it remarkably effectual and peculiarly adapted for general practice. It must be instituted in time, however; even minutes count in eclampsia. Stroganoff, Roth says, has certainly obtained better results in eclampsia than any other clinician can boast, and the outcome at Leopold's clinic was also unexpectedly favorable as the method had been applied with considerable skepticism. Good results may be anticipated when the physician who first sees the patient begins treatment according to Stroganoff's method and then sends the patient to an institution where it can be continued with expert skill. If general practitioners and the clinics could thus work together, he declares, the treatment of eclampsia would enter on a most promising phase. Others have treated women in eclampsia with morphin and chloral but they gave them only during the convulsions, while Stroganoff keeps the woman constantly under the influence of small doses of the drugs and thus wards off any further attacks. No external influence, noise or light, is allowed to disturb the drowsiness induced by the sedatives. If the woman has to be touched, it is done under 20 drops of chloroform. His plan is to give 0.015 gm. (¼ grain) morphin at once; in 1 hour 2 gm. (30 grains) chloral, at the third hour, repeat the dose of morphin; at the seventh hour, repeat the dose of chloral; at the thirteenth hour, 1.5 gm. (23 grains) chloral and repeat

this dose at the twenty first hour. He gives the chloral in a solution of 20 parts chloral hydrate, 20 parts mucilage of acacia and 180 parts distilled water. Only 1 of the 31 women died and autopsy revealed signs of pneumonia in this case, possibly responsible for the fatal outcome.

Beiträge zur Klinik der Tuberkulose, Würzburg

XVII, No. 1 pp. 1-149. Last indexed Aug 13, p 630

76 Experimental Research in Tuberculous Infection. O. Grüner and F Hamburger.
77 Histologic Research on the First Changes after Tuberculous Infection. H. F. Helmholz and T Toyofuku.
78 Occurrence of Tubercle Bacilli in the Tissues and Changes in their Property of Being Acid-Fast. (Beitrag zum Vorkommen des Tuberkelbazillus im Gewebe, sowie zur Aenderung seiner Säurefestigkeit.) P. Geipel.
79 Various Aspects of and Experiences with Tuberculin Treatment of Tuberculosis. (Beiträge zur spezifischen Behandlung der Tuberkulose auf Grund klinischer Beobachtungen.) W Neumann.

Beiträge zur klinischen Chirurgie, Tübingen

July, LXVIII, No 3, pp. 605-827

80 Sarcomatous Carcinomas and Carcinomatous Sarcomas. (Ueber Mutationsgeschwülste und ihre Stellung im onkologischen System.) H. Coenen.
81 Tardy Meningitis after Apparent Recovery from Fracture of the Skull. E. Lonhard.
82 *Appendicostomy. H. v. Salis.
83 Infections with Anaerobic Bacteria. (Zur Kenntnis anaërober Staphylokokken und des Bacillus funduliformis.) M. Heyde.
84 *Transplantation of Dead Bone. (Ueber Knochenersatz.) W. Kausch.
85 Contact Cancers. (Zur Frage der Abklatschcarcinome.) A. Caan.
86 Hemostasis by Twisting in the Vessel Walls. (Ueber die Verwendbarkeit der Blunk'schen Blutgefässklemme zur definitiven Blutstillung.) H. Petzsche.
87 Lessons from 225 Cases of Fracture of the Skull. (Bericht über 225 Schädelfrakturen 1897-1907 mit Nachuntersuchungen.) L. Frank.
88 Resection of Half of Pelvis. (Ueber Resektion einer Beckenhälfte und Exarticulatio interilio-abdominalis.) D. Kulenkampff.
89 Congenital Fistula in the Lower Lip. (Ueber die angeborenen Unterlippenfisteln.) A. Oberst
90 The Spiral Incision in Treatment of Varicose Veins. (Zur Behandlung des varikösen Symptomenkomplexes mit dem Spiralenschnitt nach Rindfleisch-Friedel.) P. Kayser.
91 Local Tumor-Forming Fibrous Ostitis. G. E. Konjetzny.

82. **Appendicostomy.**—Salis reports 8 cases in which direct medication of the inflamed bowel through the appendix, brought out and sutured to the skin, proved the means of curing obstinate, simple or membranous colitis. Good results were obtained even in the purulent ulcerative form. The technic is so simple that he prefers it to an artificial anus, to resection of the bowel or ileosigmoidostomy, as it answers practically the same purpose while the operation is comparatively an insignificant one. The opening is not large enough, however, he states, in case of mechanical or peritonitic ileus.

84. **Implantation of Dead Bone.**—Kausch has implanted bone from the cadaver, ivory supports, and dead bone, reporting here 8 cases. The results show that cadaver bones and foreign substances are unsuitable material for implantation, but that bone taken recently from the human body but no longer living can be made to answer the purpose admirably. In one of his cases the tibia was resected, including the periosteum, on account of sarcoma, and a corresponding piece of the tibia from a leg amputated the day before on account of sudden trauma was implanted in its place. The periosteum was scraped off, the epiphyses sawed off, the bone marrow scooped out and a piece 8 cm. (over 3 inches) was implanted in the patient's leg. It was held in place with a long ivory tube at each end, passed into the inner canal of the bone of the graft and stumps. Recurrence of the sarcoma compelled amputation of the leg 266 days later. The implanted bone had become covered with a new growth of periosteum and was being absorbed, its place being taken throughout by new bone tissue. The ivory had been absorbed also but there was no new regeneration of bone in its place.

Berliner klinische Wochenschrift

August 8, XLVII, No [illegible], pp [illegible]

92 Importance of Ehrlich's "606" in Treatment of Syphilis. (Bedeutung des Ehrlich'schen Arsenobenzols für die Syphilisbehandlung.) A. Neisser and [illegible] Kuznitzky.
93 *Relations Between Hypersensibility and Immunity. (Beziehungen zwischen Ueberempfindlichkeit und Immunität.) E. Friedberger.
94 [illegible] and Psychiatry. H. Much.
95 *Avoidance of Accidental Pseudopulmonary Sounds in Auscultating the Apices. (Ueber pseudopulmonale Geräusche und ihre Vermeidung bei der Auscultation der Lungenspitzen.) E. Allard.
96 Origin of Emphysema. (Zur Emphysemfrage. II.) L. Hofbauer
97 The So-Called Trachoma Germ not Identical with the Gonococcus. (Entsteht der Trachomerreger durch Mutation des Gonococcus?) L. Halberstaedter.
98 Positive Findings with the Meiostagmin Test in 30 out of 32 Cases of Cancer. (Zum Studium der Meiostagminreaktion bei bösartigen Geschwülsten.) C. Stabilini.
99 Influence of Lipoids on Autolysis of the Liver. (Einfluss der Lipoide auf die Leberautolyse.) G. Satta and G. M. Fasiani

93. **Relations Between Hypersensibility and Immunity.**—Friedberger is inclined to regard these as practically identical processes, differing only in degree.

95. **To Avoid Accidental Sounds in Ausculting.**—Allard distinguishes the sounds due to the muscles or scapula from those originating in the apex by having the patient change the position of arm and shoulder, the change in the sounds then revealing their extraneous nature. The accidental sounds can be excluded by having the patient extend his arm straight, rotate it inward in the shoulder joint and then move the arm backward until the shoulder joint is lowered. With this position there do not seem to be any accidental muscle or scapula sounds; he has noticed moreover that the breathing sounds become more prominent in this position.

Deutsche medizinische Wochenschrift, Berlin

August 11, XXXVI, No. 32, pp. 1473-1512

100 Morbid Dread. (Zur Symptomatologie und Therapie der Angst.) A. Cramer.
101 *Experiences with Ehrlich's "606" in Treatment of Syphilis. (Beobachtungen an 503 mit Dioxy-diamido-Arsenobenzol behandelten Krankheitsfällen.) W. Wechselmann.
102 Glioma Removed from Third Left Frontal Convolution. (Operiertes Gliom der III. linken Stirnwindung.) Coler.
103 *Impossibility of the Hair Turning White Suddenly. (Ist plötzliches Ergrauen des Haupthaares möglich?) L. Stieda.
104 Endothelial Origin of Mononuclear Cells in the Blood. V. Patella.
105 *Origin and Treatment of Scoliosis. E. Hoffmann.

101. See abstract 10 in American Current Literature, this issue.

103. **Is It Possible for the Hair to Turn White in a Few Hours?** Stieda answers this question in the negative, stating that extensive search on his part has failed to reveal an authentic case of this occurrence. The cases on record are all based on hearsay evidence or the phenomenon is to be attributed to the individual's not being able or forgetting to use the customary hair-dye. A patient of Behrend's suffered from headache and he advised the man to give up the use of his hair-dye, which was probably responsible for the headaches. The man did so and explained to his friends that the sudden change of his black locks to white was the result of business worries. Stieda also knows personally of a case in which a dark-haired man was taken to prison and when discharged after a few days his hair was white, but simply because he had not taken his hair-dye with him to prison.

105. **Origin and Treatment of Scoliosis.**—Hoffmann lays great stress on prevention of scoliosis, declaring that once established the treatment is tedious and not very encouraging. He ascribes the development of the curvature to the fact that the child loses the instinctive sense for the correct attitude of the body owing to strain on the muscles from certain attitudes at school work. When examined the child seems to be scoliotic when in reality it merely assumes a scoliotic attitude from disturbances in the sense of muscular balance. Sitting without a support for the back aids in fatiguing the muscles and to rest them the child stoops over or twists around or slides down in its seat. Girls' muscles do not get so much exercise as boys' and consequently these faulty attitudes are more common among them. When this scoliotic attitude once becomes habitual, the child is unable to stand up straight even when it tries to do so, and it has to be taught anew the sense of muscular balance in the spine. This can be done by training, the physician saying, "Chest out; draw in your abdomen; throw your head back, hold your right shoulder lower, etc.," aiding these

commands at first with manual pressure, but later relying on the commands alone and shortening them, until when the child is told to stand erect it assumes automatically the proper position. It may be wise to teach a rather overcorrected attitude at first. This training of the muscles is supplemented with gymnastics to strengthen the back muscles, and he instructs the mothers to carry on the training under occasional supervision by the physician. The measures must be individualized to each case, he says, possibly including a slanting seat in school and higher sole on one side. Creeping exercises, etc., may be useful in advanced stages but he prefers exercises erect, as the aim is to teach the child to stand and sit straight.

Deutsche Zeitschrift für Chirurgie, Leipsic

July, CV, Nos. 5-6, pp. 445-614

106 Tardy Sequels of Appendicitis. (Spätfolgen der Epityphlitis.) O. Retzlaff.
107 Duodenal Ulcer. (Das Duodenalgeschwür und seine chirurgische Behandlung.) D. G. Zesas.
108 *Superheated Air in After-Treatment of Laparotomized Patients. (Heissluftbehandlung nach Laparotomien als peristaltikanregendes Mittel zugleich ein Beitrag zur Verhütung post-operativer Peritonitis.) A. Strempel.
109 Retrograde Incarceration. L. Stuckey.
110 *Rolling Up the End of the Severed Intestine. (Eine neue Methode des operativen Darmverschlusses.) R. Klapp.
111 Treatment of Syndactylia. R. Schreiber.
112 Gunshot Wounds of the Heart. (Herzschüsse.) H. Iselin.
113 Tardy Intestinal Hemorrhage after Operative Treatment of Incarcerated Hernia. (Die Spätdarmblutungen nach der Brucheinklemmungsoperation.) C. Canestro.
114 Hemorrhagic Glossitis in a Hemophiliac. E. Umbreit.

108. **Superheated Air in After-Treatment of Laparotomized Patients.** Strempel is enthusiastic over the way in which peristalsis is stimulated after a laparotomy by applying heat to the abdomen, either in the form of the hot air box or an incandescent electric light box. He has used the latter exclusively as he happened to have a contrivance of the kind on hand. In his 111 cases flatus passed generally in from 18 to 24 hours, seldom as late as 48 hours. Another advantage of the method is that the patients are thoroughly warmed by it, counteracting the tendency to chilling during the operation. The temperature in his box can never get over 55 C. so that the box does not require very close supervision. He applies it for an hour and a half at a time, with intervals of 3 hours, and keeps this up night and day until all danger of intestinal paralysis is past. He has never witnessed any injurious effect on the heart and vessels although he has kept close watch for any tendency in this direction. No adjuvant measures were needed in any instance as the heat answered all purposes, except in a few cases a pint of water was injected to soften hard feces, or an intestinal tube was inserted to promote passage of flatus when the patients were too weak to strain. The only possible mishap from this method of after-treatment is that very restless patients on arousing from the effects of their anesthetic are liable to scorch the skin against the electric lights. The heat not only stimulates peristalsis but seems to promote absorption and prevent formation of adhesions while it seems to attenuate the virulence of bacteria in the region.

110. **Closing the Stump of the Severed Intestine by Rolling it Over.**—The long narrow forceps with which the stump of the intestine is clamped are rolled up on the intestine for two or three turns. The last turn is sutured to the body of the intestine and the forceps are then withdrawn. The lumen is thus more effectually closed than by the ordinary technic, Klapp declares, while the procedure is simple and neat.

Fortschritte der Medizin, Leipsic

August 4, XXVIII, No. 32, pp. 961-992

115 Surgical Treatment of Heart Disease. (Die chirurgischen Behandlung der Herzkrankheiten.) G. Axhausen.
116 Present Status of the Cancer Question. (Heutiger Stand der Krebsfrage.) C. Da Fano. Commenced in No. 30.

Jahrbuch für Kinderheilkunde, Berlin

August, LXXII, No. 2, pp. 121-242

117 Determination of Amount of Energy Required in the Food of Infants. (Zur Lehre von der energetischen Bestimmung des Nahrungsbedarfes beim Säugling.) O. and W. Heubner.
118 *Hypothyroidism in Children. (Hypothyreoidie im Kindesalter.) W. Stoeltzner.
119 *Calcium and Spasmophilia. J. Rosenstern.
120 *Pylorus Intubation for Spasmodic Stenosis of the Pylorus in Infants. (Ueber den hypertrophierenden Pyloruskrampf des Säuglings.) B[illegible] and F. Winternitz.
121 Suppuration of the Salivary Glands in 3 Infants. (Ueber eitrige Speicheldrüsenentzündung bei Säuglingen.) P. Ausbach.

118. **Hypothyroidism in Children.** Stoeltzner remarks that myxedema is not often correctly diagnosed; the children are generally treated for years on the mistaken assumption of rachitis. As a prospect of a cure grows less and less with the duration of the myxedema, this failure to recognize it early may have disastrous consequences. The rudimentary forms are particularly liable to escape recognition, while thyroid treatment in time is almost a certain cure. In a case of this kind, a boy of 6 had not grown in the last 2 years but seemed otherwise normal although not particularly bright. Under cautious thyroid treatment by the end of 18 months he had grown 11 cm., nearly 4½ inches. In 2 other cases the myxedema developed after severe measles or mumps, with acute thyroiditis in the latter case. The thyroid treatment ordered was soon abandoned by the family and the child developed pronounced myxedema, but after 2 years it spontaneously subsided. In a fourth case the myxedema developed after a severe fall over a balustrade, the throat in front bleeding from the injury. The hypothyroidism in this case was evidently of traumatic origin, the first case of the kind on record he believes. In this case also thyroid treatment promptly cured the child. In conclusion Stoeltzner suggests that the "pasty" children, fat, pale and flabby, may be suffering from hypothyroidism and require thyroid treatment. Overfeeding of children with this tendency to hypothyroidism seems to entail lymphatic enlargement.

119. **Lime and a Tendency to Convulsions.** Rosenstern is convinced that the research to date has established the fact that the calcium ions are highly important for the regulation of the phenomena of movements and of nerve stimulation. His own experience confirms the assumption that a deficient proportion of lime in the food may entail nervous overexcitability, while he found that the excitability was materially reduced in 15 out of 20 infants with pronounced spasmophilia after ingestion of 100 c.c. of a 3 per cent. solution of calcium chlorid ($CaCl_2$). The cathode opening contraction, the facialis phenomenon and Trousseau's sign all showed the marked influence of the single dose of lime; a solution of sodium chlorid, on the other hand, seemed to have a contrary action. No injurious by effects were observed from the single dose of lime, and Rosenstern thinks that his experience deserves attention as a means of treating an acute attack of threatening convulsions in a child. The infants to whom he gave the lime were all between 4 and 12 months old and most were inclined to dyspeptic disturbances besides the spasmophilic tendency.

120. **Stenosis of the Pylorus in Infants.** B[illegible] writes from Budapest to describe his experience with spastic stenosis of the pylorus in his own 2 children. The cases were distinguished further by the intensity of the syndrome. In his first child the weight dropped from 3,050 gm. at birth to 1,840 in less than 7 weeks, and operative treatment became necessary. Loreta's divulsion was done; the hard contracted pylorus relaxed in the surgeon's hand during the operation but it was still abnormally thick although there was no trace of organic stenosis. The explosive vomiting continued as severe as before, the divulsion having evidently done no good, and the child growing constantly worse, the pylorus was incised and a Nélaton catheter, No. 7 French, was introduced through the mouth and passed through the pylorus into the duodenum. By this means it proved possible to feed the infant and recovery soon followed, all trouble being over by the time the child was 6 weeks old; it is now 3½ years old and perfectly healthy. The disturbances in his second child were not so severe; the pylorus was never palpable and the syndrome disappeared under medical measures alone. The first symptoms in both cases were the uneasiness in nursing so that the children were unable to empty the breast and the protruding stomach, this protrusion of the stomach region and difficulty in nursing sustaining the assumption that

the spasm of the pylorus is the primary disturbance. Peristalsis in the stomach was noticed 4 days later and the tumor, the size of a hazel-nut, in the pylorus region by the end of the week. He recognized the true trouble from the start and kept a detailed record of all the data, especially the amount of fluid ingested and vomited each day. Nothwithstanding the severe derangement from the pylorospasm, the organism tenaciously maintained its normal water balance. He is inclined to ascribe the whole trouble to a lack of balance between the musculature of the antrum and the musculature of the fundus of the stomach; when the innervation of both becomes normal then all disturbances from this source cease. At birth there is neither spasmodic contraction nor hypertrophy of the pylorus, merely the predisposition. Winternitz discusses the cases from the surgical standpoint, calling attention to the extreme retraction of the muscular pyloric ring after the lengthwise incision, indicating excessive tonicity in the muscle. The pylorus was incised over the tube introduced from the mouth; this allowed ample nourishment from the first and the child began to gain at once. The retention pylorus catheter has proved successful in other cases in his hands, but he warns that it should not be left *in situ* longer than 2 days.

Medizinische Klinik, Berlin

August 14, VI, No 33, pp. 1285-1322

122 Tuberculous Disease of the Eye. (Ueber tuberkulöse Erkrankungen am Auge.) C. Hess.
123 *Experiences with Ehrlich's "606" in Treatment of Syphilis. (Behandlung der Syphilis mit dem neuen Ehrlich-Hataschen Arsenpräparat.) E. Hoffmann.
124 Action of Carbonated Baths on Heart and Vessels. (Die Herz- und Gefässwirkung alter und neuer natürlicher CO_2-Bäder.) B. Fellner, Jr.
125 Certain Digestive and Nutritional Disturbances in Pulmonary Tuberculosis. (Ueber einige Störungen der Verdauung und Ernährung bei Brustkranken.) J. Cecikas.
126 Ischl Mineral Muds in Therapeutics. (Ueber Ischler Salzbergschwefelschlamm und dessen Verwendung.) A. Ott.
127 Modification of Wassermann Reaction Technic. K F. Hoffmann.

123. **Ehrlich's "606" in Treatment of Syphilis.**—Hoffmann states that recurrences have been observed in large numbers of cases of syphilis after treatment with "606" in the customary dosage, and that by-effects have accompanied the use of the remedy to such an extent as to invalidate the claim made for the "606" that it is entirely harmless. In his experience with it by-effects were noticed only when the drug was in an acid solution, while they were absent when a neutral solution was used. The remedy does not certainly kill all the spirochetes as claimed, he says, as he was able in one case to demonstrate the presence of lively spirochetes in lesions on the genitals and tonsils a week after the injection of "606." In the case of a boy of 15 with syphilitic ozena from inherited taint, the improvement at once under the "606" was remarkable. In a case of ulcerated gummas in the mouth, throat and testicles of a man of 40, high fever, pulse of 140 and dyspnea followed the injection of the "606," other signs indicating central pneumonia of embolic origin and secondary pleurisy with extreme weakness of the heart. He ascribes this syndrome to dislodgement of a thrombus in the gluteal muscle following injection of a very acid solution; nothing about the syndrome suggested local infection of the site of the injection. In 2 other cases there was considerable disturbance of the heart action, the pulse running up to 120 and 160, the area of dulness spreading toward the right with accentuation of the second sound. These findings persisted for a few days and then gradually subsided. In another case there was a slight albuminuria. No visual disturbances were ever observed. He knows of a case in a Bonn institution in which the patient died suddenly the night after the injection. Ehrlich adds the details of this last fatal case as he has obtained them by telegraph. The patient, he says, was a woman of 33 with syphilitic apoplexy, paresis of the legs, tachycardia, difficulty in swallowing and accelerated breathing. The conditions in this case should have forbidden the use of the "606," he declares, as he has expressly rejected all responsibility when the remedy is given to other than those healthy except for the syphilis and the organs sound. He also excludes the metasyphilitic diseases from treatment with "606." He reaffirms that given in the right way and with proper indications the remedy is free from dangers and does not induce any appreciable by-effects. Ehrlich has the records now of over 3,000 cases.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

August, XXXII, No. 2, pp. 125-240

128 Determination of Hemolytic Substances in the Placenta. E. v. Graff.
129 No Direct Connection Between Gynecologic and Gastric Disturbances. (Ueber das wechselseitige Verhältnis der weiblichen Geschlechtsorgane und der Erkrankungen des Magens.) O. Vertes.
130 Polydactylia. F. Heimann.
131 Multiple Laceration of Vaginal Vault During Delivery. (Ueber mehrmalige Zerreissungen des Scheidengewolbes während der Geburt.) M. Kaufman.
132 Operative Treatment of Myoma. K. Franz.
133 *Operability of Recurrences After Removal of Uterine Carcinomas. O. Hoehne.
134 Groove Formation on the Surface of the Ovary. (Ueber Furchenbildung an der Oberfläche des menschlichen Ovariums.) G. Bien.
135 Retrogression of Ovarian Tumors after Vesicular Mole. (Rückbildung von Ovarialtumoren nach Blasenmole.) L. Fränkel.

133. **Operability of Recurrence After Removal of Uterine Cancer.**—Hoehne makes a point of keeping patients under supervision after he has operated on them for uterine cancer. He tells them to return to be examined at certain intervals and keeps a record of the dates, sending them a notice if they fail to present themselves as ordered; nothing should be allowed to interfere with this systematic reexamination. In 2 cases he was able by this means to discover recurrence in an early stage and successfully remove it, before the patients had the least suspicion that anything was wrong with them again, their general health being excellent. The after-examinations are always made with the greatest care and on discovery of the slightest suspicious lump the patient is taken into the hospital for 2 weeks' control. If the lump grows any larger during this time it is assumed to be malignant and is removed, but if it does not grow or subsides, the patient is dismissed and systematically reexamined at intervals. Prophylaxis of recurrences in this way is much more promising, he remarks, than the efforts to have primary cancer diagnosed earlier. The surgeon can thus root out recurrences on their first appearance. He describes a case in which what was supposed to be a nodular recurrence, not discovered until quite large, proved to be merely thick indurated cicatricial changes in the tissues. In another case what seemed to be merely an inflammatory infiltration proved to be a malignant recurrence extending diffusely through the region. Another case demonstrates the danger of thrombosis of the iliac veins following carcinomatous involvement of the vessel wall. It might be possible in such cases, he suggests, to prevent trouble from this source by ligating the main iliac vein before resecting the cancerous glands encroaching on the vein.

Münchener medizinische Wochenschrift

August 9, LVII, No. 32, pp. 1673-1720

136 Intoxication from Decaying Pancreas Tissue. (Zur Theorie der Pankreasvergiftung.) G. v. Bergmann and N. Guleke.
137 *Artificial Premature Delivery and Vaginal Cesarean Section with Habitual Fetal Mortality. (Künstliche Frühgeburt und vaginaler Kaiserschnitt bei Habituellem Absterben der Frucht.) O. v Franqué.
138 *Treatment of Sciatica with Epidural Injections. L. Blum
139 Relations of Lymphocytes to Splitting of Fat and Destruction of Bacteria. (Beziehungen der Lymphocyten zur Fettspaltung und Bakteriolyse.) S. Bergel
140 The Meiostagmin Reaction in Typhoid. L. Vigano.
141 The Meiostagmin Reaction in Experimental Tuberculosis and in Differentiation of Human and Bovine Tubercle Bacilli Culture and Infection. A. Gasbarrini
142 Reconstructed Portrait of Prehistoric Man. (Die bildliche Darstellung des Urmenschen und ihr wissenschaftlicher Wert.) F. B. Solger
143 Rhachiotomy in Treatment of Transverse Presentation. (Behandlung der verschleppten Querlage mittelst der Rhachiotomie Küstner.) H. Küster
144 Tetanus of Obscure Origin. (Zur Lehre vom kryptogenetischen Tetanus.) F. Stromeyer
145 *Nephritis Secondary to Exophthalmic Goiter. (Nierenerkrankung bei Basedowscher Krankheit—Thyreogene Nephritis.) M. B. Grampner

137. **Prophylaxis of Habitual Death of the Fetus.**—Anomalies or disease of the placenta or changes resulting from the influence of chronic nephritis or nutritional disturbances in the endometrium may be responsible for the death of the

fetus in repeated pregnancies. In a case reported by von Franqué there were numerous patches of fibrous degeneration in the placenta; the patient was a woman of 38 with chronic nephritis and the fetus had died just before term in 3 previous pregnancies. She was kept under constant supervision during the 2 weeks before term and after a week the fetal heart sounds were found to be growing weaker, so he punctured the membranes and followed this in less than an hour with vaginal Cesarean section. The child was of normal size but weighed only 2,850 gm., evidently having suffered from insufficient nourishment, but has since developed normally. In another case, he delivered with the inflatable bag under much the same conditions. The pathologic findings in the placenta were not so pronounced in this case, but there was evidently a reaction to some irritating process. He declares that artificial premature delivery just before term as indications arise in these cases of habitual fetal mortality is a thoroughly scientific procedure, most gratifying in its outcome.

138. **Treatment of Sciatica with Epidural Injections.**—Blum applied the perineural technic, that is, injection around the nerve of an anesthetic or saline solution, in 25 cases of sciatica and the results were generally good. In 3 cases, however, no effect was obtained, and he has since used Cathelin's epidural technic and found it even more satisfactory. It was described at length in THE JOURNAL, July 13, 1901, page 150. The fluid is injected into the spinal canal through the lower median sacral foramen, the needle having to pierce only the sacrococcygeal ligament. The ligament once pierced, the needle is turned to point toward the cauda equina above. After injection of from 5 to 10 c.c. of salt solution, improvement of the sciatica is evident at once, very rarely the delay is 24 hours after the injection. In a few persistent cases he had to repeat the injection 3 or 5 times at intervals of 2 or 3 days before a complete cure was realized. The effects were always at least as good and as permanent as with the perineural injections, while the epidural technic is not painful, he says, and has never induced fever or untoward by-effects in the thousands of cases in which it has been used to date. This cannot be said of the perineural technic; he observed peroneus paresis in 2 cases after the perineural injections and others have reported similar experiences. Another advantage of the epidural technic is that it acts on other nerve tracts as well as on the sciatic; the single injection banishes pain in the sacrum and femoral nerve, while with the perineural technic each nerve has to be treated separately. The epidural injections have also been successfully applied to relieve the pain from compression of nerve roots by a cancer in the spine, to relieve the gastric and bladder crises in tabes and in lead colic and to cure nocturnal enuresis.

145. **Nephritis with Exophthalmic Goiter.** Graupner relates a number of experiences and arguments which demonstrate that hyperplasia of near lymphatic organs is liable to develop in consequence of the progressive hyperthyroidism and thyroid intoxication, this hyperplasia being most evident in the thymus, lymph glands, in heteroplastic lymphomas in the thyroid itself or in the spleen and bone marrow. There may be a toxic nephritis characterized by necrosis of the epithelium; its development is favored by operative intervention on the thyroid as in the 2 cases reported in detail in which the patients succumbed in 18 and 26 hours after the operation. There was pronounced status lymphaticus in both cases and recent destructive nephritis.

Virchows Archiv, Berlin

August, CCI, No. 2, pp. 161-320

146 Kidney Tumors. (Untersuchungen über Nierengeschwülste.) M. Zehbe. Commenced in No. 1.
147 Cause of Specific Action of Mercury. (Die Grundwirkung des Quecksilbers.) G. Priebatsch.
148 Fatal Burns. (Beitrag zur Kasuistik der lokalen und allgemeinen Veränderungen beim Tode durch Verbrennung.) Raysky.
149 Microscopic Composition of the Exudate with Tuberculous Otitis Media. G. de Berardinis.
150 Regeneration after Tuberculous Intestinal Ulceration. (Regeneration des Darmepithels und der Lieberkühnschen Krypten an tuberkulosen Darmgeschwüren.) R. Amenomiya.
151 Regeneration after Superficial Duodenal Ulcers. (Die Regeneration des Darmepithels von den Brunnerschen Drüsen in oberflächlichen Duodenalgeschwüren.) H. J. Helmholz.
152 Local Amyloid of the Thyroid. (Lokales Amyloid der Schilddrüse.) I. Staffel.
153 Inflammatory Tumors of the Salivary Glands. (Ueber die entzündlichen Tumoren der Speicheldrüsen.) H. Thyssen.
154 Multiple Subperitoneal Serous Cysts of the Uterus. B. Huguenin.
155 Intracellular Nerve Network in Tumor Cells. (Das Golgi'sche Binnennetz in Geschwulstzellen.) E. Savagnone.
156 Malignant Suprarenal Tumor. (Zur Kenntnis bösartiger Nebennierengeschwülste.) F. Lasagna.
157 Hypophysis Tumor Without Acromegaly. M. Moskalew.
158 Sarcoma in Spinal Dura Mater. (Sarkom der Dura mater spinalis und dessen Dissemination im Meningealraum mit diffuser Pigmentation der Leptomeningen.) K. Kawashima.

Wiener klinische Wochenschrift, Vienna

August 11, XXIII, No. 32, pp. 1171-1192

159 Period of Incubation in Serum Sickness. (Ueber Inkubationszeit.) F. Hamburger and R. Pollak.
160 The Content of the Duodenum and Its Clinical Importance. (Der menschliche Duodenalinhalt mit statistischen Vergleichstabellen zu seiner klinischen Beurteilung.) M. Gross, Oefele and M. Rosenberg (New York).
161 Tests of Pancreas Functioning. (Ueber die wichtigsten neuen Untersuchungsmethoden zur Prüfung der Pankreasfunktion.) L. R. v. Korczynski.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXVII, No. 3, pp. [illegible]. Last indexed August 6, p. [illegible]

162 *Curative Action of Laparotomy for Tuberculous Peritonitis. F. Heimann.
163 The Local Tuberculin Reactions in Pregnancy and the Puerperium. (Systematische Untersuchungen über die lokalen Tuberkulinreaktionen in der Schwangerschaft und im Wochenbett, und Schlussfolgerungen hinsichtlich der Diagnosen und Prognosenstellung.) R. Stern.
164 Two Cases of Cesarean Section with Unusual Complications. A. Sitzenfrey.
165 *Racemose Vaginal Cancer in Children. (Zur Kenntnis der traubigen bösartigen Geschwülste der kindlichen Scheide.) C. Knoop.
166 The Full Bath a Source of Infection for Parturients. (Das Bad ist eine Infektionsquelle.) W. Hannes.
167 Pfannenstiel's Technic for Wedge Resection of the Uterus. (Die Pfannenstielsche Keilresektion des Uterus.) O. v. Franqué.

162. **Curative Action of Laparotomy in Peritoneal Tuberculosis.** Heimann states that 36 women with tuberculous peritonitis have been laparotomized at Küstner's clinic in the 10 years ending in 1908. All were much improved or cured by the operation, and 15 have been recently reexamined. Fully 54 per cent. seem to be in perfect health at present, good testimony as to the curative value of a laparotomy in these cases. In 2 other cases Heimann had occasion to laparotomize women who had been operated on elsewhere years before for peritoneal tuberculosis and he found that the tuberculous lesions had completely healed. The aspect was the same as that in guinea pigs after complete recovery from experimental tuberculous peritonitis. The peritonitis in his cases was of the serous type and the laparotomy was made as soon as the trouble was diagnosed. Concomitant lung lesions seemed to be benefited by the operation at the same time as the peritoneal. The abdomen was merely opened and the ascites evacuated; no attempt was made to rinse out the abdominal cavity and the adnexa were left undisturbed, even when there was reason to suspect a tuberculous lesion in them. One of the women has passed through a normal pregnancy since. He lays great stress on his routine practice of systematic tuberculin treatment commenced the seventh day after the laparotomy, the course being kept up by the family physician after the patients leave the hospital.

165. **Vaginal Racemose Sarcoma in a Child.** Knoop's little patient was a girl of 3 and the racemose sarcoma recurred in 6 months and again 3 months after the second operation, after which the child died. He reviews the similar cases on record, insisting that discovery of heterologous elements even in an apparently simple vaginal polyp in a child should compel removal of the entire genital apparatus by Wertheim's carcinoma technic even in very young children. Malignant growths in the child's vagina are of a different nature from those in adults and require still more energetic measures.

Zeitschrift für Urologie, Berlin

August, IV, No. 8, pp. 561-[illegible]

168 Case of Cystic Dilatation of an Accessory Ureter. S. P. von Fedorow.
169 Further Research on the Physiology and Pathology of the Prostate. J. P. Haberern and A. Makai.
170 Gonorrheal Infection and Genesis of Accessory Passages in the Penis. C. Gollmann.

Zentralblatt für Chirurgie, Leipsic

August 13, XXXVII, No. 33, pp. 1073-1112

171 *Treatment of Exstrophy of the Bladder by Making a Receptacle for the Urine out of the Lower Cecum, Utilizing the Appendix for the Urethra. (Zur Behandlung der Blasenektopie.) M. Makkas.
172 Technic for Laminectomy for Treatment of Spinal Cord Tumors. (Zur Technik der Laminektomie in der Behandlung von Rückenmarkstumoren.) Röpke.

171. **Treatment of Exstrophy of the Bladder.**—Makkas cut off the lower part of the cecum, making a closed bag of it, in which he implanted the ureters. He then drew the appendix out through the skin below to serve as an outlet for the urine accumulating from the ureters in the new reservoir formed by the cecum bag. The patient was a girl of 12 with typical exstrophy of the bladder and atresia of the vagina. The capacity of the new reservoir is over 300 c.c. and the child wears a retention catheter to date. The cecum was prepared for exclusion and implantation of the ureters by 10 days of sterilization. This technic avoids the great drawback of the Maydl technic, namely, mixture of feces with the urine, and thus all danger of ascending infection of the kidneys is obviated. With perfected technic, he adds, it may be possible to insure continence without the necessity for a retention catheter. The article is illustrated.

Zentralblatt für Gynäkologie, Leipsic

August 13, XXXIV, No. 33, pp. 1105-1128

173 Operations on the Uterus for Myoma and Disease in the Adnexa. K. M. Eisenstein.
174 *Recurring Extra-Uterine Pregnancy. (Wiederholte Extrauterin-Gravidität.) G. Siefart.

174. **Repeated Extra-Uterine Pregnancy.**—Siefart has had a second extra-uterine pregnancy occur in 1 out of his 25 cases during the last 10 years and a second case is suspicious. This percentage of recurring ectopic pregnancies and the similar small numbers encountered by others, render it unnecessary to take measures to prevent future pregnancies when operating for extra-uterine pregnancy, which some have advocated. In 3 of his 25 cases the women have passed through normal pregnancies and deliveries since the operation for the extra-uterine pregnancy.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 11, XXXI, No. 96, pp. 1009-1016

175 Inefficacy of Mercury in Surgical Tuberculosis. (Ancora della cura della tubercolosi chirurgica con i sali di mercurio.) E. Corti.

August 14, No. 97, pp. 1017-1032

176 Chondrectomy in Treatment of Pulmonary Emphysema. (L'operazione del Freund in alcune forme di enfisema polmonare.) M. Fasano.

Riforma Medica, Naples

August 1, XXVI, No. 31, pp. 841-868

177 *Pellagra. (Per la pellagra. Studio critico.) R. Campana.
178 *Transient Albuminuria a Favorable Sign after Laparotomy for Peritoneal Tuberculosis. (L'albumina transitoria nel periodo post-operativo dei laparotomizzati per peritonite tubercolare come segno di prognosi favorevole.) F. Gangitano.

August 8, No. 32, pp. 869-896

179 Favorable Experiences with Carbon Dioxid Snow in Treatment of Angiomas. (Applicazione e risultati del trattamento del Pusey all'acido carbonico degli angiomi.) U. Noferi.
180 *Experimental Research on Influence of Fatigue on the Processes of Infection and Immunity. (L'importanza dello strapazzo fisico nel meccanismo dei processi d'infezione e d'immunità.) D. de Sandro. Commenced in No. 31.
181 Operative Treatment of Ptosis of the Liver. (Contributo alla cura operativa delle epatoptosi.) A. Cernezzi.
182 *Anesthesia of the Eyeball in Nervous and Mental Diseases. (L'anestesia del bulbo oculare nelle malattie nervose e mentali.) G. Vidone and S. Gatti.

177. **Pellagra.**—Campana protests against the assumption that there is only one single cause for pellagra.

178. **Laparotomy for Peritoneal Tuberculosis.**—Gangitano calls attention to the transient albuminuria which he noted in all the cases in which recovery followed the laparotomy, that is, in 7 out of the 12 cases of tuberculous peritonitis in which operative treatment was tried. In the 5 other cases the effusion returned, notwithstanding a second laparotomy in 2 cases. It seems evident that when the laparotomy modifies conditions to such an extent as to lead to a cure, albumin appears in the urine. The proportion was never large, amounting to 6½ per thousand in only 2 of the cases. The patients were women and girls, between 14 and 49 and the tuberculous peritonitis was of from 4 months to 2 years' duration. He merely opened the abdomen and wiped the peritoneum dry with sponges, not flushing it, following the laparotomy with injections of iodin-iodid solution according to Durante's technic, and 7 of the 12 patients have completely recovered.

180. **Influence of Fatigue on Processes of Infection and Immunity.**—De Sandro reports extensive research on dogs, rabbits and guinea pigs injected with typhoid toxins after severe muscular strain. Under the influence of the chemical changes induced by the physical strain, the nervous exhaustion, fatigue of the heart and disturbances in the blood production, the defensive powers were evidently much weakened; phagocytosis was reduced and also the chemotactic power of the cells, the bacteriolysins, antitoxins, agglutinins and opsonins showing a marked falling off.

182. **Anesthesia of the Eyeball in Nervous and Mental Disease.**—Vidoni and Gatti pressed the eyeball down on the floor of the orbit seeking for a sign of organic nervous disease and found, in fact, that the pain which this induces in normal conditions was absent in the 2 cases of tabes in their series of 88 patients with various nervous or mental affections. The anesthesia of the eyeball was also pronounced in 2 insane adults. The anesthesia is probably due to some lesion in the sympathetic nervous system, they say, adding that it may aid in the early differentiation of tabes.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

Digest of Comments on the Pharmacopeia of the United States of America (Eighth Decennial Revision), and the National Formulary (Third Edition). For the Calendar Year Ending Dec. 31, 1907. By Murray Galt Motter and Martin I. Wilbert. Bull. 63, Hyg. Lab., U. S. P. H. and M.-H. S., June, 1910. Paper. Pp. 464. Washington: Government Printing Office, 1910.

Hydrotherapy. A Work on Hydrotherapy in General, its Application to Special Affections, the Technic or Processes Employed and the Use of Waters Internally. By Guy Hinsdale, M.D., Secretary of the American Climatological Association. Cloth. Price, $3.50. Pp. 466, with 115 Illustrations. Philadelphia: W. B. Saunders Co., 1910.

Diseases of the Colon and Their Surgical Treatment. (Founded on the Jacksonian Essay for 1909.) By P. Lockhart Mummery, F.R.C.S., Jacksonian Prizeman and late Hunterian Professor, Royal College of Surgeons. Cloth. Price, $3.25 net. Pp. 322, with 88 Illustrations. New York: William Wood & Co., 1910.

Physical Examination and Diagnostic Anatomy. By Charles B. Slade, M.D., Chief of Clinic in General Medicine and Instructor in Physical Diagnosis in the University and Bellevue Hospital Medical College, New York. Cloth. Price, $1.25. Pp. 146, with 36 Illustrations. Philadelphia: W. B. Saunders Co., 1910.

Dawn of the Fourth Era in Surgery and Other Short Articles Previously Published. By Robert T. Morris, M.D., Professor of Surgery in the New York Post Graduate Medical School and Hospital. Cloth. Price, $1.25. Pp. 145, with 6 Illustrations. Philadelphia: W. B. Saunders Co., 1910.

Lectures on Surgical Nursing. By E. Stanmore Bishop, F.R.C.S., Honorary Surgeon Ancoats Hospital, and Gynecological Surgeon, Jewish Memorial Hospital, Manchester. Cloth. Price, $1 net. Pp. 143, with 9 Illustrations. New York: William Wood & Co., 1910.

Aids to Microscopic Diagnosis (Bacterial and Parasitic Diseases). By Ernest B. Knox, M.D., Diplomate in Public Health (Honors), Royal Colleges of Physicians and Surgeons, Ireland. Cloth. Price, $1 net. Pp. 156. New York: William Wood & Co., 1910.

Difficult Labor. A Guide to Its Management for Students and Practitioners. By G. Ernest Herman, F.R.C.S., Consulting Obstetric Physician to the London Hospital. Cloth. Price, $2.50 net. Pp. 517, with 180 Illustrations. New York: William Wood and Co., 1910.

Practical Obstetrics. By E. Hastings Tweedy, F.R.C.P.I., Master of the Rotunda Hospital, and G. T. Wrench, M.D., late Assistant Master. Second Edition. Cloth. Price, $5.50. Pp. 491, with 179 Illustrations. New York: Oxford University Press, 1910.

History of Medicine. By Max Neuburger, Professor of Medical History in the Imperial University of Vienna. Translated by Ernest Playfair, M.B. In Two Volumes. Vol. I. Cloth. Price, $9. Pp. 404. New York: Oxford University Press, 1910.

Practical Nursing for Male Nurses in the R. A. M. C. and Other Forces. By Major E. M. Hassard, R.A.M.C., and A. R. Hassard. Cloth. Price, $1.50. Pp. 334, with Illustrations. New York: Oxford University Press, 1910.

Facts and Problems of Rabies. By A. M. Stimson. Bull. 65, Hyg. Lab. U. S. P. H. and M. H. S., June, 1910. Paper. Pp. 90, with Illustrations. Washington: Government Printing Office, 1910.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOL. LV, NO. 13 CHICAGO, ILLINOIS SEPTEMBER 21, 1910

A CASE OF DIFFUSE, PURULENT, VENTRICULO-SEPTAL MYOCARDITIS WITH ADAMS-STOKES' SYNDROME *

HARVEY G. BECK, M.D.
AND
WILLIAM ROYAL STOKES, M.D.
BALTIMORE

The subject of suppurative myocarditis has received some attention from ancient writers, since Whittaker[1] states that Galen described this malady in gladiators and Benevenus and Bonetus have also described abscesses in the walls of the heart. Later, Laennec and Meckel cited similar cases.

These cases of suppurative myocarditis are called "myocarditis purulenta" by Aschoff,[2] who shows that they are usually produced by ulcerative endocarditis, intracardiac thrombosis, pericarditis and septic infarction and abscess formation in cases of general pyemia. It will be seen that these purulent infiltrations or abscesses in the heart muscle are secondary processes caused by an antecedent infection. The case we shall later describe is a primary condition and cannot, therefore, be compared to the above mentioned processes.

The condition known as acute interstitial myocarditis, which follows such infectious diseases as diphtheria, scarlet fever and rheumatism, first described by von Hayen,[3] also differs from our case, since it is characterized by an infiltration of lymphocytes, plasma cells and fibroblasts, while the polymorphonuclear leukocytes are absent.

Before describing our case in detail we wish to cite a case of acute purulent interstitial myocarditis following subacute rheumatism which was described by Freund[4] in 1898.

> This patient had a frequent pulse, a rise of temperature, precordial pain and delirium. The autopsy showed a flabby heart containing yellow dots and lines, and the microscopic examination revealed a diffuse inflammation with polymorphonuclear leukocytes combined with scattered hemorrhages. The blood-vessels were filled with leukocytes and the small veins contained thrombi. The muscle fibers contained vacuoles; the nuclei were elongated, thickened, fragmented and at times absent, and the cross-striations were often obscure, while the individual fibrils seemed separated one from another. Toward the endocardium they showed fatty degeneration.

The above case is the only one we have been able to find in literature of a true, diffuse, interstitial, purulent myocarditis, but we have collected a few typical instances of circumscribed abscess formation in the heart muscles. Carnas[5] states that abscesses of the walls of the heart have been most frequently observed in pyemia and ulcerative endocarditis. In certain cases there are remissions followed by relapse which give a subacute or chronic character to the disease. Laking[6] describes a case of many months' illness with sudden death, which showed two long-standing abscesses in the apex of the left ventricle, and Roth[7] has shown that these abscesses may undergo calcareous transformation. Chance[8] and Howitt[9] both report abscesses of the heart in children, and nine out of ten cases occur before the thirtieth year. Formad[10] reported a case of abscess of the heart about the size of a large bean with accompanying purulent myocarditis, and it is interesting to note that this condition may develop from a circumscribed abscess. Banks[11] also has described an abscess the size of a pigeon's egg in the left ventricle.

Abscess of the heart follows pyemia or septic endocarditis and is characterized by angina-like symptoms, dyspnea, gallop rhythm, dicrotic pulse and temperature, and Loin[12] states that this condition may be distinguished from septic endocarditis by a more rapid pulse in the former condition.

The association of heart-block with infectious diseases has recently been established. The few cases thus far reported have been reviewed by Peabody,[13] who reports an additional case. Some of the patients recovered. Autopsies have revealed various lesions of the bundle of His, such as anemic necrosis of the muscular septum in the region of the bundle, cellular infiltration, fibrous degeneration with a calcareous nodule pressing on the bundle; and James[14] has reported a case in which the bundle of His was completely destroyed by an ulcer in the interventricular septum due to a streptococcus septicemia.

Other conditions which may produce heart-block and Adams-Stokes' syndrome are syphilitic gummata and scar formation, calcareous deposits, fatty infiltration, septic and benign infarction and fibrous tumor of the bundle of His, as we have already described in a former article.[15]

---

* From the Medical and Pathological Departments of the College of Physicians and Surgeons, and the Bacteriological Laboratory of the City and State Boards of Health, Baltimore.

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] Whittaker: Twentieth Century Practice of Medicine, 1905, iv, 127.

[2] Aschoff: Pathologische Anatomie, Jena, 1909, ii, Special Part

[3] Von Hayen: Arch. de physiol. norm. et path., 1869-70, iii, 81

[4] Freund: Berl. klin. Wchnschr., 1898, xxxv, 1077, 1106.

[5] Carnas: Myocardite primitive suppurée du septum, Loire méd., 1892, xi, 113, 120.

[6] Laking: Saint George's Hosp. Rep., 1875, vii, 361; Rev. d. sc. méd., 1876, i, 589.

[7] Roth: Cited by Ziegler, Lehrbuch der speciellen pathologischen Anatomie, Jena, 1887.

[8] Chance: Lancet, London, May 16, 1846, p. 548.

[9] Howitt: Lancet, London, June 20, 1846, p. 684.

[10] Formad: Tr. Path. Soc. Philadelphia, 1891-3, xvi, 80.

[11] Banks: Proc. Path. Soc. Dublin, 1852-53, p. 27.

[12] Loin: Ann. Soc. d'anat. path. de Bruxelles, 1880-81, Bull. 30, p. 31.

[13] Peabody, F. W.: Heart-block Associated with Infectious Diseases, Arch. Int. Med., 1910, v, 252.

[14] James: Am. Jour. Med. Sc., 1908, cxxxvi, 469.

We regret that we were unable to obtain any pulse tracings in the case the report of which follows, but the patient was under observation only for several days in the hospital, during which time the sphygmograph was being repaired. Nevertheless, we are convinced that he suffered from heart-block with Adams-Stokes' syndrome. The case is unique because of its association with the rare condition of primary purulent myocarditis.

CASE REPORT

CLINICAL HISTORY

Patient.—J. C., a man aged 67, by occupation a street-cleaner. His history is unimportant. In early childhood he had measles, scarlet fever and mumps. Apart from these maladies he enjoyed remarkably good health until his thirtieth year, when he contracted syphilis. He developed the usual characteristic secondary symptoms, for which he received several months' treatment. He was always employed at heavy, laborious work. In his earlier days he was strongly addicted to the use of alcohol, mostly in the form of whisky. For the past twenty-five years he drank more moderately.

Present Illness.—He continued in good health until seven months before his admission to the Mercy Hospital. At this time he began to have vertigo and syncope with epileptiform seizures. These attacks came on abruptly, frequently without premonition, at other times with a brief aura, consisting of a sense of smothering, scotoma and tinnitus aurium. The patient sank rapidly into a state of semiconsciousness, which was followed by clonic spasms of the facial muscles on the right side and tingling and formication in both upper extremities. Other associated symptoms were vasomotor disturbance, oppressive sensation in the epigastrium, with pain which radiated to both arms, and intense dyspnea. The entire seizure lasted only a few minutes. These attacks came on very frequently. They were usually single, but sometimes five or six followed in close succession; excitement or physical exertion had a tendency to produce them. For this reason the patient had been unable to follow his vocation for the past seven months. Three months after the onset of the attacks a cough developed, which was accompanied with a slight expectoration. Dyspnea on slight exertion became an annoying symptom. Later he noticed enlargement of the veins in his legs, which subsequently became varicosed. There was no edema. He had a constant feeling of pressure in his epigastrium and dyspeptic symptoms were marked. On March 25, 1910, on the advice of his physician, Dr. C. F. Blake, he was sent to the hospital.

Physical Examination.—This revealed the following condition. The patient looks fairly robust, is well developed and in a good state of nutrition. Mentally he is apathetic, inclined to stupor and talks incoherently, but, when aroused he appears nervous and apprehensive and responds readily to inquiries in a perfectly rational manner. The face is pale, the lips slightly cyanosed and the conjunctivæ anemic and injected. The pupils are equal and react sluggishly. The tongue is coated and flabby with marginal indentation. The mucous membrane of the tongue and buccal cavity show a slight degree of cyanosis. There is a small patch of alopecia of the scalp, and the hair and eyebrows come out readily. The jugular bulbs and the superficial veins of the neck are distended and pulsate. The chest is somewhat emphysematous in type. Breathing is irregular and, at times, Cheyne-Stokes in character. Percussion of the lungs shows hyperresonance over the anterior and lateral aspects of the chest and over the upper half posteriorly. The bases of both right and left lung are moderately dull. Fremitus is generally decreased. On auscultation emphysematous breathing is heard over the entire chest and a few dry scattered râles are heard.

Heart: The maximum apex impulse is in the fifth interspace in the mammillary line. There are no abnormal areas of pulsation. Relative cardiac dulness extends 1.5 cm. to right of the right sternal border and the distance from the midsternal to the left border at the apex measures 9 cm. Dulness begins above at the lower border of the second rib. There are no cardiac murmurs at the apex; both sounds are clear and distinct. The first sound, however, is not entirely normal, as it lacks the so-called booming quality which is a distinctive feature of the mitral systolic sound. The aortic and pulmonary first sounds are almost inaudible. A reduplication of the second sound is heard at the aortic and pulmonary areas, and also at an area corresponding to the junction of the fourth interspace and left sternal border. Bradycardia is pronounced and the cardiac rhythm is fairly good. There are from 44 to 46 apex-beats per minute, while there are from 86 to 94 jugular pulsations, denoting practically a 2 to 1 rhythm. The radial pulse is likewise slow (46 per minute), but the rhythm is good and pressure is minus. The ratio between the auricular and ventricular systole is disturbed when the patient exercises.

The blood-vessels are somewhat thickened, but no more so than one would expect to find in a man of the patient's age. With the exception of double inguinal hernias the abdominal examination is negative. The superficial veins of the lower extremities are engorged. Reflexes are not disturbed. There is a slight enlargement of the cervical and inguinal glands.

Urine: Specific gravity, 1.013; traces of albumin; otherwise negative.

Course of Disease.—March 28: The patient had several seizures during the night, following each other in close succession, and to-day he appears exhausted and drowsy. He has Cheyne-Stokes breathing and voids large quantities of urine.

March 29: Slept well during night and shows a general condition of improvement. Radial pulse is fairly regular but slow. Jugular pulse well marked. Two pulsations occur to one radial.

March 30: Radial pulse, 43; jugular, 86. Forced exercise in bed produced an acceleration of the venous pulse to 98, but had no effect on the radial pulse. The following records taken during the day show the relation between the radial and jugular pulses:

Time.	Radial.	Jugular.	Time.	Radial.	Jugular
9:30 a. m.....	48	99	12:00 m.	46	94
10:00 a. m.....	46	84	12:30 p. m.....	44	90
10:30 a. m.....	50	104	1:00 p. m.....	48	96
11:00 a. m.....	48	98	1:30 p. m.....	42	90
11:30 a m.....	52	90	2:00 p. m.....	50	96

March 31: Patient felt comfortable during the early part of the night, but later in the night he ventured out of bed and was found in the toilet with an acute paroxysm. He had another paroxysm shortly after returning to bed, from which he quickly recovered. Several hours later he was found dead in bed.

During his entire stay in the hospital the patient's temperature was normal.

GENERAL AUTOPSY REPORT

Body Section.—Lungs show some edema and congestion. Pericardial sac filled with a bloody fluid. Heart somewhat enlarged. Arteries show some sclerosis. Liver about normal in size, but showed chronic passive congestion. Spleen normal. Right kidney much enlarged and several small cysts on its surface filled with a watery fluid. Left kidney enlarged and both showed chronic nephritis. Stomach showed marked congestion and acute gastritis.

Owing to an unfortunate accident no microscopic sections were made from the viscera, other than the heart, but it may be taken for granted that there was no acute purulent condition present and that the sections would have shown only a chronic nephritis and an acute congestion of the gastric mucous membrane.

Bacteriologic Examination.—No cultures were made, but stained specimens showed a few pneumococci in the purulent areas of the heart muscle.

EXAMINATION OF HEART

The heart is somewhat enlarged, weighing 450 gm. The measurements are as follows: Thickness of left ventricle midway 18 mm.; length of left ventricle 8.5 cm.; aorta, just above valves 8 cm. in circumference; interventricular septum 9 mm.

---

[15] Beck and Stokes: A Clinical and Pathologic Study of a Case of Adams-Stokes' Disease, Arch. Int. Med., 1908, ii, 277.

thick. Right side of heart: right ventricle 8 mm. thick; length of right ventricle 8 cm.; pulmonary artery just above valve 5.5 cm.

The papillary muscles of the right and left ventricles are flattened. The heart muscle is reddish brown in color, and, on cutting through the interventricular septum, near the auriculoventricular septum, fine yellowish streaks can be seen. On making a flat section of the muscle of the left ventricle opposite the interventricular septum, small grayish streaks and small reddish dots are apparent in the muscular substance which has been laid open. The valves are normal. The aorta contains a few small yellowish plaques just around the entrance of both coronary arteries, and there are numerous smaller plaques scattered over the intima of the rest of the aorta.

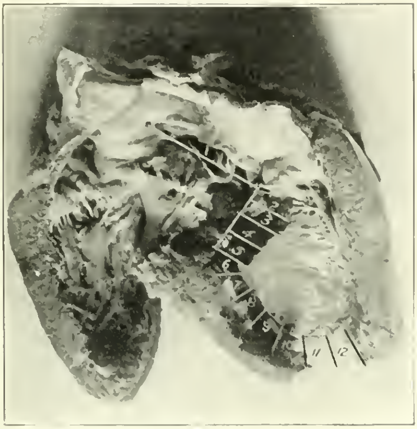


Fig. 1.—Heart, showing the situation of the various blocks from which the sections were made. These are numbered as in the text. These blocks of tissue were cut out of the heart in order to obtain cross-sections of the bundle of His.

Coronary Arteries.—Both coronary arteries were dissected out to the ramification of their finest branches, and the general condition is as follows:

Left Coronary Artery: The main artery, the left descending branch and the circular branch all contain numerous bulbous thickenings, giving the artery an irregular, beaded or nodular appearance. To the touch, the entire artery is much firmer and harder than normal, and the irregular miniature sausage-shaped nodules have the feel of hard bony tubes. A fine probe measuring 1 mm. in thickness can be passed through the circular branch and also through the descending branch to a distance of 6 cm., but the lumen is evidently narrowed, as the probe passes with difficulty. On opening the artery, the intima is seen to contain numerous irregular yellowish elevations, most of which contain a soft pultaceous yellow material, or a much firmer calcareous deposit forming thick plates.

Right Coronary Artery: This artery does not show the same nodular condition, but presents rather a general indurated, cord like, leathery feeling. On opening up the artery, there are a few small yellowish plaques containing a soft, pultaceous, yellow, cheese-like material, but there are no calcareous deposits. The intima seems universally thickened, presenting a firm, tough, thickened tissue. A probe 1 mm. in thickness passes 4 cm. through the main artery, where it is abruptly stopped by an adherent thrombus which extends for a distance of 3 cm. in the descending branch supplying the right ventricle.

Histopathology.—Before describing the microscopic changes present in the heart, it is necessary to describe the situation of the various blocks of tissue from which the sections are made, and this can best be explained by referring to the photograph of the heart which is seen in Figure 1.

Section 1 was made from a block of tissue bounded to the left by the endocardium of the left ventricle, to the right by the endocardium of the right ventricle, and above and below, by the fibromuscular wall of the auricular septum. The section, therefore, passes from above downward directly through the center of the fossa ovalis, and includes the muscular structure of the auricular septum for a considerable distance below the fossa It, therefore, would show a cross-section of any of the rootlets of the bundle of His, taking their origin from the region of the septum. The area formerly occupied by this block of tissue is indicated by the number 1 which will be found within the limits of the first set of white lines.

Sections 2, 3, 4, and 5, were made from blocks of tissue which include the horizontal course of the bundle of His, showing, therefore, cross-sections of the bundle. They form triangles whose apices are represented by a point just above the auriculoventricular fibrous ring, and whose sides are formed by the endocardium of the right and left ventricles. The bases are formed by lines passing from the left to the right ventricle directly through the interventricular septum. The situation of these blocks is indicated in Figure 1 by the numbers mentioned above, and their distal planes are designated by the white lines.

Sections 6, 7, 8 and 9 are made from blocks which follow a line perpendicular to the apex, which begins at the base of the last section, and ends at the apex. These blocks pursue the general course of the two branches of the bundle of His for the right and left ventricle, and the sections, therefore, show these branches in an oblique or horizontal plane. The white lines show the distal limits of each block, while the numbers show the situation of these blocks.

Sections 10, 11, 12 and 13 are taken from blocks which pursue a gentle curve around the very limits of the auriculoventricular septum adjacent to the apex, and they end at the very tip of the apex of the heart. They are numbered by black figures, and the black lines indicate the limits of each block of tissue.

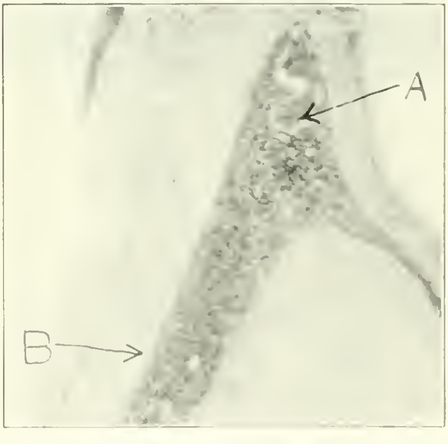


Fig. 2.—Cross-section of the bundle of His at A, in which there were numerous hemorrhages. The auricular septum is above and the ventricular septum below, the bundle running in a groove between its two septa. The thick bundle passing down to the left is the bundle for the right ventricle and the thinner branch nearer the endocardium is the branch for the left ventricle.

Microscopic Examination.—No. 1: This section, passing through the muscles of the auricular septum, the fossa ovalis and the lower portion of the auricular wall, shows a few strands of the bundle of His, taking their origin from the thin wall of the fossa. The nuclei are larger than the rest of the heart muscle, and the muscle fibers are separated and surrounded by a connective tissue containing many fibroblasts, lymphocytes and a few polynuclear leukocytes.

No. 2: This is a section through the proximal end of Segment 2, showing the auricular septum, the ventricular septum and the auriculoventricular groove containing the bundle of His. The bundle of His and the connective tissue around it are infiltrated by many polynuclear leukocytes. The muscular structure of the ventricular septum, especially that near the endocardium of both ventricles, presents a remarkable appearance. There is a diffuse purulent infiltration of the muscles separating individual fibers or groups of fibers. Many of the fibers show necrosis, and there are also groups of leukocytes which show much nuclear fragmentation. Other groups of leukocytes form elongated abscesses.

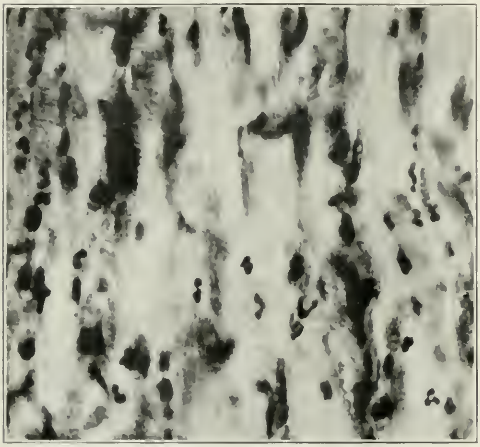


Fig. 3.—From a photomicrograph taken at B in Figure 2. It shows diffuse purulent infiltration, fragmentation, atrophy and hyperchromatosis of the nuclei of the heart muscle.

No. 3: Conditions are practically similar to those found in No. 2.

No. 4: This shows the thin connective tissue septum of the auricle with many connective tissue cells but no muscle fibers. Below the septum in the auriculoventricular groove, the bundle of His can be distinctly seen, together with its branches for the right and left ventricles. The central bundle itself contains many scattered hemorrhages, and the branches for the right and left ventricle soon become involved in the general purulent infiltration, described above. This purulent infiltration can also be seen scattered in certain areas throughout the entire septum, and these areas show intense granular degeneration of the muscle fibers. The purulent infiltration is much more intense just beneath the endocardium of both ventricles, and this infiltration often forms a network between the muscle bundles of degenerated necrotic muscle fibers. The branching of the bundle is well seen in Figure 2.

No. 5: In this section the central bundle has apparently disappeared but the left branch is still visible, and at some distance from the bifurcation, it shows moderate purulent infiltration. There is also marked purulent infiltration of the entire septum in the lower half of the section, especially towards the endocardium of the right ventricle.

No. 6: This section is made from a series of blocks which are perpendicular to the apex and which follow the general course of the two bundles of His, as they course downward in the ventricular septum towards the apex. It is impossible to locate the cross-section of any particular bundle of muscle fibers which would correspond to either of the branches of the bundle of His, and there is no marked purulent infiltration of the muscle in this section. The thickened endocardium does show a slight infiltration with polynuclear leukocytes and lymphocytes, and there are a few similar groups of cells scattered through the section. There are areas of hemorrhages scattered through the muscular structure, and the blood-vessels are crowded with leukocytes and lymphocytes.

No. 7: This section shows areas of intense hemorrhage together with coagulative necrosis of the muscle fibers, and there is an increase of connective tissue elements between the muscle bundles, indicating a beginning chronic interstitial myocarditis, and some of these areas of coagulative necrosis show marked nuclear fragmentation.

No. 8: In this section through a plane which is nearer the apex, there are, again, areas of marked purulent infiltration with necrosis of the muscle fibers. There is also some chronic interstitial myocarditis and scattered hemorrhages.

No. 9: This ends the series made from blocks approaching the area of the apex, and the conditions are similar to those described in No. 8. A section through several large papillary muscles fails to show any purulent infiltration, but the intense congestion of the capillaries in certain areas of the heart muscle is marked.

No. 10: This section is taken from the first of a series of blocks which pursue a gentle curve around the limits of the auriculoventricular septum ending at the apex. The heart muscle shows extensive necrosis, numerous hemorrhages and congestion of the capillaries, and there is slight, scattered purulent infiltration. The numerous papillary muscles do not show any abnormal changes. A branch of the coronary shows a greatly thickened intima containing numerous connective tissue cells.

No. 11: This tissue shows extensive areas of necrosis and hemorrhages, and these areas are infiltrated by small mononuclear lymphocytes, singly or in groups, and the blood-vessels also contain increased number of lymphocytes.

No. 12: This section is principally marked by extensive areas of hemorrhage and some chronic interstitial myocarditis.

Summary.—It will be seen by reference to Figure 1, that the sections are taken from blocks beginning at the fossa ovalis in the auricular septum, and describing a semicircle passing outward along the horizontal course of the bundle of His, then downward through the ventricular septum, and finally describing a gentle curve, the semicircle ending at the very tip of the apex.

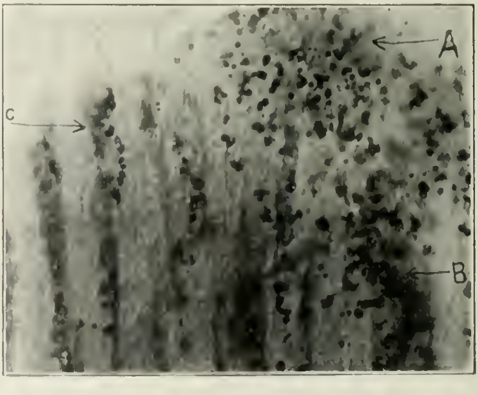


Fig. 4.—Area of necrosis with intense nuclear fragmentation and purulent infiltration at A. At B the general purulent infiltration is seen, and at C this purulent infiltration pursues a linear course between the individual muscle fibers.

There were no pathologic changes found in that portion of the auricle from which the bundle of His takes its origin, but after the bundle has entered the auriculoventricular groove, it is beset by numerous hemorrhages, and its two branches show moderate purulent infiltration. The rest of the muscular structure of the septum shows marked purulent infiltration in the linear areas beneath the endocardium of both of the ventricles and in scattered masses throughout the tissue. There is also marked arteriosclerosis.

Sections From Other Portions of the Heart.—In addition to those described above, sections were made from various other portions of the heart in order to study the extent of the purulent infiltration and the condition of the blood-vessels.

Those of the first set were made from the left auricular appendix, the septum between the auricles, the wall of the right auricle and the musculi pectinati of the right ventricle. The left auricle shows no abnormal changes, but the wall of the right auricle with its musculi pectinati shows a few polynuclear leukocytes in single rows, or small groups, and the nuclei of many of the muscle fibers are shrunken and irregular in size and shape.

Another set of sections was made from the wall of the left ventricle at the left apex, from four separate areas in this wall opposite the septum, and running from the base to the apex, through the papillary muscles, and from the interventricular septum. The first section near the apex shows an adherent antemortem clot attached to the endocardium by means of fibrin. There are many endothelial cells and fibroblasts entering this fibrin in an attempt at organization, and the endocardium is thickened and infiltrated by leukocytes, red blood-corpuscles and fibroblasts. The clot contains masses of fibrin and polynuclear leukocytes and fibroblasts. The muscle fibers next to the endocardium contain numerous large vacuoles, only a mere shell remaining, and the nuclei are frequently shrunken. There is no diffuse purulent infiltration. The five sections from different portions of the left ventricle opposite the septum do not show any marked changes, but the muscle fibers of the papillary muscles near the endocardium show vacuolization. The septum at the apex shows no marked changes, except fatty infiltration near the pericardial surface.

The right coronary artery 6 mm. from the mouth of the aorta shows an interesting condition. The intima is greatly thickened, measuring from 2 to 10 times the thickness of the media adjacent to it, which shows marked atrophy. It contains a moderate number of fibroblasts and two large irregular areas of calcareous deposits. The lumen is completely occluded by a thrombus consisting mainly of red blood-corpuscles and fibrin, but containing groups of organizing fibroblasts and a few polynuclear leukocytes. This thrombus is adherent to the intima from which the endothelium has become detached. A smaller branch of this coronary artery also shows the same thickened intima, and the lumen is reduced to a small irregular channel. The adventitia contains numerous fibroblasts filled with small brown granules of blood pigment, and the muscle fibers of the media show great atrophy. The intima contains scattered polynuclear leukocytes, granular masses of lime salts, and fibroblasts. The same artery nearer the aorta also contains an adherent thrombus of the intima, and shows great thickening of the intima and, just where this is attached to the thrombus, it is highly infiltrated by leukocytes.

SUMMARY

The clinical history of this case indicates that the patient had been suffering from syncopal attacks for a period of seven months. It is difficult to account for these earlier attacks unless we can believe that there were recurrent purulent infiltrations of the bundle of His with damage to the muscle fibers. We found no other lesions of the bundle of His and can only report the patient's condition for about a week prior to his death, together with the discovery of an acute primary purulent infiltration involving the bundle of His.

We desire to thank Dr. H. W. Stoner for the photograph and photomicrographs, and Dr. J. J. O'Malley for assistance rendered.

214 East Preston Street. 1639 North Calvert Street.

Bromids in Confirmed Epilepsy. W. A. Turner, in the *Lancet*, states that in cases of confirmed epilepsy with mental deterioration the bromids are of relatively little value.

A STUDY OF A CASE OF HEART-BLOCK

WITH ALTERNATION OF THE SYSTOLIC AND DIASTOLIC JUGULAR WAVES*

ISAAC IVAN LEMANN, M.D.
Lecturer and Instructor in Medicine, Tulane University
NEW ORLEANS

So much has been written in the past few years about heart-block that the report of a single case can no longer be considered worth while. My reason for reporting the present case is that it presents a feature which, so far as I can learn, has not yet been described. It is apparent from the wide diversity of symptoms and of tracings in the cases constantly being reported that not all cases of heart-block are alike and there is certainly much still to be learned about the clinical picture the disease presents. Each case recording some new point adds to the sum of our knowledge.

Briefly stated, the phenomenon essential to the diagnosis of heart-block is the dissociation of the rates of pulsation of the auricles and ventricles. This is generally attributed to an affection of the bundle of His along which travels the stimulus from auricle to ventricle. The block may be complete, in which case the auricular and ventricular rates are entirely different; or it may be partial, as in my case, when some of the auricular stimuli pass through to the ventricles. The peculiar feature which my patient presented in addition was an alteration of the systolic wave, (*r*), and the diastolic wave, (*h*), appearing in the jugular pulsations.

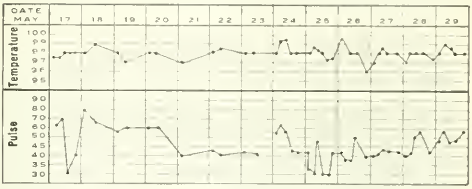


Fig. 1.—Showing the variation in the pulse; record taken every four hours.

REPORT OF CASE

History.—The patient, a white male, aged 75, was admitted to the Touro Infirmary, New Orleans, May 17, 1909, complaining of headaches, dizziness, constipation, belching, and involuntary contractions of the abdominal muscles just before going to sleep. His complaints were of four years' standing. His family history was entirely without interest for the present inquiry. He had always been perfectly well and did not remember any other than the most trifling illness. He had had gonorrhea thirty years ago. He chewed and smoked tobacco moderately and seldom drank alcohol.

Examination.—The physical examination showed a well-developed and well-nourished and well preserved man. The heart was practically normal in size, the apex being just inside the left nipple and the right border at the right border of the sternum. No murmurs were to be heard. There was a moderate peripheral arteriosclerosis. The urine showed no abnormalities. The pulse showed a considerable range in frequency, beating sometimes at the rate of 30 to 35 and at other times as rapidly as 70 to 75. The heart-rate, counted at the apex, corresponded always with the radial pulse. The variation in the pulse is shown in the accompanying chart (Fig. 1), on which is recorded the rate taken every four hours. On June 12, 1909, he had "a spell of dizziness and almost lost consciousness for a second." He was taken to his room and there lay down. Shortly afterward his pulse was found to be 36 and weak. Heart-sounds could not be heard. After two or three minutes the pulse jumped to 72 and became stronger. A few weeks after his admission to the hospital he was transferred to the Julius Weis Old Folks' Home, which is a department of the Touro Infirmary, and has remained under observation during the year which has elapsed. He has continued to complain of frequent dizziness but there have been no more syncopal attacks.

---

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

I was fortunate enough on several occasions to get tracings at the moment of the change in his pulse-rate. Such a tracing is given in Figure 2. This tracing was made October 17, 1909. At the beginning of the tracing the auricular rate was 66 while the ventricular was 33. Every other stimulus from the auricle, therefore, was blocked. The *a-c* interval (the time between the auricle beat and the ventricle beat) was 1½ (expressed in fifths of a second). The normal interval is about one-fifth of a second. At the point marked *x* the block suddenly ceased and all the auricular stimuli passed through to the ventricle. The rates of the auricles and of the ventricles were now both the same, 60. The *a-c* interval continued to be one and a half fifths.

In order to attempt an explanation of this alternation it is necessary to stop here to inquire into the manner in which these waves are produced. The wave *v* is explained by Mackenzie[1] in this way: The blood (during ventricular systole) "comes mainly from the periphery into the auricles through the veins. When the auricle becomes filled the surplus distends the superior vena cava and jugular, and hence appears in the tracing as a wave." If we assume this as the correct explanation of the occurrence of the wave, then we must, in order to account for the alternation, assume that in some instances there is a greater surplus distending the vena cava and jugular than in other instances, or at any rate the surplus is sent back or held back with varying force. Since there is no reason to think that the amount of blood flowing from the periphery through the veins to the auricles varies so considerably and so regularly in volume from second to second, we are forced to consider that the cause of the alternation must lie in some condition of the auricular wall. It seems probable that a varying tonicity would permit the auricle to be distended to a varying degree. At times, therefore, the auricle would contain a larger amount of blood than at others, and in consequence there would be a smaller surplus left to distend the vena cava and the jugular. This would make a smaller wave. When the tone of the auricle was greater a smaller amount of blood would be accommodated, a larger surplus would overflow into the vena cava and jugular and a large wave would be caused. The common occurrence of a pulsus alternans in the peripheral circulation presents an analogy which may be used as an argument in favor of the explanation I offer. If there may exist an alternation of the contractility of the ventricle, is it not reasonable to suppose that there may be an alternation of the tonicity of the auricle?

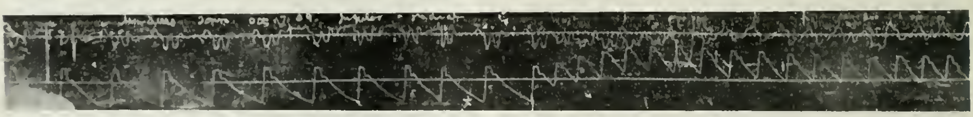


Fig. 2.—Pulse-tracing taken at the moment of change of pulse rate. At the beginning of the tracing the auricular rate was 66, while the ventricular was 33, afterward 60, showing block of every other stimulus from the auricle. No alternation of any waves; *a*—*c*—1½; continues the same after disappearance of block.

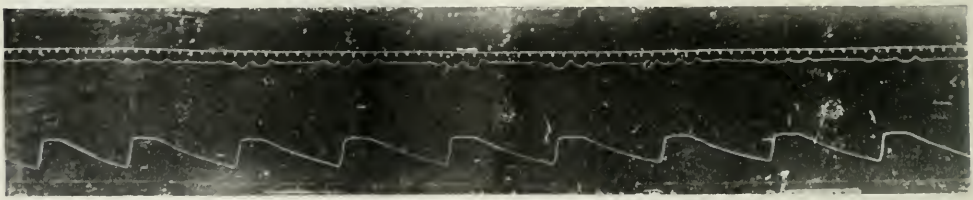


Fig. 3.—Tracing showing similar block of every other auricular stimulus. Auricular rate 60; ventricular 31.5; *a*—*c* interval=$1\frac{2}{3}$; no alternation of waves.

Figure 3 shows a tracing taken Feb. 20, 1910. Here there is a similar block of every other auricular stimulus. The ventricular rate was 31 and the auricular rate 60. The *a-c* interval was somewhat longer than on the previous occasion, being one and two-thirds as compared to one and a half. Neither of these tracings presents the unusual alternation of the systolic and diastolic waves. This is seen apparently only in tracings where there is no heart-block. A good illustration is given in Figure 4. Here it is very easy to see in the jugular (the upper tracing) that the waves *v* and *h* are alternately high and low. Thus in cycles 6 and 8 they are high and in 7 and 9 they are low. The alternation is clearer in Figure 5, where the enlargement is greater. The wave *h* is not lettered here but it is the wave following immediately after the *v* and it will be observed that its alternation corresponds to that of the *v* wave. In both of these tracings there is no block, although the slowness of the radial pulse would have led one to expect its occurrence. The rate of both auricles and ventricles was 46. The delay of the auricular stimuli is evidenced by the increased *a-c* interval—two-fifths of a second.

We may now turn our attention to the *h* wave and shall find, as I think, that the cause of its alternation lies in the same variability of the auricular tone. This *h* wave was described by Gibson[2] and Hirschfelder[3] (independently) to the inrush of the blood from the auricles into the ventricles after the opening of the auriculoventricular valves, causing the leaflets to be floated up, and bringing about a transient closure of the valves. This explanation is generally accepted. If this is correct, then it is apparent that the condition of the auricular wall will be the chief factor in determining the size of the wave, which will record the influence of this closing of the valves as a wave in the jugular tracing.

---

[1] Mackenzie: Diseases of the Heart.
[2] Gibson: Lancet, London, Nov. 16, 1907.
[3] Hirschfelder: Am. Jour. Med. Sc., September, 1906.

The tracing shown in Figure 6 was obtained at the same sitting as that in Figure 4. The plateaus succeeding the v waves and preceding the carotid, c waves were thought when the tracing was first studied to be due to the auricular contractions. In other words, they were considered to be a waves. There was, therefore, apparently an alternating condition of the auricular contractility. This was, however, a faulty intrepretation as we shall see in a moment. Such an alternans action of the auricles has been described by Griffith.[4] It was accompanied by an alterrating ventricular contraction. Griffith explains the alternately large and small auricular waves as follows:

> The primary condition is the alternans action of the ventricles. When the systoles are strong they last long enough to prevent the quickly following auricular contraction from driving the blood freely or at all into the ventricles and so a large wave is seen in the jugulars. When the ventricular systoles are weak they do not last so long, and the auricle can drive its blood in larger amount into the ventricle and consequently the jugular wave will be smaller. It is of course only when the a-c interval is unduly long, as it was in this case, that alternately large and small auricular waves could be determined in this way by an alternans ventricular action.

There was, however, no condition of this sort present in my case. On a closer analysis of the tracing in Figure 6, and in comparing it with the other tracing made at the same time, it became evident that the plateaus already mentioned were due not to the auricular contraction a, but to h plus a. The initial rise of the plateau is due to the h wave and its level is maintained by the oncoming of the a wave which is not visible as an additional rise.

On two occasions I tried to ascertain the effect of atropin on the block. On both occasions I gave 1/60 of a grain hypodermatically and in both instances there was absolutely no result from its administration. Although the radial pulse was slow, (46), and I had expected to find a block present, this was not the case either time. Hence, I am unable to say what effect atropin would have on the block.

I desire to express my obligation to Prof. George Dock, who first pointed out the alternation of the waves.

602 Perrin Building.

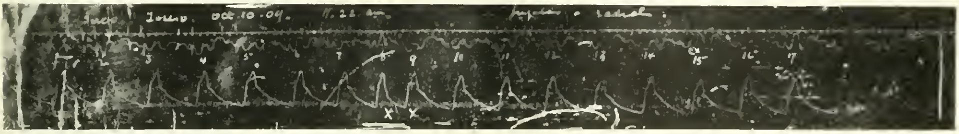


Fig. 4.—Tracing made when there was no block, showing the alternation from high to low. Diastolic wave h; alternation of v; alternation of h; a—c 2; ventricular rate 46. No block.

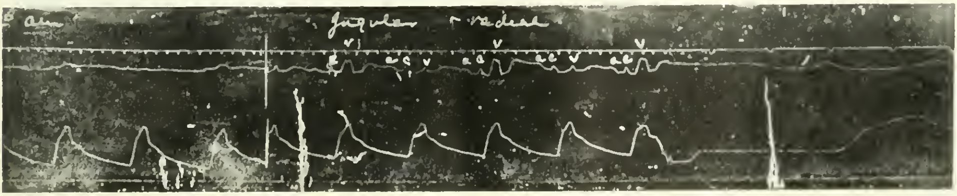


Fig. 5.—In this figure the alternation is clearer, the enlargement being greater Ventricular rate 46; alternation of v; alternation of h.

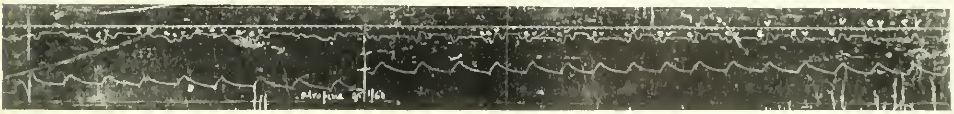


Fig. 6.—Tracing obtained at same sitting as Figure 5, showing apparent alternation of a waves. The initial rise following the v wave is due to the h wave and its level is maintained by the oncoming of the a wave, which latter is not visible as an additional rise, hence a—c cannot be measured. Ventricular rate 46.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. LEMANN AND BECK AND STOKES

DR. HAVEN EMERSON, New York: I have been much interested in result of experimental procedures or distention of the auricles with saline solutions. If one places a dog under ether anesthesia, and floods the auricles quickly with saline solution, the animal will develop auricular paralysis. But if one makes a slow infusion of the saline solution, there will result a condition of auricular vibration (fibrillation). It has been found that by replacing the blood of any tissue by any of the usual artificial circulation ordinary fluids we alter the tone of that tissue, especially the muscular tissue; therefore it is entirely conceivable that by flooding the auricles with saline solution there results an alteration of the a wave such as shown by the study just reported. The analysis of heart block has been explained as being the result of an alteration of the tonicity of the auricular wall. So far as is known, the tonicity of the blood vessels alters but slowly. It must be remembered that the heart muscle has been shown to correspond in every way with the skeletal muscles as regards the output of work and conditions under which work may be done to the best advantage as regards time or load. The heart muscle, however, does not appear to alter in tone so rapidly as do the skeletal muscles. We should consider the possibility that the tone of the muscle of the heart may alternate nearly as does the tone of the skeletal muscles. Until we can prove consistently that certain procedures alter the tone of the heart muscle we must be conservative in accepting such a change of tone as an explanation of or accompaniment of heart-blocks as instanced in the papers read.

---

[4] Griffith: Quart. Jour. Med., January, 1910.

Dr. Albert E. Taussig, St. Louis: I have under observation a case of congenital stenosis of the pulmonic orifice with a patent ductus arteriosus which shows a phenomenon similar to that described by Dr. Lehmann. The patient is a young man, aged 19, a shoemaker. He is able to earn a good living at his work in spite of his cardiac defect. The heart is enlarged and he has the typical murmur and other phenomena characteristic of stenosis of the pulmonic orifice. The *a* wave in the jugular bulb is exaggerated and shows well-marked alternation in height, especially when he is under the influence of digitalis. Tracings taken some weeks ago show that the radial pulse is about normal, while the jugular pulse shows a high *a* wave which alternates in height. This alternation occasionally fails. Another interesting feature of these curves is that at the same time of the alternation of the *a* wave there is an alternation of the *a-c* interval. The higher the *a* wave the longer the *a-c* interval. This is the reverse of what one might expect *a priori.*

INSTRUCTION OF THE PUBLIC IN ANTI-TUBERCULOSIS MEASURES BY A TRAVELING CAR EXHIBIT

GEORGE HOMAN, M.D.
Chairman Executive Committee, Missouri Association for the Relief and Control of Tuberculosis
ST. LOUIS

When the Missouri Association for the Relief and Control of Tuberculosis was formed in 1907 a main purpose of the organization was declared to be the enlightenment of the public on the disease in question by means of lectures, addresses, demonstrations, and exhibits, these activities being a necessary preliminary to a right understanding of the subject thus presented, and to afford an intelligent basis on which local organization could be brought about.

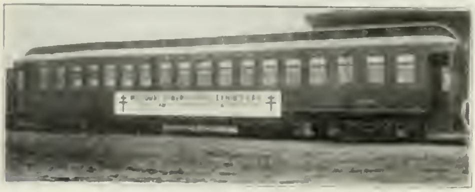


Fig. 1. Exterior view of antituberculosis exhibit car.

To the extent that its limited means allowed a consistent effort was therefore made by the association to enlist the interest and aid of local communities through their medical, social and business organizations, and with some success, the medical societies naturally being the leaders and chief supporters of such movements and auxiliary branches were formed in a number of cities and counties of the state. It was found, however, that these bodies tended in time to become listless, and in casting about for other means of awakening interest in the subject of tuberculosis and its prevention, the idea was conceived that a well-chosen exhibit installed in a railway coach and sent over the railroad lines in charge of a qualified staff would very likely prove to be the most effective form in which such an object lesson could be presented to the public at large.

With this end in view the association early in 1908 made overtures to the State Board of Health suggesting cooperation and joint effort to accomplish this undertaking, but as an outcome difficulties appeared and the negotiations were brought to a close.

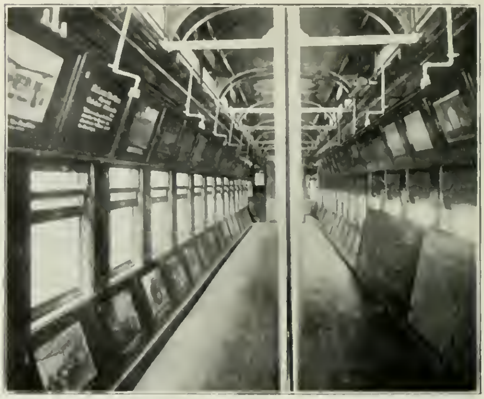


Fig. 2.—Interior view of antituberculosis car.

The project, however, was not lost sight of and endeavors were made to secure funds for this purpose, which hope was realized last June when the announcement was made in the Section on Preventive Medicine and Public Hygiene at the annual meeting of the American Medical Association in St. Louis that a check was in hand ample in amount to cover for a limited time the expenses involved in the equipment and operation of the contemplated railroad car service.*

The managers of railway systems operating lines in Missouri were at once approached with representations touching the plans of the association, with the result of securing a prompt response from the St. Louis and San Francisco System, a first-class day coach being tendered with a promise that it would be turned out of the shops in complete order to receive the exhibit as planned, with special devices for hanging and lighting, no charge to be made for the car or for hauling it, while free transportation for five persons would be supplied, if desired, this gratuitous service including even gas, ice, etc.

The St. Louis Municipal Commission on Tuberculosis with generous public spirit offered the free use of their valuable framed exhibit, which it was found could be used to superior advantage in fitting out the car, and acknowledgment of this graceful courtesy was made accordingly.

---

* The donor of this fund was Mr. Adolphus Busch, a distinguished citizen of St. Louis, who is widely known as a generous giver to many worthy causes. The work of preparing the car for the road in all its details was placed in the hands of a subcommittee composed of Mr. J. H. Lynch, treasurer of the association, Dr. James Stewart and Mr. Robert J. Newton, secretary of the Municipal Commission on Tuberculosis. Miss W. Doyle, assistant secretary to the association, served as advance agent to the car.

The final details respecting the supervision, equipment, routing, etc., of the car were completed toward the end of July, and August 1 was fixed on as the date for starting, a time schedule having been prepared by the officials of the road which covered twenty-four days and provided for stops and demonstrations at thirty-eight towns and cities located in twenty-eight different counties.

It was decided that the offer by Dr. James Stewart, medical supervisor to the St. Louis Board of Education, of his services free as lecturer in full charge of the car be gratefully accepted, and he was provided with a paid helper to look after the property, work the stereopticon and give aid in other ways as required, sleeping quarters being provided for him in the car. It was arranged further that the assistant secretary should travel from five to seven days in advance of the car and make all necessary arrangements for the meetings with the local people at the designated stopping places, getting at once in touch with public officials, physicians, newspaper men, clergy, business men, club women, etc., notices being regularly mailed ahead stating what was desired by her.

The car left St. Louis as per schedule going southward through territory bordering on the Mississippi River to the extreme southeastern part of the state, thence westward along the southern slope of the Ozarks to Springfield and the thickly peopled lead and zinc mining districts of southwest Missouri; then northward along the western border to Kansas City, where two days were spent, the exhibit being removed from the car to the business center of the city. Returning to Springfield by another route, St. Louis was reached by the trunk line of the Frisco system, the schedule having been extended four days in response to a popular demand for more time at different stopping places, the tour closing August 28.

On its second tour the car left St. Louis September 7, via the Missouri, Kansas and Texas system, the plan being to traverse the entire central part of the state from Hannibal on the Mississippi River to St. Joseph on the western border, covering both sides of the Missouri River and visiting some of the oldest and most thickly populated parts of the state. The return route was to be by way of the Rock Island railroad, this system equaling the others in the courtesies and services freely extended. The success of this further undertaking seems undoubted as increasing attendance at lectures, with financial support, and growing public interest have uniformly marked its course.

In fitting up the car the space was utilized to the utmost by the device of a partition lengthwise in the center formed of framed pictures hung back to back, as imperfectly shown in the accompanying illustration. The end and side walls were also fully utilized, and on shelves and in lockers an ample supply of literature, buttons, post cards, sanitary folding cups, etc., was to be found.

The association was fortunate in securing the services of Dr. Stewart for this work, who, as a former member of the Missouri General Assembly, was successful in securing legislation providing for the state sanatorium now located at Mount Vernon. A part of the purpose of this tour was that every proper effort should be made to meet the candidates for the legislature in each county and explain to them the objects in view, and by thus interesting them and their people, to secure support for such recommendations on public health lines as may be submitted to the legislative body by the Governor at the session which opens next January, and in this direction much encouragement is reported as a result of the trip. Indeed, it may be claimed with justice, that for a venture which, so far as known, stands unique in its character as a pioneer effort, the undertaking was a conspicuous success, large and interested gatherings being the rule, tuberculous people in rural parts sometimes traveling as many as thirty or forty miles to reach the car in the hope of learning something of benefit to themselves.

It is evident that the higher officials of some of the leading railway lines are beginning to realize the value of such public teaching in disease repression, and this fact was plainly shown in the cordial zeal and skill with which this undertaking was promoted down to the minutest details by Mr. A. Hilton, general passenger agent of the Frisco road, supplemented at certain points by the Saint Louis Southwestern, and the Missouri Pacific railroads, reaching in all a population, not including Kansas City, of nearly a quarter million of people, 1,248 miles being traversed in the tour of the car.

The Missouri, Kansas & Texas Railway management have tendered to this association every facility at their disposal for the operation of the exhibit car over their lines, by means of which a very considerable additional population can be reached, and it is hoped that all the other systems will see the advantage of like action in the warfare against consumption.

A keen interest in public health affairs could have been the only inducement which led the governor of Missouri, Hon. Herbert S. Hadley, to consent to accept the presidency of this association, and this interest was shown to a still greater degree by the official naming of a commission of twenty or more citizens of this state whose duty it will be to make thorough inquiry respecting tuberculosis in Missouri, and frame a report on which he may base recommendations to the legislature for remedial action next year.

While it was found that a considerable financial outlay is involved in the operation of such a traveling exhibit, even when much necessary service is rendered free of charge, still it is firmly believed that the returns to the public in the form of a better knowledge of disease prevention fully repays such expenditures, and it is the hope of the association that additional financial means will be forthcoming to enable this form of instruction to be pushed into every part of the state where the railroads penetrate. Thus far practically the whole burden of this work has been borne in St. Louis, and the available funds of the association have been exhausted in the enterprise herein sketched.

As before indicated, much of the best help and cooperation at the different points was given by the organized medical profession, officials of local societies, councilors, and the President of the state association, Dr. H. E. Pearse, all lending a hand with full sympathy and good will to forward the cause. A number of leading physicians along the route even volunteered their services for work with the car if future tours were found possible. Another factor making for the success achieved was the public press, many of the papers giving columns of space to descriptions, with pictures, etc., showing the work and purposes of the car

ALOPECIA AND SEBORRHEA *

CHARLES J. WHITE, M.D.
Instructor in Dermatology in Harvard University
BOSTON

Dandruff and loss of hair are two of the minor afflictions of civilized life which are usually sources of constant chagrin to the unfortunate men and women who fall victims to their presence. One or both of these conditions, which even we ourselves experience sooner or later, are brought to our attention as dermatologists so frequently that it seems fitting from time to time to present them as themes for discussion when we meet in the hope that some member here may contribute some small bit of knowledge to a subject which needs so much help from an etiologic and therapeutic standpoint. It is, therefore, because we practitioners are usually so helpless when confronted by a well-established case of alopecia or of seborrhea that I have ventured to summarize my knowledge of these conditions gleaned from the study of 794 examples observed in my personal private practice.

In the following pages I shall deal principally with seborrhea capitis and with alopecia simplex and alopecia furfuracea, but I shall speak superficially on alopecia areata, and alopecia from ringworm, syphilis and overexposure to *x*-rays.

ALOPECIA

Statistically, I record 679 cases of loss of hair divided clinically as follows:

	Cases	Males	Females
Alopecia simplex[1]	115	37	78
Alopecia furfuracea	443	206	237
Alopecia areata	86	46	40
Alopecia from ringworm	16	9	7
Alopecia from syphilis	17	11	6
Alopecia from *x*-rays	2	1	1
	679	310	369

From these figures it will be seen that women are more often affected by loss of hair than men, in the relative proportion of 54 and 46, unless it be that women feel this loss more keenly and therefore consult physicians more freely on this account. It is interesting, however, to note the figures of Elliot,[2] who in his paper of 1892 records about identical percentages, viz. 55 per cent. women and 44 per cent. men. Jackson,[3] on the other hand, in 1893 found the proportions reversed and recorded alopecia in 52 per cent. males and 48 per cent. females.

Possible Etiologic Factors in Alopecia Simplex and Alopecia Furfuracea

From a study of my records it will be noted that heredity, dandruff, systemic depression, fever, operations and maltreatment of the scalp have been connected in the patients' minds with the production of the fall of the hair. Under the heading of systemic depression figure overwork, worry, nervous exhaustion and prostration, recent immigration or foreign travel, pregnancies, and chronic diseases or invalidism. The term "maltreatment of the scalp" is based on my own personal theories as to what is right and what is wrong in the hygiene of the scalp and includes the rough usage of brushes, combs and massage in the presence of dandruff; shampoos less often than once a month or more frequently than once a week; the use of any drugs in any form on the healthy hair or scalp; the continued application of too drying alkaline soaps; the frequent or constant exposure of the uncovered head to the summer sun; the daily sousing of the head in shower-baths or in salt water; and the modern over-treatment of the normal scalp by barbers and hairdressers.

Statistically we find these factors summed up as follows:

		Cases
Heredity:	Father's side of the house	108
	Mother's side of the house	51
	Not recorded	12
		171
Alopecia present in brothers or sisters		72

From these figures it is seen that a hereditary taint exists in 30 per cent. of these individuals. Dandruff was present in 443 patients, a percentage of 79+. Systemic depression was recorded in 120 cases, a percentage of 21+. Fever was noted in 63 individuals, a percentage of 11+. Operations were blamed in 12 persons, a percentage of 2+. Maltreatment was evident in 277 patients, a percentage of nearly 50; and, finally, more than one of the above possible etiologic factors was found in 386 cases, a percentage of approximately 70.

It may be interesting to pause a moment and compare these figures with those of Dr. G. T. Elliot[4] and of Dr. G. T. Jackson[3] who based their figures on 344 and 300 cases respectively.

	Heredity	Systemic Causes	Seborrhea
Elliot	1.16*	5.52	91.68
Jackson	38.32	....	72.66
C. J. White	30.64	21.50	79.39

* This percentage relates to alopecia simplex only.

The figures which follow in the rest of this paper are not wholly satisfactory and are comparatively small, as the symptoms had existed so long in many cases that patients were unable to remember the exact date of their beginnings.

Ages When Alopecia Simplex First Appeared

Among those who could be exact there were 25 males and 43 females out of a possible 37 and 78 respectively.

Males: 7 cases began between 16 and 20.
8 cases began between 21 and 25.
6 cases began between 26 and 30.
1 case began at 35.
1 case began at 39.
2 cases began at 46.

It will be seen that this clinically uncomplicated type of loss of hair begins at or before the age of 30 in 84 per cent. of the male cases.

Females: 7 cases began at or before the age of 15.
3 cases began between 16 and 20.
5 cases began between 21 and 25.
4 cases began between 26 and 30.
7 cases began between 31 and 35.
2 cases began between 36 and 40.
6 cases began between 41 and 45.
6 cases began between 46 and 50.
2 cases began between 51 and 55.
1 case began at or before the age of 56.

---

* Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] By this term is meant the simple loss of hair without other [illegible] symptoms.

[2] Elliot, G. T.: Sixteenth Annual Meeting of Am. Derm. Assn. [illegible], p. 81.

[3] Jackson, G. T.: Loss of Hair, a Clinical Study Formed in 300 Private Cases, Tr. Am. Dermat. Assn., 1900, p. 50.

[4] Elliot, G. T.: Alopecia and Its Most Frequent Cause, Dermatitis Seborrhoica, Tr. Am. Dermat. Assn., 1895, p. 95.

Of the seven early cases five followed acute febrile disturbances. Between the ages of 15 and 30, however, we find that 33 per cent. of these women developed their simple alopecia, contrasted with a respective percentage of 84 in men, whereas between the ages of 31 and 50 we note a percentage of 58, figures which force us to the conclusion that alopecia simplex develops much later in women than in men.

Ages When Dandruff and Alopecia Appeared in Alopecia Furfuracea

DANDRUFF

Males, 91 cases.

3 cases began between 9 and 10
8 cases began between 11 and 15
31 cases began between 16 and 20
25 cases began between 21 and 25
14 cases began between 26 and 30
8 cases began between 31 and 35
1 case began at 37 and 1 at 43

Females, 75 cases.

3 cases began between 7 and 10
12 cases began between 11 and 15
10 cases began between 16 and 20
13 cases began between 21 and 25
11 cases began between 26 and 30
12 cases began between 31 and 35
7 cases began between 36 and 40
3 cases began between 42 and 45
4 cases began between 46 and 56

Contrasting these two columns of statistics we are struck by two facts, viz., that men are more prone to remember the exact date when their dandruff began than is the case with women and that in these men and women seborrhea capitis appeared at an earlier period in the former sex than in the latter. Thus between the years 16 and 25 we find 61 per cent. of males developing their dandruff while in females at a similar epoch we find but 32 per cent.

ALOPECIA

Males, 127 cases.

6 cases began between 10 and 15
30 cases began between 16 and 20
55 cases began between 21 and 25
14 cases began between 26 and 30
14 cases began between 31 and 35
2 cases began between 36 and 40
3 cases began between 41 and 45
2 cases began between 46 and 50
1 case began at 60

Females, 129 cases.

7 cases began between 12 and 15
24 cases began between 16 and 20
21 cases began between 21 and 25
25 cases began between 26 and 30
25 cases began between 31 and 35
16 cases began between 36 and 40
5 cases began between 41 and 45
1 each at 46, 51, 54, 61, 63 and 68

In these columns it is seen that men and women are apparently equally impressed by the exact age at which their hair begins to fall but that between the ages of 16 and 25 alopecia develops in 67 per cent. of the men affected against 34 per cent. in the women.

Thus from these foregoing contrasting figures we learn that men are attacked much earlier than the opposite sex by alopecia furfuracea whereas women as a whole become the victims of alopecia, either simple or furfuraceous, more often than men, in fact, in the proportion of 56 to 43.

Varieties, Distribution, and Subjective Symptoms of Dandruff and Loss of Hair in Alopecia Furfuracea

DANDRUFF	Cases.
Slight in	127
Abundant in	199
Localized in	83
Yellow brown in	56
Oily in	78
Dry in	53
Granular in	23
Adherent in	38
Loose and large in	39
Accompanied by pruritus in	97
Accompanied by burning in	3
Accompanied by hyperidrosis in	30

ALOPECIA	Cases.
Slight in	67
Marked in	130
General in	30
Principally on forehead in	119
Principally on top of head in	79
Principally on sides in	13
Principally at tonsure in	38
Hair dry in	37
Hair greasy in	15
Hair split in	49
Hair short in	34
Hair coarse in	8
Hair fine in	21

These figures require no elucidation. It is evident from their study that in alopecia furfuracea we may expect to encounter more often well-marked examples of seborrhea and of loss of hair than the reverse; that dandruff is usually general in distribution, while alopecia is generally localized; that dandruff is frequently accompanied by subjective symptoms and is often associated very strikingly with many changes in the texture of the hair as well as in its loss.

The Treatment of Alopecia Furfuracea

I fear that we must all agree that our therapeutic results in this disease are very disheartening. I tell all my patients who have noted this condition for more than a few months, and especially those whose forebears have been similarly affected, that a permanent cure is hardly to be hoped for, but that by long and continued perseverance on their part they may keep their scalps clean and delay the inevitable baldness for years.

The medical aphorism which tells us that therapeutic non-success may be judged by the multiplicity of the drugs recommended in a given disease is well emphasized in the present instance.

My armamentarium has included the following medicaments:

Washes, containing 70 per cent. alcohol, quinin, cantharides, capsicum, pilocarpin, chloral hydrate, tartaric and salicylic acids, phenol, formaldehyd, trikresol, anthrasol, and croton and turpentine oils.

Ointments, containing sulphur, salicylic acid, zinc oxid, resorcin, oil of cade, ichthyol, succus limonis, yellow oxid and ammoniated chlorid of mercury, orthoform and biborate of soda.

Soaps, containing betanaphthol and glycerin.

Internal medication, including iron, nux vomica, magnesium sulphate, dilute sulphuric acid, betanaphthol, malt, cod-liver oil, phenyl salicylate, ichthyol, salicin, thyroid extract and phosphate of soda.

Massage.

Despite this long list I practically confine myself to four prescriptions which I append:

1. R.	gm or c.c.		
Acid. salicyl			
Sulph. precip. āā	2	or	ʒss
Petrolatum	32		℥i

M. S. Ointment. Apply at night. Shampoo with a simple soap the following day.

2. R.	gm. or c.c.		
Pilocarpin nitrat	.06		gr. i
Quinin sulph	.6	or	gr. x
Tr. canthar.			
Tr. capsic. āā	10		ʒiii
Alcohol, 70 per cent. ad	250		fl. ℥viii

M. S. Wash for scalp. Apply in the morning.

3. R.	gm. or c.c.	
Acid tannic .	2|26	gr. xxxv
Chloral hydrate	1|66	gr. xxvii
Acid tartaric	2|	gr. xxx
Ol. ricini	1| or	m. xv
Alcohol, 70 per cent	200|	fl. ℥vi

M. S.—Wash for scalp. Apply in the morning.

4. R.	gm. or c.c.	
Hydrarg. chlorid. corrosiv	24	gr. iv
Euresol	8| or	ʒii
Sp. formicarum	30|	℥i
Ol. ricini	4|12|	ʒi iii
Alcohol, 70 per cent. ad	250|	℥viii

M. S.—Wash for scalp (poison). Apply two teaspoonfuls in the morning.

The last of these four I hold easily first in its successful results. I associate its formula with Dr. G. T. Elliot, and it has proved a veritable godsend to me in treating many of these almost impossible cases. The essential feature in its composition is, I believe, euresol—the mono-acetate of resorcin. The smell of this salt is a very unfortunate factor, however, but one which the manufacturers have not been able to eradicate without markedly diminishing the value of the drug. The chloralhydrate wash I place second in efficacy.

Perhaps the most striking feature of these four prescriptions seems to be the absence of pure resorcin from their composition. I am free to confess that I never have been able to reduce its strength sufficiently to render it anything but an irritant to the scalp.

Results of Treatment Summarized by Age

MALES, 200 CASES

Very good, 16 cases

At 19	2 cases
Between 20 and 25.	4 cases
Between 26 and 30.	3 cases
At 31	1 case
Between 41 and 45.	3 cases
Between 46 and 50.	2 cases
At 58	1 case

Good, 80 cases

At 13 and 14.	2 cases
Between 16 and 20.	10 cases
Between 21 and 25.	16 cases
Between 26 and 30.	23 cases
Between 31 and 35.	13 cases
Between 36 and 40.	9 cases
Between 41 and 45.	3 cases
At 49, 56, 65 and 75.	1 case

Slight, 58 cases

Between 15 and 20,	10 cases
Between 21 and 25,	20 cases
Between 26 and 30,	13 cases
Between 31 and 35,	6 cases
Between 36 and 40,	2 cases
Between 41 and 50,	4 cases
Between 53 and 63,	3 cases

Poor, 37 cases

At 18 and 19.	2 cases
Between 21 and 25.	14 cases
Between 26 and 30.	8 cases
Between 31 and 35.	7 cases
Between 36 and 40.	4 cases
Between 42 and 46.	2 cases

Bad, 9 cases

Between 20 and 26.	4 cases
At 32	2 cases
At 38, 42 and 53.	1 case

FEMALES, 194 CASES

Very good, 17 cases

At 17	1 case
Between 26 and 30.	4 cases
Between 31 and 35.	5 cases
At 58	2 cases
Between 47 and 50.	3 cases
Between 56 and 60.	2 cases

Slight, 53 cases

Between 7 and 9.	2 cases
Between 13 and 15.	4 cases
Between 16 and 20.	2 cases
Between 21 and 25	11 cases
Between 26 and 30.	11 cases
Between 31 and 35.	7 cases
Between 36 and 40.	4 cases
Between 41 and 45	3 cases
Between 46 and 50	5 cases
Between 51 and 55	2 cases
At 70	2 cases

Bad, 6 cases

At 16	1 case
Between [illegible] and 37,	2 cases
Between 43 and 48.	3 cases

Good, 93 cases

Between 11 and 14.	4 cases
Between 16 and 20.	7 cases
Between 21 and 25.	19 cases
Between 26 and 30.	15 cases
Between 31 and 35.	16 cases
Between 36 and 40.	12 cases
Between 41 and 45.	7 cases
Between 46 and 50.	4 cases
Between 51 and 55.	3 cases
Between 57 and 60.	3 cases
At 63, 80, 83 each.	1 case

Poor, 25 cases

Between 11 and 15.	2 cases
Between 16 and 20.	2 cases
Between 21 and 25.	3 cases
Between 26 and 30.	6 cases
Between 31 and 35.	1 cases
Between 36 and 40.	2 cases
At 50, 56, 60	2 cases

These figures are comparatively small because many patients came but once and hence cannot be included in these lists.

From these figures it is seen that the prognosis in women is better than in men in the proportion of 56 per cent. to 18 per cent. These percentages are based on the "very good" and the "good" results in both sexes; and in addition we see that there were fewer "poor" and "bad" results in women than in the men in the proportion of 16 per cent. to 23 per cent. Therefore, we may encourage our feminine patients decidedly more than we can our masculine.

SEBORRHEA

Included in this study of 794 cases were found 117 individuals who were the subjects of dandruff alone. It is rather a disconcerting fact to find so many examples of seborrhea capitis without resulting loss of hair, especially as this condition had existed for many years in many of these people—disconcerting because in this paper it has been inferred, at least, that dandruff is the most frequent cause of alopecia. Nevertheless, when the data are put into cold figures it will be found that these inferences are perhaps not wholly wrong. In the list there are 115 cases of alopecia simplex or a total number of 232 individuals in whom dandruff has played no part in the production of loss of hair. On the other hand, there is a total of 413 men, women, and children, a ratio of nearly two to one, in whom dandruff and loss of hair were present and in whom, by the figures in the great majority of instances, the seborrhea had preceded the alopecia for varying lengths of time.

To return to our cases of seborrhea simplex. Of the 117 examples 54 were males and 63 females, a ratio of 46 to 54—a distinct feminine preponderance and curiously enough corresponding absolutely exactly to our percentages of alopecia from various causes recorded in the early part of this communication (see above).

Age When Seborrhea Began

Males, 32 cases

At 1, 11, 14 each.	1 case
Between 16 and 20.	8 cases
Between 21 and 25.	2 cases
Between 26 and 30.	10 cases
Between 36 and 40.	4 cases
Between 53 and 60.	4 cases
At 65	1 case

Females, 29 cases

At 1, 7 each.	1 case
Between 10 and 15.	7 cases
Between 16 and 20.	10 cases
Between 21 and 25.	5 cases
Between 26 and 30.	4 cases
At 41	1 case

These are rather small figures from which to draw conclusions but one is struck by the fact that dandruff comes on in childhood or in early adult life—71 per cent. in men and 96 per cent. in women exhibiting this symptom at or before the age of 30.

Incidence of Seborrheic Symptoms Other Than Dandruff

For some years it has been my custom to regard seborrhea as merely the cutaneous evidence of some internal disorder and to look on acne vulgaris, acne rosacea, eczema seborrheicum and Fordyce's disease of the lips as similar expressions of the same general disturbance. So, from a study of these records, I find that in the 413 cases of alopecia furfuracea there were 57 individuals (a percentage of 12, consisting of 31 males, and 20 females) who exhibited one or more of these allied eruptions; while in the 117 examples of seborrhea simplex there were 29 men and 38 women (a total of 67, or a percentage of 57) with similar efflorescences.

DYSPEPSIA

As to the nature of the fundamental disorder which, some think, lies at the bottom of these seborrheic symptoms we are decidedly at sea. Many of us, however, are wont to accuse digestive disturbances as possible sources of trouble and in this series of cases clinical evidences of dyspepsia have been found in the following percentages: in alopecia simplex 3; in alopecia furfuracea 8; and in seborrhea simplex 17. Surely, these are small crumbs of comfort to the believers in the digestive origin of these disorders.

Regions Affected in Alopecia Areata and in Ringworm

ALOPECIA AREATA, 86 CASES

Scalp, 71 cases		
Occipital,	36 cases	= 50 %
Parietal,	11 cases	= 15 %
Top of head,	8 cases	= 11 %
Frontal,	5 cases	= 7 %
General,	11 cases	= 15 %

Ringworm, 9 cases		
Occiput,	5 cases	= 55 %
Top of head,	2 cases	= 22 %
Sides,	1 case	= 11 %
Beard,	1 case	= 11 %

Face, 21 cases		
Beard,	13 cases	= 62 %
Upper lip,	5 cases	= 24 %
Eyebrows,	3 cases	= 14 %

No comment is necessary on these figures; they are very small but they speak for themselves. In scrutinizing my cases of alopecia areata I was struck by the marked incidence of an accompanying dandruff. This statement of course coincides with Sabouraud's dictum that pathologically and bacteriologically seborrhea always precedes or accompanies alopecia areata. Another fact impressed on my mind in the study of these cases is that one attack of alopecia areata very often leads to one or more successive outbreaks.

SUMMARY

This then brings me to the end of these numerous columns of figures and deductions, which in conculsion I may summarize as follows:

1. Alopecia accompanied by dandruff is the commonest type of loss of hair.

2. Women are more prone to alopecia than men, in the proportion of 54 to 46.

3. The possible and principal causal factors of alopecia are heredity in 30 per cent., dandruff in 79 per cent., systemic depression in 20 per cent, fever in 11 per cent., and maltreatment of the scalp in 50 per cent.

4. Alopecia simplex develops before the age of 30 in 84 per cent. of the men, but in only 33 per cent. of the women.

5. Dandruff behaves in a similar manner and before the age of 25 attacks 61 per cent. of its future male victims but only 32 per cent. of its female.

6. The loss of hair in alopecia furfuracea comports itself with these previous two findings, appearing before the age of 25 in 67 per cent. of the men, but only in 34 per cent. of the women.

7. Summarizing paragraphs 2, 4, 5, and 6, we find that men are attacked earlier than women with alopecia and with seborrhea but that eventually women rather than men fall victims to these conditions.

8. When dandruff is present it is apt to be abundant rather than slight, oily rather than dry, and to be accompanied by itching.

9. With alopecia we find well-marked cases rather than mild ones, located in the great majority of the cases in the frontal and temporal regions and accompanied by hair which is apt to be dry, split, short and fine.

10. The drugs most successful in the treatment of dandruff and loss of hair are euresol, bichlorid of mercury, tannic acid and chloral hydrate.

11. The final results of treatment in these affections are almost disheartening, but judged from a temporary point of view, we may expect good or very good response in 48 per cent. of men and in 56 per cent. of women.

12. Seborrhea may exist for years without entailing any appreciable loss of hair; nevertheless, dandruff does seem to be followed or accompanied by alopecia twice as often as not.

13. Seborrhea simplex is a disease of childhood or early adult life, developing before the age of 30 in 71 per cent. of men and 96 per cent. of women.

14. Other seborrheas of the skin such as acne vulgaris, acne rosacea, eczema seborrheicum and Fordyce's disease, may accompany loss of hair and dandruff. Their percentages of concomitance, however, vary, and consist of 12 per cent. in alopecia furfuracea and 57 per cent. in seborrhea simplex.

15. Dyspepsia, on the other hand, exists in surprisingly small percentages in these cases, being present in only 3 per cent. in alopecia simplex, 8 per cent. in alopecia furfuracea, and 17 per cent. in seborrhea simplex.

16. From the preceding two paragraphs we may induce that seborrhea simplex is a truer form of dandruff than that accompanying loss of hair.

17. In alopecia areata and in ringworm of the scalp, the region most affected is the occipital.

18. In alopecia areata dandruff is a frequent accompaniment and we also find that one attack of the disease is apt to be followed by one or more later outbreaks.

259 Marlborough Street.

ABSTRACT OF DISCUSSION

Dr. William O. Roop, Dayton: I indorse Dr. White's statement in regard to the value of euresol in treatment of these diseases of the scalp. I have frequently included it in my application in the treatment of these seborrheic conditions, and it has given me better results than some of the older remedies.

I have been consulted during the past year in several cases of alopecia areata, and in all I was particularly struck by the accompanying seborrhea; and while the recognized treatment has always been of a stimulating character, I felt that inasmuch as the etiology of alopecia areata is somewhat in dispute, that perhaps the same treatment as for seborrhea, and of a less stimulating character than that usually employed, might be successful. With that idea in view, I used a simple ointment of sulphur and resorcin, rubbing it into the patches at night, and in a number of instances I have been rewarded by a rapid return of hair in these bald areas. In other cases I have used treatment of a more stimulating character, such as applications of chrysarobin, phenol and the high frequency current, but I was surprised to observe that my results were more rapid and satisfactory from use of the milder methods. This would suggest that alopecia areata may be of seborrheic origin since the two affections are so frequently concurrent and both yield to the same treatment.

Dr. Frank C Knowles, Philadelphia: In anticipation that Dr. White would dwell on the subject of alopecia areata, I have reviewed the dispensary reports of four hospitals, the Pennsylvania, University of Pennsylvania, Howard, and Children's, with which I am connected. During the last five years I have seen 105 cases of this disease, twelve of this number being of the universal type. Alopecia areata of dental origin has recently been reported by several writers; Jacquet has written most extensively on this phase of the subject.

Rousseau Decelle (*Bull. et mém. de la Soc. méd. des hôp.*, 1909, p. 62) has described several cases. Jourdanet (*Bull. de la Soc. française de dermat. et de syph.*, April, 1910), detailed an alopecia areata of the nape of his own neck following caries of a wisdom tooth. Traumatism seemed to have been etiologic in a few of my cases. In my collection of photographs are five pictures of a case of universal alopecia, in a boy of sixteen. The various stages and relapses of the disease, extending over a period of three and one-half years, are plainly shown. The last photograph, which was taken in May, 1910, shows complete restoration of all the hair.

Dr. J. M. King, Nashville: Dr. Whitfield, of King's College, London, who has the reputation of being a very careful and competent observer, has found some defect of vision in nearly all his patients with alopecia areata. I remember that whenever such a patient consulted him, he always had the vision tested. In treatment, the prescription that I have used, in alopecia of the seborrheal type has been made up of bichlorid of mercury, resorcin, chloral hydrate, tincture of cantharides, glacial acetic acid and alcohol. I first saw this used in St. George's Hospital, London, and I found that it acted very well indeed in a number of cases. I have not tried euresol, as this mixture has served me well in conjunction with sulphur ointment, used once every week or two weeks, the night before the application of green soap shampoo.

Dr. Alfred Schalek, Omaha: I was surprised to hear that seborrhea was an incurable disease, as my experience has not borne that out. I believe that it is curable in the majority of cases if the treatment is sufficiently prolonged. In one case of alopecia areata in which I applied the high-frequency current, the coincident seborrhea of a severe type from which the patient was also suffering largely disappeared, and from that time on I have used the high-frequency current in these cases with good results.

Dr. J. B. Kessler, Iowa City: The statement made by Dr. White that alopecia was more common in females than in males rather took me by surprise. My experience has been the reverse. In the hospital with which I am connected there are about 45 nurses in the training-school; after they have been in the hospital six or eight months many of them complain that they are losing their hair. Last summer, in connection with some of my colleagues, I took up this matter to see if the cause of this loss of hair could be determined. We investigated the cooking and the quality and quantity of the food, which was up to the average and sufficiently nourishing, and the only possible etiologic factor we could find was a lack of exercise in the open air. These nurses were on continuous duty for twelve hours and then returned to the Nurses' Home to sleep and study. It seems to me that this is the most prolific cause of alopecia in this class of people. I believe that women, as a rule, take better care of their hair than men, and when the hair becomes affected they are apt to follow the physician's directions more faithfully than men.

I have had some experience with euresol, and while it is very efficient, it is also very expensive, $1.00 an ounce making the price almost prohibitive. I have found, usually, in these forms of alopecia, that ointments are better in the beginning than solutions and that the latter are more effective when they are preceded by the use of ointments. A favorite application of mine, although its odor is objectionable, is the oil of cade and sulphur. I first learned the value of this mixture while I was in Boston, working under the [illegible] Dr. White. Euresol was brought to my attention through the kindness of Dr. Charles J. White; my results with this remedy, as well as those of my son, have been very satisfactory. I keep up the application for about a month, when the dandruff can be easily removed and the scalp will remain free from it for a reasonable length of time. There are some cases, however, and I have one under my observation at the present time, in which all methods of treatment are more or less unsatisfactory.

Dr. Isadore Dyer, New Orleans: I want to sound one note in the danger of the use of the hair brush. I have preached for many years that no patient with dandruff will recover until the hair brush is discarded. There are only two ways of sterilizing it: One is by boiling and the second is by burning it. In the propagation of dandruff, the barber-shop is probably the chief offender, and I believe that an inspection of the usual ancient hair brush found in the wash-room of the country hotel or in any public place will demonstrate the destruction of the bristles of the brush itself by the micro-organism. The men who are interested in the work of this Section, as well as all dermatologists, should carry on this crusade against the hair brush as I have long done in my own city. I have frequently seen patients in whom the recurrence of dandruff invariably followed a visit to the barber shop. While on a visit abroad, after I had been free from dandruff for many years, I visited a barber shop and warned the barber not to use the brush. Just as he was completing his work, however, he forgot my instructions and gave one stroke with the hair brush. Five days later I again began to treat my scalp for dandruff. I cannot concede that the particular form of seborrhea which we call dandruff is incurable. I instruct male patients to wash their scalp every day; the female patients every other day, or at least twice a week. An experience extending over a number of year, has justified my faith in the use of resorcin, 2 to 5 per cent. solutions. Euresol has no advantage over this, in my own experience. In fair-haired patients, or those who have hair tinged with gray, the resorcin must be modified or some substitute employed. By neglecting this precaution, I have once or twice in my early experience inflicted on my patients hair which in color resembled the plumage of a canary bird. Chloral hydrate serves in these cases: it is an excellent stimulant to the scalp and an efficient antiseptic. I have never seen a case of alopecia areata which I believed to be parasitic, or in which I was not able to demonstrate a neurotic basis. I remember one case in which these bald patches recurred for nearly a year; the patient's occupation was that of a driver of a fire engine, and when he gave that up, his hair promptly and permanently returned.

In the treatment of this condition, I regard the high-frequency current as more satisfactory than any other.

Dr. M. L. Heidingsfeld, Cincinnati: The basis of our present treatment of alopecia rest on the experiments of Lassar and Bishop, which were carried on 30 to 40 years ago on mice, rabbits and other animals. For fifteen or 20 years the results of this work were unquestioned; when they were controverted by Blaschko, who maintained that alopecia was not a parasitic condition. Blaschko carried out a series of experiments similar to those of Lassar and Bishop, and his results were absolutely negative. Treatment of this condition at the present time is based largely on the theory that it is of parasitic origin. Personally, I concur in the belief that premature baldness is not a parasitic condition. I think that too much manipulation of the scalp by rubbing and massaging is injurious both in men and in women. Premature baldness is accompanied by four cardinal symptoms, i. e., itching, dandruff, a dry or oily condition of the scalp, and, lastly, loss of hair. Dandruff is only a precursor of the loss of hair, and in order to prevent the occurrence of the latter, we must control the itching, the dandruff and the abnormal condition of the scalp. Treatment must be directed against these special conditions. Resorcin, if too strong or too frequently applied, will produce an oily condition of the scalp. An oily scalp may be rendered less oily, or even dry, by substituting colloidal sulphur or nascent sulphur, after the formula of Radcliffe Crocker for the resorcin.

Dr. William Frick, Kansas City: In the alopecia accompanying syphilis the loss of hair is not always limited to the scalp. I recently saw a case in which the alopecia of the scalp was not complete, but there was a complete loss of the eyebrows and eyelashes.

Dr. William A. Pusey, Chicago: One factor in regard to alopecia has not been mentioned and is worthy of consideration, particularly with the present fashion, and that is, excessive exposure of the scalp to sunlight. We are all familiar with the middle-aged man riding horseback or playing golf bareheaded in the forlorn hope of bringing his hair back. For many years I have regarded this excessive exposure to sunlight as an exciting factor in the production of alopecia. I have noticed that many of these patients apply for treatment in the autumn, after they had gone bareheaded throughout the summer, and I was also led to this idea through the analogy of the effect of the sun's rays with those of the *x*-rays. We know that with highly actinic energy we can produce baldness, and I am inclined to believe that free exposure to sunlight will have the same effect. This is probably only one of many factors, and in my opinion alopecia is a condition of complicated etiology; it is not a well-grounded view that all alopecias or nearly all are parasitic.

I have never been able to convince myself of the value of many of the remedies that have been mentioned in the treatment of this condition. This is true of resorcin, with which I have had a very unsatisfactory personal experience. I know of only two remedies that have a definite value in the treatment of alopecia, namely, tar and sulphur. I have used alcohol in various combinations, and it is my impression that about as much good is accomplished by alcohol alone as when it is combined with other remedies.

Dr. J. Grindon, St. Louis: It is a popular notion that frequent washing injures the scalp, but practically, I have observed that those who are the most inveterate and constant in the practice of washing the scalp keep their hair as long as anybody else, and I always tell my patients that they can wash their heads as often as they please. Nor can I understand how the application of soap and water to the surface of the scalp can have any bad effect on the growth of the hair. In regard to medication in these cases, I have had very good results from the use of resorcin, and I agree with Dr. Kessler that solutions are usually more effective when they are preceded by the use of ointments. One of my favorite prescriptions is composed of petrolatum, salicylic acid and sulphur. I tell my patients that this application is disagreeable, but that it will probably not be necessary to continue it for longer than a month. After this I use resorcin, usually a 2 per cent. solution, either alone or in combination. In cases of well-established seborrheal alopecia I tell my patients that I do not believe that I shall ever be able to give them an actual permanent cure, but that I hope to bring about a symptomatic cure, providing they keep up the treatment indefinitely. As long as they live they will be obliged to pay some attention to the scalp in order to avoid a recurrence. So far as the effect on the scalp of exposure to the rays of the sun is concerned, I must agree with Dr. Pusey on theoretical grounds. The comparative frequency with which cases of loss of hair are observed in the autumn I attribute not to the effect of the sun's rays, but rather to the fact that there is natural loss of hair at that period of the year, whether one plays golf bareheaded or not. The *x*-ray, in small doses, causes a growth of hair, while large doses produce a loss, and the actinic rays from the sun in such doses as we get them, probably stimulate the growth of hair. Our ancestors, who wore no clothing at all, had hair all over their bodies.

Dr. J. B. Kessler, Iowa City: I have in mind a case of universal alopecia in a boy of 18 in whom the condition has now lasted about 2 years. With the exception of two or three little stubs, his body and scalp are completely bare. He has been examined by a neurologist and his blood has been examined with entirely negative results. I have been unable to find the cause of the alopecia or a remedy for it.

Dr. Frances Rowley, Galveston: Has anyone studied this matter with reference to the diet of the patient? Has the nitrogenous metabolism been investigated, or would these patients receive any benefit by increasing the sulphur?

Dr. C. J. White, Boston: The diversity of opinions expressed well illustrates the fact that we really do not know anything about this subject scientifically. We have our pet theories, and we reason largely by analogy. I agree with Dr. Pusey in regard to the effect on the hair of over-exposure to sunlight. I believe that the scalp and hair are supposed to have a certain amount of grease, and if we expose the scalp to the sun, we remove the greasy element and the hair becomes bleached. For the same reason, constant washing of the head or over-treatment of the scalp is equally disadvantageous. This history of too much sun or too much washing I have frequently obtained from persons who were prematurely bald.

My colleagues and I in Boston have never derived much benefit from the use of resorcin in this disease. If it is applied strong enough to do any good, it inflames the scalp. As to a possible deficiency of sulphur in the economy, to which Dr. Rowley referred, I do not know whether any scientific work has been done in that direction, but I have given that drug internally in one of its several forms without resulting benefit.

I tell my patients to use a hair brush as little as possible unless it is a clean one, and instruct them to sterilize it by placing it in the sun for a few hours at least once a week. I agree with Dr. Dyer that the hair brush is a very common cause of the persistence of dandruff. In treatment in general, I have tried all the various ointments, and in my hands they did not work so well as the two lotions that I have described. I believe that women are affected with alopecia oftener than men, but there are cases in which men feel more keenly than women the loss of their hair. As to the various etiologic factors of alopecia areata referred to by Dr. Knowles, I do not think we know the true cause of the affection, but I believe that in some specific organism plus the stimulus of a nervous breakdown or sudden shock or the debilitating effect of slow sepsis from carious teeth we have a reasonable theory of the origin of this disease.

THE EXTERNAL PREPARATIONS OF THE U. S. P. AND THE NATIONAL FORMULARY [*]

C. S. N. HALLBERG, Phm.D., M.D.
CHICAGO

THE U. S. PHARMACOPEIA

The external preparations of the U. S. P. comprise some 55 articles representing the following classes:

Unguenta
Cerata
Suppositoria
Oleata
Linimenta
Collodia
Cataplasmæ
Chartæ

Previous to the last revision these preparations were designed from a purely pharmacal standpoint; that is, the selection of the vehicle—the forming substance—was governed primarily by pharmaceutic considerations, so as to insure stable and otherwise superficially satisfactory preparations.

Having immediate charge of these preparations in the last revision, it was our good fortune to receive suggestions from many medical specialists, ophthalmologists, gynecologists and dermatologists, such as Dr. W. L. Baum of this Section, and the formulas for these preparations were for the first time revised on a therapeutic basis. Since they have proved uniformly satisfactory pharmaceutically, it might be well here briefly to consider these preparations according to their classification and therapeutic groupings, in order to determine whether practice has demonstrated the correctness of the theoretic considerations on which they were severally formulated, and it is hoped that the fullest discussion and criticism may obtain among those who use these preparations.

---

[*] The author of this paper, being now engaged in the revision of the U. S. P. and the N. F., desires physicians to report to him any criticism on these preparations, particularly the newer ones taken from the British Codex and also any additions that might be sufficiently valuable or extensively used to warrant admission to either the U. S. P. or the N. F. Address C. S. N. Hallberg, 71 E. Twelfth Street, Chicago, Ill.

[*] Read in the Section on Dermatology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis June, 1910.

UNGUENTA—OINTMENTS

Impalpable mixtures of medicinal agents and a fatty vehicle, soft solids, melting at the body temperature, intended for external application or inunction. They may be grouped therapeutically according to the function of their respective vehicles:

1. *Epidermatic.*—Non-penetrative, non-absorptive, protective, antiseptic, etc.

Vehicles: Soft paraffin (petrolatum, etc.).

PREPARATION	PRINCIPAL INGREDIENT	PROPORTION
Unguentum acidi borici—	boric acid	10%
phenolis—	phenol (carbolic acid)	3%
zinci stearatis—	zinc stearate	50%
hydrargyri diluti—	mercury	33%

2. *Endermatic:* Semipenetrative or semiabsorptive emollient, nutritive, astringent, etc.

Vehicle: Animal or vegetable fats, oils or waxes—lard, suet, almond oils, hydrated wool fat.

PREPARATION	PRINCIPAL INGREDIENT	PROPORTION
Unguentum acidi tannici—	ac. tannic,	20%
aquæ rosæ—	rose water,	20%
belladonnæ—	ext. belladonna,	10%
chrysarobini—	chrysarobin,	5%
diachylon—	lead plaster,	50%
hydrargyri—	mercury,	50%
hydrargyri nitratis—	mercury nitrate,	10%
iodi—	iodin,	4%
iodoformi—	iodoform,	10%
picis liquidæ—	tar,	50%
potassii iodidi—	potass. iodid,	10%
stramonii—	ext. stramoni,	10%
sulphuris—	sulphur, washed,	15%
veratrinæ—	veratrin,	4%
zinci oxidi—	zinc oxid,	20%

Vehicle: Hydrated wool fat and petrolatum, equal parts.

Unguentum hydrargyri ammoniati,	10%
hydrargyri oxidi flavæ,	10%
hydrargyri oxidi rubri,	10%

3. *Diadermatic.*—Penetrative or absorptive—systemic or constitutional.

Vehicle: Hydrated wool-fat:

Lanoleum hydrargyri—50 per cent., not official.

CERATA—CERATES

Mixtures of fats, waxes, sometimes resin, of hard consistence, softening by heat, readily spread on cloth, adhering to the part applied. To serve as protective dressing or to produce antiseptic, astringent or vesicating effects.

PREPARATION	PRINCIPAL INGREDIENT	PROPERTY
Ceratum—		protective
camphoræ—	linim. camphor, 10%	antiseptic
plumbi subacetatis—	liq., 20%	astringent
resinæ—		discutient.
resinæ compositus—		discutient
cantharides—	32%	vesicant

EMPLASTRA—PLASTERS

Mixtures of medicinal agents with lead plaster, rendered pliable by admixture with rubber, hard solid, readily softening so as to be spread on cloth or fabric, adhering to the skin part to which it is applied. To serve as protective or supportive or to exercise specific effects.

PREPARATION	PRINCIPAL INGREDIENT	PROPERTY
Emplastrum plumbi—	diachylon, lead oleate.	
adhesivum—	rubber, petrolatum 2%	
belladonnæ—	ext. belladonna, 30%	anodyne
capsici—	oleoresin capsicum	rubefacient
hydrargyri—	mercury 33%	alterative
opii—	ext. opium, 6%	anodyne
saponis—	soap, 10%	stimulant

The plasters of the present Pharmacopeia, all containing adhesive plaster as the vehicle, easily prepared and readily spread, are a vast improvement over the former "pitch plasters." Being endermatic, they exert the action of the respective medicinal agents, in which respect they differ from the commercial rubber plasters which are simply adhesive, do not permit any penetrative effect and are therefore therapeutically inert.

SUPPOSITORIA—SUPPOSITORIES

Mixtures of the medicinal substances and a fatty or gelatinous vehicle readily fusible at the body temperature and made into different shapes for introduction into the various orifices of the body.

Three different kinds as to size and shape of suppositories are official.

1. *Rectal.*—Cone-shaped, weighing 2 gm.; vehicle theobroma oil.

2. *Urethral.*—Pencil-shaped, weighing from 1 to 2 gm.; vehicle glycerinated gelatin or theobroma oil.

3. *Vaginal.*—Subglobular or ovoid, weighing from 4 to 10 gm.; vehicle glycerinated gelatin or theobroma oil.

There are, besides, glycerin suppositories gelatinized by soap to permit of being made into dosage form for facile introduction in the rectum, there to act as a solvent and thus produce prompt evacuation. The true suppositories, on the other hand, being analogous to ointments or cerates, present to the surfaces the most intimate admixture of the various antiseptic, astringent, anodyne, etc., agents for the most favorable action on the parts to which applied.

While the selection of theobroma oil as a vehicle for rectal suppositories cannot be improved on, a non-fatty vehicle is preferable for those intended for urethral and vaginal use. Glycerinated gelatin is therefore given the preference, although the choice of also using theobroma oil is left free to the practitioner.

The reason for this distinction in the vehicle for these different kinds of suppositories is based on the information of clinical observers that, while the rectal secretions are normally alkaline and therefore a fatty vehicle is appropriate, the secretions of the genito-urinary organs being normally acid, a fatty vehicle would be less desirable and hence the choice of a non-fatty vehicle would be better adapted to the mucous surfaces under such conditions.

The choice of glycerinated gelatin for this purpose leaves nothing to be desired from a pharmaceutic standpoint, the suppositories being soft and flexible and owing to the great proportion of glycerin contained (about 50 per cent.) retaining their solubility for any reasonable length of time. With the use of the official gelatinum glycerinatum, these suppositories are readily and quickly prepared, the only requirement being the variously shaped molds.

Whether or not this distinction in vehicle in the different kind of suppositories is really of therapeutic advantage has not been so far generally demonstrated, since seldom is any other vehicle than theobroma oil specified, no matter what kind of suppositories are required. It is hoped that this question will be discussed so that the Committee on Revision will have the benefit of the experience of clinicians.

OLEATA—OLEATES

The official oleates are formed by direct union of the base with oleic acid. They belong to the so-called "insoluble soaps." To the best of our knowledge oleates are only endermatic and not diadermatic, that is, they penetrate into the skin but do not pass through so as to have systemic effect. The following official are saturated oleates:

Oleatum hydrargyri (25 per cent. Hg oxid).

Oleatum quininæ (25 per cent. quinin alkaloid).

The following are solutions of alkaloidal bases in oleic acid in excess. In the first three olive oil is substituted for about one half the amount of oleic acid. The advantage of this has been questioned and deserves clinical observation.

Oleatum atropinæ,	2%	Oleatum veratrinæ,	2%
Oleatum cocainæ,	5%	Oleatum aconitinæ,	2%

Zinc oleate is a fine dry powder of a soapy feel valuable as a mild antiseptic and astringent "dusting powder."

COLLODIA—COLLODIONS

Solutions of medicinal substances in collodion, a solution of pyroxylin in ether alcohol, which being applied with a pencil quickly dries and leaves an impervious film.

The following are official:

Collodium—	collodium flexile—	
acidi tannici –	(styptic),	20%
cantharidatum—	(blistering),	60%
iodatum—	(iodized),	5%
collodium iodoformatum—	(iodoform),	5%
salicylatum comp.—	(corn collodium),	
tiglii—	(croton oil),	10%

THE NATIONAL FORMULARY

While not so important a work as the U. S. P., the National Formulary contains many preparations extensively used by physicians; and now is the time to make such additions and corrections as may be advisable, since its revision is now proceeding.

The following several classes of preparations for external or local use are included and it is the desire of the Committee to be informed by physicians of what criticism they would make on these various formulas; also what other preparations they would propose for admission.

GLYCEROGELATINA—GLYCERO-GELATINS

Medicinal agents incorporated with a 25 per cent. solution of gelatin in glycerin. Especially useful as a dressing where bandages are inadmissable. Prepared from the official gelatenum glycerinatum by simply incorporating the medicinal agent, first levigated with glycerin, with the melted glycerogelatin. The jelly is melted by placing the container in hot water, when it is applied with a camel's-hair pencil.

Glycerogelatinum—	acidi salicylici,	10%
	iodoformi,	10%
zinci durum—	firm zinc glycerogelatin.	
zinci mollis—	soft zinc glycerogelatin.	

PASTA DERMATOLOGICA—DERMATOLOGIC PASTES

Ointment-like mixtures of starch, dextrin, zinc oxid, calcium carbonate or sulphur, made into a paste with glycerin, soft soap, petrolatum, lard or other fat, with antiseptic or astringent agents.

Pasta dextrinata—Equal parts dextrin, glycerin and water.

ichthyoli—	Unna—ichthyol,	25%
naphtholi—Lassar—	beta-naphthol,	10%
resorcinolis mitis—Lassar—	resorcinol,	10%
zinci—Lassar—	zinc—salicyl,	2%
zinci mollis—Unna—	soft zinc paste.	
zinci sulfurata—Unna—	sulphur præcip.,	10%

STILI DILUBILIS—UNNA PENCILS

Stilus acidi salicylic dilubilis,	10 per cent.
Stilus cocainæ dilubilis,	5 per cent.

UNG. RESORCINI COMP.

This ointment, containing resorcinol, zinc oxid and bismuth subnitrate, each 6 parts, and oil of cade 12 parts, is extensively employed. The preparation discolors, but when the oil of cade is replaced by oil of birch (ol. ruscae) 6 parts (instead of 12 parts) a superior ointment is obtained. The opinion of physicians is decided on this.

UNGUENTA EXTENSA—SALVE MULLS

Medicated cerates to be spread on gauze for continuous application to avoid maceration.

Ung. extensum zinci,	10%
hydrargyri chloridi corrosivi,	2 per mille
salicylatum,	10%
creosoti salicylatum.	

The following ointments of the British codex may also be of service:

Unguentum capsici (21 per cent. capsicum infused).
creosoti, 10 per cent. petrolatum.
suprarenalin, 10 per cent. suprarenalin.

Petrolatum combined with ammonia soap is used as a vehicle under the following titles:

Petrolatum saporatum liquidum—liquid petrox.
Petrolatum saporatum spissum—solid petrox.

These are rarely used except as vehicles for various potent agents; iodin, phenol, etc. The Latin title is unwieldy and becomes more so when linked to a specific name.

PAROGEN

Under the title "Parogen" the British codex contains the following formula containing 50 per cent. less liquid paraffin (liquid petrolatum) than that of the present N. F.

Parogenum—parogen: Syn. liquid parogen; vaso liniment; oxygenated paraffin. Liquid paraffin 40; oleic acid 40; alcohol ammon. (5%) 20. Mix and agitate until a clear solution is obtained.

Also the following combinations, all made with the liquid parogen:

Parogen chloroformi camphoratum—camphorated chloroform parogen.
Camphor 37.50; chloroform 25, dissolve, add parogen 37.50.

Parogenum creosoti—creosote parogen—
Creosote 5; parogen 95; mix them.

Parogenum empyreumaticum—empyreumatic parogen.
Oil of cade 25; parogen 75; mix them.

Parogenum eucalyptolis—eucalyptol parogen.
Eucalyptol 20; parogen 80; mix them.

Parogenum guaiacolis—guaiacol parogen.
Guaiacol 20; parogen 80; mix them.

Parogenum hydrargyri—mercury parogen.
Mercury 30; wool fat 15; triturate till metallic globules cease to be visible, then add thick parogen, 55.

Parogenum ichthamolis—ichthamol parogen.
Ammonium ichthosulphonate 10, parogen to 100, dissolve and strain after standing

Parogenum iodi—iodin parogen.
Iodin 10; powder and triturate till dissolved in oleic acid 40; mix with liquid paraffin 40 per cent, then alcohol ammon. (5 per cent.) 10.

Parogenum iodi dilutum—diluted iodin parogen.
Iodin parogen 60; parogen 10; mix.

Parogen iodoformi deodoratum—deodorized iodoform paraffin.
Iodoform 3, eucalyptol 3, parogen to 100. Dissolve iodoform in the parogen by warming cautiously; then add the eucalyptol.

Parogenum mentholis—menthol parogen.
Menthol 2, parogen to 100, dissolve by warming cautiously.

Parogenum naphtholis—naphthol parogen.
Naphthol 10, parogen to 100; triturate till dissolved.

Parogenum picis—tar parogen.
Tar 25, parogen to 100, mix them.

Parogenum salicylatum—salicylated parogen.
Salicylic acid 10, parogen to 100; powder and triturate till dissolved.

Parogenum sulphuris—sulphur parogen.
  Sulphur subl. 3, linseed oil 37: dissolve by aid of heat; then mix with parogen to 100.
Parogenum sulphuris compositum—compd. sulphur parogen.
  Sulphur parogen 10, oil of cade 10, thymol 0.3, eucalyptol 3, oil of turpentine 30, parogen to 100. Dissolve the thymol and eucalyptol in the oil, mix with the parogen.
Parogenum terebenthina—turpentine paraffin.
  Venice turpentine fact. 20, parogen to 100; mix them.
Parogenum spissum—thick parogen.
  Hard paraffin 12, liquid paraffin 48, oleic acid 30, alcohol ammon. (5 per cent.) 10. Melt the hard paraffin; add the liquid paraffin, then the oleic acid and the alcohol and continue the heat on a water bath until the product weighs 90.

The following single generic names are suggested for the same reasons as was the parogenum for petrolatum saponatum. If physicians are expected to use these preparations, the generic titles must be composed of single words otherwise when the specific name is added they become too cumbersome.

LANOLIMENTA—LANOLIMENTS

Lanolimentum mentholis—menthol lanoliment.
  Menthol 5, hydrous wool-fat to 100; mix.
Lanolimentum mentholis salicylatum—salicylated menthol lanoliment.
  Menthol 5, methyl salicylate 10, hydrous wool-fat to 100; mix.
Paraffinoleum mentholis menthol paraffinol—liquid petrolatum and menthol.
  Menthol 2, liquid petrolatum to 100. Mix and strain if necessary.
Paraffinoleum eucalypti—eucalyptus paraffinol.
  Oil eucalyptus 5, liquid petrolatum to 100; mix.
Paraffinoleum thymolis—thymol paraffinol.
  Thymol 1, liquid petrolatum to 100. Dissolve by trituration in a warm mortar.
Paraffinol phenolis—phenol paraffinol.
  Phenol cryst. 1, liquid petrolatum to 100. Dissolve by trituration in a warm mortar.

74 East Twelfth Street.

MEDICO-PHARMACEUTICAL ETHICS *

A. S. MUSANTE, Ph.G., M.D.
SAN FRANCISCO

The heading of this paper sounds more like the title of a book on the subject than that of a more or less haphazard essay, but no other short caption suggested itself for a treatise on the proper attitude and mode of reciprocal action that should exist between the members of the professions of medicine and pharmacy.

No historical survey of the origin of either one of these callings from the other will be attempted, for some medical writers declare that pharmacy originally sprang from the forced surrender of the custom of general healers of preparing their own drugs, in order to keep abreast of more related advances of their work, and the pharmacists retort that there were no doctors at first, the healing art having been practiced by the ancient botanists, from whom pharmacy, more than medicine, can claim heritage. Nor will the subject be treated academically. An effort will be made to point out and describe some of the real and imaginary evils that have crept into the practices of medicine and pharmacy, which make pharmacists and physicians antagonistic professionally to one another, and to suggest how these unethical errors can be corrected.

COMMON VICES

I shall get at the substance of the matter instantly by stating that there are some evils that are common to both professions, among which may be mentioned, first, the payment of percentages by pharmacists and physicians for patients referred; second, the recommendation of a certain physician or drug-store because of this commission; and, third, the expression of derogatory opinions against the members of the medical and pharmaceutic fraternities, because of the facts that, on the one hand, the physician in question will not send patients or pay the commissions others do, and, on the other, the pharmacist is not one from whom the physician can expect a percentage from his prescriptions.

There is only one side to the first of these three evils and that is this: The payment of a percentage by a pharmacist to a physician for prescriptions directed to his store is wrong, as it is practically collusion between the prescriber and dispenser in an effort to overcharge the patient. It only means that the patient is going to be forced to pay an additional amount to cover the commission paid. A physician should charge a sufficiently remunerative fee to satisfy himself financially and should not expect in addition a share of what the patient is paying (supposedly) for his medicine. It is equally unjust for the pharmacist to expect a commission for work referred to the physician, as this recommendation would then be made mostly for gain and, in this way, only physicians paying this commission, rather than those who are capable, would be named to the inquiring. The recommendation of a certain physician by the pharmacist should always be made because it is thought that that physician is the best fitted to advise the patient; and the medical man can feel justified in referring the sick to particular drug-stores only when he is of the opinion that in these places his prescription will be more accurately filled than in other pharmacies; in this way using his expected care that incompetent men will not be given a chance to make any errors.

The last of these common faults, that of making belittling remarks about either certain physicians or certain druggists who do not further the interest or meet the approbation of a member of either profession, is wrong because the physician or pharmacist often is mistaken in his opinion, and, again, because it may shake the confidence of a patient in his physician when the latter is censured and therefore tend to lessen the likelihood of the patient's cure. As pharmacists or physicians, we should not speak against one or the other. We can and should refuse to recommend to patients anyone who is incompetent, but should not speak evil of him. We only nullify each other's efforts in performing the noble work of aiding the sick when we speak against members of either profession. Let us recommend certain physicians or certain pharmacists when asked or when we think it necessary, but let it always be for meritorious reasons and never with the consideration of possible gain or revenge in view. In this way, each will reap his just reward and medicine and pharmacy will move on, hand in hand, in the work of humanity to which they should be devoted.

Let us now take up the consideration of evils confined almost entirely to one or the other profession, and we shall find much to speak about. The pharmaceutic evils are principally drug-store prescribing, substitution, the pushing of patent medicines, bad dispensing, and

---

* Read at the Annual Meeting of the California Pharmaceutical Association, San Francisco, May 19, 1910, at which the San Francisco County Medical Society was present by invitation.

the practice of exposing mistakes supposed to have been made by prescribers. The medical profession is called on to defend itself against the charges of dispensing medicines, deficient knowledge of material medica and prescription-writing, which is responsible for the ordering of unsightly mixtures, overdosage and the prescribing of patent and proprietary medicines, as well as special makes of official preparations, and the custom of blaming the pharmacists for failure to obtain certain therapeutic results, a supposed color, odor or taste of a mixture prescribed. These topics cover the sources of complaint usually found when a threatened breach is wedging in between the professions, but do not include matters that often cause internal dissension between pharmacists themselves, like higher educational requirements, cut-rate methods and side-lines; or matters confined within medical ranks, such as advertising and specialization; or the subject of renewals of prescriptions, the ownership of the latter and the matter of the enforcement of the pure drug acts, which are regulated by law in many states.

PHARMACEUTIC TRANSGRESSIONS

Taking up the pharmaceutic vices, one by one, let us define them and see how far—if at all—they are permissible, and offer some suggestions for their correction or regulation.

Drug-Store Prescribing.—In the literature and by personal experience, I find that most of the antagonism felt toward the pharmacist by medical men is on account of drug-store prescribing, which includes treatment over the counter and in the back room. That it is wrong even to the patient, for the prescriptionist to attempt to diagnose or cure diseases, either by prescribing medicines or by giving treatments, as in the form of irrigations in venereal diseases, there is no doubt. The argument often advanced that this practice results in a financial loss to the physician as well as to the druggist, is not the strongest objection to this evil. For no one who realizes how difficult it often is for the skilled physician to diagnose and treat the symptoms of which the average patient complains can fail to see how impossible it is for the pharmacist, who has received no special training in these matters. Consider how misleading a symptom must be to one who knows nothing about reflected pain or who has never heard of an extra-uterine pregnancy! "But," some will say, "that does not apply to diseases which are self-evident, as for example, gonorrhea or syphilis." It does not make any difference, for it is often just as hard to treat these diseases successfully as it is to diagnose others. This statement is borne out by the experience of eminent gynecologists who have found that about 12.5 per cent. of all operations performed on women are caused by uncured gonorrhea affecting their husbands, who often were assured that they were cured and also by the startling fact that this disease is responsible for 80 per cent. of deaths from disorders peculiar to women.

But how far can the pharmacist go before he can be deemed guilty of intruding on the physician's domain? This is a limit on which not all agree. Some say that a prescriptionist should never give medicine without an order from a physician, but is this practical? It seems that the best compromise that has been offered is that a pharmacist should never try to diagnose a case, but should explain to a patient that the best thing would be to see a physician, as his opinion may be necessary, and then, if the customer refuses to do this, the druggist should give some unharmful mixture for the symptom complained of with final directions to see a physician if not relieved. A member of the pharmaceutic profession is presumptuous when he fails to tell the sick that pharmacists are not able or taught to diagnose diseases and that it is the physician's work to do so, just as it is presumptuous for the physician to give a price on prescriptions without knowing how they are figured.

Substitution.—Substitution or omission of ingredients in a prescription is unjustifiable and criminal. The physician and patient have a right to insist that the medicines prescribed are dispensed and anyone who wilfully deals out one substance for another or who leaves out any of the contents ordered in a prescription is deserving of the bitterest condemnation from both professions. But there is an aspect to this subject not often considered by my exacting colleagues, and that is the custom of specifying the manufacturer's name when official preparations are prescribed. In rare cases this is along the lines of safety, but it can and is often carried out too far. For example, let me tell a story which Prof. W. M. Searby narrated to me, touching on this point. A pharmacist who had a large number—I think it was fifteen—fluidextracts of ergot, was handed a prescription in which a new inferior make was specified. This was an urgent case and the medicine was needed, for the messenger said the physician was waiting to use the ergot on the patient, who was suffering from a postpartum hemorrhage. So the pharmacist gave an excellent preparation of the drug instead of the one called for, which he did not have. Was he right in what he did? He certainly was, for it might have been the cause of a woman bleeding to death if, actuated by exaggerated ideas of avoiding substitution, he had given back the prescription and not dispensed what he did. Many other cases like the above happen and a drug-store must be kept stocked with many makes of certain preparations which are exactly the same in value. It would be better for physicians to specify the maker's name only when there is some good reason, leaving the pharmacist, who is better trained to choose between good and bad preparations, responsible for the quality of all drugs, as he is for ingredients of unspecified manufacture.

Crude Dispensing.—By the evil of bad or crude dispensing is meant the turning out of mixtures of offensive appearance and taste and doubtful therapeutic value because of inability to compound properly. Every physician has noticed this fault when for some reason he has had to write some prescription, not simple to dispense, a second time for the same patient, who has gone to a different pharmacist each time. I am not referring to those cases in which the trouble is due to the inability of the physician to prescribe, but to those instances in which, in one drug-store, the pharmacist will understand how to combine the ingredients ordered and turn out an excellent preparation, while at other places the compounding is done by some who do not know the proper way and send the patient an abominable combination. So much for bad dispensing.

Exposing the Mistakes of Physicians.—This is just the course which the pharmacist should not take, considering the number of common blunders, especially in the crucial situations in which the prescriber often finds himself. Nothing is gained by letting the patient know of any supposed error, but the pharmacist should communicate with the physician about the matter and, if this is not possible, the correction should be made by the prescriptionist and the physician be positively informed. It is wrong to [illegible] a patient and to return the prescription, as the mistake might be overlooked in another place and a fatality result. It follows that a physician should always act in a gentlemanly manner when called on to correct a mistake, and should feel that a dispenser is acting along the lines of carefulness and safety in communicating with the physician even if the error can be shown to be only apparent.

Pushing the Sale of Patent Medicines.—The matter is one almost wholly pharmaceutic. Let us pass it by thus: Most of the prominent pharmacists would gladly do away with this feature of their business if it meant the abolishment of the public evil of self-medication, but, as it would be taken up by department-stores and the business increased rather than lessened, there is no reason why they should not keep these nostrums. When it is considered also that often even physicians prescribe these remedies, it seems unreasonable to expect a drug store to do without them. I believe, however, that the pharmacist should never recommend any of these preparations, but should furnish them only when called for. For druggists to push certain compounds of their own manufacture, like insect-destroyers and spring medicines for which customers rarely apply to a physician, is not much of a breach, especially when those are recommended to be "just as good" or better than widely advertised, but not so effective, nostrums. Care in proclaiming the virtues of these preparations should be exercised and no exaggerations indulged in that might offend broad-minded and intelligent physicians—no matter how great an impetus would be given to these goods.

MEDICAL EVILS

And, now, let us review the transgressions of which the medical profession seems to be guilty and reason out how much can be said to be excusable.

Dispensing by the Physician.—Dispensing at the office and at the patient's house is the oldest charge hurled at physicians. Let it be understood at the start that no reasonable pharmacist can deny that this practice is in order when immediate medication is needed or when the patient lives at a distance too remote from a drug-store. It was said in defending the physician against exposure of his errors that the nature of his work is such that mistakes often creep into his prescriptions; therefore the fact is evident that somebody must act as a checker in dispensing his orders, and who is better qualified than the pharmacist? Many times also the physician is wrong in his idea of the dosage of some powerful drug appropriate for the occasion, but rarely used, and it is here that the knowledge of posology taught in the college of pharmacy should be brought into play. The pharmacist also has a better opportunity to make sure, as he can look these matters up in the books on materia medica without exciting suspicion. It follows also that the physician cannot dispense as competently as the pharmacist, whose ability to do so is dependent on his knowledge of and experience in mixing drugs. Therefore, a physician who makes it a practice to dispense his own prescriptions acts detrimentally to his patient, the pharmaceutic profession and his brother practitioners, in the latter case because of the unfair financial advantage gained by the custom.

Inability to Prescribe.—The inability to prescribe properly demonstrated by so many physicians is due to insufficient knowledge and practice in materia medica and is fundamentally responsible for its sequel, the ordering of proprietary and patent medicines. It probably would result in making better therapeutists—though not as scientific laboratory men—if medical colleges would encourage prospective medical students as much in taking a course in pharmacy as a pre-medical study as they do in the completion of a purely scientific curriculum, the substance of which is hardly ever used by the average practitioner.

Illegible Writing.—That the notorious habit of prescribers of writing illegibly has not been responsible for more trouble is due to the extraordinary skill with which the pharmacists decipher the different parts of prescriptions. This subject has received legal attention in some countries, and carelessness in ordering has been made a crime.

Overdosage.—Overdosage and the writing of freakish physical and chemical incompatibilities only serve to bear out what was said about the limited idea of materia medica and pharmacy retained by medical men from the teaching given in these subjects at most medical colleges. As better courses in these subjects are being given now than five years ago, the reform in this deficiency is bearing fruit.

Prescription of Proprietary or Patent Medicines.—The use of ready-made proprietary or patent medicines has already been well thrashed out and will not receive the attention here it otherwise would. As this largely results from not knowing how to combine the remedies desired in a particular case in the most palatable and compatible form, it has decreased as the movement for a better knowledge of materia medica has progressed. This movement will spread until every physician will have a better idea of the drugs contained in the United States Pharmacopeia and National Formulary, using other drugs only when a real improvement of benefit to his patient is exploited. How few of the proprietaries of the last decade really were the products of advanced pharmacy, and how many were only well-known and often worthless drugs, done up in an elegantly deceiving style! In any of the big prescription pharmacies one will find dozens of preparations that once reigned supreme in their separate fields and are now condemned to the oblivion of the top shelves or the back room. In speaking of substitution the often unnecessary habit of specifying the maker's name when an official preparation is wanted was commented on sufficiently.

Exposing Mistakes in Dispensing.—Reciprocally the same feeling should manifest itself when the pharmacist is thought to have made a mistake in the dispensing of a prescription as was mentioned in discussing the delicate way a physician's error should be called to his attention by the prescriptionist. If a medicine has not the desired effect or does not come up to expectations as to palatability or appearance, the blame is not always with the dispenser. The physician may have forgotten to order some ingredient or may have prescribed something of which he did not know the properties as well as he ought. If the medical man will use his ingenuity as often as his pharmaceutic friend does, the patient will not have his confidence shaken in the latter and will probably not be as suspicious of the physician himself. Neither the pharmacist nor physician should forget the just defenses of idiosyncrasy and tolerance in any case in which these seem to be the explanation of the patient's complaint against one or the other.

SUMMARY OF SUGGESTIONS

In conclusion, let the members of both professions feel the need of co-operation with each other; let pharmacists, out of consideration for their medical friends, refuse to do something and insist on doing others, and let the latter act reciprocally. At the same time nothing should be done which is unjust to the public. Therefore the practice of paying commissions to pharmacists for work referred, or to physicians for prescriptions, should be absolutely discontinued. Recommendation of either prescriber or dispenser should always be based on merit and not on expected financial gain. Opinions derogatory to any member of either calling should be indulged in only in extreme cases.

Pharmacists should prescribe only in rare cases, including poisonings and instances in which first aid is needed before the physician arrives. Skill in dispensing should be possessed by all pharmacists and substitution never practiced. Errors on the part of physicians should be handled so that the patient does not know of them and corrections explained where the medicine is urgent and it is impossible to reach the physician. The rule in the matter of handling patent and proprietary preparations should be "Buy what is called for and sell on demand only" (Coody).

Physicians, on the other hand, should not dispense their own prescriptions, except in cases in which urgency or remoteness from a drug-store demands it; should possess a proper knowledge of materia medica and prescription writing, and write legibly and order carefully, avoiding the unnecessary use of ready-made preparations and too extended specification of the manufacturer's name of official remedies, and should not expose to the patient blunders thought to have been committed by the pharmacist when unsatisfactory results are obtained.

Joint meetings where subjects of a kindred nature could be discussed are also advisable, so that such topics as those here suggested and others could be thrashed out.* The two professions should act in unison in the propaganda for the United States Pharmacopeia and National Formulary.

I think that, as our differences are being adjusted, we are again making it plain to the pharmacist and to the physician just where the one is intruding on the ground of the other. There seem to be many things too often left undone that would make up for the loss occasioned by a stricter adherence to one's own work. For example, much of the laboratory work of the physician, like the examination of blood, urine, sputum and feces, could be done for him by the pharmacist, as courses are given in most colleges in these branches; in this way the pharmacist becomes the co-worker of the physician in the diagnosis of the diseases of which mankind is affected.

Whether everyone will agree with all I have said or not, is it not better to give these matters attention? They mean much to both professions. As these and other infringements that often wedge in between these allied professions become adjusted we should have a better pharmacy and a better medicine, and together they will battle in the war on the ailments "that flesh is heir to." I can close in no better way than in the words of Dr. H. H. Rusby: "We are not taking part in this life for all that we can get out of it. The very best part .... is its voluntary sacrifices, the best part of our possessions, that part which we freely give away because it will do better work elsewhere than if retained in our own possession."

346 Montgomery Avenue.

---

* Some articles dealing with the relationship between physicians and pharmacists, which have appeared in medical journals, are here cited for the benefit of those who may wish to look up some of them:

Anderson, W. C.: Relations of the Physician and the Pharmacist, New York State Jour. Med., August, 1909.

Barbour, M.: The Relation of Medicine to Pharmacy, New York Med. Jour., April 2, 1910.

Coody, A. S.: Pharmacists and Physicians, Proc. Am. Pharm. Assn., 1908, p. 1056.

Dimmitt, A.: Relationship between Physicians and Pharmacists, Kentucky Med. Jour., June, 1908

Earp, S. E.: Relation of Physician and Druggists, Jour. Indiana State Med. Assn., November, 1908.

Francis, J. R.: Relation of the Pharmacist to the Physician, Jour. Indiana State Med. Assn., November, 1908.

Hemenway, H. B.: Relationship of Druggists and Physicians, Chicago Med. Recorder, Nov. 15, 1907.

Klingberg, W. A.: The Ideal Relation between Doctor and Druggist, Jour. Kansas State Med. Soc., August, 1909.

Marshall, W. C.: Relation of the Pharmacist to the Practice of Medicine, Virginia Med. Semi-Month., Aug. 27, 1909.

McCloskey, C. J.: Doctor and Druggist, Med. Soc., New Jersey, May, 1908.

McCormack, J. N.: What Should be the Relations of Pharmacists and Physicians? Druggists' Circular, October, 1907.

McKee, E. S.: Medico-Pharmaceutical Graft, Pacific Pharm., May, 1908.

Mittelbach, William: Union of Physician and Pharmacist, Druggists' Circular, March, 1907

Ormsbee, J. L.: The Physician's Relation to the Pharmacist, Practically Considered, Jour. Missouri State Med. Assn., February, 1909.

Romig, E. B.: The Pharmacist as a Professional Man and His Relation to the Physician, West Virginia Med. Jour., December 1908.

Rusby, H. H.: Cooperation of Physicians and Pharmacists, Druggists' Circular, October, 1907.

Sutphin, P. C.: Relations that Should Exist between Pharmacists and Physicians, Kentucky Med. Jour., December, 1907.

THE NEW TEST FOR CANCER OF THE STOMACH, WITH SUGGESTED IMPROVEMENTS *

J. W. WEINSTEIN, M.D.
NEW YORK

I. INTRODUCTION

Medical means have been of no avail in the treatment of cancer. The only resort is surgery. If we succeed in radically extirpating the cancer *in toto*, the chances of a permanent cure are good. The importance of an early diagnosis in cancer in general, and in carcinoma ventriculi in particular, is obvious. Unfortunately in cancer of the stomach an early diagnosis is rather the exception than the rule, and in most cases, when we learn the diagnosis, we also learn the prognosis. The diagnosis of cancer of the stomach rests on the history of the patient; on the absence of free hydrochloric acid; on the presence of lactic acid, Boas-Oppler bacilli, a palpable tumor and occult blood; and on the occurrence of a variable degree of motor insufficiency. No single factor is diagnostic in itself, but a combination of these features is required for the establishment of the diagnosis. Unfortunately such a combination is not always present, and when it is present, it is not discernible at a very early stage of the disease. The Solomon test is of very little value. Any new sign that will aid in the diagnosis of carcinoma ventriculi is more than welcome.

A few months ago Neubauer and Fischer[1] published their results of a new test for the diagnosis of cancer of the stomach: the so-called glycyltryptophan test. In order to comprehend the rationale of this test we must understand certain principles in physiologic chemistry. Our food, as such, cannot be assimilated by the system. In order to be absorbed most food substances must be converted into simpler cleavage products. Thus proteins to be absorbed by the system, must go through a series of changes, until they reach the simplest grade. This series of changes for coagulable proteins, such as albumin, is: (1) acid metaprotein, (2) primary proteoses, (3) secondary proteoses, (4) peptones, (5) "polypeptids" and finally (6) amino-acids. Amino-acids are the simplest cleavage products into which proteins must be broken up for assimilation by the body. The hydrolytic cleavage of the proteins into amino-acids is effected by the digestive enzymes. There are numerous amino-acids, such as glycin, alanin, leucin, tyrosin, tryptophan, etc., each exhibiting characteristic properties. In a normal stomach the digestion of proteins is never carried to the amino-acid stage. It is only in the intestines that extended hydrolysis into amino-acids occurs.

---

* From experiments conducted in the Laboratory of Biological Chemistry of Columbia University, at the College of Physicians and Surgeons, New York, under the auspices of the George Crocker Special Research Fund.

[1] Neubauer and Fischer: Deutsch. Arch. f. klin. Med., 1909, xcvii, 499.

Various investigators have shown that cancerous tumors elaborate a certain enzyme which exhibits strong proteolytic powers, and which is capable of converting proteins as well as simple peptids into amino-acids. Although benign tumors, as well as other somatic tissues, possess similar properties, their peptid-cleaving powers are rather weak—they never equal the powerful peptidolytic action of malignant growths. Neubauer and Fischer have contrived to utilize this fact in a new test for cancer of the stomach. They used glycyltryptophan for this purpose.

Glycyltryptophan is a dipeptid,[2] one of the simplest types of peptids. As a synthetic product, it owes its existence to the ingenuity of Emil Fischer, who has made some of the most important chemical discoveries of modern times. Emil Fischer succeeded in combining various amino-acids into forms that closely resemble natural proteins of the simpler types. These synthetic peptids are like proteins in responding to the hydrolytic action of proteases[3] and in yielding their corresponding component amino-acids. Glycyltryptophan, as its name signifies, consists of a union of glycin and tryptophan radicals.

In making their test, Neubauer and Fischer add filtered stomach contents to a solution of glycyltryptophan. The mixture is then placed in a thermostat for about twenty-four hours. At the end of that time a test is made for the presence of tryptophan. If tryptophan is found it means, according to Neubauer and Fischer, that an enzyme present in the stomach contents has converted glycyltryptophan into glycin and tryptophan. Such a result could not be due to normal constituents of stomach contents, e. g., pepsin, rennin, lipase or hydrochloric acid, since these agents do not, under gastric conditions, split either dipeptids or proteins into amino-acids. An enzyme capable of converting glycyltryptophan into glycin and tryptophan occurs in gastric contents only in cases of malignant growths of the stomach.

Glycyltryptophan was used for this test because tryptophan, which it easily yields, may be more readily detected than any other amino-acid. No protein yields a larger proportion of tryptophan. Tyrosin is perhaps the only other amino-acid which could be employed to similar advantage in such work. Tyrosin may be easily detected by reason of its comparative insolubility and its consequent tendency to crystallize. A dipeptid yielding a large proportion of tyrosin, such as glycyl-l-tyrosin might be expected, therefore, to serve as satisfactorily in the test as that particular dipeptid did in similar work recently by Abderhalden[4] in another connection. The simplicity, promptness and delicacy of the bromin test for tryptophan, however, give the advantage to the compound favored by Neubauer and Fischer. That the cleavage of dipeptid in the stomach in the case of cancer is done by an enzyme secreted by the tumor, and that it is not accomplished by pepsin, was shown by Kohlenberger.[5]

NEUBAUER AND FISCHER'S PRECISE METHOD OF PROCEDURE

In applying the glycyltryptophan test, an Ewald test breakfast is extracted in thirty to forty-five minutes after a meal and filtered. Glycyltryptophan[6] is treated with some of the filtrate. The bottle containing the mixture is placed in a thermostat for twenty-four hours. At the expiration of that period the contents are tested for the presence of tryptophan. This is done as follows: About 3 or 4 c.c. of the contents of the bottle are removed with a pipette from underneath the layer of toluol and placed in a test-tube. A few drops of 3 per cent. acetic acid solution are added. Saturated aqueous solution or bromin is then added from a pipette, drop by drop, to the stomach contents in the test-tube, until a reddish violet color appears. The appearance of this color, at times a rose-red, shows the presence of tryptophan and the test is positive.

Considerable practice is required for the accurate performance of the test in the presence of very minute proportions of tryptophan, because slight excess of bromin may make the characteristic color disappear in a moment. Large excesses may impart a lemon-yellow color to the mixture. Whenever the reddish-violet color merges into yellow, we know positively that there is an excess of bromin in the mixture.

The opening at the tip of the pipette from which the bromin solution is dropped should be a fine one, and the "bromin water" added very cautiously, drop by drop, until, in case reaction is positive, a reddish-violet color appears. If reaction is very faint the test-tube should be left standing for a while. In about ten minutes, in such cases, the reaction may become considerably intensified. Usually 5 to 7 drops of bromin water are required to bring out the reaction in 3 to 4 c.c. of contents, but sometimes 1 to 2 drops are sufficient. When that is the case it is well to let a single drop of bromin water fall on the wall of the test-tube instead of into the liquid itself, in which case the volume of delivered bromin solution is reduced to a fraction of a drop, and excess is avoided.

Instead of bromin solution, pure bromin vapor may be used. If a bottle containing bromin is tilted slightly over the mouth of the test-tube, heavy bromin vapor will fall into the test-tube and dissolve in the liquid; and the reaction will promptly appear to its maximum degree. Great caution must be exercised, in this treatment also, not to add an excess of the vapor, for an excess will make the reaction disappear at once, and a lemon-yellow color may be imparted to the contents.

Bromin itself should be handled with great care, for it is extremely irritating to the respiratory mucous membrane. Under no circumstances should plain liquid bromin be mixed with the gastric contents to be tested. An aqueous bromin solution may be kept saturated by retaining in it a slight excess of the heavy, liquid bromin.

---

[2] Dipeptid—a peptid containing only two amino-acid radicals.

[3] Proteases are enzymes possessing the power of splitting up proteins and peptids, e. g., pepsin, trypsin, erepsin, etc.

[4] Abderhalden: Ztsch. f. physiol. Chem., 1909, lxii, 136.

[5] Kohlenberger: Deutsch. Arch. f. klin. Med., xcix, 148.

[6] Glycyltryptophan, as prepared for the test, is a clear watery solution. It is dispensed by Kalle & Co., Biebrich a. Rhein, all ready for use in little bottles. Each bottle contains a few minims of glycyltryptophan solution with a layer of toluol over it, as a preservative. This amount of glycyltryptophan is sufficient for one test. The bottle has a mark on it up to which the filtered stomach contents is to be added. The total capacity is about 15 c.c.

Acetic acid is added to the mixture to be tested because the reaction appears only in an acid medium, perhaps very faintly so in a neutral one, but never in an alkaline medium. Almost all stomach contents are acid and in testing them for tryptophan the addition of acetic acid may not be necessary. In mixtures of very low acidity the addition of acetic acid seems to serve a useful purpose.

SPECIAL SOURCES OF ERROR IN THE GLYCYLTRYPTOPHAN TEST

Neubauer and Fischer made a series of tests in normal and pathologic cases and were extremely gratified by the results obtained. The following sources of error in the application of the glycyltryptophan test are mentioned by them:

1. *Presence of Tryptophan in the Stomach Contents.*—Neubauer and Fischer advise tests for tryptophan in the stomach contents before glycyltryptophan is added. If tryptophan is found, the specimen of stomach contents should be rejected, they say, and another one subjected to the test. I do not agree with Neubauer and Fischer in this regard, as I shall show further on in this paper.

2. *Presence of Peptid-Splitting Bacteria in the Stomach Contents.*—Neubauer and Fischer have tested the effects of pure cultures of various species of bacteria on glycyltryptophan and have found that some species are able to split off tryptophan. The addition of toluol to the material in the test is proposed by them as a safeguard against such bacterial action. The passage of the stomach contents through a filter, according to them, also removes the offending micro-organisms. This danger is greatly overestimated by Neubauer and Fischer.

3. *Presence of Trypsin in the Stomach Contents.*—Duodenal contents may regurgitate into the stomach and the trypsin may split up the glycyltryptophan. Neubauer and Fischer exclude this latter possibility by examining the stomach contents in gross for bile, which is easily recognized by its greenish color. In the presence of manifest bile another specimen must be used for the test.

4. *Presence of Blood in the Stomach Contents.*—According to Neubauer and Fischer blood is capable of splitting up glycyltryptophan and thus serving as a source of error in the test. If the presence of blood is suspected, a test such as the guaiac or benzidin test should be made for it. If occult blood is present, Neubauer and Fischer recommend that that specimen be discarded and a new one tested. The danger from the presence of occult blood is also exaggerated by Neubauer and Fischer.

Lyle and Kober[7] who recently reported the results of their study of this test as applied to twenty-one cases concluded as follows: "Our results with this test have been satisfactory. A repeated negative reaction is very valuable. When the test is positive, the complication of a regurgitation of trypsin must be thoroughly investigated."

2. METHOD OF EXPERIMENT

I have been engaged, during the past few months, in a study of the value of this new test for cancer of the stomach in its various aspects, and my experience agrees with the results obtained by the former investigators. I wish, however, to propose some important modifications based on a study of sixty-three normal and pathologic cases in all forms of gastric disease (see Section 4, Record of Cases).

It is my conviction that the employment of glycyltryptophan is superfluous. The tryptophan reaction may be obtained without it. Every test of my series of cases was a double one (one with and one without glycyltryptophan), and glycyltryptophan was found to be unnecessary. The reason is obvious. The enzyme secreted by the cancer is potent enough to hydrolyze protein, as well as dipeptid into amino-acids; nor does it have to do it unaided, for in the vast majority of cases the associated pepsin converts accompanying protein to peptones. There were only about two or three instances in my series of cases, in which the test was positive in the presence of glycyltryptophan, but negative in the absence of that compound. On the other hand, I had some cases in which the opposite was true—in which without glycyltryptophan a better reaction was obtained than with it. More than that, I received the impression that the addition of glycyltryptophan may at times serve as a source of error. It is possible that some of the bottled specimens of glycyltryptophan undergo spontaneous decomposition into the component amino-acids. I noticed in two tests the production of a very deep red color in the presence of glycyltryptophan, whereas in its absence no reaction occurred. (In one instance a clear-cut case of chronic gastritis. See Record of Cases, special Case 39.)

These observations aroused my suspicion. On one of the two occasions referred to, there was a surplus of the specimen of stomach contents under examination. I then tested that specimen with a sample of glycyltryptophan from another bottle and obtained only the faintest trace of a reaction. There appears to be no other explanation for this exceptional result, than the assumption that the first sample of glycyltryptophan contained free tryptophan.

I have subjected seventeen bottled samples of our supply of glycyltryptophan to tests for free tryptophan. Distilled water instead of stomach contents was added to each of these bottles of glycyltryptophan.[8] The tests gave entirely negative results in each case. It should not be forgotten, however, that suspicion was aroused in only two out of nearly 150 instances, and, therefore, the seventeen negative results would not exclude the correctness of my assumption that two of the samples employed contained free tryptophan.

There are several advantages in excluding glycyltryptophan from the test. Glycyltryptophan is comparatively expensive.[9] The toluolized samples form opaque, milky mixtures with stomach contents. Detection of slight proportions of tryptophan may be very difficult, often is impossible, in such opaque media. It is the clear solution only that develops, as a rule, a distinct and unmistakable reaction. Filtering the opaque mixture does not do any good in most cases. The opacity persists in spite of repeated filtrations.

---

[7] Lyle and Kober: New York Med. Jour., June 4, 1910, p. 1151.

[8] Each bottle contained sufficient glycyltryptophan for one gastric test.

[9] Material for 150 tests, imported duty free for use in this laboratory, cost $50.

Neubauer and Fischer advise the use of a regular Ewald test breakfast extracted in thirty to forty-five minutes. I found, however, that employment of a regular dinner and extraction of some of it at a later stage of digestion (within three or four hours), served the purpose better. I convinced myself of this in connection with specimens of contents from two cases that showed marked tryptophan reactions after a regular dinner, but failed to give any reaction after an Ewald test breakfast, the stomach having been washed previously (Cases 1 and 3). Both were obstruction cases. The Ewald test breakfast is ideal for testing the secretions of the stomach, but as an aid in the test for cancer enzymes, it is much inferior to a regular dinner. There is only one class of cases for which the Ewald test breakfast may be preferred. It happens occasionally, though very rarely, in cases of stagnation, that a stomach under the influence of a heavy meal will secrete hydrochloric acid, while the light Ewald test breakfast will not cause any secretion. It will be pointed out later that hydrochloric acid reduces the activity of, or may destroy, the cancer enzyme. When a negative tryptophan reaction is obtained in a case of pyloric stenosis showing free hydrochloric acid, it may be desirable to wash the stomach and administer an Ewald test breakfast, so that the contents may possibly be free from hydrochloric acid, and the elicitation of the tryptophan reaction favored on that account. (Group 11 illustrated this point.)

Neubauer and Fischer state that "hydrochloric acid, in a strength equal to 0.36 per cent., destroys this (cancer) enzyme." While the results of my experiments corroborate this general statement, there appear to be exceptions to it. Cases 11 and 16 gave marked tryptophan reactions in the presence of considerable free hydrochloric acid.

Neubauer and Fischer further advise the application of the tryptophan test to stomach contents before adding glycyltryptophan for the detection of the cancer enzyme. If a positive tryptophan reaction is obtained with bromin water, that specimen, they say, should be discarded and a new one secured. But why discard it? This response tells the facts in the case! I detected preformed tryptophan in untreated stomach contents repeatedly. I obtained the reaction directly and easily. I have obtained it frequently in contents from cancer cases but in no others! Of course, if one intends to use glycyltryptophan, the course prescribed by Neubauer and Fischer is the best one to pursue, but the results of my own research warrant the conclusion that the use of glycyltryptophan for the detection of gastric cancer is superfluous.

I tried the effect of adding to stomach contents protein such as fibrin, or food from the meal, with the idea of enhancing the reaction, but the results were negative.

Neubauer and Fischer state that the tryptophan reaction must be obtained in twenty-four hours, or it is of no value, since bacteria are likely to hydrolyze the dipeptid and thus produce tryptophan. They experimented with pure cultures of micro-organisms and found that certain species possess proteolytic properties. As a safeguard against this contingency, as has already been stated, they advised the addition of toluol. My experiments have dealt not with pure cultures, but with stomach contents as such. I have kept specimens of stomach contents over a month (some specimens being devoid of free hydrochloric acid), both with and without preservatives, and, except in carcinoma cases, tryptophan did not develop from the admixed glycyltryptophan. Only in two achylic cases, on very prolonged standing, did the reaction appear in contents from non-cancerous patients. Therefore, when an untreated specimen is kept for forty-eight hours in a thermostat, there is no special danger that bacterial development of tryptophan will occur. Sometimes a faint reaction becomes more marked in forty-eight hours. The addition of preservatives is superfluous and inconvenient. Thymol fragments form a heavy, milky emulsion with stomach contents, which is intensified by the addition of bromin water. Toluol is better, but it likewise forms a turbid mixture with stomach contents, and, as I mentioned before, such turbidity interferes with sharp elicitation of the tryptophan color reaction with bromin water. Chloroform and ether are best in this respect, but they seem to interfere somewhat with the reaction in certain cases.

I disagree with Neubauer and Fischer in their view that blood serves as a source of error in the glycyltryptophan test. The testing of contents for *occult* blood is superfluous. I do not wish to be placed in the position of taking issue with Neubauer and Fischer on the proposition that blood contains proteolytic enzymes. My contention is merely that blood in stomach contents, in a quantity insufficient to be betrayed by its color, is not potent enough to hydrolyze protein or glycyltryptophan into detectable quantities of tryptophan. This conclusion is sustained by observations in several cases, in which occult blood was present in the contents, as proved by blood tests, and yet no tryptophan could be detected after application of the glycyltryptophan test. More than that, I even added blood to stomach contents by getting blood from the patient's finger, but no tryptophan could be obtained in the mixture even after standing in a thermostat for days. This was done by me on two patients, whose cases were both anacid. I also added blood from myself and from a fellow worker in the laboratory to glycyltryptophan, in quantities just sufficient to impart a slight bloody tinge to the solutions, but after six days' incubation in a thermostat none of the mixtures contained a trace of tryptophan. Of course, it is probable that if a large quantity of blood is added to gastric contents, tryptophan will be formed, but such contents are, in general, worthless in this connection for another reason, namely, that it is impossible to discern the characteristic tryptophan-bromin color in a red or dark-colored medium. Occult blood, therefore, cannot serve as a source of error in the tryptophan test.

Duodenal contents which have regurgitated into the stomach are likely, if sufficient in quantity, to vitiate the test, since the contained trypsin may convert proteins into amino-acids and thus produce tryptophan that might be ascribed to cancer enzyme. Unless bile is manifestly present in the gastric contents, however, there is little or no danger in this connection, assuming, of course, that bile and pancreatic fluid always appear together. Neubauer and Fischer aptly remarked that no chemical test need be made for bile in doubtful cases. It is sufficient, they believe, to examine the contents in gross and if bile is obviously present, as evidenced by greenish color of the contents, such a specimen should be discarded and a fresh one obtained. Occult bile could hardly be accompanied by sufficient trypsin to produce a detectable amount of tryptophan in the test.

Lyle and Kober seem to be impressed by the possible influence of the trypsin that may occur in stomach contents in this relation. From extended experience in stomach work I can say that duodenal material rarely appears in stomach contents. Duodenal fluid may occasionally be present in very trivial amounts, but it cannot then vitiate the tryptophan test. Moreover, pepsin in the presence of acid destroys trypsin. Acid itself does so. To serve as a source of error in the tryptophan test, duodenal contents must be present in large quantities, and the stomach contents must be alkaline. These two conditions prevail only when there is an obstruction of the duodenum below the papilla and in certain pathologic cases following gastro-enterostomy, in which the drainage goes from the afferent loop into the stomach, instead of into the efferent loop. I have had several such cases; two of them are included in these experiments (Cases 11 and 15). But in cases like these the presence of duodenal contents may be determined without any difficulty.

After all is said, one fact stands out prominently, viz., that the glycyltryptophan test yields positive results in practically all cancer cases and hardly ever in any others, as may be seen from the reported results of the experiments by Neubauer and Fischer, Lyle and Kober and myself.

THE AUTHOR'S TRYPTOPHAN TEST

The test, as I have modified it and now recommend it, is made as follows: Four or five hours after a regular dinner, some stomach contents are secured, filtered and tested with bromin water for tryptophan. If present, reaction is positive. If absent, some of the filtrate transferred to a stoppered bottle and treated with a little toluol, or better still, without a preservative, is put in the thermostat and tested again for tryptophan twenty-four to forty-eight hours later. Although the reaction very often develops at room temperature, the mixture should be kept in a thermostat for the period stated.

DEFICIENCIES OF THE TRYPTOPHAN TEST

The most serious defect of the tryptophan test is its inconstancy. The reaction may be present in one specimen of stomach contents and absent in another from the same patient. The only safeguard against this uncertainty is, in case of negative results, to test three or four specimens obtained at different times. If three or four tests yield negative results, the case is most likely non-cancerous. Work now in progress may ultimately indicate the reasons for the inconstancy referred to. (See addendum.)

Satisfactory results are unattainable unless the contents are practically colorless. Admixture of coloring matter may make it impossible to conduct the test. The presence, therefore, of blood or coffee-grounds in the contents makes it necessary to select another specimen for the test. In giving the patient a meal for the test, he should be instructed not to ingest any foodstuffs that are likely to impart color to the contents. Coffee, tomatoes, strawberries, etc., for obvious reasons, should be excluded. Tea must not be strong, else the contents will be sufficiently reddish to render the test useless. (See addendum.)

The fact that free hydrochloric acid interferes with the activity of the cancer enzyme or may destroy it altogether, is a serious obstacle in the way of reliable employment of the tryptophan test.

3. GENERAL CONCLUSIONS

A critical review of the results obtained in this study of the tryptophan test convinces me that it is a valuable sign in the diagnosis of cancer of the stomach. It is a sign in itself. The other signs of cancer, such as absence of free hydrochloric acid and presence of lactic acid, occult blood, coffee-grounds, etc., have no value whatever, when taken individually, since they appear in conditions other than carcinoma. They are of value only in conjunction with other data. Moreover, none of these has any negative value. In these respects the tryptophan test is superior to any of them. True, it is inconstant, but are positive results from the Widal test, the finding of the tubercle bacilli, the finding of plasmodia, constant features? However, in matters of such importance many observations must be made before conclusive deductions can be drawn. I cheerfully recommend this simple tryptophan test to the profession for the further study and more complete determination of its real value.

Is it an *early* sign of cancer? I do not know! I have not been fortunate enough, as yet, to get a very early case and determine the matter, one way or the other. Much more work must be done in this connection before that important question can be answered.

I wish, in this connection, to express my indebtedness to Prof. William J. Gies of the College of Physicians and Surgeons, who has placed his laboratories at my disposal and has secured the support necessary for the conduct of this rather expensive research. With his ever-ready counsel and valuable suggestions he has contributed greatly to the success of my work. I also express my indebtedness to Prof. Francis Carter Wood of St. Luke's Hospital, Miss Selma Granat of the Presbyterian Hospital, Dr. Julius Rudisch of the Mount Sinai Hospital and Drs. A. Zemansky and W. Weinberger of the Lebanon Hospital for supplying stomach contents of some very interesting cases.

ADDENDUM

In an endeavor to perfect my methods further, while the manuscript of this paper was in the hands of the editor, I made observations warranting the following preliminary conclusions: Pepper interferes with the tryptophan-bromin reaction; so does lemon juice. Sugar is an excellent stimulant to the secretion of cancer enzyme; beef is much better than chicken. A good meal for the tryptophan test is one consisting of bread and butter, with meat prepared very plainly without extra seasoning or dressing, and some very sweet, weak tea. I made about a dozen tryptophan tests recently on each of two patients (Cases 16 and 17), and, using such meals, obtained uniformly positive results in almost every test.

I have secured excellent results by giving a meal consisting of white bread and very sweet weak tea without milk, the meal having been extracted in one hour. This statement is based, however, on tests on only two patients.

4. RECORD OF CASES

I. CASES WITH CONTENTS YIELDING A POSITIVE TRYPTOPHAN REACTION *

CASE 1.—M. G., male, aged 49. Free hydrochloric acid, 0; total acidity, 58. Lactic acid, present. Two tests were made for tryptophan; both were positive. Tryptophan was present in the gastric contents immediately after removal from the stomach. A test breakfast, after lavage of the stomach, failed to yield contents giving the tryptophan reaction even after standing several days in the thermostat. The patient was operated on and proved to have an extensive carcinoma originating in the pylorus.

---

* Every test referred to in this record as a tryptophan test, unless otherwise indicated, was a double one—with glycyltryptephan and without it. The results in each case were identical in quality unless otherwise indicated.

Case 2.—I. S., male, aged 45. Clear-cut carcinoma. Coffee-grounds. Free hydrochloric acid, 0; total acidity, 136 to 166. Lactic acid, considerable. Immediately after removal of contents from the stomach a faint tryptophan reaction was directly obtained. After forty-eight hours in the thermostat, this reaction was more marked.

Case 3.—S. D., male, aged 61. Clear-cut carcinoma involving the pylorus. Marked peristaltic movements. Free hydrochloric acid, 0; total acidity, 6. Lactic acid, considerable. Two tests were made for tryptophan; both were positive.

Case 4.—G. E., male, aged 54. Cancer involving the pylorus. Three tryptophan tests were made, with two positive results and one negative. Free hydrochloric acid, 0 to 34; total acidity, 42 to 66. No lactic acid.

Case 5.—G. E., male. Autopsy: cancer of the pylorus. Five tryptophan tests were made, two with stomach washings. Three Ewald test breakfasts were given. One Ewald tryptophan test was negative; the others were positive. In two tests the direct tryptophan reaction appeared after forty-eight hours' standing in a thermostat, but not before.

Case 6.—N. T., female, aged 46. Palpable tumor. Patient died. Clear-cut carcinoma. No free hydrochloric acid in stomach contents. Two tryptophan tests were made with positive results. In one test the reaction was slight.

Case 7.—S. F., male, aged 73. Cancer of the pylorus. Marked stasis of food. Free hydrochloric acid varied in quantity from a trace to 24; total acidity, 88. Lactic acid, present. Four tryptophan tests were made. Two were positive and two negative. The contents that gave the negative result contained free hydrochloric acid, 24.

Case 8.—D. P., female. Cancer of the pylorus and posterior wall. Operation. A test for tryptophan was positive.

Case 9.—S. N., male, aged 28. Carcinoma of the lesser curvature. Operation. Free hydrochloric acid, 0; total acidity, 6 to 14. Lactic acid, present. Two tryptophan tests were made; one was positive, one was negative.

Case 10.—G. H., male, aged 51. Carcinoma ventriculi. Free hydrochloric acid, 0; total acidity, 10. Lactic acid, present. Palpable tumor. A tryptophan test was positive.

Case 11.—S. D., male, aged 52. Carcinoma ventriculi. Marked peristaltic movements. Dilated stomach. Marked stasis. Refuses operation. Free hydrochloric acid, 26; total acidity, 92. Lactic acid, present. A specimen of stomach contents with the above acidities showed a marked direct tryptophan reaction. On two other occasions, with acidities of free hydrochloric acid, 50 to 72; combined, 24, and total, 108 to 130, direct tryptophan reactions were positive. One month prior to this, two tryptophan tests were negative.

Case 12.—C. C., female. Suspected carcinoma. Two tryptophan tests; one positive, one negative.

Case 13.—A. S., male, aged 36. Free hydrochloric acid, 32; total acidity, 76. This did not appear to be a cancer case. Unfortunately the patient could not be kept under observation. One tryptophan test was made with a positive result.

Case 14.—A. T., female, aged 33. Material from the stomach contained much bile on repeated examinations. Free hydrochloric acid, 0; total acidity, 20. The patient underwent a gastro-enterostomy for pyloric ulcer two years ago. Non-cancerous case. Two tryptophan tests were made; both positive.

Case 15.—S. G., male, aged 52. Jejunal ulcer. Gastro-enterostomy four years ago. Non-cancerous. Material from the stomach contained much bile on repeated examinations. Free hydrochloric acid, 0 to 28; total acidity, 24 to 68. One positive tryptophan test was made.

Case 16.—R. K., male, aged 54. Case of suspected carcinoma. Free hydrochloric acid as high as 50; always present. About a dozen tryptophan tests were made and almost all were positive.

Case 17.—I. C., male, aged 46. Clear-cut case of cancer. Palpable tumor. Cachexia. Coffee grounds. Very poor [illegible]. Free hydrochloric acid, 0; total acidity, 14. Lactic acid, considerable. A dozen tests for tryptophan were made, all were positive.

Case 18.—L. B., male, aged 65. Patient of Dr. Jerome M. Lynch. Clinical diagnosis by Dr. Lynch, carcinoma ventriculi. Operation by Dr. Lynch about 2½ years ago for cancer of the rectum. Free hydrochloric acid, 0; total acidity, 14. Lactic acid, trace. Starch digestion, good. Occult blood, present. One test for tryptophan was made with a positive result.

Case 19.—Mrs. M., aged 54. Patient of Dr. William Weinberger. Undoubted case of carcinoma. Operation revealed a tumor in the pyloric region. Free hydrochloric acid, absent. Lactic acid, present. Two tests were made for tryptophan by Dr. Weinberger. The first was negative; the second, positive.

II. CASES WITHOUT FREE HYDROCHLORIC ACID IN THE STOMACH CONTENTS AND NOT YIELDING POSITIVE TRYPTOPHAN REACTION

Case 20.—S. L., male. Suspected carcinoma. Free hydrochloric acid, 0; total acidity, 48. Lactic acid, negative. One test was made for tryptophan, but with a negative result.

Case 21.—J. O'H., male, aged 41. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 44-76. Lactic acid, 0. Two tryptophan tests were made; both were negative.

Case 22.—A. C., female, aged 38. Suspected carcinoma. Free hydrochloric acid, 10; total acidity, 34. Lactic acid, 0. Blood in contents. Two tests were made for tryptophan; both were negative.

Case 23.—C. R., female. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 14. Lactic acid, 0. Several tryptophan tests were made; all were negative.

Case 24.—A. N., female, aged 55. Achylia gastrica. The patient has been under my observation for the past nine years. Several examinations were made for tryptophan; all were negative. Free hydrochloric acid, 0; total acidity, 6. Lactic acid, 0.

Case 25.—A. N., male. Achylia gastrica. Free hydrochloric acid, 0; total acidity, 8. Lactic acid, 0. One tryptophan test was made with a negative result.

Case 26.—R. H., aged 52. Spasmodic stricture of the upper part of the esophagus. Free hydrochloric acid, trace; total acidity, 36. Several tryptophan tests were made, but all were negative.

Case 27.—I. D., male. Chronic gastritis (alcoholic). Free hydrochloric acid, 0; total acidity, 14. Lactic acid, 0. One tryptophan test was made with a negative result.

Case 28.—N. F., male. Suspected carcinoma. Free hydrochloric acid, 0; total acidity, 16. Lactic acid, 0. One tryptophan test was made with a negative outcome.

Case 29.—R. McM., female, aged 42. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 38. Lactic acid, 0. Three tests were made for tryptophan; all were negative.

Case 30.—A. M. K., aged 36. Gastroptosis, hypoacidity. Free hydrochloric acid, trace; total acidity, 24. Lactic acid, 0. Two tryptophan tests were made; both were negative.

Case 31.†—O. D., female. Diagnosis; achylia gastrica. Free hydrochloric acid, 0; total acidity, 4.

Case 32.—E. T., female. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 40.

Case 33.—B. J., male. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 25.

Case 34.—D. F., female. Diagnosis, achylia gastrica. Free hydrochloric acid, 0; total acidity, 6.

Case 35.—B. S., male. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 20.

Case 36.—D. P., female. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 32.

Case 37.—L. L., male. Chronic gastritis. Free hydrochloric acid, 0; total acidity, 16. Lactic acid, 0.

Case 38.—M. B., female. Achylia gastrica. Free hydrochloric acid, 0; total acidity, 8.

III. SPECIAL CASE, YIELDING TRYPTOPHAN REACTION WITH GLYCYLTRYPTOPHAN, BUT NONE WITHOUT IT

Case 39.—B. C., male. Chronic gastritis and hyperacidity, very marked tryptophan reaction with glycyltryptophan; none without it.

---

† At least one test with glycyltryptophan and one without it was made in each of Cases 31-38, with uniformly negative results.

IV. CASES NOT YIELDING TRYPTOPHAN REACTION

None of the cases in this group gave the tryptophan reaction. The tryptophan test was repeated several times in many cases. The gastric contents from all these cases had free hydrochloric acid.

Six cases of hyperacidity.

Three cases of chronic gastric ulcer.

Five cases of neurasthenia.

One case of contraction of gastro-enterostomic orifice four years after operation. Marked stasis of food. Dilated stomach.

One case of arteriosclerosis.

One case of hypernephroma. Patient died.

Three cases of gastric atony, with marked stasis of food.

Two cases of gastroptosis.

One case of enlarged gall bladder, probably due to calculi.

One case of chronic constipation.

71 East Ninety sixth Street.

A STUDY OF THE BACTERIAL FLORA OF THE NASAL MUCOSA IN THE PRESENCE OF RHINITIS[*]

WILL WALTER, M.D.
CHICAGO

This study represents an effort, extending over about two years, to learn something of the bacterial flora of the upper respiratory tract in the presence of disease. The purpose was to ascertain, first, whether the flora in our territory are comparable to regions where such investigations have been made, namely, in various parts of England and in Germany; secondly, to uncover, if possible, the etiologic factors in infections of the mucosa of this tract. Most of these infections are more serious in their final results than they are usually considered. They may not only be the precursors of diseased adnexa, of cervical adenitis, often of meningitis, but, by the absorption of formed toxins, they are worthy of consideration for the part played in hemic and vascular disorders leading to arterial hypertension and its sequelæ.

These are, fundamentally, infections which are peculiar to the mucous surfaces and, of course, must vary according to the environment, habits and social status of the infected subjects.

Only infections of the nasal mucosa are reported here. Detailed reports on specific bacteria will cover the other regions.

CHARACTER OF THE RESEARCH

In this study endogenous diseases are not considered, only ectogenous bacterial invasion. The whole study includes examinations of about 250 cases of diseases of the upper respiratory tract, including a number of ear infections which presuppose postnasal infection, a considerable number of tracheal infections and a limited number from the polybacterial pharynx. Out of this research are taken 100 cases of nasal infection, listed in order of record, and these include a few cases of pernasal secretion from sinusitis.[1]

The whole series represents a greater number of diseases than of individuals, and this discrepancy between diseases and persons infected is due to a fact to which I shall later call attention more specifically, namely, the fact that it is not unusual to find coincident infection on different areas of the upper respiratory tract caused by distinct bacteria on the respective areas involved. The fact that bacteria grow with varying degrees of rapidity and virulence is, of course, well known, but it becomes a matter of importance, (from the therapeutic side), to appreciate the possibility of this cotemporaneous infection of different regions.

This locally variable susceptibility is probably due to three conditions: (1) the variation in culture media offered by the locality; (2) the variation in virulence in the respective regions, depending, doubtless, on specific local resistance to invasion; (3) the lowering of bacteriotropic pressure in reflexly related regions through stasis, the evolution of disease in one locality producing the lowered resistance in a region closely associated with it. As to regional variation, we know the proclivity for multiplication of the gonococcus on the mucosa of the urethra and of the conjunctiva, but it is rarely found growing on the upper respiratory tract. On the other hand, the pneumococcus has an adaptive habit which enables it to grow fairly well on the conjunctiva, well in the nose, ear and pharynx, and luxuriantly on the pulmonary mucosa, and even on the blood-stream itself; but it is not equally virulent in all sites *in vivo*, and is most selective as to its growth *in vitro*. So, as will be seen from the findings, the bacteria vary greatly in their selection of surface on which to grow.

METHODS OF THE RESEARCH

Film preparations were made from the secretions taken by platinum loop, if plentiful, or by sterile swabs, if scant, and fixed in flame. For cultures a platinum loop sterilized in flame was introduced directly on the area involved in the inflammatory reaction. This method was used for all inoculations and, acting on the advice of the English workers in this field, they were made on Loeffler's blood-serum mixture which, as will be seen later, is probably not altogether reliable in fulfilling the possibilities of development for many of the organisms. They were all stained by Gram's method. In the presence of diverse colonies, subcultures were made and, from pure cultures obtained, cultural tests were carried out.

The method of obtaining materials differs from that employed by some of the English and German investigators and is more reliable, since some of them have depended on secretion blown from the nostrils, which is almost certain to be contaminated by the ever-present cocci in the skin and hairs of the interior nares, and unless special care is taken, mixes the secretions from the two nares. If the secretion is abundant, it is, of course, possible to wash the larger masses thoroughly and to obtain from them uncontaminated material, but in the beginning of acute infections, when there is only watery secretion, it is difficult to get such masses.

The method of blowing the material from both nostrils would be inaccurate in many cases, for there is abundant evidence that the two sides of the noses may vary as to their bacterial content, particularly in early stages of infection. It is even possible to have acute rhinitis on both sides caused by distinct organisms. In one case there was an acute febrile attack starting on the left side of the throat, passing to the left nostril and

---

[*] Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

[1] I must acknowledge my great obligation to the following individuals: Aaron Arkin, who carried through the cultures of the first series of sixty-four cases in the bacterial laboratory of the University of Chicago through the courtesy of Professor Jordan; Dr. Mary C. Lincoln, who carried through the second series of fifty cases and has critically examined the whole list; and my assistant, Miss Copeland, who with me has worked out the third series of 136 cases. I am also indebted to men in the laboratory of Wright and Douglas at St. Mary's, London, and to Dr. Allen of London, for confirmation of my findings in the probably most frequent causal factor—the *Bacillus segmentosus* of Cautley—and for courtesies extended by them. Without the cooperation of all these people it would not have been possible to carry out so thoroughly such a number of examinations in the time of the research.

TABLE 1.—SHOWING FINDINGS IN 100 CASES OF RHINITIS

														Diphtheroids																				
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Staph. [illegible]	Staph. [illegible]	Staph. aureus	Giant m[illegible]	Gram + Strep. cocci	Bac. segm[illegible]	Unclassified.	Yellow bac.	Brown bac.	Salmon bac.	Micrococcus catarrhalis.	Muc. capsulatus (Friedlander).	Diplococci (unclassified).	Gram— and Gram+ pneumococcus.	No growth on B. S.	Pyocyaneus.	Streptobacilli [illegible]	Influenza "bl[illegible]"	Morax Axenfeld.	Bac. fusiformis.	Bipolar bac.	Resemble B. coli.	Spored bac.	Koch-Weeks.	Miscellaneous.	Remarks.	No. present in each
82	[illegible]	..	..	..	.	..	..	+	..	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
84	.	+	..	+	..	..	..	+	..	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
88	[illegible]	..	..	..	..	..	..	.	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
89	[illegible]	..	..	.	[illegible]	.	+	+	..	..	..	..	..	..	..	..	..	..	•	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
92	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	.	[illegible]	..	[illegible]	..	..	.	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
100	[illegible]	[illegible]	[illegible]	.	.	[illegible]	[illegible]	+	..	..	..	..	[illegible]	..	+	..	.	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
101	.	..	[illegible]	.	−	..	..	[illegible]	..	..	..	..	+	..	..	..	..	..	+	..	..	..	+	..	..	..	+	..	..	..	..	..	..	5
102	[illegible]	+	..	+	..	..	..	+	..	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
104	[illegible]	..	..	.	..	..	..	.	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	3
105	+	..	..	..	..	..	..	+	..	..	..	..	+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
107	[illegible]	..	..	+	.	..	..	[illegible]	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
109	+	[illegible]	[illegible]		[illegible]	[illegible]		+	..	..	..	..	[illegible]	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
110	.	[illegible]		[illegible]	.		..	.	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
122	.	..	..	+	..	..	..	..	+	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
128	+	..	..	.	..	..	[illegible]	..	..	..	+	..	+	+	..	..	..	..	•	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
130	+	..	..	..	..	..	..	[illegible]	..	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
136	+	..	..	.	..	..	..	..	..	+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
137	+	..	..	..	..	..	..	..	..	[illegible]	+	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	2
141	.	.	.	+	..	..	.	..	..	+	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
144	.		.	+	.					+	..	.	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1

117	+	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	2
153	..	..	..	+	..	..	..	..	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
155	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
157	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
159	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
160	..	+	..	+	..	..	..	..	..	+	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3
162	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
164	..	+	..	+	..	..	..	..	..	..	+	..	+	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	3
165	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	+	..	..	..	..	..	+	..	..	+	..	..	..	..	..	..	3
166	..	..	..	..	..	..	..	..	..	+	+	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
170	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
171	+	..	..	..	..	..	..	..	..	..	+	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
172	+	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
173	..	+	..	+	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
175	..	+	..	+	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
179	..	..	..	+	..	..	..	..	..	+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
182	..	..	..	..	..	..	..	..	..	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
187	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
189	+	..	..	..	..	..	..	..	..	+	+	..	+	..	..	..	..	+	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	5
190	+	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
197	..	..	..	+	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
201	..	..	..	+	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
202	+	..	..	..	..	+	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
210	+	..	..	..	..	..	..	+	..	..	..	..	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
215	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
216	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
217	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
218	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	1
219	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2
221	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	1
223	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
225	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	1
226	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	1
No. times found	49	10	7	35	10	5	9	31	2	23	12	5	35	5	4	1	1	20	7	6	7	4	3	3	2	2	2	1	1	1	1	5	..	184

* Present, but already counted in another finding and therefore not added in totals at right.

1. Atrophic.
2. Gram negative, Gram-positive.
3. Pure culture.
4. Gram-positive, long rod.
5. *Micrococcus tetragenus*
6. Gram-positive, large bacillus.
7. Gram-positive bacillus, large sectional.
8. Acute laryngo-pharyngitis.
9. Non-suppurating.
10. Involution forms.
11. Like influenza, but smaller.

into the left frontal and, possibly, anterior ethmoidal cells, with the coincident development of frontal sinusitis on the right side, but with a different organism present. In this instance, it seemed that the bacterial infection on the left side did not pass to the right side at all, but so lowered the resistance through reflex vascular stasis that a latent infection became manifest on the right side. I judge this from the accidental fact that we had made a culture from the right frontal sinus a few weeks previously, which was also predominant in this finding. In this case our technic proved valuable and the evidence was incontrovertible, presenting the interesting feature of a patient suffering constitutional symptoms from pneumococcus infection on the left side and the local pressure symptoms from a staphylococcus on the right side. Instances might be multiplied, showing the fallibility of diagnosing the infection from specimens from areas other than those involved in inflammatory reaction, and justifying the technic employed. Coincident infection of the trachea by *Micrococcus catarrhalis* with rhinopharyngeal infection showing Cantley's bacillus, has been observed several times.

TABULATION OF FINDINGS

Table 1 represents the 100 cases of nasal infection. The acute on chronic and acute on subacute are considered as acute infections, but they will also show among the subacute and chronic cases of rhinitis though counted but once. The number of acute cases are therefore sixty-four. There are thirty-four subacute and eleven chronic; five cases of acute sinusitis and nine cases of chronic sinusitis.

This table presents some interesting and instructive features. The number of cases and specimens examined is greater than the combined reports of the English observers, and differs in results from some and, in percentages, from all. Many bacteria are present accidentally and not in a casual way.

In Table 2 the bacteria are arranged by groups taken in the order of percentage of finding.

The Staphylococcus Group

The three varieties of staphylococcus, *S. albus*, *S. citreus* and *S. aureus*, are listed separately, making a total of fifty-six cases, indicating a presence of these pus cocci in 56 per cent. of all cases of infection studied; other cocci added bring the total to 73 per cent. Lewis and Turner[2] made a study of twenty-six specimens from normal noses, disclosing pus cocci in 50 per cent.; but the most notable extended studies are those by Hesslauer[3] covering 186 specimens from the normal in which staphylococci are present in 25 per cent., and by Neumann[4] covering 206 cases, which showed the presence of *S. albus* in 98 per cent., *S. aureus* in 30 per cent. and *S. citreus* in 12 per cent.

Our percentage of staphylococci in infected cases is probably relatively very high. In some of these cases they seem to be the only organism present. The evidence of German and English observers is, however, against the probability of primary infection by them; they are almost universally considered as secondary invaders. Workers in the field of the conjunctiva have found it very difficult to grow staphylococci on the conjunctiva, while as to the study of staphylococcus infection in otitis there seems to be a great lack of agreement, such men as Pes and Gradenigo[5] maintaining that they are always secondary invaders, while Zaufal and Roskin[6] feel that they may replace the primary exciting bacteria and a few assert that primary infection by staphylococci is possible.

---

[2] Edinburgh Med. Jour., November, 1905, p. 393.
[3] Centralbl. f. Bakt. Orig., 1903, xxxiii, 47.
[4] Ztschr. f. Hyg., 1902, xl, 33.

It would seem that time must be allowed for the better differentiation of this group. While in some of these cases they seem to be the only possible causal organism, such a case as 71, pneumococcus infection, might easily have been laid at the door of staphylococcus, since staphylococci were present on the first day of the attack, no pneumococci being recovered from the secretion. At the end of a week, during which time the boy was not seen and had been very ill with typical pneumonia rhinitis, the smears and cultures showed pure culture of pneumococci. A few days later, staphylococci again appeared in the secretions and the pneumococcus disappeared.

Several cases showing pure culture of staphylococci in very red pharynges, and a few ear cases, in which the staphylococci were the only demonstrable agents in the attack, have been observed. It is only lately that we have been testing the liquefying reaction of the staphylococci and, in all cases observed in this regard, we have found the liquefiers to be associated with the more acute inflammatory reaction. This is in accord with the final conclusions of Axenfeld[7] and others who have studied this group, namely, that the liquefying staphylococci are the virulent ones and that most of the others are harmless.

If staphylococci invade the mucosa in a secondary way, it would seem that they do so because the primary infectors produce local injury to the mucosa, in like manner that staphylococci invade the skin following local irritation and lowering of resistance. In that event it is pertinent to inquire why they may not cause rhinitis, if present on the mucosa when it is injured by foreign bodies, as dust, or by chemical or thermal irritation. If we conclude that they are mostly of secondary occurrence, but that they may be secondary to other irritants than bacterial, then they could not be said to occur in epidemic form, and would be atypical clinically. Such seems not to be the case.

In the light, however, of this great preponderance of common agent at their primary invasion, we can not consider them as probable factors in starting the inflammation, but as secondary. I call them "possibly causal" in the cases in which they are present alone, that is, twenty-four times. Probably in these cases they are secondary to irritation other than bacterial, and possibly many would prove like Case 71, should repeated examinations be made. We are not considering the frequently occurring furuncles in the nasal vestibule. These are indisputably due to staphylococci and usually—possibly always—the aureus.

The Diphtheria Group—Bacillus Segmentosus of Cautley

The second in percentage order of occurrence 35 per cent., the *Bacillus segmentosus*, is worthy of special consideration, but time is not available for it. A detailed description of this interesting organism will follow.

Though discovered by Cautley,[8] working under the local government board of London, in 1893, and investigated since by Gordon,[9] by Prosser-White,[10] by Benham[11] and by Allen,[12] and commonly known in England under the name of *Bacillus septus*, it is almost unknown in our literature. I had noted its presence for several years and had it reported by laboratories as "diphtheroids," "Gram-positive diplococci," etc., but could not identify it positively; I failed to ascertain anything of it from bacteriologists in this country and did not appreciate what I had, until Allen described it in 1908. On a visit to London last year I submitted my slides to Allen and to men in the Wright and Douglas laboratory, who confirmed the finding. So what I here report is known through England as the *Bacillus septus* (Cautley's bacillus).

It is a diphtheroid, Gram-positive bacillus, club-shaped, with rounded ends 0.2 or 0.3 by 0.5 microns. Its chief morphologic characteristic is the segmentation or barring due to an unstained septum, which caused Cautley to give it the name of *Bacillus coryzæ segmentosus*—coryza because he thought it to be the cause of the coryza of epidemic influenza.

Prosser-White found it in all of seven cases, Benham in twenty-five of twenty-seven and Allen in eleven of forty-two cases of acute rhinitis. It was not alone in these cases, but apparently predominant and was thought causal. My percentage is not so high as Cautley's, Prosser-White's or Benham's, but it is higher than Allen's, and this, as will be brought out in a later specific report

TABLE 2.—ETIOLOGIC SUMMARY *

Classes of Organisms.	Variety.		Per Cent.	Acute. Probably Alone Causal. Per Cent.	Acute. Probably Causal, But Not Alone. Per Cent.	Acute. Total Probably Causal. Per Cent.	Acute. Possibly Causal. Per Cent.	Chronic. Probably Alone Causal. Per Cent.
Pyogenic cocci:—	Staphylococci	56						
	Giant micrococci Gram positive	12						
	Streptococci	5						
		—	73	0	..	0	21	0
Diphtheroids:	Segmentosus	35						
	Unclassified	5						
	Yellow bac.†	4						
	Brown bac.†	1						
	Salmon bac.†	1						
		—	46	22	19	41	0	0
Micrococcus catarrhalis			29	7	13	20	0	0
B. mucosus capsulatus (Friedlander)			7	0	0	0	2	5
Pneumococcus (Fraenkel)			7	7	0	..	0	0
No growth			4	0	0	..	0	0
Diplococci unclassified Gram positive and Gram negative			6	0	0	..	3	..
Pyocyaneus			3	0	0	..	1	2
Influenza "Beta"			2	1	1	2	0	0
Gram positive streptobacilli			3	0	0	..	0	0
Miscellaneous organisms			10	0	0	..	0	0

* Based on conclusions of literature and my own clinical and bacteriologic observations.
† Named from color of growth on blood-serum; classified by morphology.

---

[5] Arch. f. Ohrenh., xxxviii.
[6] [illegible]: Diseases of the Ear, p. 273.
[7] Axenfeld-MacNab: Bacteriology of the Eye, p. 231.
[8] London Local Govt. Rep., 1894-95.
[9] London Local Govt. Rep., 1901-02.
[10] London Local Soc. Rep.
[11] Brit. Med. Jour., May 6, 1906, p. 1023.
[12] Lancet, London, November, 1908, p. 1501.

on the organism, may be accounted for by the fact that all but Allen's studies were taken from epidemic periods. Allen's was part of a research covering four years, and mine, a greater number of cases than all of the others combined, also covered a longer period and may thus be inclusive of epidemics. Attention is also called to the fact that Benham's 90 per cent. occurred in the months of November and December and in mine, if the occurrence in autumn months were taken out, a high percentage would be obtained, that is, in epidemic form. It is also interesting to note that, during the past two months (spring), we have not obtained from any of the many cultures in acute rhinitis a single specimen of *B. segmentosus*, though we have tried every case for it in hopes of showing a fresh culture for inspection. It seems from these facts that possibly this bacillus is epidemic in the autumn months.

The addition to this list of twenty-five or thirty new cases, worked out since this report was closed, would alter the percentages, adding materially to the next-mentioned organism, *Micrococcus catarrhalis*, fifteen or twenty, and to a new tiny diplococcus, Gram-negative and so far unclassified, eight or ten cases, thus reducing the preponderance of *B. segmentosus*.

The evidence is much in favor of the *Bacillus segmentosus* as a primarily etiologic organism in rhinitis. As to its being a distinct bacteriologic organism, however, there is some doubt, since its margin of differentiation[13] from the *Bacillus xerosis* and the *Bacillus septatus* of Gelpke,[14] both of which are innoxious to the conjunctiva, is small and both may be identical therewith. From secretions it is a slow grower, sometimes appearing only after three days; it does not liquefy gelatin and it grows in discrete colonies with serrated edges. In subcultures it grows more rapidly and coalesces.

Clinically it is quite characteristic, starting nearly always in the throat after a few hours' incubation, and passing to the nose. It has been recovered five times from the ear in twenty-six cases of acute otitis; it was found in one case of sinusitis and has persisted for over a year with *Mucosus capsulatus*—seventeen cases examined—and was obtained three times from cough cultures; so that it may be said to have a strong predilection for the nasal mucosa, where it develops an acute reaction, typical rhinitis, with little or no tendency to chronicity. Counting out the cocci and other organisms known not to be causal in coryza, it may be said to be the only causal organism present in 19 per cent. of cases examined, occurring also eleven times with *Micrococcus catarrhalis* and five times with other possible causal bacteria.

The other diphtheroids are few numerically, but some of them are severe in their manifestations; one, Case 78, not reported in this list, in which was found the yellow bacillus like that in Cases 79, 92, 100 and 104, all severe, produced the most nearly fatal rhinitis and otitis I have seen, with temperature range from 106 to 96. This case I intend to report specifically.

Micrococcus Catarrhalis

This Gram-negative coccus is misnamed, because it is wrong to convey such an impression of mild and benign character as is given by such a name. In some ways it seems the most dangerously infectious of all the bacteria, because of its prevalence, its capacity for wide-spread growth on the mucosa, its recently proved ability to cause meningitis, its clearly infectious character and the frequently caused painless otitis media caused by it.

It is noted in 20 per cent. of rhinitis and may be considered as alone causal in 8 per cent. Noted epidemiologically since the closing of this report, that is, in the months of April and May just passed, this percentage would be about 60 and the addition of these last cases to our list of 100 would increase its presence alone from 8 per cent. to 18 per cent. In the whole research its presence is noted in thirteen cases of throat and trachea and seven cases of suppurative otitis. In symbiosis with the *Bacillus segmentosus* there seems to be an exaltation of virulence.

When found in otitis media suppurativa in pure culture it has produced less pain and has undergone resolution following paracentesis more quickly than any other infection that has come to my notice. In the ear it is quite likely to abort.

There is not much in the literature on the subject of this organism. We have been able to differentiate several strains of quite characteristic action and reaction, but into that I am not prepared to enter at this time. Attention may be called in passing to its morphologic and, in some strains, culture similarity to the meningococcus on one side and the gonococcus on the other.

I believe that there has been an epidemic of *Micrococcus catarrhalis* infection in Chicago this winter and spring. In the winter epidemic and in tracheal infection generally it seems most persistent, but in this spring's epidemic (not reported here) it has been mild and self-limited. Some of the series we have encountered since this report culture differently and may prove to be another organism of the same group.

Lastly, attention is again called to its recovery post mortem from an increasing number of cases of meningitis and to the fact that its proneness to cause slight subjective disturbance may account for many an obscure case of meningitis of nasal or aural genesis.

Bacillus Mucosus Capsulatus (Friedlander's Pneumobacillus)

It has been a matter of surprise to note almost complete absence of this organism in acute infections, because I was prejudiced in favor of its finding in the beginning of the study. None of the observers whom I have quoted, however, with the exception of Allen, have found it in the epidemic investigated. If I had not spent some time in Allen's laboratory and become familiar with his method of working, and if I did not know his thoroughness as a bacteriologist, I would doubt the possibility of its causing acute rhinitis, since we have found it present so rarely and then, with two possible exceptions, confined to chronic cases. Allen reports Friedlander in thirteen of his forty-two cases, but by his table it may be considered as alone causal of acute rhinitis only in six cases, or 14 per cent., as against Von Besser's[15] 2.5 per cent. and Lewis and Turner 4 per cent. for normal noses.

Attention is called to the fact that authorities have come to consider the ozena bacillus[16] of Lowenberg and Abel[17] as identical[18] with the pneumobacillus of Friedlander, since they are alike morphologically, in staining reaction, and in nearly all of their cultural peculiarities as well as their pathogenicity for animals. In four of my cases the diagnosis of ozena would properly be made:

---

[13] Axenfeld-MacNab: Bacteriology of the Eye, p. 29.

[14] Arch. f. Ophth. (Graefe's), 1896, xlii, 97.

[15] Beitr. z. path. Anat. u. z. allg. path., 1889, vi, 33.

[16] Jordan: General Bacteriology, p. 252.

[17] Wassermann Kolle's Handbuch, 1903, ii, 870.

[18] Axenfeld-MacNab: Bacteriology of the Eye, p. 242.

two of them were seen by other men and were so diagnosed. I reported it as possibly causal in two acute cases.

Pneumococcus—Fraenkel

None of the articles quoted in this report mention the finding of the pneumococcus in acute rhinitis, which seems rather remarkable, particularly for Allen's research, which covered four years and would, one would imagine, report some findings. Hesslauer[3] gives the enormous percentage of 19.7 and R. O. Neumann[4] 22 per cent. for abnormal noses, but neither states what sort of cases he reports. It is certainly a very frequent cause of acute infection in this climate. Pneumococcus infection in the eye is quite common and it acts like my reported Case 137, in that as soon as the pneumococcus disappears the staphylococci become more obvious, appearing in large numbers.

Patients with this infection are severely ill. These cases constitute many of those which are diagnosed as grip. Especially is it noteworthy, though I have not seen it mentioned anywhere, that these infections frequently terminate by crisis. I believe that Axenfeld noted it in relation to pneumococcus eye infections, but the reference is mislaid.

Several instances have been observed in which typical pneumonia temperature range was exhibited without, so far as could be ascertained, any pulmonary involvement. This is an intensely interesting observation and is recommended for consideration.

Attention is also called to the fact that, in all cases in which pneumococcus is present, it is in pure culture, barring a notation I have already made, that staphylococci precede and follow its activity. These observations have raised many interesting points that may not be entered into at this time.

Bacillus Pyocyaneus

I have seen no mention of pyocyaneus in relation to nasal infection. It must be very rare, and English confrères with whom I talked are of the opinion that it probably grows in structures deeper than the mucous membrane.

Morax-Axenfeld and Koch-Weeks Bacilli

Morax-Axenfeld and Koch-Weeks bacilli have been very commonly observed by others, but I have seen them only the three times mentioned.

Influenza "Beta" Bacillus

The influenza "beta" bacillus presents many points of interest. I call it influenza "beta" because it is not the influenza bacillus, but belongs to this group. It should have more extended study.

The other organisms are probably of accidental occurrence and not worthy of note.

Influenza Bacillus—Possibility of Failure

It is especially interesting to call attention to the fact that in 250 cases examined the influenza bacillus has not been encountered once, nor was it noted by any of the English observers whose reports go back several years, except in an epidemic on the Riviera, in which the pneumococcus is reported as causal with *B. influenzæ*, *M. catarrhalis and paratetragenus*. This is surprising in view of the fact that diagnoses of grip colds have been made daily from clinical manifestations by physicians and specialists all over the country these years.

I report in this series four specimens in which no growth occurred and from whose smears no diagnosis could be made. This reveals the fact of the possibility of error in this research to which I previously called attention, namely, the fact that all cultures were made on Loeffler's blood-serum mixture.

It is pretty generally understood among experts on the subject that the influenza organism grows poorly on blood-serum unless some hemoglobin be present and, although there have been no cases which could clinically be adjudged influenza, it is possible that, had we used hemoglobin containing media for the influenza group (so-called hemophile pole bacteria) which grow with certainty only on them, we should be more certain as to the occurrence of influenza.

In like manner errors may have occurred with relation to the pneumococcus, although it is much more easily recovered from smears, had we used some such formula as that of Wertheim, on which organisms such as gonococcus and pneumococcus and Koch-Weeks bacillus grow best. It is also possible that better results might be obtained for the *Micrococcus catarrhalis* with the so-called nasgar mixture recommended by Wasserman.

These various media we may employ for future research.

No such objection may by any possibility obtain as to the limited finding of pneumobacillus of Friedlander, for on blood-serum it will outgrow any organism known to us, colonies growing to the size of a silver quarter while the *B. segmentosus* is grown to pin-point.

CONCLUSIONS FROM THE RESEARCH

The evidence seems indicative that the diphtheroids, particularly *Bacillus segmentosus* of Cautley, are concerned in the production of so-called common cold in its typical manifestation in the nose, and there is much evidence that it occurs in epidemic form.

The *Micrococcus catarrhalis* is much more general in its manifestation, and is, probably, also epidemic and productive of a rather more severe inflammation, though mild epidemics occur.

It seems likely that the symbiosis of these two organisms increases the virulence.

The pneumobacillus of Friedlander is much more concerned in chronic conditions and is probably identical with the ozena bacillus.

The pneumococcus of Fränkel flourishes in any part of the upper respiratory tract and, when virulent, has been found in pure culture.

Clinically the segmentosus infection is most likely to be in the nose, seldom in the trachea, but may cause otitis media; *Micrococcus catarrhalis* is most apt of all to invade the larynx and trachea, but may occur in the ear or nose and with variable virulence. The pneumobacillus is mostly confined to the nose and sinuses.

Influenza is conspicuous by its absence.

Pyogenic cocci are non-pathogenic locally, except as secondary invaders, and the probability is that only a limited number of strains are concerned in causation of acute infections on the mucosa, and these are not genuine coryza.

The bacterial flora of the nose in America probably does not differ materially from that of other countries, but must of necessity be governed largely by environment, occupation, social position and epidemics as to the ratios of finding.

72 Madison Street.

ABSTRACT OF DISCUSSION

Dr. E. R. Lewis, Dubuque, Iowa: In considering the pathologic conditions of the nasal and accessory nasal tissues, it must be remembered that a majority are due directly to infections, and of the remainder a large number are due indirectly to preexistent or coexistent infections. The subject of Dr. Walter's paper is, therefore, of practical interest to all who have to deal with these conditions. Inasmuch as there are involved two widely differing antagonists, the invading organism and the invaded tissues, analysis must proceed from two widely differing standpoints, that of the bacteriologist and that of the clinician. Observations which are to form the basis for deductions as to the bacteriologic or the clinical side of the matter must be made by experts and the bacteriologic expert should not dwell in the body of the clinician, and *vice versa*.

Among the deductions, certainties may or may not present; uncertainties are bound to. Undue emphasis should be spared the former and accorded the latter.

The fundamental reasons underlying the immunity of certain tissues and the susceptibility of other tissues apparently similar, in the same individual, to the same infection, may not be forthcoming. For instance, a gonococcus, bathing in mucous emulsion the newly born head, harms not the oral mucosa, or the nasal mucosa, but does attack the ocular mucosa. Yet that same oral mucosa, scatheless from its encounter with the gonococcus, falls easy prey to the leptothrix or saccharomycetic infections, which in turn do not attack the conjunctivæ; the same nasal mucosa offers but weak resistance to pneumobacillus or streptococcus. Why? The Morax-Axenfeld bacillus conjunctivitis proceeds uninterrupted in the presence of bichlorid of mercury or silver salts but succumbs to zinc sulphate, whereas the more virulent gonococcus conjunctivitis subsides under the influence of silver salts but is not affected by zinc sulphate. Why? Questions like these must remain unanswered until careful investigations, patiently pursued and zealously guarded against error, shall have built up little by little a knowledge of the subject founded on truths proved by oft repeated observations. I wish to express the appreciation which I am sure we all feel in regard to Dr. Walter's patience and energy.

I want to voice a suggestion concerning nomenclature which may be of some practical value. In speaking of the pharyngitis, tonsillitis, or rhinitis due to the *Bacillus diphtheriæ*, we are wont to use the terms nasal diphtheria, diphtheritic tonsillitis or diphtheritic pharyngitis. In speaking of other forms of pharyngitis, tonsillitis or other inflammation specified according to site, of known etiology, should we adopt the custom of using etiologic terms, it seems to me we should have made a step in advance, albeit a small one.

Dr. W. S. Anderson, Detroit: Why do infections of the mucous membrane of the lower respiratory tract occur? We all have patients who very seldom have an acute cold, and we have other patients who repeatedly have acute colds. We know that the lower animals are comparatively free from these infections. Why? What is there in the normal mucous membrane of some persons that resists infection while that of others does not? As I understand it, the normal respiratory tract is sterile, or nearly so. In the nose there are always a few micro-organisms but they do not thrive on a healthy mucous membrane. Going downward we find fewer and fewer germs until the tract below the vocal cords is always sterile in a healthy subject. But, in the presence of an acute cold there will be an abundant growth of organisms along the whole respiratory tract. Why? I have done some work in animals and it is easy to show that the lower respiratory tract is sterile but in many conditions it becomes infected. The mere closing up of the nose of a dog will be followed by a copious growth in the lower respiratory tract. Now we are coming to believe that many of the infectious diseases gain entrance through the mucous membrane of the respiratory tract, meningitis, diphtheria and so forth. In many of these there are local lesions of the mucous membrane, and yet if you attempt to reproduce these lesions in the lower animals you will fail. I have tried over and over again with the Klebs-Loeffler bacillus and have always failed, and yet if we inject the organisms into the blood of the animals, they will die immediately or in twenty-four to forty-eight hours. The same thing occurs with the organism of pneumonia. If you rub it on the mucous membrane of the respiratory tract you will get no results at all. Why is the membrane in some cases so resistant? If we could learn what the local condition of the respiratory tract is that favors infection it would explain a great many conditions.

Dr. Will Walter, Chicago: Infection of the normal mucosa was not investigated but I reported the investigations of others who compare the normal with the abnormal. As to resistance to infection, of course there is the local resistance and the general immunity to be considered. There is also a variation in virulence of infectors and doubtless a specific local resistance. These are the problems which the laboratories of the world are trying to solve and which may not be answered offhand. In obstructed noses we have from mechanical causes practically a stasis and hence lowered local resistance. The opsonic index may be as high as 2 or 2.50 and still you get infection because of this stasis and the consequent poor local resistance. If the nose is shut off from its function by such abnormalities or by being held closed infection naturally occurs lower in the tract. Protection against such infection is one of the reasons for the existence of the nose.

A CLINICAL STUDY OF A CASE OF PSEUDOLEUKEMIC ANEMIA OF INFANCY (VON JAKSCH) *

THEODORE J. ELTERICH, M.D.
PITTSBURG, PA.

In 1889, von Jaksch proposed the term "anemia pseudoleukemica infantum" to designate a pathologic picture characterized by oligocythemia, oligochromemia, considerable permanent leukocytosis, enlarged spleen, slightly enlarged liver, and, sometimes also, enlarged lymph-nodes. Its identity as a distinct disease has been seriously questioned by some authorities on diseases of the blood. Notwithstanding, however, we find in a certain number of infants suffering from a severe form of rachitis or hereditary syphilis, a symptom-complex which is entirely apart from the pre-existing disease.

A number of German authors, Japha, Fischl and Geissler and also some Italians include the grave infantile anemias in the secondary anemias with a toxic basis, practically as a middle condition between anemia and leukemia. Japha does not regard the spleen as the primary focus, and is of the opinion that it has nothing to do with the regeneration of the blood; this is based on the fact that the enlargement frequently becomes reduced before the blood picture has become normal, while the extent of the enlargement does not correspond to the gravity of the anemia. Japha also believes that deficient new formation of blood constitutes the nature of the affection. At the same time, there may be an exaggerated destruction; but there are only a few cases in which the anemic (granular) degeneration of the red corpuscles is found as a positive evidence of blood poison.

A very notable work on this subject by Banti appeared in 1883. He believed that anemia splenica was a primary disease of the spleen, but he also considered it a splenic form of leukemia. In the case studied and described by him, there were marked fibrous changes in the trabeculæ and the follicles of the spleen; and a great diminution of the cells. There were many phagocytic cells containing red corpuscles; the bone-marrow was red and showed a lymphoid condition, but the lymph-nodes were enlarged. The spleen weighed 2 pounds, 7 ounces; the liver weighed 2 pounds, 12½ ounces. The blood showed a diminution of leukocytes and the red corpuscles were between 2,000,000 and 3,000,000 per cubic millimeter. Koplik reports nine cases in which the blood-picture was as follows:

---

* Read in the Section on Diseases of Children of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

> The hemoglobin ranged from 28 to 65 per cent.; the count of red blood-cells or erythrocytes fell as low as 1,400,000 and in others was as high as 4,448,000; and the leukocytes ranged from 5,200 to 40,000 and 80,000 to the cubic millimeter. In all cases there were nucleated red blood-cells, normoblasts and megaloblasts from 7 to 15 per cent. In some cases the white cells varied from 10,000 to 80,000 to the cubic millimeter in a given case, with erythrocyte count of 2,699,999 to 3,799,999.

He regards von Jaksch's anemia as a severe secondary anemia with or without marked leukocytosis.

Monti and Berggruen report 20 cases. In six of these the red cells were below 1,600,000. Four cases proved fatal; one recovered in which the proportion of leukocytes to the red cells had been 1 to 12.

History.—The case which I observed was that of a male child aged 13 months, admitted to the children's ward of the Allegheny General Hospital, Pittsburg, Aug. 4, 1909. The father and mother are both of German parentage and are apparently in good health. There is no history of tuberculosis or syphilis. The patient was one of twins; the other died at the age of 2 months from diarrheal affection. The patient had always been a weak and delicate baby. He was breast-fed for a few weeks only, and then fed on various foods, principally condensed milk. He had always been pale and cries a great deal. He had never been known to smile.

Examination.—The child was very poorly nourished and anemic. His expression was often anxious; but, as a rule he seemed apathetic. The skin was dry and flabby. Numerous purpuric spots were seen in various parts of the body, particularly in the legs and over the right iliac region. There was considerable enlargement of the lymphatic glands in the cervical, axillary, and inguinal regions. The abdomen was distended. The anterior fontanel was open and about the size of a twenty-five cent piece. The child had but six teeth. The epiphyses of the forearms were enlarged. Rachitic rosary, well marked. Examination of the chest revealed a subacute bronchitis. The heart sounds were clear and distinct. The liver was found to be enlarged, extending several finger-breadths below the costal cartilages. The spleen was enormously enlarged, the tumor extending far below and to within half an inch of the umbilicus. The notch of the spleen could be felt plainly. There seems to be some pain on palpation. Examination of urine was negative. The examination of the blood showed 27,500 whites, 2,500,000 reds and 45 per cent. of hemoglobin.

Course of Disease.—The foregoing is a description of the condition of the patient on admission to the hospital. He remained in the institution until the time of his death, Aug. 26, 1909, twenty-two days after admission. The progress of the disease was rather rapid and influenced to a considerable degree by intercurrent affections and conditions.

Temperature: On admission, his temperature was slightly above normal but during the course of the disease varied from 101° to 104° F., partly due to a bronchopneumonia and a purulent inflammation of the middle ear, which occurred on the tenth and twelfth days, respectively, after admission.

Pulse: The pulse was rapid, never below 120, but, until shortly before his death of fair quality.

Weight: From 15 pounds and 9 ounces the weight fell rapidly to 13 pounds during the first week. Later there was a gain of about half a pound which was followed by a rapid decline, reaching 11 pounds on the day of the patient's death.

Skin: In addition to the purpura, which remained and increased throughout the course of the disease, marked icterus was present shortly before death.

Lungs: While, on admission, only a few coarse râles could be heard over his chest, evidences of a bronchopneumonia were present on the tenth day and continued up until the time of his death.

Digestive System: Vomiting and diarrhea occurred frequently. It was extremely difficult to find any food which would agree with the patient. Whey and barley-water were about the only things which he retained.

Urine: At first the urine was normal, but later after the administration of arsacetin[1] it contained a large amount of albumin, also a few hyaline and granular casts.

Blood: As stated above, at the time of admission, the patient had 27,500 whites, these gradually became reduced to 16,000; the reds were 2,500,000 and were reduced to 2,287,000. The hemoglobin remained about the same, 45 per cent.

Differential count:

Neutrophils	6.50 per cent.
Small lymphocytes	61.00 per cent.
Large lymphocytes	18.63 per cent.
Transitionals	1.47 per cent.
Eosinophils	0.28 per cent.
Basophils	0. per cent.
Neutrophils myelocytes	1.18 per cent.
Eosinophils myelocytes	1.18 per cent.
Normoblasts	9.76 per cent.
Poikilocytesis	.... per cent.
Polychromatophilic red cells	.... per cent.

Therapy.—The treatment at first was directed entirely to the digestive organs, calomel and bismuth being employed. Later the patient was given arsacetin hypodermatically in doses of 0.05 (gr. ¾) but, on account of the occurrence of albuminuria had to be discontinued. In addition, iron and stimulants were given.

Summary of Clinical Symptoms.—Rachitis, enormous enlargement of the spleen, moderate enlargement of the liver and lymphatic glands, purpura, icterus, bronchopneumonia, otitis media, gastro-intestinal indigestion, albuminuria.

Autopsy.—This was made by Dr. F. Proescher, Pathologist, Allegheny General Hospital.

Spleen, Macroscopic Examination: The spleen measured 10 cm. (4 in.) in length, 8 cm. (3.2 in.) in breadth, and 5 cm. (2 in.) in thickness. It weighed 163 gm. (5 oz. 15 grains) and was therefore about seven times the natural size of the spleen of an infant at that age. Its consistency was firm and it was deeply notched at the lower end. The surface was mostly of a light red color, but in some parts, a dark blue discoloration was seen. On section it was found to be of tough consistency. The follicular markings were obliterated. Numerous irregular but not sharply defined areas were to be seen. These were about the size of pin heads, of a grayish white color.

Spleen, Microscopic Examination: The capsule, as well as the trabeculæ, was thickened. The connective tissue was deficient in nuclei and hyaline in appearance. The follicles were completely obliterated. Most remarkable was the great interstitial fibrous induration, which had caused almost complete obliteration of large areas of the pulp. This induration was seen to be partly in the shape of large, irregularly scattered areas of greater or less thickness, with remnants of pulp tissue, still enclosed; or, in the form of diffusely scattered, isolated fibers, traversing the entire pulp and passing between the pulp cells. These were exceptionally well defined by the Van Gieson staining. Both the smaller and larger vessels also showed considerable fibrous induration, especially the tunica adventitia, which was enormously thickened. In some places there was also a proliferation of the intima, which led to complete occlusion of the lumen. The enormously thickened adventitia presented a marked tendency to hyaline degeneration. The fibers of the connective tissues were conglomerated into hyaline masses containing no nuclei. The lumina of the majority of the blood-vessels were empty, but, where they were filled with blood, erythrocytes pale and indistinct were found, beside which were seen many mononuclear and a few polynuclear cells.

---

[1] Arsacetin is sodium acetyl arsanilate, a compound derived from sodium arsanilate. It is claimed to be less toxic than sodium arsanilate and to possess the advantage of keeping well and being sterilizable without decomposition. Adult dose 0.1 gm. (1½ grains) to 0.05 gm. (7½ grains.) For internal administration 0.05 (¾ gr.) 3 to 4 times daily. See N. N. R., 1910, page 26.

In addition, there were seen cavities, either scattered or in groups, or even long and winding, and lined by a single layer of spindle-shaped endothelial cells. They were enclosed by a dense ring of round cells, some of which were surrounded by a thick hyaline non-nuclear tissue. That we were not dealing with blood-vessels was established by the fact of the uniformity of structure of the surrounding tissue, which allowed of no distinction of the different layers of the blood-vessels. We were in all probability dealing with a cystic dilatation of the lymph spaces. The pulp consisted of numerous blood-cells and round-cell elements of varying sizes, averaging from 3 to 6 microns in diameter. These mostly showed a round or slightly lobulated nucleus, with scanty protoplasm. Some of the nuclei were rich in chromatin, others showed only a framework of chromatin; many of the large mononuclear cells showed eosinophil granulations. In addition, a few spindle-shaped cells resembling endothelium cells were found. Large giant-like cells with phagocytic enclosure of red blood cells were scarcely seen.

Liver, Macroscopic Examination: The liver was 9 cm. (3½ in.) in length, 16 cm. (6½ in.) in breadth, 4 cm. (1½ in.) in thickness and weighed 345 gm. (11 oz. ¾ drams). It was of firm consistency, its edges were sharp and the color a yellowish red in some places, while in others it was more of a yellowish color. On section it was of a bright yellow or red color. The acinous delineations were quite plainly visible. At the periphery the acini were of a sulphur yellowish color; but, in the center more of a yellowish red and cloudy. Throughout the entire parenchyma there were numerous punctiform hemorrhages. The vessels were not enlarged. The tissues were moist and on pressure a thin, bloody fluid exuded copiously. The gall-bladder contained a large quantity of tough yellowish green bile.

Liver, Microscopic Examination: The parenchyma of the liver showed extensive tough infiltrations, especially the middle acinous zone. The liver cells in the center of the acini showed parenchymatous degeneration, partly sclerotic, partly necrotic. Irregularly scattered were seen larger and smaller hemorrhages (extramedullary blood formation) as well as larger and smaller round cells, with deeply stained nuclei. Some of these were round, others lobulated. The periportal connective tissue was very much thickened and infiltrated with round cells; also the walls of the hepatic artery and portal vein. Van Giesen's stain showed regularly distributed interstitial induration.

Kidneys, Macroscopic Examination: The two kidneys together weighed 100 gm. (3½ oz.); adrenals 6 gm. (90 gr.). The renal capsule was easily detached. The surface was lobulated and of a pale yellow, with numerous punctiform hemorrhages. On section the cortex was found to be enlarged, of a pale yellow color and slightly protuberant. The cortical marking was only present in form and was very much obliterated. Small white stripes were visible. The pyramids were somewhat more sharply defined by a more yellowish color. The left kidney presented practically the same appearance as the right one, but was somewhat redder in color. The mucous membrane of the renal pelvis was pale, with numerous punctiform hemorrhages.

Kidneys, Microscopic Examination: Both kidneys showed severe parenchymatous degeneration, with extensive necrosis of the epithelium. Slight hemorrhages into the glomeruli and uriniferous tubules were found. Hyaline masses were found in some of the canals, especially in the collecting ducts. On frozen section and with the Sudan stain fatty morphosis was found in some of the tortuous and straight uriniferous tubules.

Heart: The heart weighed 50 gm. (1¾ oz.) and was well contracted. The musculature was of a cloudy, gray, yellowish color. Numerous small hemorrhages were found beneath the epicardium. The valvular apparatus was intact, the foramen ovale closed. The intima of the large vessels, as well as that of the valves, was slightly discolored, a yellowish green.

Lungs: The lungs weighed 175 gm. (5 oz. 125 gr.). Right lung: In the upper lobe there was an irregular slightly depressed circumscribed spot about the size of a twenty-five cent piece. The spot was discolored and dark gray in appearance. In the lower lobe there was also a spot about the size of a ten-cent piece, which was also depressed and dark gray in appearance. On section the entire pulmonary parenchyma seemed to be studded with the above-described areas. It was entirely airless and on pressure a dark red turbid fluid exuded. Left lung: In the upper and lower lobes similar areas were found.

Stomach: The stomach contained a small quantity of fluid. The mucous membrane was atrophic and showed numerous punctiform hemorrhages.

Bowels: A small quantity of greenish white masses were found in the duodenum. The mucous membrane of the jejunum was also atrophic. In the colon a large quantity of fluid and dark green feces were found. The mucous membrane of the transverse colon was very much injected; that of the ascending and descending colon was pale.

The autopsy findings in this case correspond closely to those in the case described by Banti. Here we also find the fibrous changes in the trabeculæ and the follicles of the spleen, and a great diminution of the cells. We also have a diminution of leukocytes and the red corpuscles.

The diagnosis of this case as belonging to the class of cases described under the term of pseudoleukemic anemia of infancy can scarcely be questioned. The low leukocyte count, the diminution of the red blood-corpuscles below half the normal, together with the enlargement of the spleen, moderate enlargement of the lymph-nodes distinguishes it from leukemia and simple or pernicious forms of anemia. Whether this case is to be considered a secondary anemia in connection with the rachitis with a toxic basis; or, as a distinct organic disease, it is difficult to decide. The organic changes in the spleen and liver would indicate a primary diseased condition of that most important blood-making organ, the spleen. The evidence seems about equally divided and in view of the fact that so far but few autopsies have been recorded in these cases, it is impossible to come to any definite conclusion in this single case. I hope that by having carefully studied and recorded the findings of this interesting case I have added a small mite to the literature of this important disease.

6101 Penn Avenue.

ABSTRACT OF DISCUSSION

Dr. J. F. Hultgen, Chicago: In the last few years I have had a number of similar cases which have made me think a good deal of this question. The case just reported undoubtedly belongs to that class of anemias of infancy which we call for want of a better name, pseudo-leukemia. Some of my recent cases have shown a combination of leukemic and leukanemic changes; that is, not only very marked qualitative and quantitative changes of the leucocytes, but also marked alterations in the number and form of the red blood-corpuscles. Others run up to a true leukemia and end in death. Dr. Elterich's case does not belong to this last special class and I am glad he mentioned that. Assuming that all the leukocytes develop from the small lymphoid cell, those infections characterized by specific changes in the blood must be due to an irritation of the leucogenic system. Whether or not this condition is recognized at an early stage, or advances to a splenic anemia or Banti's disease before it is diagnosed makes no difference. It is the same disease, only a later stage. I think we are almost smothered by a multitude of names in the description of the so-called pseudo-leukemia of childhood. Any severe distardiness of the infantile leucopoietic system may in the first place produce partial or complete leukemia. Whether we have a polynuclear or a mononuclear or a lymphatic leukemia, does not alter the case. It simply depends on the hastening or the slowing of the processes of maturation of the lymphocytes. Later on, after months or years the patients come to our offices, and finding a large spleen, ascites, etc., we call it Banti's disease. The pathogenesis of infantile pseudo-leukemia does not reside in the spleen alone. It depends on infectious, or toxi-infectious lesions of the lymphoid tissues. I think it is easy to believe that as long as there is some leucopoietic tissue left there may be an acute leucogenic crisis. The blood examination then would show a leukemia. A blood examination made later on will likely show a splenic anemia, or an *anémie primitive* of French writers, a leukanemia, or Banti's disease, etc. Or the patient may go on to a pernicious anemia. This is also easy to understand if we consider that in irritation of the leucopoietic cells we must also have a hematopoietic irritation. I think that all these anemias should be looked on as the results of an infection of the lymphoid or leukopoietic system in the gastro-intestinal canal, which may or may not be noticed at the time of its occurrence. Its various forms are nothing but the variations common to all individuals. In childhood the death of these patients is due to exhaustion. Perhaps there are toxic symptoms, but they usually die with the clinical picture of asthenia, though this is often preceded by bronchopneumonia. I think the abdominal symptoms are always at the bottom of this condition, though they are not usually recognized.

Dr. C. F. Wahrer, Fort Madison, Iowa: I have seen three cases that would come under the author's name of the infection. The first patient, after five months, died. The second after three months died, and the third recovered. The recovery may throw a little doubt on my diagnosis, but I did the best I could with the means at hand. We had a symptom-complex of an affection that we may class under the diagnosis named by the essayist. The children all had the symptoms that have been named briefly by the author. There was anemia, there were purpuric spots and a history of syphilis in the ancestry of the first two; in the last one, a gastro-enteric trouble with numerous and profuse hemorrhages from the intestinal canal. The treatment in the first two cases was addressed chiefly to the origin of the disease, *i. e.*, the syphilitic condition, and in the last case it consisted mainly in the administration of Fowler's solution, iron and remedies addressed to the gastro-intestinal tract. This child, after ten years, is still in perfect health.

Dr. Theodore J. Elterich, Pittsburg, Pa.: I am not in a position to classify these cases according to their pathologic findings. I had only one case in which the diagnosis seemed positive. In one or two other cases no blood count was made and the patients died before they could be removed to the hospital for observation. The symptoms were those of rickets, with an enlargement of the spleen and anemia.

CHOKED DISC IN ITS RELATION TO CEREBRAL TUMOR AND TREPHINING *

ALFRED SAENGER, M.D.
Neurologist to the Hospital St. Georg
HAMBURG, GERMANY

When I was invited to be the guest of the Section on Nervous and Mental Diseases of the American Medical Association, and to read a paper before this famous body, I felt highly honored, and it was with the greatest pleasure and thanks that I accepted this invitation. Having leave to choose the subject I did not hesitate long and selected the important theme of choked disc in its relation to cerebral tumor and trephining.

There is hardly any point which has for so long a time been subject to so much controversy as the pathogenesis of choked disc. In spite of numerous works, experiments, clinical observations and pathologic-anatomic investigations, we have not succeeded in bringing about an agreement between the various investigators on this topic. Just lately the old quarrel on the pathogenesis of choked disc has become active again in Germany.

Surgical experience being, to my mind, of great importance for clearing up the origin of choked disc I was convinced that America would be the best forum for discussing this question, because America possesses a greater experience on the effect of and indications for trephining in cerebral tumor than we do in Germany, thanks to the studies and works of Taylor, Mills, Spiller and Frazier, De Schweinitz, Weisenburg, Putnam, Knapp, James Bordley and also to the new methods of Harvey Cushing, not forgetting, however, England's contributions, by Horsley, Gowers, Gunn and Leslie Paton.

The fact that I was an ophthalmologist at first and devoted myself to neurology later has brought it about that I have been occupied for twenty years with studying the changes of the fundus of the eye in diseases of the brain.

By request of Professor Uhthoff of Breslau, I made a report on the pathogenesis of choked disc before the seventy-sixth Versammlung Deutscher Naturforscher und Aerzte in Breslau in 1904. Since that date so much new work has been published, that I deem it necessary to give you a brief outline of the stand we take on this important question in Germany.

REVIEW OF WORK AND THEORIES ON CHOKED DISC

Tuerck was the first, who in 1853, when describing a case of cerebral tumor with retinal hemorrhage expressed the idea, that the changes in the fundus of the eye were due to increase of intracranial pressure. However, only in 1860 the scientific world became acquainted with the so-called choked disc through Albrecht von Graefe's work on complications of optic nerve-inflammation with brain diseases. Von Graefe saw the cause of choked disc in brain pressure, due to cerebral tumor, the sinus cavernosus being thus compressed and the voiding of both the vena ophthalmica and the vena centralis retinæ being inhibited; bringing about dilatation and twisting of the retinal veins as well as edematous swelling of the optic disc. He explained the inflammatory changes, first, as originating from retinal extravasations of blood; secondly, from the irritating effect of swelling of the optic disc, still increased by toughness of the scleral ring.

Von Graefe's hypothesis, however, soon encountered opposition. Hughlings-Jackson took the optical affection for a reflex symptom, but it was the anatomic facts found by Sesemann which principally disproved the theory. It was he who proved that the central retinal vein has an off-flow into the facial veins, quite independent of intracranial pressure. Moreover, Sesemann argued that compression of the sinus cavernosus could not be effected as easily as one might think. Later these statements made by Sesemann in 1869, though accepted everywhere, even by von Graefe himself, have met opposition from the well-known anatomist, Merkel, and from Gurwith, who, on the basis of extensive anatomic investigations, argued that the greatest part of the orbital venous blood flows into the sinus cavernosus. Quite recently J. Tudeich and Krüdener have endeavored to uphold the old theory of von Graefe for those cases of choked disc, in which intracranial pressure is localized.

---

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixty-first Annual Session, held at St. Louis, June, 1910.

The second principal theory of choked disc is the one brought forward by Schmidt-Manz's theory of mechanical transportation, based on Schwalbe's discovery of the communication between the intravaginal space of the optic nerve and the intermeningeal space of the brain. According to the views of both these authors a vaginal hydrops of the optic nerve is caused by increase of intracranial pressure, for instance, owing to cerebral tumor, and consequently, incarceration of the intraocular end of the optic nerve would occur, choked disc henceforth resulting.

Von Schulten, by his experiments, confirmed Schmidt-Manz's theory, which was readily accepted, but soon also vigorously combated.

In 1881 the famous ophthalmologist, Leber, brought forward a new theory of choked disc before the London Congress. According to Leber it is a real inflammatory process, a papillitis, not preceded by any stage of pure edema or pure venous stagnation. The originators of inflammation are in the fluid which has come from the intermeningeal space of the brain into the intervaginal space of the optic nerve. Even though a real hydrops of the optic nerve were absent, yet choked disc could occur, because the point is not the quantity of the fluid, but its quality.

Deutschmann supported the theory of Leber by several works and established the hypothesis that the cerebral tumors produce toxins, which call forth inflammation of the optic nerve and its sheaths.

Besides Hughlings-Jackson, Gowers also was of the opinion that intracranial tumors could cause neuritis optica through irritating influences acting as foreign bodies.

In modern times Zellweger and Elschnig, the latter of whom disposed of twenty-eight cases of choked disc, which he examined microscopically, declared themselves for the Leber-Deutschmann inflammatory theory. Elschnig says, that in intracranial tumors the primary is a neuritis of the optic nerve, whereas edema is secondary and only an accompanying symptom.

Liebrecht, in 1902, is likewise of the opinion that the primary manifestations are inflammatory changes within the optic sheaths, in connection with which a stagnation of the lymph occurs in the optic nerve and disc.

We may quote, among other theories, the one of Parinaud. According to him the various intracranial diseases call forth a stagnation in the optic disc only in the case of complication with hydrocephalus internus. With this is connected edema of the brain, which by itself affects an equivalent edema of the optic nerve. This may be followed by inflammation *neurite œdémateuse*. In the presence of edema of the optic disc, according to Parinaud, the diagnosis of hydrocephalus and cerebral edema only is admissible.

Lourdill accepted Parinaud's theory. However, he considered the primary change to be an edema of the ependymalglia, which continues in a direct way in the glia of the chiasm and of the optic nerve.

Also, according to the opinion of Ulrich (1887) cerebral edema propagates into the optic nerve.

In 1904 extensive researches (forty-six eye examinations) made by Kampherstein from Professor Uhthoff's clinic at Breslau, proved that the most invariable symptom consisted in an interfasciary edema of the optic nerve. For this reason in most cases choked disc is nothing but an edema propagated from the brain, penetrating into the optic nerve, and through it into the optic disc by the way of the lamina, creating hereby incarceration of the intraoculary optic nerve-end a swelling within the rigid scleral ring.

Benedict and Adamkiewicz occupy a position apart with regard to the pathogenesis of choked disc. The former believed the vasomotor nerves to be irritated by the tumor, thus causing an inflammation of the optic disc by reflex. The latter regards the choked disc as the result of a neuroparalytic inflammation due to irritation of the trophic centers proper to the optic nerve.

Knapp, Deyl, von Gross and Yamaguchi published cases to prove the causation of choked disc through compression of the central vein.

PRESENT-DAY THEORIES

In our days we seem to be reaching a compromise. Thus Greeff expressed himself as follows: "It seems to be the case that stagnation of the cerebrospinal fluid plays an important rôle, but that inflammatory irritations are concurring."

In 1907 I published a treatise, in which I pointed out again energetically my views, which I had presented in 1904, viz., that a palliative operation should be performed in cases of inaccessible brain tumor in order to avoid threatening blindness.

SUMMARY OF CASES

I disposed of nineteen cases. In two of these choked disc decreased only after the trephining hole had been enlarged, allowing a great outflow of cerebrospinal fluid. In two cases decompression had no effect whatsoever as far as the choked disc was concerned. These were cases of extraordinarily large, rapidly increasing brain tumors. In one case only, a tumor of the base, the operation was followed by very high fever and rapid exitus. No doubt it must have been one of those cases which have just been described by Dr. George J. Jacoby in New York, because post-mortem examination did not explain the cause of the hyperthermia.

In all the rest of the cases the effect of decompression on choked disc was obvious.

In one case I was able to observe, as did Cushing in two cases, a decrease of choked disc directly after decompression.

I apply this term in the sense of Frazier, as he explained in an address before the Toronto Academy of Medicine last year. He said: "The term decompression implies not simple trephining, but the removal of the dura.

DECOMPRESSION OPERATION

In all my cases decompression has been done in this sense. Often I could observe that the choked disc decreased in the measure in which the outflow of cerebrospinal liquor increases. As a rule it takes several weeks or months to flatten down.

In order to obtain good results as far as vision is concerned it is imperative to operate early, viz., while the visual power is still good. In some cases I have seen vision improve considerably after decompression.

E. von Hippel, in his studies of the literature in 1908, arrived at the same result. He does not, however, give his personal experience.

Philip Coombs Knapp, in 1906, published a vast number of cases in which no tumor was found by operation or in which decompression alone was done. Knapp affirms that the development of choked disc is arrested only in about half the cases. I regret very much that Dr. Knapp is not present. I would ask him whether he took any notes of the degree of visual power and time of operation. This is the important point.

I indicated as being the best time for operating the very beginning of visual diminution. If the operation is done after this epoch, atrophy of the optic nerve very easily develops, as I have seen several times.

The place to trephine is obviously that point of the skull, under which the tumor is supposed to be.

In case a local diagnosis is impossible I advised trephining on the right parietal lobe. Recently I had the pleasure of conferring with Harvey Cushing in Baltimore about this question, and he had the kindness to show me several cases of decompression by his subtemporal method, and I must say that seldom have I seen such good results, so that I here gladly say that in the future I shall advocate this region for decompression and not the right parietal lobe, as I have formerly recommended, although realizing that the subtemporal operation, though preferable, may be more difficult to perform.

INOPERABLE TUMOR

What shall we do in such cases, in which an osteoplastic resection after the method of Wagner has been made and an inoperable tumor or a very high tension of brain without surface change is found? The new method of Cushing is very ingenious in combining exploration with subtemporary decompression, as he has described in the transactions of the American Surgical Association.

In subtentorial cases trephining is not so dangerous in my experience as it was thought before.

Spinal puncture, puncture of the lateral ventricles and the so-called Balkenstich procedure (Braman) cannot possibly, in my experience, compare with trephining of the skull as regards results. My conclusions were summed up as follows: Palliative trepanation of the skull according to the modern standing of surgery, in the hands of a skilful surgeon who has experience in neurological work is almost without danger and an extremely beneficial operation, which I should recommend in every case of inaccessible brain tumor, in order to ease the torments of the patient, and above all, to save him from impending blindness.

This standpoint expressed by me first in 1891 and defended in 1902 against the opinion of Bergmann before the Surgical Congress at Berlin, has met with such universal favor in America, that it seems superfluous to mention it specially, as Horsley, Cushing, and others expressed themselves in the same way.

INCREASED TENSION THE CAUSE

These extensive surgical experiences, however, possess a great value for the conception of the pathogenesis of choked disc. They certainly admit of the conclusion that the main point in bringing about choked disc consists in increased cerebral tension. For in the majority of cases decrease of tension by trephining is followed by disappearance of choked disc, and so quickly, too, at times, that toxins could not possibly have had any influence particularly in those cases in which the dura has not even been opened.

The exact process in the genesis of choked disc has remained occult up to date in spite of plenty of experiments and microscopic-anatomic research.

RESULT OF AUTHOR'S INVESTIGATIONS

I have myself, during the latter years, devoted much time to pathologic-anatomic examinations of choked disc in brain tumor, which we encounter frequently in the Hospital St. Georg at Hamburg.

During these investigations I could also state the fact that in some cases of choked disc a dilatation of the intervaginal space has been missed. Moreover, I have often seen cases of ampulla nervi optici without choked disc. In many cases I found only slight microscopic changes in the optic nerve and in the sheaths, though choked disc was exquisitely pronounced. In other cases, however, I found the space between the fibers of the optic nerve had become wider, allowing the conclusion of the presence of edema, but I was not able to prove it. To my mind the methods heretofore in use for examining choked disc are entirely insufficient, all the more as it is essential to show the presence of edema.

Considering what manipulations must be performed with the optic nerve, more or less bruising it in its removal, it is quite obvious that the results of microscopic examinations, often modified by artificial products, must often give quite varying pictures, which certainly cannot render the subtle conditions *in vivo*. Already the preparation for embedding the nerve in celloidin and letting it rest in alcohol of increasing percentage proves altogether that the optic nerve is being exposed to considerable shrinking processes, altering entirely the conditions which the supposed edema is expected to have caused.

I am trying at present new methods, which should avoid this faulty treatment. At present I am, however, not in a position to report on the results obtained.

I should like to add concerning my microscopic examinations, that in some cases I found ectatic capillaries and even hemorrhages in the optic nerve as well as in the dura. So far as inflammatory changes are concerned, I found in some cases cellular infiltrations between the sheaths, which would have been interpreted according to former views as inflammation. According to the opinion of competent pathologic-anatomic authorities (Prof. Fraenkel and Prof. Simmonds, of Hamburg) these were proliferations of endothelial cells, and therefore not real inflammation. In this way probably the diverging findings of the authors must be understood, some calling inflammation, what others describe as an increase of endothelial elements.

CLINICAL OBSERVATIONS

Returning to the clinical observations, at present I dispose of twenty-six cases in which decompression has been performed for cerebral tumor.

Seven were cases of tumor of the cerebellum. In one of them a cyst was found, after removal of which the patient got well. Three were cases of tumor of the acoustic nerve (*Kleinhirnbrückenwinkeltumoren*).

One was a tumor of the parietal lobe. In this case there occurred a hernia, as was described later by Cushing, who recommended the establishment of hernia as a decompressive measure for inaccessible brain tumors. The patient in this case continued to live for nine months with good visual power and in good general condition.

Three were tumors of the frontal lobe. In one of the patients there was choked disc in one side only, namely, opposite to the seat of the tumor. Three were cases of tumor of the base. In these cases decompression was of no avail.

In two cases of cerebral tumor decompression only had the advantage of removing headache and vomiting. The patients had become blind already before the operation.

In a very remarkable case in which the patient was operated on for supposed tumor of the cerebellum (choked disc, cerebellar ataxia, absence of patellar reflexes, occipital headache, vomiting) the result of decompression was very deplorable. The patient died of hemorrhage immediately after and post-mortem examination revealed the total absence of any tumor and the presence of chronic meningitis. A similar observation has been quite recently published by Oppenheim, in Berlin.

No less remarkable are the five following cases: All of the patients presented the symptoms of a brain tumor: choked disc, headache, vomiting; two of them had focal symptoms of hemiparesis of the right side. One showed the symptoms of a tumor of the acoustic nerve. When decompression was performed, there was no tumor found. After trephining and outflow of cerebrospinal fluid the choked disc disappeared and brain tension and its symptoms were effaced.

The first patient, 27 years old, was operated in 1899 and was presented by me before the Surgical Congress at Berlin in 1902. He now is doing very well, with a slight diminution, though, of visual acuteness. He is busy in a banking house from morning to night.

The second patient, operated in 1901, was a teacher in drawing, who was still active until 1909, when actually pensioned off.

The third patient is a boy twelve years old, who had totally lost his sight under the symptoms of brain pressure and choked disc. He was trephined over the parietal lobe with removal of the dura after the method of Wagner in 1909. The boy is absolutely well and one of the best scholars in his class.

The fourth case concerns a man aged 22, with the symptoms of a tumor of the central lobe. Nothing was found during the operation; all symptoms receded, leaving, however, a slight weakness of the right hand. He is now fulfilling the duties of a watchman.

The last case, a man of fifty-six, is also active in performing his business. There was no decompression made, but a puncture of the left lateral ventricle relieved him of all symptoms of brain pressure. Only a slight weakness of the right hand remained.

THE QUESTION TO BE ANSWERED

The question arises in these cases: Have we to deal with a tumor which has become regressive, or a so-called pseudotumor, such as was described first by my colleague, Dr. Nonne, of Hamburg, or else hydrocephalus internus, or finally Reichardt's cerebral swelling?

In the present state of science it is impossible to answer these questions definitely. Let us hope the time is not far off when by the united work of the neurologists of the New and the Old World this high aim will be achieved!

ABSTRACT OF DISCUSSION

Mr. J. Herbert Parsons, London, Eng.: I hold that the pathogenesis of the disease is a question of edema and not of inflammation. I suppose that we are all absolutely agreed as to the importance and utility of the relief of intracranial pressure in the treatment of these cases, whether the tumor is a so-called operable tumor or not. Of course the important point is the relief of the visual symptoms; and here I speak entirely from the pathologic point of view, and therefore perhaps in a manner not altogether acceptable to the neurologists. I do think that the determination of the time at which interference should take place and the advisability of its interference in these cases, should be determined to a very considerable extent to the ophthalmologists. The fundus conditions are ones with which the ophthalmologist is very much more familiar than the neurologist, and the ophthalmologist can give the neurologist information which is of the utmost importance in assisting him to determine the best time for interference to take place.

I know from many cases that I have seen in England that interference is frequently delayed much too long from the point of view of vision, and in a very large proportion of these cases (a far larger proportion than is at all desirable) the only palliation that can be secured is to give these patients vision during the remainder of their lives, and also to relieve their headaches, etc. That is an enormous boon to the patient. It does not do very much good to interfere in the very last stages.

Dr. Julius Grinker, Chicago: The question of whether choked disk is caused by an inflammation or an edema has recently occupied the neurologists of this country, and discussions of this problem have been reported in the journals. Cushing's experiments on animals and his observations on patients before, during and after operation seem for most of us to have settled that point. Others, however, have disputed the contention that edema or mechanical causes are responsible for the so-called choked disk.

About six weeks ago I was consulted in a case in which I made a diagnosis of frontal abscesses. In addition to other symptoms, there was a hazy condition of the fundi oculorum which was verified by an ophthalmologist. An operation was performed, the abscess was drained and apparently completely evacuated. Two or three weeks after the patient had been considered well, however, I was asked to see him again, and to my great surprise, I found a typical choked disk—a finding also verified by an ophthalmologist. Three weeks later the same patient developed more symptoms of brain-pressure. He was again operated on but this time the surgeons could not find the seat of the abscess, although it was suspected that another abscess had formed which was the cause of the choked disk. The abscess had just been missed, the patient died, and an autopsy disclosed a cistern of pus connected with the former abscess by a canal no larger than the size of a goose-quill—the whole constituting a so-called hour-glass abscess.

This case certainly leads to the conclusion that the accumulation of pus back of the first abscess was the actual cause of the choking of the disk, which had been only incipient when the small abscess was present, and it gives support to the mechanical theory of the causation of choked disk. I believe that it is only by clinical experiences of this kind, by experiments as performed by Harvey Cushing and others, and by observations of cases before and after decompression, that we can come to anything like a satisfactory solution of the question of the nature of so-called choked disk.

Dr. J. Bordley, Jr., Baltimore: For several years I have been associated with Dr. Cushing in working at the practical utility of cerebral decompression. So far as the operative result is concerned, it matters little what the pathogenesis of choked disk is; whether it is a simple mechanical pressure which directly forces down the fluid into the optic nerve, or whether it is pressure which results in the production of a toxin. The important fact to determine is whether a decompressive operation relieves choked disk. We know from an experience covering about 200 brain tumors that it does. When the operation was performed without delay, the results were uniformly satisfactory and convincing. The time to operate in these cases is as soon as they are discovered. There is no change in the optic disk with which I am familiar, from the active stage of hyperemia with edema to the later stages of atrophy, in which a decompressive operation is not advisable.

Professor Saenger records a case of a patient who prior to operation was blind but subsequently had complete restoration of vision. It has been my pleasure to see several such cases. We know, of course, that in these cases there was not complete atrophy, and we believe the blindness due to central pressure and not to pressure on the nerve alone.

It is impossible to look at a disk that is choked and determine its exact condition and what may be expected to result from operation. A marked choking with complete atrophy may be unperceived by the observer; or there may be new tissue formation on the disk and in the nerve which so closely simulates complete atrophy that almost any ophthalmologist would be willing to stake his reputation on the diagnosis; nevertheless, when the disk declines and the patient recovers there is perfect vision. I am confident that it is not possible to locate the tumor by a study of the disks. While there are suggestive signs they are by no means of positive value. As an example we had a long list, possibly twenty-five or thirty patients, with the greatest choking on the side of the tumor. We were almost persuaded. Then came a series of several cases with the greatest choking on the opposite side. As a rule, however, the greatest choking—or rather the greatest change in the optic nerve—is on the side of the tumor, probably 65 or 75 per cent.

Tumors of the cerebellum, as a rule, give rise to a greater swelling than tumors farther forward. Anatomic variations in the optic nerves make a difference in the degree of swelling on the two sides. Consequently it must be expected that tumors, even of the same histologic structure, will result in a difference in degrees of swelling in different individuals. In our experimental work on animals, where the choked disk was produced with simple saline solutions, the greatest choking usually occurred on the contralateral side. My impression is that the same rule will hold good in patients with intracranial injuries in whom there is hemorrhage. Wherever there was solid pressure, such as produced by paraffin, the greatest change was usually on the same side.

One thing is absolutely certain: a decompressive operation should always be performed when one is dealing with a stationary or increasing choking of the optic disk. There is no excuse for sitting by and waiting for vision to decline; every bit lost may be gone forever, for one may have waited for the beginning of a very rapid end. And it is well to remember that if the sight is not obliterated by pressure, it may be by the new connective tissue which forms in the nerve and in the disk—as the result of long irritation. Like other scar tissue this will shrink, and as it shrinks it snuffs out the life of the nerve.

Dr. A. Saenger, Hamburg, Germany: I am much gratified that my paper has elicited such a lively discussion, and, above all, that Dr. Parsons, the eminent ophthalmologist of London, agrees with me. He declares that choked disk is not an inflammation but an edema of the optic papilla. This statement is very important as coming from a very competent authority on pathologic anatomy in the field of ophthalmology, and also as coming from the English school. We all know how tenaciously the conception of the inflammatory nature of choked disk has been maintained in England. Even Gowers, that well-known authority, has championed this view.

I hope that now there will be a general acceptance of the view that the increased pressure on the brain is the main factor in the origin of choked disk, manifesting itself in the edema of the papilla. There may be inflammatory changes besides, but they are of secondary nature. The inflammatory theory of choked disk, as Leber and Deutschmann propounded it, can no longer be maintained. I am familiar with Dr. Bordley's work on the subject done in collaboration with Cushing. I visited the famous Johns Hopkins Hospital at Baltimore a few days ago and was amazed at the extraordinary amount of material in the field of brain surgery which is at Harvey Cushing's disposal there. I had also an opportunity to see this master in his special field of science operate. I admired the originality of his technic, the position he gives the patient and his extreme caution and conscientiousness in the execution of the operation. We stand on the same ground in respect to early trephining with a tumor in the brain. Cushing, however, goes beyond me in this. He trephines even before actual choked disk has developed, while I prefer to wait until with existing choked disk the vision begins to show impairment.

My warning to refrain from operating too early is based on my last series of five cases on the latest experiences with pseudotumors, swelling of the brain, chronic meningitis and brain syphilis with negative Wassermann reaction. The deceptive cases of brain syphilis which so often runs a disguised course should be constantly borne in mind, and specific mercurial treatment should invariably be given a trial before any operation on the brain. I have occasionally encountered unilateral choked disk, far more frequently on the side corresponding to the tumor, but still, though rarely, sometimes on the opposite side. I am persuaded that individual changes in the optic foramen are responsible for the lack of development of choked disk. In one case I was able to determine this to be the fact, although it is technically a difficult matter to demonstrate beyond cavil this narrowing of the optic foramen. It is to be hoped that some research worker may turn his attention especially to this question ere long.

DISLOCATION OF SHOULDER-JOINT COMPLICATED BY FRACTURE

WITH REPORT OF TWO CASES

JOHN S. McEWAN, M.D.
Surgeon to Church Hospital; A. C. L. Surgeon
ORLANDO, FLA.

The fracture of a dislocated humerus is so rare an accident that up to 1894 a most careful search had revealed only 117 cases, and the surgeon reporting this fact adds that no single observer has met more than five.[1]

The text-books[2] take this subject up in a very limited manner.

This injury is usually caused by the patient having received a heavy blow upon the shoulder, or having fallen on the shoulder or on the outstretched hand or elbow. Rare as these accidents are, a recent authority[3] (1906) says that they are more frequent and more important than fracture of the scapula, though the latter, as well as fracture of the clavicle, also occurs.

In treating dislocation complicated by fracture the dislocation should be reduced as soon as possible by one of several methods in use, the one generally employed being that described by Kocher in 1870, and is described by Keen as follows:

"The patient is seated, and the surgeon stands facing him and on his injured side. He bends the elbow and grasps it in one hand, while he seizes the wrist with the other. He then bends the elbow, and adducts the arm until the elbow touches the trunk. The arm is immediately rotated outward as far as it will go, and being thus adducted and rotated outward the elbow is carried well forward and upward. The whole arm is then rotated inward, so that the hand sweeps over the chest, while the elbow is brought back to its original level. The bone slips into place with a hardly perceptible click in a successful case, and the shape and movement of the joint are at once restored." All this must be done slowly and gently to avoid causing a fracture at the surgical neck. "The Kocher method is based on the exact knowledge of the pathologic conditions, and is the most perfect one for this reason."

---

* Read before the Association of Atlantic Coast Line Railway Surgeons, May 17, 1910.

[1] Since the article written by Dr. Charles McBurney and Dr. Charles N. Dowd (Ann. Surg., April, 1894), there have been several contributions on the subject, the principal ones being as follows:
Andrews, E. W.: Surg., Gynec. and Obst., November, 1905.
Royster, H. A.: The Management of Dislocation of the Shoulder-Joint Complicated by Fracture of the Neck of the Humerus, The Journal A. M. A., Aug. 10, 1907, p. 487.
Mason, J. M.: Ann. Surg., 1908, xlvii, 672.
Flint, C. P.: Am. Jour. Surg., 1908, xxii, 161.
Spencer, W. G.: Proc. Roy. Med. Soc., London, 1908-9, ii, Clin. Sect., p. 226.
Toubery: Rev. internat. de méd. et de chir., 1908, xiv, 183.
The most valuable contribution during the year 1906, however, was the article written by Dr. Robert Jones on Certain Injuries Associated with Displacement of the Head of the Humerus, Brit. Med. Jour., June 16, 1906, p. 1385.

[2] Burghard, Frederick F.: System of Operative Surgery, London, 1909, 577-581.
Eisendrath, Daniel: Dislocations, pp. 395-406.
Keen: Surgery, Philadelphia, 1907: Fractures, pp. 162-181.
Power, D'Arcy: Green's Encyclopedia and Dictionary of Medicine and Surgery, Chicago, 1908, iii, 351; ix, 143.
Rixford, Emmet: American Practice of Surgery, New York, 1908, iv, 31-50.
Stimson, Louis A.: Treatise on Fractures and Dislocations, New York, 1905.
Scudder, C. L.: The Treatment of Fractures, Philadelphia, 1907, 594.
Spencer, W. G., and Gask, G. E.: The Practice of Surgery, London, 1910, pp. 338-340, p. 368.

[3] Jones, Robert: Brit. Med. Jour., June 16, 1906, p. 1368.

The traction method is employed when it is impossible to reduce the dislocation by the above means. There are several ways of applying this, a simple one being to grasp the arm above the elbow and make a steady traction downward and outward, then gradually abduct the arm until it is nearly at right angles with the body. Pressure is then made over the head in the axilla.

Another method is that of Stimson, in which weights are attached to the elbow or wrist (the arm hanging free of the floor as the patient lies upon a table). Ten pounds are added at times one or two minutes apart until 40 pounds have been reached, and in from five to fifteen minutes the head is advanced toward the glenoid cavity by adducting the arm against the fist that has been placed in the axilla.

In fractured dislocations an anesthetic should be administered and "every method should be tried in order to reduce the head before performing operation." Where other efforts fail McBurney's operation is advised, in which an incision is made in the soft parts on the outer aspect of the upper fragment, extending down to the bone, and a hole is drilled in the latter, through which a stout hook is inserted and direct traction made on the upper fragment in the proper direction.

Dr. Robert Jones reports twenty-two cases of fracture of the head of the humerus associated with dislocation of the shoulder, and after advising the reduction of the dislocation as soon as possible by one of the accepted methods, he adds: "Having reduced the dislocation, the fracture of the humerus is of comparatively little moment and need not be dwelt on." Perfect apposition is not necessary to good results, and he strongly advises against the wiring of fragments in fracture through the surgical neck, his experience with many hundreds of cases of this fracture showing that wiring would not have been of service in a single instance. In order to prevent stiffness of movement after the parts have united, massage and passive movements should be regularly practiced between the fourth and eighth weeks.

For fracture of the clavicle and scapula with displacement the dislocation should be reduced and for the latter cases the arm need only be kept at rest and protected from accidental injuries by the use of a shoulder cap, the use of the axillary pad also being considered useless and even dangerous by some surgical authorities. When the clavicle is fractured Sayre's method of strapping the arm is advised.

CASE 1.—*History.*—The patient came into my office Sept. 30, 1909, saying that on July 18 he had fallen out of a wagon and struck on his right shoulder. He could not move his arm; pain was severe, but he got up and went to a physician, who said that he had a dislocation. This physician tried to reduce it without an anesthetic, but could not, so sent him to another physician in an adjoining town, who, on July 20, gave the patient an anesthetic. When he woke up he was told that his arm had been put back in place and that if he would keep it in there for three weeks it would be all right. He removed the bandage at the end of the three weeks and found his arm in the same position it was before. His arm had been paining him ever since and he could not use it only to a limited extent.

Examinations, Treatment and Result.—The first examination showed shortening of the humerus, very small amount of adduction and abduction, anterior and posterior motions being limited, and on examination with the *x*-ray made a probable diagnosis of fracture dislocation. I sent him to the hospital, gave him an anesthetic, and on manipulation found a fracture at the surgical neck of the humerus and anterior dislocation. I was unable to reduce his dislocation, so put the arm up in as good position as possible, and when the patient had recovered from the anesthetic advised him to let me operate and put his arm in proper position. This he refused to do and went home. I examined the patient on May 1. He said that he had no pain, but he could not move his arm very much, although his movements were greater than when he left here. He had no adduction and very little abduction, anterior and posterior movements were good. He still declines operation, because, as he says, "My arm doesn't hurt me and I am getting better all the time."

CASE 2.—*History.*—The patient, who was referred to me by Dr. H. on February 18, said that the last he remembered was that he was standing at a lunch-counter drinking coffee; a policeman told him he fell over and had a fit and that they picked him up and walked him home. This was on Nov. 2, 1909. A physician was sent for on November 3, who anesthetized the patient and put his arm in splints. Not having obtained any use of his arm, the patient went back to the physician on December 3, and was again given an anesthetic and the dislocation supposedly reduced again. This time the arm was put up in plaster of Paris; the splint was left for three weeks and then taken off. The arm was still severely painful and useless.

Examination, Treatment and Result.—On careful examination, including the use of the *x* ray, I found a retroglenoid dislocation with fracture of the anatomic neck of the humerus. I advised operation and on Feb. 22, assisted by Dr. Edwards, I opened the joint, using the anterior incision, took out the head of the bone, curetted the glenoid cavity and put the arm up in position, kept it immobilized until the wound healed, and since then the patient has had constantly passive and active motion with massage and as a result is getting good use of his arm. I believe that if I had used the posterior incision I would have had less difficulty in removing the head of the humerus.

In comparing my two cases I find that the patient on whom I operated has the most serviceable arm and therefore, I should advise all persons who have dislocation of the humerus with fracture in which reduction has not been obtained and there is restricted motion to submit to an operation.

All patients with unreduced retroglenoid fracture dislocation should be operated on, using posterior intermuscular incision recommended by Dr. W. G. Spencer.

THE CONTRIBUTION OF EXPERIMENTAL TO HUMAN POLIOMYELITIS *

SIMON FLEXNER, M.D.
NEW YORK

Epidemic poliomyelitis has within three years become a common and widely distributed disease in the United States. Prior to 1907 the epidemic disease occurred rarely, only, in this country. Since 1907 it has prevailed from the Atlantic to the Pacific Ocean, and probably few states have entirely escaped its ravages. Judging from the fragmentary reports which have come to my attention it would seem as though the southern states had escaped wholly or in large part, but this apparent discrepancy may result from failure either to recognize the nature of the epidemic disease or to report on it, or may be due simply to the circumstance that the fact of its occurrence in the South has not chanced to come to my attention.

---

*A rather complete bibliography accompanied this article and is included in the author's reprints. Because of the space required, it is omitted from THE JOURNAL.

It is significant in respect to this point that within the period mentioned epidemic poliomyelitis has prevailed in Cuba. Before 1907 epidemic poliomyelitis had been becoming more frequent in northern Europe, and particularly, so far as reports indicate, in Scandinavia. Beginning in 1907 or thereabout a pandemic of the disease arose. The United States, Austria, Germany and latterly France have certainly participated in the epidemic outbreaks. Whether still other countries have been similarly visited I cannot say, but it is highly probable that they have.

It is a matter of significance that the original foci of the epidemic disease in the United States, occurring in the summer of 1907, were among the Atlantic seaboard, and that the two centers of population most seriously affected were about Greater New York and Boston. The particular point of importance in this regard arises from the fact that those two centers of population receive first and in most concentrated way the immigrant population from northern and eastern Europe. Since, moreover, the best established endemic focus of epidemic poliomyelitis recorded in the last decade or two has been the countries of Scandinavia, the further fact becomes significant that the second large isolated outbreak of the disease in this country occurred in that part of the middle west, namely about Minnesota, which receives a large influx of immigrant population from Norway and Sweden.

CONTAGIOUSNESS

The studies especially devoted to the question of the mode of spread of poliomyelitis, which have been conducted with unusual energy and perspicacity in the last few years, would seem to have rendered contagion highly probable. If the views respecting the manner of the transfer of the contagion put forward with good reason should become established, the explanation of the extension of the epidemic centers of poliomyelitis from northern Europe to America will have become obvious. The data collected in Scandinavia indicate that the contagion can be carried by intermediate persons from the stricken to the healthy, and from patients not frankly paralyzed, but suffering with slight or so-called abortive attacks of the disease. Moreover, the incubation period of the disease would appear to vary within considerable limits, being sometimes not more than two or three or four days in length and at other times as much as twenty days, the average being eight or ten days, and thus affording opportunity for the transportation across the Atlantic Ocean of the incipiently infected. This particular problem would receive considerable illumination from facts which are ascertainable, such as the number approximately of recently arrived immigrants who developed poliomyelitis in this country since 1907. I am not aware that any effort has been made in the course of the several recent extensive investigations of the epidemiology of the affection to elucidate this important point.

The idea of a contagion in respect to epidemic poliomyelitis is not a new one, but appeared in the literature more than a quarter of a century ago, and of late has been frequently invoked. The clinical course of the disease indicated an infectious origin, but up to very recent times no convincing knowledge concerning the nature of the agent causing epidemic poliomyelitis existed. Various bacteria, and especially certain cocci, have from time to time been isolated in cultures from fluids obtained by lumbar puncture from patients suffering from the epidemic disease, or from specimens of the central nervous system removed from victims at autopsy. These bacteria did not conform to one species or group of micro-organisms, and did not suffice to set up poliomyelitis in animals. They can be accounted for more satisfactorily as contaminations or secondarily invading bacteria than as the cause of the disease. The epidemic of 1909 in this country, in France and in Germany, led to a renewed study of the nature of the infection, in the course of which the more subtle and recent methods of bacteriology were employed. These methods led almost simultaneously in the United States by Dr. Lewis and myself and in France by Landsteiner and Levaditi, to the discovery that the infectious agent was an extremely minute micro-organism that readily passed through the pores of earthenware filters and constituted, therefore, an example of the so-called filterable viruses, of which at the present time several examples are known to cause infectious diseases in man and the lower animals. The filterable nature of the virus has now been confirmed wherever the subject has been accurately investigated. On acquisition of the fact of the nature of this virus, and of the further fact, on which the discovery of the nature of the virus actually depends, that both the higher and lower monkeys are subject to the experimental disease, rests the recent great advances which have been made in the investigation of epidemic poliomyelitis.

EXPERIMENTS WITH MONKEYS

It was predictable that the effort would be made as soon as circumstances favored to transmit poliomyelitis to monkeys. Since the disease appeared not to be transferable to the more common species of warm-blooded animals, usually available in laboratories, it became imperative to attempt its transfer to other species more nearly related to man. The last few years had indeed afforded several brilliant instances in which progress in determining the nature or the conquest of important infectious diseases had resulted from the use of apes and monkeys. Two examples illustrative of this statement are afforded by syphilis and epidemic cerebrospinal meningitis. Hence, in 1907, when the first epidemic appeared in New York and vicinity, we endeavored to transfer poliomyelitis from human beings to monkeys. Unfortunately we were at this time limited merely to fluids obtained by lumbar puncture from cases at different stages of the disease. I say unfortunately for the reason that we had the idea originally of bringing the supposedly infected material directly into relation with the nervous systems of monkeys. This we indeed did with the fluids obtained by lumbar puncture, from which we failed entirely to produce any symptoms that we could discover, including paralysis. During the epidemic of 1907 we did not secure organs from a case of pure infantile paralysis, and we failed, therefore, in our intention to inoculate monkeys from the spinal cord. Had we secured such material the discovery of the nature of epidemic poliomyelitis would, it is fair to assume, have been made two years earlier than it was. It was not until September, 1909, that we secured the spinal cord from two cases of infantile paralysis in human beings, which specimens were employed for the inoculation of monkeys by direct injection of an emulsion into the brain through a trephine opening. The first inoculations were successful. The animals immediately after their recovery from the ether anesthesia were lively and normal. They remained apparently in perfect health for a number of days, when paralysis set in. The spinal cord derived from these animals was and is still being employed to transmit the infection to still other monkeys.

During the summer of 1909 Landsteiner and Popper published an account of a successful inoculation of two monkeys with the spinal cord derived from a case of infantile paralysis in a child. They employed the peritoneal cavity as the site of injection, which led to the development of paralysis, but in endeavoring to continue the transfer of the virus by intraperitoneal injection of other monkeys they failed entirely. Strauss and Huntoon in this country, who repeated in the late summer or early autumn of 1909 the experiments of Landsteiner and Popper, met with the same interruption of their work. Using the peritoneum as the avenue of entrance of the virus, they succeeded in producing paralysis in a monkey inoculated with the human cord, but failed to produce paralysis when they transferred to other monkeys a suspension of the spinal cord of the paralyzed monkey. In view of these experiments, and of still other similar ones made by different investigators, it is probable that the virus contained within the human cord is on the whole more active when implanted in the monkey than is the virus contained within the monkeys' spinal cords that is derived by proliferation immediately from the virus of human source. The question for the moment remains open whether this disparity depends on the quality of the virus or the number or state of concentration of the organisms. Later studies, to which reference will be made, indicate that the virus of poliomyelitis is subject to qualitative variations, from which it follows that the sudden change of host might tend to a reduction in the potency of the virus, the fact of which reduction is exhibited when the virus is compelled to traverse a considerable territory and to overcome certain natural obstacles before it reaches the central nervous system, on which it became implanted. The fact of this qualitative change is far less apparent when the altered virus is brought immediately into relation with the tissues of the nervous system.

CLINICAL EFFECTS OF INOCULATIONS

In noting the clinical effects of the inoculations we have paid attention to a number of conditions and signs that had already been indicated by observations made on the human affection. We have, therefore, observed an incubation period represented by the interval elapsing between the time of inoculation and the appearance of the first definite paralysis, which incubation period includes certain manifestations which have been noted as prodromal symptoms. Thus the shortest period noted as elapsing between the inoculation and the onset of paralysis has been three or four days and the longest period thirty-three days, the average period being eight or nine days. The prodromal symptoms consist of a state of undue nervousness and excitability on the part of the inoculated monkeys, or inability to fix the gaze, with which is associated a wrinkle and mobile rather than smooth and placid cast of countenance, and an erection of the hairs over the body. These symptoms are most marked for a period of from six to eight hours before the onset of the paralysis. We have not noted any constant elevation of temperature or gastro-intestinal disturbance. The onset of paralysis either when the prodromal symptoms have occurred, or when they have been absent or undetected, tends to be sudden. The paralysis affecting any of the larger groups of voluntary muscles tends to be accompanied with other weak or partially paralyzed groups of muscles. In certain animals the medulla was first affected, and in them death sometimes occurred before the development of actual paralysis. In respect to location, the lower and upper extremities were affected oftener than the muscles of the trunk, and the spinal paralyses were much more frequent than the cerebral. Sensory disturbances occurred, but their investigation was much less satisfactory than the investigation of the motor disturbances. In other words, there is a striking similarity between the frank examples of epidemic poliomyelitis, whether occurring spontaneously in man or produced experimentally in monkeys. A further correspondence exists in this: Slight and evanescent or abortive attacks of the disease have been described in human beings, cases the nature of which would not be suspected were it not for the fact that they occur during the prevalence of epidemics of frank paralysis; and similar abortive or evanescent attacks have been noted among inoculated monkeys, but rarely. There is, however, one important point in which the experimental disease happily differs from the human affection. The mortality in the human affection rarely exceeds 10 per cent. of those frankly attacked, and frequently it is much less than that. The experimental disease, on the other hand, has terminated fatally in about one-half of the first series of animals inoculated, and in a much larger proportion of the later ones. Hence the experimental disease is more highly fatal than the spontaneous disease.

PATHOLOGY

A still further correspondence between the spontaneous and experimental disease is found in respect to the pathologic changes or lesions. The gross lesions visible to the naked eye present in the spinal cord and medulla of monkeys consist of congestion and hemorrhage into the gray matter, chiefly but not exclusively confined to the anterior horns. On the other hand, the general appearance of the spinal cord, medulla and brain are not greatly altered, and the visible effects are no proper measure of the damage inflicted by the virus.

The microscopic lesions are more severe and widespread in the spinal cord than in the brain, and more pronounced in the gray matter and membranes of the cord than in the white matter. No part of the spinal cord, including the medulla, is entirely free from lesions, but the severest lesions tend to occur at levels corresponding to the groups of muscles most severely paralyzed. The meninges show more or less diffuse infiltration with round cells, the greatest accumulations of which are about the blood-vessels, where thick collars of cells often exist. The infiltration is within the adventitial coat, while the muscular coat and the intima remain intact, although the lumina of the vessels are often encroached on through compression. When the vessels are small the effect on the lumina, and hence on the permeability, are considerable. Meningeal cellular invasion is always interstitial and does not give rise to exudate on the surface of the cord or brain, and it is, moreover, made up almost exclusively of mononuclear cells.

The gray matter of the cord shows lesions of the anterior and posterior horns and the commissure, but the anterior horns are as a rule more severely and widely injured than the posterior horns. The chief lesions surround the vessels and consist of a cellular infiltration and edema of the perivascular spaces, and sometimes of hemorrhages as well. When the nerve cells and ground substance are injured, as is frequently the case, foci of similar cells occur there, and the nerve cells show degeneration and necrosis. The extent of the lesions in the gray matter varies greatly. Sometimes minute foci of injury and sometimes complete degeneration of the anterior horns occur. The infiltration of the perivascular sheaths of the vessels is continuous with that of the pia-arachnoid. The white matter of the cord holds in respect to the frequency and severity of the affection an inferior position, and the lesions when present there consist of edema, perivascular cellular infiltration, hemorrhage and necrosis of tissue. The brain shows lesions that are, however, more sparse than in the spinal cord. They correspond with cellular infiltrations of the meninges similar to but less in amount than in the cord. The intervertebral ganglia regularly are the seat of a diffuse and nodular infiltration with lymphocytic cells, which collect between the nerve cells and about the nerve fibers, both of which may be the seat of degeneration or of necrosis.

The pathogenesis of the affection is explained by the nature and distribution of the lesions. It would appear that the virus becomes implanted on the leptomeninges, especially in the region of the spinal cord and medulla, where it sets up cellular infiltrative changes that are most marked in the perivascular lymph spaces of the arteries entering the nervous tissues. The vascular lesions constitute the primary causes of the lesions of the nervous tissue, the severity of which is determined by the particular vessels affected and the intensity of the involvement. The infiltrative lesions are confined to the perivascular lymph sheath and adventitia, but still other lesions must occur in the intima of the vessels from which the edema and hemorrhage arise. The central arteries entering the anterior median fissure and supplying the anterior gray matter of the cord invariably become affected, through which the preponderance of lesions of the anterior horns is accounted for. Since the arteries supplying the posterior gray matter are less important, the lesions in the posterior cornua are slighter. The degree, therefore, of affection is determined by the richness of the arterial blood supply, whence is explained the liability of the lumbar and cervical enlargements to severe lesions. Irregularity in the branching of the central artery probably explains the common variations observed in the involvement of the two lateral halves of the body. The brain is far less commonly the seat of lesions, but it is not spared. Paralysis of the cranial nerves, and especially of the facial nerve, follows on them, but lesions also occur in parts of the brain which do not respond by paralysis. The brain injuries, like those of the cord, depend on vascular lesions.

Hence it would appear that there are good grounds for believing that a considerable part of the paralyses, especially those that are not permanent, are the effects of temporary vascular impediments. The impediments are [illegible] the lumina of the vessels, which are merely reduced or flattened through pressure. Thrombi do not occur. Some of the functional disturbances are possibly [illegible]; others are probably caused by slight degenerations, and still others are undoubtedly caused by small hemorrhages and edema. All these effects may possibly be recovered from: part by resolution of the cellular vascular infiltrate and reestablishment of the lumen, part by absorption of edema and hemorrhage, and part by restoration of the mildly degenerated nerve cells. The severer degenerative and other lesions, through which actual necrosis is produced, do not become restored. On them depend the permanent paralyses and deformity.

THE VIRUS

The virus causing epidemic poliomyelitis has been stated to be of very minute size. It is, so far as we can now judge, one of the most minute organisms known to cause disease. This conclusion follows from the fact that in aqueous suspension, such as is secured through preparing an emulsion of the spinal cord in distilled water, it passes with great readiness and little or no loss of potency through the pores of the densest and finest porcelain filters, namely, the so-called Chamberland filter. It passes with even greater ease through the somewhat less dense Berkefeld filter. It is extremely doubtful whether the virus has actually been seen. On staining film preparations of the filtrate with mordanting dyes, preparations are secured which under the highest powers of the microscope exhibit minute points, circular or slightly oval in form, which possibly, although not certainly, represent the stained parasite. When the filtrates are examined under the dark microscope, innumerable bright dancing points, devoid of definite size and form, and not truly motile, can be discerned. That these particles represent the micro-organism of poliomyelitis cannot be affirmed, since similar particles are present in filtrates obtained from nervous and other tissues which can be viewed also as consisting of simple protein matter.

The filtrates are highly potent. Quantities as small as one one-thousandth to one one-hundredth of a cubic centimeter suffice to cause paralysis in monkeys after the usual incubation period, when injected into the brain. The virus is highly resistant to external agencies and conditions. It withstands glycerination for weeks or months very much as the virus of vaccinia or rabies does. It withstands drying over caustic potash for weeks without any or marked reduction in potency, showing a greater degree of resistance than the virus of rabies. It retains its virulence apparently unimpaired for weeks, on being kept constantly frozen at minus 2 to 4 C. It also withstands for a long time temperature slightly above the freezing point of water, in the course of which the nervous tissue containing the virus undergoes autolysis, and it has been shown to survive the growth of ordinary mould. On the other hand, it is readily injured by heating, since temperature of 45 to 50 C. maintained for half an hour suffices to render the filtrate incapable of causing paralysis. It is also readily destroyed by 1 per cent. solution of hydrogen peroxid, and by such simple disinfectants as menthol.

That the virus is a living organism must be concluded from the fact that such minute quantities of it suffice to carry infection through an indefinite series of animals. We have propagated the virus now through twenty-five generations, representing twenty-five separate series of monkeys, and as many removes from the original human material supplying it, and the activity of the virus for the monkeys has increased rather than diminished in the course, and as the result of the successive transplantations. Whether the virus has been or is to be cultivated outside of the body is still an undecided question. We early secured certain indications which led us to hope that the virus multiplied in a medium of bouillon mixed with human serum. We have, however, not succeeded in producing paralysis by the inoculation of one of these possible cultivations. On the other hand, original virus has been observed to retain its virulence for several weeks when kept in a similar bouillon at the temperature of the thermostat.

PROGNOSIS

At the outset of the experiments we estimated that less than one-half of the monkeys that became paralyzed would, if permitted, recover more or less completely from the paralysis. Since, however, our purpose was best served at the time by sacrificing the paralyzed animals immediately on the appearance of the paralysis, they were as a rule etherized. We now believe that the deduction was erroneous and that the fatalities would have been greater than we supposed, and probably as many as three-fourths of the paralyzed animals would have succumbed to the disease. At this early period, however, a number of paralyzed animals recovered, usually, however, incompletely, retaining residue of the paralysis similar to what is observed in the spontaneous human affection. The indications now are that the virus has altered qualitatively and so increased in potency in the later generations that recoveries are hardly to be looked for. The mortality at present approaches 100 per cent., with which figure there is happily nothing in the pathology of the human affection that is comparable. In view of certain experiments of a therapeutic character which are to be mentioned, the fact of the intense activity of the virus should be borne in mind. Undoubtedly examples of the virus will be discovered which will become modified in the reverse direction and lose rather than gain in activity. At one period, indeed, in the course of propagation of each of the two viruses which we originally secured there occurred what appeared to be a sharp decrease of virulence, a change indicated by feeble effects during several passages and the final loss of power of certain strains to transmit the infection. To the circumstance that we carried the virus forward in parallel series of inoculations is to be attributed the survival and increasing activity of the strains at present in use.

INOCULATION OF OTHER ANIMALS

Repeated attempts have been made to implant the virus on other animals, but without success.[1] The animals thus employed consisted of the available warm-blooded domestic animals of this country, and included guinea-pigs, rabbits, rats, mice, dogs, cats, sheep, cows; goats, pigs, chickens, pigeons and horse. The rabbits and guinea-pigs were inoculated directly with each of the two specimens of human virus, and additional rabbits and guinea-pigs and other animals with virus derived from monkeys. In contrast with these failures is the successful employment of several species of monkeys. The greater number employed were of the species *Macacus rhesus*, but all other species of old world monkeys seem equally susceptible. These included, beside *M. rhesus*, *M. Cyonomolgus* and *nemestrinus*, *Cercocebus fulignosus*, *Cercopithecus callitrichus*, and *Papio babuin*. Of the new world monkeys we employed two species, one belonging to the genus *Cebus* and the other including *Capuchinus*. It chanced that the larger ring-tail proved susceptible and the smaller did not, so that a question arises whether the catarrhine are not more uniformly susceptible than the platarrhine species. No instance of the spontaneous transfer of the virus from a paralyzed to a normal monkey arose, although many opportunities for contagion in the course of our many experiments occurred. This fact does not militate against the notion of contagion in respect to the spontaneous disease in man, for the reason that the monkey is obviously under ordinary conditions and because of the possession of adequate external means of defence an insusceptible species, although once these defences are surmounted it proves less able to resist the injurious effects of the virus than human beings.

MODES OF INFECTION

We have seen that the intracerebral mode of infection is not the only successful one, and that the virus may be introduced into the body by way of the peritoneal cavity, under circumstances leading to paralysis. It has been proved that the virus, when derived from an infected monkey, may also be introduced successfully by way, not only of the peritoneum, but also by means of the general blood, the subcutis, spinal canal, large nerves and certain mucous surfaces. Thus the introduction of large quantities of virus into the stomach or duodenum does not lead to paralysis unless the motions of these organs are for a time arrested by means of opium. When peristalsis has thus been prevented infection and paralysis result in some instances after this mode of introduction of the virus. However, it would appear that none of the avenues mentioned lead so uniformly to paralysis as does the direct or intracerebral mode of inoculation into the nervous tissues. There exists, however, one mucous surface that is more readily traversed by the virus than the other avenues, excepting the brain, and that is the mucosa of the nasopharynx. If this mucous membrane is lightly scarified in an etherized animal, and the virus rubbed into the scarifications by means of a swab, infection and paralysis usually, and with few exceptions, results with promptitude. Our experience is to the effect that the tracheal mucosa and the lungs do not afford an easy point of entrance of the virus into the body, at least under conditions in which gross lesions of the superficial tissues have not been previously produced.

The facts just given concerning the several possible portals of entry of the virus of poliomyelitis into the body under conditions leading to paralysis have significance with respect to the usual portal of entry of the poison in the spontaneous infection in man. We have been led by certain theoretical considerations to view the nasopharynx as the location in the body to be regarded with special suspicion as being the portal of entry of the virus. Some of these theoretical considerations may be mentioned. Our attention was arrested by the frequently observed fact that in point of distribution epidemic poliomyelitis resembles epidemic cerebrospinal meningitis, and that the two diseases, indeed, so often presented such close similarities in this respect that they had often been confounded with each other. The chief and striking difference between them related to the seasonal prevalence, which for epidemic poliomyelitis is midsummer and for epidemic cerebrospinal meningitis late winter or early spring. The two diseases, moreover, attack by preference infants and young children, although not sparing older children and adults, and in about the same ratio. In the majority of instances a single case appears in a family or home, but often two cases, and less often three or more cases appear. The relation between the group cases in a house or locality has in respect to both diseases been made out only recently, through the discovery of the rôle of the intermediate carrier of the infection.

---

[1] Krause and Meinicke, in Germany, of all those engaged in the recent investigations, alone claim to have transferred the disease to rabbits.

Now it is held that the *Diplococcus intracellularis* passes into the cerebrospinal membrane by way of the lymphatic connection existing between them and the nasopharyngeal mucous membrane. None of the lower animals, not even monkeys, are so susceptible to the pathogenic effects of the *Diplococcus intracellularis* that its inoculation into the nasal mucosa suffices to set up acute meningitis. We have already seen that the virus of poliomyelitis, which is so much more active, can be introduced successfully by direct inoculation into this membrane.

The considerations thus far given show the close agreement existing between the two diseases, epidemic meningitis and epidemic poliomyelitis, in respect to the part played by the nasopharyngeal mucous membrane. Still other considerations are these: It is difficult, if not impossible, to establish in human beings the fact that the diplococcus passes from the meninges by a reverse lymph current into the nasopharynx, and yet such a migration is not only highly probable, but would most readily and satisfactorily explain the persistent intracellularis infection of these mucous membranes, which is regularly present in epidemic cerebrospinal meningitis. The case is quite different in monkeys infected with *Diplococcus intracellularis* by injection of cultures into the lumbar spinal canal, in which the migration into the nasopharynx of the diplococcus contained in leukocytes, and free also, has been followed with the microscope. It may therefore be regarded as established that this mucous membrane serves both as the site of escape from and of entrance into the meninges of the *Diplococcus intracellularis* in man. The question arises: Does this membrane serve a similar double function in respect to the virus of poliomyelitis? That it may serve for its entrance into the body we have already seen, and the experiment is readily made to determine whether or not the virus is also excreted there. The excised mucosa of monkeys recently paralyzed and killed has only to be rubbed up with quartz sand, suspended in distilled water and pressed through a porcelain filter in order to secure a fluid free from bacteria and suitable for inoculation into the brain of healthy monkeys. By employing this method we have been able to produce paralysis, and thus to prove that the mucous membrane contains the virus. The virus in the mucous membrane is not derived from the blood contained within it. It is true that the blood does contain the virus, but in such minimal quantities that an amount of two cubic centimeters may fail to cause the infection, while as much as 20 has caused typical paralysis. Moreover, we have ascertained that the organs generally do not contain the virus in such amounts as readily to convey the infection. We have failed repeatedly to secure infection from the spleen, bone marrow, liver and different groups of lymphatic glands, and in several experiments failed to develop paralysis after injection of the salivary glands, although Levaditi has reported one such successful experiment among several failures. We have failed to produce paralysis by the injection of a suspension of the mesenteric lymph nodes taken from an animal that had become paralyzed as a result of an intrastomachic injection of the virus, while we have been successful in producing paralysis with the mesenteric lymph nodes secured from a human case of poliomyelitis. That the lymphatic glands in the monkey are capable of retaining the virus in an active state is proved by the fact that after subcutaneous inoculation of an emulsion of the spinal cord derived from a paralyzed animal, the regional lymphatic glands (axillary and inguinal) proved infectious. Again, Römer and Leiner and Wiesner have in certain instances caused paralysis by injecting into the brain emulsions of the mesenteric and of the cervical lymphatic glands taken from monkeys which became paralyzed following an intra-cerebral inoculation of the virus. It appears, therefore, that the virus may be retained for a time by certain distant organs, and especially by the lymphatic glands, which it reaches through the general circulation; but these localizations give no indication of the point of entrance into the body of the virus. The virus has thus far not been found in the excreta, that is, in the feces and urine, nor in the intestinal mucosa or bile. Since the virus is filterable it is possible to demonstrate its presence in material highly contaminated with bacteria.

We are disposed to the view that the nasal mucosa serves not only as the portal of infection but also as the path of elimination of the virus into external nature, since such elimination must occur in order that the virus be maintained alive and transmissible. It is well known that direct connections exist between the meninges and the nasal mucosa by way of the lymphatics, which pass with the filaments of the olfactory nerve through the cribriform plate. We have already alluded to the fact that the virus first becomes implanted on the leptomeninges, and this primary location of the virus is what would be especially favored by the mode of entrance of the virus just mentioned. That the early participation of the leptomeninges does not occur without certain definite corresponding alterations taking place in the cerebrospinal fluid we have been able to demonstrate. It will be recalled from the cerebrospinal fluid obtained by lumbar puncture from cases of the human spontaneous disease at different periods after the onset of paralysis, have shown only slight qualitative abnormalities. These fluids, which are clear, but may be in excess, show merely a moderate increase of the lymphocytes normally present, and no other qualitative changes. Moreover, this fluid has been shown by repeated tests to be non-infectious, or at least not capable of setting up paralysis in monkeys, even when injected into the brain. In monkeys on the other hand, in which the spinal fluid can be investigated during the incubation period of the disease, as well as after the development of paralysis, it has been shown that the reaction of the meninges to the injection of the virus occurs quickly and that at the expiration of periods of twenty-four, forty-eight or seventy-two hours, the number of cells within the fluid has progressively increased, so as to give rise to a slight opalescence of the fluid which becomes subject also to spontaneous coagulation. The fluids contain an excess of protein, as may be shown by means of Noguchi's butyric acid test. This condition of increased cells and protein is of brief duration and is succeeded by one in which the fluid is clear and non-coagulable and the protein not increased, but only the lymphocytes are more numerous than normally. This is the state of the fluid in monkeys at a period concurring with the onset of paralysis, or appearing soon after, so that there is essential agreement between the two conditions. The spinal fluid taken from monkeys when clear and limpid, does not convey the infection and produce paralysis, but when the fluid is taken at an earlier period, at the height of the opalescence, it is capable of transmitting the disease.

Finally, the question arises whether the virus of poliomyelitis can be directly implanted on the leptomeninges, which question can be answered in the affirmative. If an active virus is introduced by lumbar puncture into the meninges, infection and paralysis may be produced. Hence it would appear as though all the theoretical conditions required to establish the nasal and meningeal route as a direct one for infection in poliomyelitis had been supplied by experiment.

It remains to add that in course of the demonstration given by these experiments, two important subsidiary problems have been elucidated: First, the pathogenesis of the affection has been rendered clear and comprehensible, and next the changes in the spinal fluid induced by the infection have been brought clearly into view as constituting criteria on which, even in human cases, an early diagnosis of the disease, preceding the onset of any meningeal or paralytic symptoms, may come to be based. What is required merely is that those physicians having access to clinical cases should perform lumbar puncture early[2] when poliomyelitis is suspected, and during the prevalence of an epidemic on patients presenting a series of indefinite symptoms that precede as prodromata the onset of paralysis, or themselves comprise the group-symptoms that may define the so-called abortive form of the affection.

IMMUNITY

Experiments have been conducted to determine the kinds and degrees of immunity which are produced by the inoculation of the virus of poliomyelitis. Since the literature on epidemic poliomyelitis is silent on the subject of reinfection, it can be inferred that a second attack of the disease is rarely ever suffered by one individual. Two possible reasons can be assigned for this: The first and most probable is that one attack of this disease, as is the case with some other acute general infections, tends to afford an enduring immunity, and the other, that as epidemics have in the past occurred infrequently and reappeared after long intervals, the children once affected have passed beyond the susceptible age period at the time of the next epidemic.

We have available in monkeys which have recovered from an undoubted infection, attended by paralysis, an opportunity to decide the question whether an attack of poliomyelitis protects against subsequent infection. Thus far we have subjected a number of monkeys to reinoculation into the brain at periods varying from eight days to four or five months, after the paralysis first appeared, without succeeding in reinfecting any of these animals. They were not rendered perceptibly sick by the subsequent inoculation after the one originally producing paralysis, and in no instance was recrudescence of the paralysis produced. It is interesting to note that in point of severity the first attack varied between mere tremor of the head, a partial paralysis of one limb, and complete paralysis of legs and arms. The paralysis had in some instances nearly or completely disappeared, and in others it had become reduced, but still affected all the muscles of one or two limbs. These results indicate what will probably be found to be true equally of human beings, that an undoubted attack of poliomyelitis, even when unaccompanied by definite paralysis, produces a state of refractoriness in reinoculation with active virus that endures for months and probably for years, if not throughout the life of the affected individual. On the other hand, our experiments, embracing now a large number of monkeys, establish that when the virus is introduced into the brain, practically all monkeys belonging to the generally susceptible species are subject to infection, although they do not invariably succumb to the first inoculation, but may require a second injection. However, it would still appear that rare individual monkeys are highly refractory to infection, and it has also been observed that an unsuccessful inoculation of the virus does not act as a protective, but leaves the unaffected animals either with their original degree of susceptibility unimpaired, or, what further experimentation will be needed to confirm, leaves the animals possibly somewhat more disposed to a subsequent infection.

This latter point of the failure of an unsuccessful intracerebral inoculation of the virus to increase resistance does not answer the question negatively, whether by suitable means it may not be possible to develop an active immunity independently of the production of even the most trifling symptoms that might be taken to indicate an attack of poliomyelitis. We have, indeed, been successful in establishing in a certain number of monkeys a state of active immunity through a single large subcutaneous injection of the crude or modified virus, as represented by the emulsions of the spinal cord taken from recently paralyzed monkeys, or by repeated injections of gradually increased amounts of the crude virus. This mode of producing active immunity has not, up to the present, been developed into a uniformly successful and safe method, since of the treated animals some do not develop a strong immunity and others develop paralysis as a result of the treatment. The direct immunizing effect has been produced also by means of a virus somewhat modified after a long immersion in glycerin, so that it may be regarded as probable that a qualitatively modified virus, changed through the action of chemical or physical agents, or modified by biological conditions within certain hosts, can be produced, and that this altered virus will be found more appropriate than the virus of full potency for purposes of active immunization. At present the experimental basis is entirely inadequate to justify the attempt to induce active immunity as a protective measure in human beings. Monkeys thus directly immunized resist successfully the injection of large doses of virus into the brain.

It has therefore been established that an undoubted and even high degree of immunity to infection with the virus of poliomyelitis is obtainable in animals, and probably equally in human beings. The question which next arises is this: As a result of this immunity, do the body fluids acquire new properties capable of experimental demonstration, on which the immunity probably depends? In answer it can be stated that human beings and monkeys who have passed through an attack of poliomyelitis come to contain in their blood certain neutralizing principles for the virus of poliomyelitis, and that these principles are readily demonstrable by animal tests for two or more years in human beings, and that they probably persist for as great a period in monkeys. Similar principles are absent from the normal serum.

---

[2] The earliest cellular reaction in monkeys is not purely lymphocytic but includes polymorphonuclear leukocytes which may predominate for the first period of one or two days. The earliest reaction of the meninges in human beings also is attended with polymorphonuclear excess (Wickman and Fulton.)

They are demonstrated by bringing into contact an active filtrate containing the virus with the serum of the blood derived from animals or human beings who have recovered from poliomyelitis, or from monkeys actively immunized directly to the virus, and incubating the mixture for a period at 37 C. and determining that after this treatment the virus is no longer able to set up paralysis on being injected into the brain of normal monkeys. Furthermore, it has been shown by Netter and Levaditi that the blood of a patient who had suffered an abortive attack of poliomyelitis contained such neutralizing principles.

A pressing question could now be approached, namely, whether the immunity principles contained within the serum suffice to neutralize the virus of poliomyelitis once it is present in the body. It could be assumed that the serum of animals, as of human beings that had recovered from paralysis, would contain the immunity principles in no high state of concentration. Effort was therefore made to reinforce the degree of immunity in these monkeys by subsequent inoculations of virus, and the therapeutic experiments defined were conducted in part with this reinforced serum, and in part with the serum of directly immunized monkeys, and such serum as could be obtained from human patients. It can now be stated that if the quantity of the virus injected into the brain be not in excess of a given dose the development of paralysis can in some cases be prevented by making several injections of the serum by lumbar puncture into the subarachnoid space, while in another number of animals the onset of paralysis is much delayed. In respect to the latter point it may be stated that the period of incubation in the control animals ranged from seven to eleven days, and in some of the animals treated with the human serum the onset of paralysis was delayed until the twenty-sixth or twenty-seventh day. Moreover, infection by the nasal mucosa can also and with greater certainty be prevented by the serum injections.

The manner of making the therapeutic injections was somewhat varied, but in general may be described as follows: An intracerebral injection of the virus having been made, after the expiration of a period not exceeding twenty-four hours, the subarachnoid injections of the serum were performed on three successive days, after which, an interval of three days having been allowed to elapse, three more daily injections of serum were given. We chose the subarachnoid method of injection rather than the intravenous mode, in order that the immunity principles might be brought into the most direct relationship with the virus, and particularly in view of our conception of the pathogenesis of poliomyelitis and of the primary site of localization of the virus in the leptomeninges. We believe that as good results could not be achieved by the intravenous injection of the serum, although the immunity principles could doubtless be brought to the nervous tissues by the circulating blood, for the reason that we know that these principles are not readily if at all secreted into the subarachnoid space. Hence they would not come into relationship with the seat of the active virus at a period preceding its active multiplication and extension throughout the nervous tissues. We think it also probable that had the serum injections been resumed after another interval of rest, the last vestiges of the virus in the tissues might have been destroyed in those animals in which the incubation period was much delayed, so that the ultimate appearance of paralysis might have been entirely prevented.

We have sought to ascertain whether animals protected from infection through the employment of mixtures of virus and immune sera, or as a result of treatment by subarachnoid injections of immune sera for therapeutic purposes, exhibited an unusual degree of resistance to subsequent intracerebral injections of active virus made at periods of several weeks to four or five months after the conclusion of the original experiments. The object of these tests was to ascertain whether a permanent augmentation of the natural resistance to infection had been accomplished by the introduction of the virus under these conditions of restraint into the body. We have found that no unusual degree of resistance to subsequent intracerebral injections of active virus has resulted, which fact we believe points to the validity of the following deductions: (1) A neutralized mixture of virus and immune serum does not lead to any degree of active immunization; (2) the therapeutic action of an immune serum is associated with restraint of multiplication of the virus such as would be required to establish any grade of active immunity; (3) a simple passive immunity is either not produced at all by the serum injections, or is of brief duration or small amount.

PRODUCTION OF A SERUM

The observations on immunity which have been presented early suggested that an effort be made to produce a corresponding active immunity in some of the lower animals that might possibly become the source of a therapeutic serum. This particular phase of our studies is being actively pursued at the present time. However, several facts have already been developed. It has, for instance, been found that the horse does not readily respond even to large injections of filtrates carrying the active virus with the development of immunity principles within the blood. It is true that our experiments are restricted for the present to a single horse, the blood serum of which, after many months of treatment, had no restraining effect on the virus either *in vitro* or within the body. The rabbit and chicken would seem not to yield such immunity principles. On the other hand we have secured indications that the sheep may react more favorably. It has been found that normal sheep serum possesses a definite although slight neutralizing power for the filtered virus when mixed directly with it, and that the injection of emulsions of the spinal cord and brain of recently paralyzed monkeys into the sheep augments this property of neutralization. What remains to be determined is the degree to which this augmentation can be carried, and whether a serum can be secured that will possess therapeutic value; but should the sheep fail in this respect, the search must be continued and be made to include still other species of animals, in the hope that one will be found in which the immunity response will be greater. There are serious objections to the use of monkeys as a source of a therapeutic serum, even were one of high potency capable of being prepared in those animals. The use of human serum, derived from persons who have passed through an attack of poliomyelitis, as a therapeutic agent, would be free of certain objections attached to the use of monkey serum, but it is not very probable that such an immune serum would be found to have sufficient strength or that it could be procured with sufficient readiness to make it available for practical application. Finally, the serum treatment of poliomyelitis must at the present time be regarded as strictly in the experimental state, and it cannot be predicted how soon or whether ever at all such a form of specific treatment of the disease will be applicable to the spontaneous epidemic disease in human beings.

SUMMARY

It may be confidently stated that the experimental study of poliomyelitis has yielded a large number of important facts relating to the spontaneous disease in man. These facts include the discovery of the nature of the virus, of many of its properties, of certain important clinical and pathological peculiarities of the disease, of the phenomena of immunity, of a mode of spontaneous infection, while they have served to establish a basis on which to develop measures of prevention, and on which to build hopes for the working out of a specific method of treatment. Moreover, the advance which has now been accomplished will make it possible to determine with accuracy whether poliomyelitis is a single clinical and pathologic entity, or a generic name covering groups of symptoms and descriptive of the effects of certain lesions of the spinal cord and brain of which epidemic poliomyelitis is merely one, but the most important variety. It is not improbable that poliomyelitis, like meningitis, may be found to arise from several independent causes, and that epidemic poliomyelitis, like epidemic meningitis, may be distinguished among the varieties by being invariably the product of a specific micro-organism. We possess already evidence to the effect that certain of the lower animals, among them poultry, the dog, and possibly the horse, are subject to poliomyelitis, due apparently in each instance to a cause peculiar to the species affected.

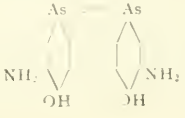
THE ARSENICAL TREATMENT OF SYPHILIS

JOHN B. MURPHY, M.D.
CHICAGO

Much attention has recently been paid to the arsenic treatment of syphilis and particularly to the Ehrlich-Hata preparation known as "606", *i. e.*, the dioxydiamidoarsenobenzol dihydrochlorid, a single injection of a proper dose of which is reported to be destructive of the *Spirochæta pallida*. The recently recorded cases show a striking uniformity in the immediate curative effects in all of the spirilloses, or diseases of spirochetic origin.

It is believed that this arsenical preparation is as destructive of the spirochetes as quinin is of the plasmodia of malaria. The spirochetes disappear entirely from the local lesion and from the blood in from four to ten hours after the injection of the remedy and the disease appears to be entirely arrested in twenty-four hours. These seem astonishing statements but they are verified by a number of able observers as Ehrlich, Hata, Wechselmann, Alt of Uchtspring, Schreiber of Magdeburg, Iversen of Russia and others.

The chemical composition of this drug as given by Dr. Bertheim, who manufactures it in the Royal Institute for Experimental Therapeutics at Frankfurt under the directorship of Prof. Ehrlich, is C . H . O N As and is expressed by Ehrlich in the following formula:



This arseno-benzol-dihydrochlorid preparation is a yellowish crystalline substance not unlike iodoform in appearance and must be kept in hermetically sealed vials as the drug becomes very toxic when exposed to the air. For administration it must be handled with the greatest care and exact details in the technic must be carried out.

The dose is a single injection of from 3 to 7 grains, given either intravenously or into the gluteal or pectoral muscles.

It is not yet available to the profession for general use. In a letter which I received a few days ago from Dr. C. H. McKenna of Chicago, who was kind enough to go from Paris to Frankfurt at my request, he states that he was received and treated by Prof. Ehrlich with the greatest courtesy and all the matters concerning this preparation, the treatment and results, were placed at his disposal for observation. The details for the manufacture of the drug are not given to the public; in this Prof. Ehrlich has exercised a praiseworthy caution. Placing a drug that will be in such immediate demand all over the world, and used by men who do not exercise the precaution of reading and following out in detail the directions given for its preparation and administration, is a hazardous procedure, and failure in securing the best results obtainable for the patients through this treatment would follow. The longest period that patients have been under observation after this treatment is about eleven months. Prof. Ehrlich has reports on 7,000 patients treated. In this number there were six deaths; Ehrlich himself considers that only one might justly be attributed to the treatment. This drug has been used in the treatment of syphilis in all stages from the primary chancres to the deep specific lesions of the central nervous system. It seems to have the specific property of killing the spirochete in all its abodes in the tissue, *i. e.*, of curing syphilis in its three stages—primary, secondary and tertiary. Its most prompt action is in: (1) the syphilids and mucous patches, (2) in the gummata and, (3) in the chancre; the latter, however, is sometimes very rapidly cured. The lymphatic adenopathies speedily disappear.

It does not and should not be expected to reproduce tissues that have been destroyed by the spirochete. It will not restore destroyed columns of the cord or perforations of the palate or septum nor any other destroyed tissue. It does not produce an immediate increase in the size of the lesion by edema and swelling that was so marked in the early treatment of tuberculous lesions with tuberculin. On the contrary there is infiltration and therefore pressure on the neighboring structures. The drug relieves the shooting pain, the girdle sensation and the crises of tabes almost as a hypodermic of morphin would; and it lessens the cephalalgia of the intracranial gummata.

One of the striking factors in favor of the claims of this treatment is that the most rapid effect is produced on the external or visible lesions. The cures appear to be permanent, as less than one-half dozen relapses have been recorded and most of these were easily traceable to deficient doses or to improper administration; but the patient promptly responded to a second injection. It will be noted that this is a far better result than is obtained in the average by quinin in ague or antitoxin in diphtheria and would lead us to hope that we have really another specific remedy. Regardless of what its permanent effect in definitely curing syphilis by a single dose may be its immediate effect places it far beyond any medicament that has so far been used in the treatment of this disease and makes one feel that every sufferer should have the advantages it affords.

It has been announced that this drug will not be given to the profession for use for a number of months, a fact which forced us to try other preparations of arsenic. The one with which I have been most familiar is the sodium cacodylate which we have been using for seven years to allay the pain of metastatic, osseous carcinomata. For this purpose I have been administering it in doses of from 3 to 6 grains by mouth and have given from 1 to 2 grains in single doses daily hypodermically, also using it for the various other purposes for which arsenic is indicated. One of its striking therapeutic effects is the rapid dissolution of the deposits in fibrinous pericarditis in children, when it is administered in doses of from 1 to 3, or even more, grains daily. Its chemical formula is $(\mathrm{CH}_3)_2\ \mathrm{As\ O\ Na} + 3\mathrm{H}_2\mathrm{O}$. It appears as a white amorphous powder readily soluble in water. As a solution it can be injected into the muscle without causing much discomfort. It is prepared and carried by most of the wholesale druggists in ampullas containing three-fourths of a grain and is one of the safest of the arsenical preparations for administration.

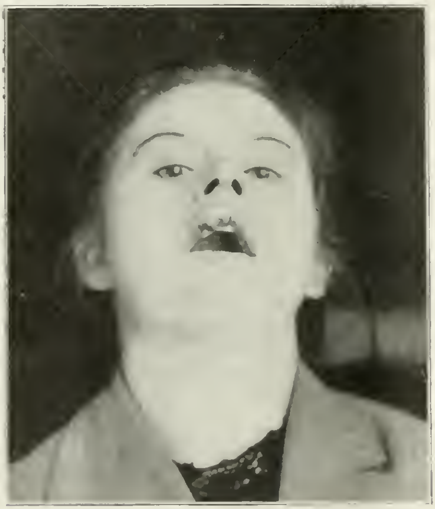


Fig. 1.—A chancre on the lip before treatment. Syphilis from the common drinking cup.

When the system becomes saturated, the patient has the typical arsenical breath, with a sense of gastric distress and loss of appetite. I have been giving it in doses of from 1 to 2 grains hypodermically into the muscles and it has a most striking effect on the syphilids, mucous patches and primary chancre. From the latter the spirochetes disappear completely in forty-eight hours, the induration is markedly reduced in twenty-four and it becomes a soft, clean ulcer in seventy-two hours. From that time on it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same time. In other words, the sodium cacodylate seems to destroy the specific micro-organism (the spirochete) which is keeping up the irritation. The adenopathies, except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days and the perforating ulcers of the palate repair in their margins leaving the perforation in a healthy condition. I have not pressed it in the tertiary lesions but will not hesitate when such cases come under observation as the toxic limitations of the drug and the line of safety in its administration are known.

Photograph 1 is from a patient, aged 17, who became infected in a cold sore on the lip from a drinking cup. The examinations for spirochetes were made at the Columbus Medical Laboratory and slides were preserved; the spirochetes were numerous. The patient received two injections of ½ grain each into the pectoral muscle, twenty-four hours apart. Forty-eight hours after the primary examination (at which time only a clean soft ulcer without induration remained), numerous slides were prepared for spirochetes, both at the Columbus Laboratory and at Mercy Hospital and all were negative. The injections were continued in ½ grain doses for eight days, then from the eighth to the twelfth day in ¾ grain doses and permanently discontinued. The patient showed none of the physiologic effects of arsenic.

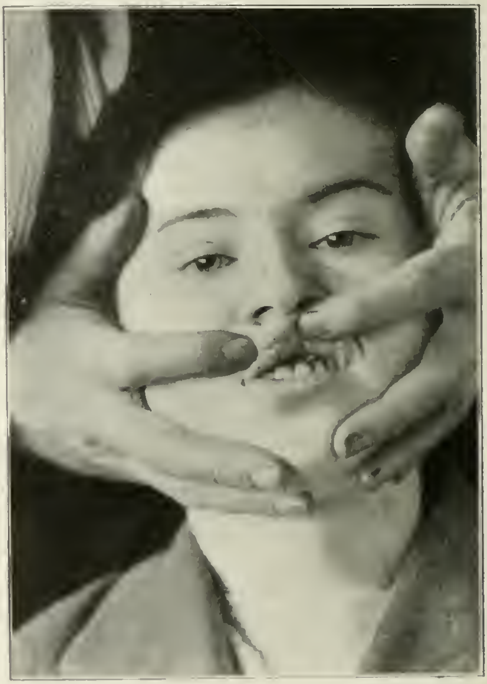


Fig. 2.—Patient shown in Figure 1, nine days after treatment of syphilis with arsenic preparation.

Photograph 2 shows the condition of the ulcer nine days after treatment was instituted as a small abraded surface without induration and no larger than a grain of flax seed and thirteen days from the initial treatment the ulcer was completely healed with no evidence of the disease remaining.

This case was demonstrated in all its stages to the visiting physicians at Mercy Hospital.

In a child nine months old with a papillary syphilid, a ¼ grain dose was administered into the pectoral muscle. The rash entirely disappeared in forty-eight hours. In a patient with active gastric crises, two 2-grain doses were administered into the pectoral muscle, twenty-four hours apart, followed by entire cessation of pain, while in his innumerable former attacks the pain lasted three weeks.

A perforating ulcer of the palate in the service of a colleague continued to advance in its destruction under daily injections of ¼ grain doses of mercuric bichlorid. Two injections of three-fourths of a grain each, of cacodylate of sodium, caused the gray surface to disappear and the margin of the ulcer to heal over in six days.

These incomplete reports are published merely as suggestions to practitioners who are willing to try a remedy as safe as sodium cacodylate and who have numerous cases coming under their observation, as the only syphilitic cases I encounter are those presenting surgical lesions.

I would further suggest that the primary dose should be from 2 to 4 grains, depending on the size and strength of the patient and should not be repeated within three or four days unless there are special indications for it.

I have never seen such effects produced by any form of treatment.

I have not given it by the intravenous method but I will so use it in a more dilute form, in the same size doses. Prof. Ehrlich has been kind enough to send me, through Dr. McKenna, twenty-five doses of "606" which are due in Chicago in a few days and which I shall use in control cases with sodium cacodylate.

100 State Street.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1910," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

(Continued from page 666)

GUAIACODEINE. — Codeine - Ortho - Guaiacol - Sulphonate. Guaiacodeine is Codeine - Ortho - Guaiacol - Sulphonate $C_{18}H_{21}NO_3C_6H_3(OH)(OCH_3)(HSO_3)1:2:6 = C_{25}H_{29}O_8NS$, the neutral codeine salt of guaiacol sulphonic acid.

Guaiacodeine is produced by the double decomposition of a soluble salt of codeine with the potassium or barium salts of ortho-guaiacol-sulphonic acid taken in molecular quantities.

It is a white crystalline powder. Soluble in 90 parts of water, 450 parts of alcohol and 30 parts of methyl alcohol, insoluble in ether; very slightly soluble in chloroform. Very soluble in hot water.

A drop of solution of ferric chlorid added to a solution of the salt in water or alcohol produces a deep blue color, indicating the presence of ortho-guaiacol sulphonic acid.

The salt melts between 163° C. and 165° C. (325.4 and 329° F.) to a white liquid. 0.1 Gm dissolves in 10 Cc. concentrated sulphuric acid without color.

Theoretically the salt contains 59.44 per cent anhydrous codein, or 63.20 U. S. P. codeine (containing 1 molecule of water of crystallization) and 40.56 per cent ortho-guaiacol sulphonic acid.

Ammonia and alkalies precipitate from a concentrated solution of the salt the alkaloid, codeine which should respond to the tests of the U. S. P. for that alkaloid.

Actions and Uses. Those of Codeine. Since the proportion of guaiacol is small it cannot well be used to secure the action of this agent.

Manufactured by the New York Quinine and Chemical Works, New York.
U. S. patent No. 432,235. Not trademarked.

SOPHOL.—Sophol is a compound of silver and methylennucleinic acid, the silver being in organic ("masked") form.

It is prepared by conversion of insoluble silver compounds of methylennucleinic acid into soluble silver compounds by treatment with neutral salts, such as chloride of sodium. Sophol is a yellowish powder, having a metallic taste and claimed to contain silver, equivalent to not less than 20 per cent. metallic silver. Sophol is readily soluble in water, the aqueous solution having a faint alkaline reaction; it does not give a precipitate on the addition of dilute solution of sodium hydroxide or of sodium chloride; it is insoluble in ether and alcohol.

If 0.3 Gm sophol is heated in a test tube decomposition occurs with the development of brownish-red pungent vapors. If the ash is treated with dilute nitric acid, the solution filtered, a white cheesy precipitate is formed on addition of hydrochloric acid, which dissolves in ammonia water.

If 0.5 Gm. sophol is boiled with 5 Cc. of sodium hydroxide solution, the latter assumes a black color with the development of a formaldehyde odor.

If 0.1 Gm sophol is heated with 3 Cc. nitric acid, a dirty yellow precipitate is formed, disappearing on addition of an excess of ammonia water with the formation of an orange colored solution.

A solution of 0.5 Gm sophol in 10 Cc. water should have a faintly alkaline reaction and should not at once become turbid on the addition of sodium chloride solution.

If 1.0 Gm sophol is shaken with 10 Cc. of alcohol and filtered, the filtrate should not be changed on addition of hydrochloric acid.

Actions and Uses.—It is said to act as a germicide and to be free from irritating effects in the solutions ordinarily employed.

It is said to be especially useful for the prevention and treatment of ophthalmia neonatorum and may be employed in other eye affections and for the general indications of the silver salts.

Dosage.—Sophol may be applied in from 2 to 5 per cent. solutions.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 852,545. U. S. trademark No. 62,900.

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage forms of accepted proprietary articles have been accepted for N. N. R.:

Adrin Inhalent Comp.—Epinephrine Inhalent Comp., Mulford.—Each 100 Cc. contains epinephrine (as hydrochloride), 0.1 Gm. (7/16 of a grain in a fluidounce), camphor, 0.3 Gm. (1¼ grains in a fluidounce), menthol, 0.22 Gm. (1 grain in a fluidounce), thymol, 0.043 Gm. (1/5 of a grain in a fluidounce), oil of eucalyptus, 0.22 Gm. (1 minim in a fluidounce), and hydrastine, 0.0053 Gm. (1/40 of a grain in a fluidounce), oil of wintergreen, 0.99 (15 minims in a fluidounce). The solvent is a mixture of castor and cotton seed oils, together with 10 per cent. absolute alcohol by volume.

Adrin Troches.—Troches of Epinephrine, Mulford.—each troche contains epinephrine, 0.000093 Gm. (1/700 grain), menthol, 0.0013 Gm. (1/50 grain), benzoic acid, 0.0027 Gm. (1/25 grain), oil of gaultheria, 0.0034 Gm. (1/20 grain), and eucalyptol, 0.0013 Gm. (1/50 grain). The base is sugar with a small amount powdered acacia.

Friable Tablets Protan, 2½ grains.—Each tablet contains protan, 0.16 Gm. (2½ grains).

Friable Tablets Protan, 5 grains.—Each tablet contains protan, 0.32 Gm. (5 grains).

Friable Tablets Protan, 7½ grains.—Each tablet contains protan, 0.48 Gm. (7½ grains).

ARTICLES ACCEPTED FOR N. N. R. APPENDIX

Reinschild Chemical Co., New York.

Extractum Chinae Nanning.—A liquid extract of red cinchona said to contain cinchona alkaloids 5 per cent., cinchona tannins 7½-10 per cent., glycerine 30 per cent., water 55-57½ per cent.

Dose.—1 to 1.25 Gm. (15 to 20 minims) three times a day.

(To be continued)

Therapeutics

VACCINE THERAPY

Although every month, almost, changes the status of treatment with vaccines, and although methods of preparation and the strength of the solutions injected are almost as frequently modified, still one should keep up with the times and know the exact scientific belief in regard to the value and utility of vaccinations. Hence it is with pleasure that one reads the conservative, terse, and scientific article of Dr. Wilder Tileston, of New Haven (*Boston Med. and Surg. Jour.*, March 21, 1910).

Immunity is a variable condition, varying not only with the individual, but with the bacterium. Natural immunity occurs for a shorter or greater length of time after a person has had an infection. Artificial immunity to a given germ is caused in two ways: first, by inoculation with non-fatal doses of this bacterium, "active immunization;" second, by the inoculation of an antiserum, a serum which develops in the blood of a man or animal who has become more or less tolerant to a given germ. Injections of this serum into a subject susceptible to the germ, causing him to be more or less immune, is called "passive immunization." Tileston says, "There is a wide difference between the use of the various anti-sera and the injection of bacterial vaccines; the former are chiefly employed for their direct action on the bacteria or their toxins, the latter to stimulate the formation of protective bodies.

"These latter substances, or antibodies as they are often called, are found in the blood serum and act in various ways; the bacteriolysins destroy the bacteria, the antitoxins neutralize the bacterial poisons, the agglutinins bring about a clumping of the organisms, and, last but not least, the opsonins act on the bacteria in such a way that they can be taken in by the polynuclear leucocytes, a process known as phagocytosis."

There is always a certain amount of opsonin, the stimulant to polymorphonuclear activity, in the blood serum. Probably there are various kinds of opsonins to aid in the fight against the varying kinds of bacteria, and Wright has shown by laboratory methods that the amount of opsonin varies at different times, and especially varies during the progress of an infection. This is termed the opsonic index. This opsonic index may be increased by well-timed inoculations with the germ that is causing the disease. Scientifically the amount of the dose and the right time to administer it can only be determined by a prolonged laboratory examination of the patient's blood serum. This process, however, is too tedious, and is so easily subject to error, that it is not practical in general medicine. There can be no question that the inoculation of too large doses cause harm. This has been thoroughly proved in the use of tuberculin. On the other hand, Wright has shown that too small doses are of no value in raising the opsonic index. The practical deduction is to begin with very small doses and carefully watch the fever and prostration reaction. If they are found to amount to anything and much prostration, the dose was too large; if there is no indication of action from the injection, the dose was too small.

Pasteur showed in 1880 that chicken cholera could be prevented by vaccination of fowls with this organism, and later that this principle would apply to infections of other animals. In 1891 Pasteur and Haffkine demonstrated that human beings could be inoculated against cholera and become immune for some time. Over 100,000 persons were inoculated against cholera in India. The number of inoculated persons attacked by the disease was one-tenth that of those who were not so inoculated, but it was found that if the disease did attack an inoculated individual the course of the disease was just as severe as in the non-inoculated. The protection against cholera, then, was positively demonstrated. It has also been shown that inoculations against the bubonic plague has caused the mortality to be ten times less than in the non-inoculated. The protective influence of these injections develops in twenty-four hours, and immunity has been found to last several years.

Both in England and Germany protective inoculations against typhoid fever have been demonstrated to be of value. The protection in some instances has been found to last four years. For several weeks there occurs what has been termed the negative phase of the protection during which period the individual is more susceptible to typhoid infection; therefore if individuals are to be exposed to typhoid fever or must go to typhoid regions or where they are likely to become infected with typhoid, a protective injection should be given a month before. Individuals who have contracted typhoid fever after a protective injection of several weeks before have had the disease very mildly and the mortality is much diminished. As Tileston says, it seems proved that soldiers going to regions of poor sanitation should receive protective injections against typhoid. Also, nurses and ward tenders should be protected against typhoid.

Shiga believes that protective inoculations against bacillary dysentery do not prevent the disease but reduce the mortality when the disease occurs.

Some investigators believe that vaccination against secondary infections after operations under conditions, or in regions of the body in which infection will almost surely occur, is advisable. Such protective injections have been made with the *Staphylococcus aureus* and *Streptococcus*, and with the *Bacillus coli* if the operation was on the alimentary tract. It is still a question whether such injections are advisable.

In local infections without general symptoms and with the localized infection or suppuration walled off from the rest of the body by the protective powers of the blood and tissues, but not tending to heal or to be absorbed, injections to increase the opsonic power of the blood have proved of the greatest value. The protective exudate around these localized infections, as stated by Tileston, "become poor in opsonins, owing to the absorption of these substances by the bacteria; phagocytosis is at a standstill and the bacteria are free to multiply. Add to this, in the case of abscesses the tryptic substances set free by the disintegrating leucocytes, with their deleterious action on the tissues, and we have a combination of conditions unfavorable to cure." We hasten cure by evacuating the pus and draining the region, and by stimulating the constructive powers of the body by giving stimulating drugs and pushing nutrition.

A still greater aid to hasten cure seems to be a vaccination with a culture grown from the particular germ of infection; in other words an autogenous vaccination. While so-called stock vaccinations, vaccination with stock cultures of the type of germ of the infection are of some value, the various strains, especially of a pus producing germ, vary so much, and, evidently, vary so much in the kind of opsonins that is needed to eradicate them, that it has been found that vaccination with cultures from the germ that is infecting the individual is of much greater value. Such vaccinations cause increased hyperemia around the localized disease and the increased circulation thus caused is another aid in eradicating the infection. This is the reason that the Bier hyperemic treatment of localized inflammation and infection becomes of value. In other words, the opsonins are increased and the phagocytosis more active and the eradication of the infection goes on more rapidly, if the circulation in the diseased region is stimulated. These truths are especially demonstrable in lupus where tuberculin tends to cure the ulcerative type, but when the lupus is of the dry, scaly variety it is necessary for success to combine with the tuberculin injections the use of the *x*-ray to cause local hyperemia.

This vaccination treatment to aid the production of necessary opsonins in the blood will, when generally adopted, make repeated and recurrent furunculosis and carbuncles rapidly amenable to cure. Slight incisions to evacuate the pus and dead tissue are necessary, but as Tileston says, extensive surgical measures will be unnecessary, if the patient is vaccinated with an autogenous vaccine.

Vaccinations in pustulent acne are rather unsatisfactory. The same is true of erysipelas.

Septic infections should certainly be vaccinated with stock vaccine and then as soon as an autogenous vaccine can be developed it should be used. The pneumococcus vaccine seems to be of most value when the pneumococcus has attacked other parts of the body than the lung, as in pneumococcic empyema or in a pneumococcic joint inflammation.

It seems now to have been sufficiently demonstrated that gonococcus vaccine is very valuable when the gonococcus has invaded joints, and especially valuable where the inflammation has been prolonged and become almost chronic. In acute infections it is of much less value. As supposable from what is known of the lack of protection or immunity after one attack of gonorrhea, the immunity from injections also does not last long. In gonorrheal urethritis, acute and chronic, in gonorrheal prostatitis and epididymitis vaccination has not been shown to be of much value. In gonorrheal vulvovaginitis of children Tileston thinks this vaccine aids recovery more than most other treatments, but still is not very satisfactory.

A number of colon bacillus infections, especially when this germ has infected the pelvis of the kidney and the bladder, have seemed to have been benefited by vaccination with this germ.

The value of tuberculin in tuberculosis, in properly selected cases, seems to be now unquestionable. Its curative value is demonstrated in tubercular inflammations in the eye, in the larynx, and in many instances in the lungs. It is yet to be demonstrated that it should always be used in tuberculosis of the lungs. There is no question that it should be exceedingly carefully used in all early stages of tuberculosis, especially in tuberculosis of the lungs. It is very pleasing to note that in tuberculous lymph nodes, especially of the neck, tuberculin injections are shown to be exceedingly valuable as preventing the necessity of severe surgical procedures and the production of very unsightly scars to last the rest of the individual's life, and to prevent the removal of the chains of glands, which, when removed, means the removal of so many guards against entrance of germs to more susceptible structures, especially the lungs. If a tuberculous gland has become an abscess, the pus must of course be evacuated, through a small incision or even aspirated, and the tuberculin treatment begun. If there is caseation, cheesy masses must be removed surgically, but it would seem unjustifiable from the records to do gross surgery on the neck until tuberculin treatment had been proved not to cause resolution of the enlarged glands.

A tuberculous joint and tuberculous structures in the region of joints should be placed at rest, the patient given the benefit of fresh air, and tuberculin injections used, and many times operation will be unnecessary.

It has not yet been shown that tuberculin can be depended on positively to cure a tuberculous kidney, hence if it has been shown that one kidney is perfectly healthy, the diseased kidney should be removed; but if both kidneys are affected with tuberculosis, or if the other kidney is found not to be perfect in its function, tuberculin injections still offer a possibility of recovery.

If tuberculosis has generalized, in an adult, in the intestines, tuberculin is really of value. On the other hand, if the disease of a tuberculous patient, under proper treatment, seems to be at a standstill, small injections of tuberculin often stimulate the ability to combat the disease and cause the lesions to heal. It seems from the results of some investigators that infantile tuberculosis may be healed by tuberculin injections.

As has been previously stated in this department, tuberculin injections should not be given without some experience and a great deal of study of the subject. Therefore, it is not the object of this abstract to discuss either the method or the dosage of tuberculin, but to show how far the success of the treatment has advanced.

A vaccine has been prepared from a bacillus supposed to be the cause of whooping-cough, and some investigators have thought they obtained benefit from such injections. The same is true of pyorrhea alveolaris; but these are still subjects for investigation.

Vaccination in pneumonia has given in some instances a better prognosis and a diminished mortality, and sometimes seems to hasten the crisis. The best results are doubtless obtained from an autogenous vaccine.

Vaccination during the course of typhoid fever seem to be of little if any value.

Tileston quotes the following doses for vaccines:

From 100 to 1,000 millions staphylococci.
From 5 to 200 millions streptococci.
From 10 to 200 millions pneumococci.
From 5 to 500 millions gonococci.
From 10 to 200 millions colon bacilli.
From 1-10,000 to 1-500 mgm. tuberculin T. R.

A marked change for the worse one or two days after injection shows that a dose was too large and should be reduced. A temporary improvement soon followed by a relapse shows need for a larger dose. Naturally, debilitated persons and young children should receive smaller doses than the stronger and adults. Children, however, tolerate tuberculin pretty well. The frequency of the dose depends largely on the reaction, generally acute infections requiring smaller doses at short intervals, and chronic conditions larger doses at longer intervals, from four days to two weeks. The beginning dose should generally be quite small and then the dose rapidly or slowly increased, depending on the reaction. Tileston says "for general infections the doses are smaller than the above: of the streptococcus 5 to 25; of the pneumococcus 20 to 50; of the gonococcus 5 to 100; and of the colon bacillus 10 to 50 millions." He well decries the use of mixtures of various bacteria hoping that some particular germ of this mixture will fight some particular germ in the body. This is much like the old "shotgun prescriptions." It certainly seems inadvisable to inject a germ into a patient to help him fight against something that he has not got.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 24, 1910

HABITAT OF TYPHOID BACILLI IN CARRIERS

Although the recognition of the importance of "carriers" in the transmission of infectious diseases was surprisingly and seriously tardy, yet, now that this source of infection has come to be appreciated, the advance in our knowledge of the subject has been rapid. We have learned that not only are diphtheria and typhoid frequently spread in this way by apparently healthy individuals, but that meningococcus infections, and probably several other diseases, are perpetuated in endemic or epidemic form by carriers who either may have had the disease and recovered, or are hosts of an organism pathogenic to others but to which they themselves are immune. It is in connection with typhoid and paratyphoid that infection by bacillus-carriers has been especially considered within the last few years, and with these diseases it has been believed that the habitat of the infecting organisms is chiefly the gall-bladder, and their avenue of escape the bowels. It has also been recognized that in some cases the bacilli are discharged in the urine for many years after convalescence from typhoid, and in these cases the place in which the bacilli are multiplying and from which they are discharged into the urine is often a problem. In some instances a definite cystitis, pyelitis or nephritis explains the persistence of the organisms, but in other cases there is no evidence of such lesions and the administration of urinary antiseptics may fail to remove the bacilli from the urine.

An explanation of these cases has been advanced by Marchildon,[1] who has found, in two fatal cases of typhoid, infection of the seminal vesicles and prostate. In view of the known tendency of infections of these organs to assume a chronic character and to discharge the causative organisms in the urine, there is reason to suspect that typhoid convalescents may harbor typhoid bacilli in this way; this should be especially suspected and investigated in patients with long-continued bacilluria in whom the microorganisms disappear under treatment and then reappear at a later date.

Support to this suggestion of Marchildon's is furnished by comparative pathology through the recent investigations of Huet.[2] It seems that it has been frequently observed that male animals used for breeding purposes have transmitted to the females diseases from which the males had long since recovered. This has been reported several times with the influenza of horses, which is of particular interest since this disease, like typhoid in man, is not ordinarily localized in the generative organs. Huet examined the seminal vesicles of domestic animals, some of which animals were normal, while some had been infected experimentally with different organisms at varying periods of time before death, and found that frequently pathogenic bacteria can be found in the vesicles of perfectly healthy animals, while animals dying of experimental infections usually show seminal infection. Occasionally, in animals which had recovered from the infection, the germs could be demonstrated in the contents of the seminal vesicles even when the other viscera were quite sterile. From these several observations it is highly probable that typhoid bacilli frequently enter the contents of the seminal vesicles and prostate during typhoid fever, and that they may occasionally set up a chronic infection which can become a source of typhoid bacilluria of grave sanitary danger. Such localization of typhoid bacilli in the male generative organs can scarcely be a common cause of contagion, however, since about four-fifths of all known bacillus-carriers have been women, according to the review of Simonds;[3] nevertheless it is well that this source of danger has been pointed out, in order that it may not be overlooked in the search for typhoid carriers.

STUDIES IN ANAPHYLAXIS

The study of the phenomena of anaphylaxis has received considerable attention from investigators during the past year, and though sufficient time has not elapsed for the confirmation of all conclusions reached, much progress has been made in the knowledge of the subject. The later experiments and studies of Anderson and Frost[4] on the antibody concerned in the production of the phenomena of anaphylaxis lead them to conclude that this substance is quantitatively neutralized by the specific antigen; that it largely disappears from the serum of guinea-pigs during anaphylactic shock, but can be demonstrated in increased quantities in the serum of immune animals some time after recovery from such shock, and that it can be transferred to normal animals in such a way as to sensitize them against the antigen. To the antibody they give the name of "allergin," which they hope will be adopted as the regular designation of this substance. They summarize their views on the whole subject of anaphylaxis as follows:

---

[1] Marchildon, J. W.: Typhoid Spermatocystitis and Prostatitis, and Their Relation to Chronic Typhoid Bacilluria, Amer. Jour. Med. Sc., 1910, cxl, 74.

[2] Huet, R. H. G.: Samenbläschen als Virusträger, Cent. f. Bakt., Orig., 1910, lii, 477.

[3] Simonds, J. P.: Typhoid Bacilli Carriers and Their Relation to Public Health, Am. Jour. Med. Sc., 1910, cxl, 247.

[4] Bull. 64, Hyg. Lab. U. S. P. H. and M. H. S., June, 1910. This is the fifth bulletin of the Hygienic Laboratory on anaphylaxis.

Anaphylaxis is a step toward immunity, which is conceived as an increased capacity of the organism for safely and rapidly eliminating a specific antigen protein. It is remarkable among immunity reactions chiefly in the fact that (in the guinea-pig especially) the stage of hypersusceptibility is strikingly constant, well-defined and of long duration.

Immunity is a state of relative insusceptibility, characterized by an increase in the amount of free anaphylactic antibody. Whether the insusceptibility of an immune guinea-pig is due to this excess of free anaphylactic antibody, to the formation of another free antibody, or to specific changes in the somatic cells is an open question.

Hypersusceptibility to a foreign protein consists in an increase in the normal power of assimilating this protein, especially an increase in the rapidity of the reaction. This is due to the formation of a specific antibody (or antibodies) demonstrable in somatic tissues (smooth muscle) and in the serum of sensitive guinea-pigs. The action of this antibody on its antigen is quantitative and is probably primarily proteolytic.

Anaphylactic shock is due to disturbance of metabolic activities of vital cells rather than to the specific (permanent) intoxication of cells.

Antianaphylaxis is a state of absolute insusceptibility, due to saturation of the specific combining receptors. It is a temporary condition and passes gradually into the condition of relative insusceptibility known as immunity proper.

The interest in anaphylaxis lies in its relation to immunity. In the present development and understanding of the subject it has not been proved that effective practical immunity to particular diseases can be produced in this way without causing more or less serious damage to the host in other directions. The principle is tremendously suggestive, however, and may lead to the most important results. It points to possible valuable discoveries in the treatment of tumors, to a better understanding of the phenomena of asthma, and to the fact that the action of tuberculin involves the principle of anaphylaxis.

THE LESSON OF POLIOMYELITIS

The increasing prevalence of anterior poliomyelitis has made it one of our most important diseases. On account of its insidious nature and its distressing—often permanently disabling—sequelae, blighting, as it does, the lives of the young, it has especially appealed to human sympathy and has stimulated efforts along scientific lines to solve its difficult problems. No more forceful demonstration of the modern method of studying disease has been afforded than is found in the instance of epidemic poliomyelitis. Clinicians have made an intensive, systematic study of the disease and its epidemiology in the numerous localities in which it has appeared; but a still greater study is that which has taken place in the laboratories.

While it is true that some of the more important features have not yet been worked out—the causative organism, the question of immunity and a prophylactic or curative serum or vaccine—yet the laboratory study of the disease has progressed with such sure, swift steps that the early attainment of fairly complete knowledge of the disease is promising.

Most important among the studies have been those of Flexner and Lewis and their co-workers. The short notes published from time to time in The Journal, detailing the steps in the progress made in their experimental studies, and the final fuller paper of Flexner in this issue, giving a complete statement of the findings thus far made, the conclusions that may be drawn from them and outlining the requirements of the future study of the affection, constitute a striking record of results to be attained by persistent, systematic investigation in well equipped laboratories with every facility at command. This work has determined the pathogenesis, though not identifying the causative organism; has indicated the possibility of early diagnosis by examination of the spinal fluid, the probability of the establishment of an active immunity by injections of the attenuated virus; has established the presence of neutralizing principles in the blood of human beings as well as in that of monkeys following an attack of the disease, and has given some promise of the production of an immunizing serum in certain of the lower animals. All of which points to the early final solution of the problem.

It also is another instance of the absolute justification of animal experimentation in the study of the diseases of human beings.

Current Comment

NATIONAL CONSERVATION CONGRESS AND A DEPARTMENT OF HEALTH

The National Conservation Congress, recently in session in St. Paul, adopted a platform setting forth the views of the delegates as to the duty of the federal and state governments in conserving the natural and vital resources of the nation. One of the planks, unanimously adopted by the committee on resolutions and later by the convention itself, endorsed in no uncertain terms the establishment of a department of health. This plank read: "We also recommend that in order to make better provision for preserving the health of the nation a department of public health be established by the national government." This declaration was adopted in spite of a large amount of carefully stimulated (and simulated) opposition. The plank was introduced before the committee on resolutions by a delegate from Pennsylvania. As soon as it was known that there was likelihood of its adoption telegrams from all over the country began to pour in on the members of the committee on resolutions, requesting, urging and demanding that no action be taken on this subject. On Thursday morning, when the delegates assembled in the auditorium, there was found on each seat a marked copy of the *Pioneer Press* containing a full length, two column "appeal" (otherwise known as advertising matter) from the National League for Medical Freedom, reiterating previously made statements regarding "political doctors," "medical trust," "interference with liberty" and other stock bugbears. But, as a reporter for the *Pioneer Press* said, "the delegates smiled." The men composing the convention, who had been sent to St. Paul to represent the interests of the people and not the people of the interests, who had been able to detect the cloven hoof of monopoly under the specious plea for "state rights" which had been made in the opening days of the convention, were not slow to understand who and what were the influences back of the objections to governmental action for the saving of life. "The delegates smiled" when they received the telegrams, when they adopted the resolution of the committee and when the unanimous vote of the convention approved the platform. It was the sound judgment and common sense of the average American citizen which led the delegates to realize that health and life are important and that the only men who oppose any means by which life can be saved are those who have a selfish and mercenary interest in perpetuating present conditions.

THE SEROTHERAPY OF ASIATIC CHOLERA

As is well known, the serotherapy of cholera has thus far not been markedly successful. In the Russian epidemic of 1908-9 three kinds of antiendotoxic and two of antitoxic serum were used. Stühlern[1] ascribes greater potency to the former, particularly when administered in large quantities by the combined intravenous and subcutaneous method supplemented with copious saline infusion. It must be admitted that even the serum giving the best results (Schurupow's) did not lower the mortality rate below 30 per cent. One of the recent reports on an anticholera serum is that by Salimbeni,[2] who conducted his experiments, for so they must properly be called, in St. Petersburg during the serious outbreak of that city in the summer and autumn of 1908. The method used was that proposed as long ago as 1896 by Issaeff, Metchnikoff and Salimbeni himself and recently reported in detail by the latter writer.[3] The serum used in St. Petersburg was obtained from two horses "strongly immunized against the soluble cholera toxin," and 0.025 c.c. is said to have neutralized *in vitro* in the bundles twice the minimum lethal dose of cholera toxin for a guinea-pig of 250 grams. The article cited deals with only 12 cases, so that very general conclusions are hardly warranted. In this number, the mortality rate was about 24 per cent. The protocols of the individual cases indicate that no harm resulted from the serum injection (50 to 150 c.c.), and that in some cases benefit may have been produced. However, even under the most favorable interpretation, the curative power of the anticholera serum used in these observations does not seem very high.

SANITARY WORK IN BRAZIL: GOOD HEALTH A COMMERCIAL ASSET

Vice-Consul-General Slechta, of Rio de Janeiro, reports regarding the work of Dr. Oswald Cruz, to whose transformation of Rio de Janeiro from one of the most unhealthful to one of the most healthful of cities several references have appeared in The Journal. Dr. Cruz is now in the Amazon Valley carrying on a campaign against yellow fever, malaria and other diseases which have prevented the extension of commerce and industry in that region. The first work undertaken was in connection with the railroad being built around the falls of the Madeira and Mamore rivers, 500 miles south of the export rubber market of Manaos. The American contractors who are constructing this road have encountered great difficulties owing to yellow fever, malaria, beriberi and other diseases and have finally entered into a contract with Dr. Cruz to direct the work of sanitation along the right of way of the railroad and to stamp out diseases so far as possible in order to permit the completion of the railroad. It is also planned to undertake the suppression of yellow fever at the port of Para at the mouth of the Amazon, as well as at Manaos. The prevalence of yellow fever and malaria in the Amazon Valley has been one of the chief handicaps in the extension of trade and commerce and especially in the development of the rubber business. It is a sad commentary on human nature but an increasingly apparent fact that good health and the suppression of disease are attracting far greater attention now because their bearing on commerce and business is becoming evident. So long as it was merely a question of saving human lives the public remained apathetic. Now that good health and hygienic conditions are becoming recognized as business assets, we may look for increased interest and activity in the prevention of disease.

"VIVISECTION" NO MORE PAINFUL THAN TAKING CASTOR OIL

The statement has recently appeared in a number of newspapers that the Bureau of Animal Industry at Washington had entered into arrangements with the district commissioners of Washington, whereby the commissioners were to turn over to the bureau for experimentation the stray dogs of the city. In a number of cases, these statements were accompanied with comments expressing horror at the cruelty of the "experimenters" and "vivisectors" employed in the government service and protesting against the Department of Agriculture entering on a career of wholesale vivisection. A more sensible method of procedure is shown in the following from *Our Dumb Animals*, the official organ of the Massachusetts Society for the Prevention of Cruelty to Animals, a publication which can hardly be regarded as prejudiced in favor of animal experimentation:

---

[1] Med. Klinik, 1909, v, 1452; The Journal, Nov. 6, 1909, p. 1604.

[2] Abstracted in Lancet, 1910, xiv, 4.

[3] Ann. de l'Inst. Pasteur, 1908, xxii.

> A wide-spread indignation among humane people, and particularly among the foes of vivisection, has been aroused by newspaper reports to the effect that the Bureau of Animal Industry has entered into arrangements with the district commissioners of Washington whereby the former was to have turned over to it for experimentation the stray dogs of the capital city. Knowing how little confidence is to be placed in the ordinary newspaper report, we wrote at once to the department for the facts. Our readers will be interested in the reply which we summarize as briefly as possible:
>
> There is a disease known as "gid" from the symptoms of giddiness which it commonly produces in affected animals. It is transmissible from dogs to ruminants only. Of the domestic animals, sheep are most often the sufferers from this trouble. The disease is prevalent in the northern half of Montana. It is generably traceable to imported sheep or imported sheep-dogs. The most effectual way to eradicate this disease is to keep dogs, particularly sheep-dogs, free from tapeworms, the multitudinous eggs of which scattered about the pastures are the immediate source from which sheep, cattle and other ruminants become infected with the disease.
>
> The Secretary of the Department of Agriculture writes that arrangements were made whereby the district commissioners of Washington should supply a number of unclaimed dogs from the pound for use in investigations connected with this disease. He states, however, that nothing more painful can happen to these dogs than would be experienced in taking a dose of castor oil. The desire is to find the best vermifuge, that is the one most efficacious and suitable for the expulsion of tapeworms.

We commend the caution shown by the editors of *Our Dumb Animals* in going to headquarters for an authoritative statement instead of relying on garbled and misleading newspaper items. If all the advocates of humane treatment for animals would follow the same course with regard to their statements and "statistics," much of the misconception which surrounds this question would be dissipated. As has been shown repeatedly, there is an exceedingly small amount of suffering connected with "vivisection"; most of the "evidence" submitted by the opponents of animal experimentation is the result of misconception or a heated imagination.

SUGGESTION AND NOSTRUMS

One of the cruellest and most despicable phases of the "patent medicine" business is the studied effort made by nostrum exploiters to frighten their victims into the belief that they are suffering from some more or less serious disease. Not content with the sale of their preparations to those who have—or who believe they have—one of the many diseases for which the products are recommended, the "patent medicine" venders strive to create an artificial demand for their stuff by working on the imagination of the healthy and persuading them that they are sick. The scheme is an old one but none the less disreputable. One of the more recent modifications of this trick is the "gall-stone remedy" fake, a type of which is described in the Pharmacology department of this issue. Hundreds and possibly thousands of people have been humbugged by this scheme and, unless physicians enlighten the public, thousands more will be. Once let people know that they are asked to pay a dollar for a few cents' worth of olive oil and a couple of Seidlitz powders and the number of cases of (imaginary) cholelithiasis will be reduced.

Medical News

DISTRICT OF COLUMBIA

Higher Requirements.—Word from Dr. William C. McNeill, secretary of Howard University School of Medicine, states that, beginning this fall, one year of collegiate work, including the subjects: physics, chemistry and biology, and a reading knowledge of German or French, will be required for admission. The name of this college was omitted from the list published in our Educational Number of those schools which were requiring one year of collegiate work for admission.

Personal. Dr. MacPherson Crichton, Washington, appeared before the Justice of the Police, August 29, for a preliminary hearing on the charge of manslaughter, alleged to have been due to an automobile owned and driven by Dr. Crichton. A bond of $5,000 was given at the time for his appearance. It is said that he has been arraigned three times for unlawful automobiling and was held on bonds of $150 in each case for his appearance September 4.—Dr. Charles S. White, Washington, has been appointed deputy coroner by the District Commissioners, vice Dr. Larkin W. Glazebrook, resigned to become chief surgeon of the Washington Railway and Electric Company.

Studying Poliomyelitis.—The Medical Association of the District of Columbia at its meeting, August 23, 1910, appointed a committee to investigate and report on the status of epidemic anterior poliomyelitis in Washington. The disease has been prevalent in Washington during the summer, as it has in many other places, and this action is in line with that taken in other localities, to obtain all the information possible on its etiology, epidemiology, course, diagnosis, etc. The committee desires complete records of all cases occurring in the district in both private and hospital practice and to that end has prepared and sent out a circular letter explaining the object of the inquiry and requesting the cooperation of physicians in making the investigation complete. A question blank covering all angles of the disease accompanies the letter. The points to be covered in the inquiry are as follows:

1. Whether the secretions of the nose and throat are capable of carrying the disease, and, if so, when the period of infectivity begins and when it ends
2. Whether it is possible by any method to recognize the disease with certainty before the onset of paralysis, and, if so, how.
3. Whether it is possible by any method to identify abortive or atypical cases, and "carriers," if "carriers" exist, who present no clinical symptoms
4. Whether any intermediate host, such as insects or domestic animals, may be responsible for the transmission of the disease.

ILLINOIS

Chicago

Personal. Dr. Mortimer Frank has been appointed a member of the Chicago Public Library Board.—Drs. G. Paul Marquis and William L. Baum have gone to Europe.

Health League Organized. At a meeting held September 14 in Hull House theatre, the Chicago Health League, an organization to join all forces of the city, individual and municipal, in a cooperative effort for better sanitary living conditions, was formed. Dr. H. Cohen presided, the sanction of the department of health was given to the enterprise, and Health Commissioner Evans stated that an organization embodying all the functions of the numerous associations would tend to make more perfect sanitary conditions.

INDIANA

Public Comfort Station Dedicated.—The first public comfort station in the state was dedicated in Indianapolis at the corner of Wabash and Illinois streets.

Fraud Order Entered. The post office department is said to have entered a fraud order against Dr. Jacob W. Coblentz and the Compound Oxygen Company, Fort Wayne, who are alleged to have been exploiting a mixture called "Compound Oxygen."

Addition to Hospital.—Work has been begun on a large addition to the Methodist Episcopal Hospital, Indianapolis. The building will be four stories in height. Each floor will have a sun parlor. A roof garden will be added and 72 additional patients can be accommodated in the institution.

Association of Charities Meeting.—At the recent meeting of the State Association of Charities, Indianapolis was chosen as the next meeting place. Prof. U. G. Weatherby, of Indiana University, was elected president; Mrs. Wallace B. Campbell, Anderson, secretary, and Dr. Samuel E. Smith superintendent of the Eastern Hospital for the Insane, Richmond, chairman of the executive committee. One of the chief topics discussed was that of farm colonies for the insane.

Antituberculosis Work of the Red Cross.—The Indiana State Organization of the Red Cross gave a demonstration at the State Fair at Indianapolis last week of the work being done for the prevention and treatment of tuberculosis. A cottage was erected on the fair grounds and the latest methods of prevention and treatment of tuberculosis were demonstrated.

Tuberculosis Colony to be Established.—The St. Joseph County Hospital has appropriated $5,000 for the establishment of a detention hospital and $3,500 for a permanent fresh air colony for tuberculosis.

Personal.—Dr. Joel M. Partridge, South Bend, is reported to be seriously ill in Epworth Hospital, South Bend.——Dr. E. S. Waymire, a member of the house staff of the Methodist Episcopal Hospital, has been appointed house surgeon of the Wabash Railroad Hospital, Peru.——Drs. Geo. D. Kahlo, French Lick, and Chauncey W. Dowden, West Baden, have returned from Europe.——Dr. Earl Green, Muncie, has been elected Captain in the Medical Corps, Indiana National Guard.——Dr. Claude Lenox, Tell City, has gone to the Island of Molokai, to make a clinical study of leprosy.

KANSAS

Personal.—Dr. Elmer E. Haynes, Lewis, has been elected director for the Southwestern Division of the North American Esperanto Association.——Dr. George H. Brown, a practitioner of Chaunte for more than thirty-five years, has given up practice on account of ill health and has moved to Kansas City.——Dr. Franklin H. Redmond, Osawatomie, has resigned his position on the medical staff of the State Hospital.——Dr. Chilton W. McLaughlin, Kansas City, has been elected vice-president of the Bureau of Associated Medical Fraternities of the National Fraternal Congress.

LOUISIANA

New Home for Medical Society.—A permit has been issued for the erection of a two-story brick building, in New Orleans, to cost $12,000, for the use of the Orleans Parish Medical Society.

New Sanitarium to be Opened.—The Louisiana Tuberculosis Sanitarium, Hygeia, was opened for inspection September 18. A main building has been erected at a cost of $6,000, together with several cottages, and a large amount of land has been set aside for cultivation.

New President for State Board.—Dr. Oscar Dowling, Shreveport, has been elected president of the State Board of Health, vice Dr. D. Harvey Dillon, New Orleans, resigned, and assumed the duties of his office September 1. Dr. Dowling announces his plan for an educational health campaign to be initiated at once throughout the state.

City Health Board Organizes.—The New Orleans Board of Health held its monthly meeting September 13. Dr. William T. O'Reilly was reelected chairman of the Board, Dr. Paul E. Archinard, bacteriologist; Dr. Abraham L. Metz, chemist, and Dr. Paul J. Gelpi, Jr., inspector of communicable diseases. It is announced that Dr. William H. Robin will succeed the late Dr. Sidney Theard as secretary and treasurer of the board and that Dr. James A. Henderson will become a member of the board in Dr. Robin's place.

MARYLAND

Hospital News.—The trustees of Elkton Hospital have made an appeal for $7,000 to enlarge the hospital building.——The directors of Western Maryland Hospital, Cumberland, have purchased for $3,600, the residence opposite as a home for nurses. This will give ten more rooms for the use of patients.——A new nurses' home and central heating plant are to be added to the Frederick City Hospital.——About $300 was raised at a picture show and automobile carnival at Havre de Grace, September 14 toward a fund for the proposed hospital in that place.

Baltimore

Sailed for Europe.—Drs. Frank C. Ainley, J. W. Rosenfeld, Lawrence Selling, Caroline B. Towles, and Milton C. Winternitz, all of Johns Hopkins Hospital and Medical School, sailed for Europe September 14, to pursue clinical studies in Germany.

Hospital Reports.—The annual report of the Church Home and Infirmary shows an income of $73,075 with expenses of $71,100, leaving a balance in the treasury of $2,065.——The Maternité Hospital of the University of Maryland reports during the last year 201 confinements in the hospital and 865 in the outdoor department, giving an average of about thirty obstetric cases seen by each member of the graduating class.

MISSISSIPPI

Gift to Hospital.—Mrs. Lemuel P. Conner, Natchez, has donated twenty-four rolling chairs, one hand-lever tricycle, and one child's rolling chair to the Natchez Charity Hospital.

Health Exhibit at State Fair.—The State Board of Health is preparing an exhibit for the State fair this fall which will include drawings and photographs of insects responsible for the spread of typhoid and malarial fevers, as well as the hookworm parasite. Mosquitoes which are malarial carriers will be shown side by side with mosquitoes of the harmless variety, so that the public can learn to distinguish between them. Pamphlets on the cause, prevention and cure of diseases most prevalent in the state will be distributed to the public at the same time. A display of the National Tuberculosis Exhibit is also being arranged for in connection with the State Board demonstration. It is anticipated that a large number of the people who attend the State Fair may be reached in this way.

NEBRASKA

Personal.—Colonel John M. Bannister, Medical Corps, U. S. Army, has retired and will practice ophthalmology in Omaha.——Dr. Howard B. Hamilton, Ainsworth, Iowa, has moved to Omaha.

Medical Schools Open.—The John A. Creighton Medical College, Omaha, opened for its annual session, September 1.——The University of Nebraska, College of Medicine, Omaha, began its school year, September 13.

NEW JERSEY

School Medical Inspectors.—East Orange has a waiting list of physicians who are desirous of becoming medical examiners in the public schools, although it has been reported from some sections of the state that physicians are averse to accepting these appointments on account of the small fees allowed by the school inspection law.

Camden Health Board Tests Candy.—"Kelly" candy balls, a popular confection, are believed to have caused the illness of many children in Camden, but so far only three serious cases have developed. In these the infection first showed itself in blotches and later the tongue became greatly swollen, almost filling the mouth. Some of the candy has been sent to the State Health Board for analysis.

NEW YORK

The Tuberculosis Campaign.—The State Department of Health has assembled a large and comprehensive traveling tuberculosis exhibition, which has formed a very important feature in local campaigns. The work of the immediate future will consist of individual county campaigns, and the use of small tuberculosis exhibitions in many of the smaller towns throughout the state.

Tent Hospital Opened.—The temporary tuberculosis hospital was completed at the Monroe County Farm, Brighton, September 3, and two days later patients were received for treatment. The hospital consists of three apartments, a porch, a sleeping room, and a dining room. The sleeping room will accommodate eighteen patients. It is not expected that the new county hospital will be opened before next spring.

Personal.—Dr. Albert E. Leach of Mount Morris was seriously injured in a collision between his automobile and a locomotive on September 13.——Dr. E. S. McClellan, president of the Saranac Lake Board of Health, was struck by a passenger train, September 3, fracturing a rib, spraining a wrist, and sustaining numerous contusions. Notwithstanding the advanced age of Dr. McClellan, he is reported to be making a good recovery.

New York City

Personal.—Dr. Carlos F. MacDonald has returned from Europe.——Dr. Jacques C. Rushmore, Brooklyn, Dr. and Mrs. Isidore W. Held and Dr. and Mrs. Elon N. Carpenter have sailed for Europe.

Women to Work for Pure Milk. An organization has recently been formed by some women at the Hotel Astor, to be known as the International Pure Milk League. They intend to investigate all matters having a bearing on the production and price of pure wholesome milk. In New York City they will cooperate with the health department.

Better Care for School Children.—The common drinking cup has been banished from the public schools of this city. While great care has recently been exercised in regard to the teeth of the children not so much has been directed to caring for the eyes and this year the following instructions will be pasted in each book:

> Never read in bad light. Always hold your head up when you read. Your eyes are worth more than any book to you. Hold your book about fourteen inches from your face. Let the light come from behind or over your left shoulder. Your safety and success depend on your eyes: take care of them. Rest your eyes by looking away from the book every few moments. Avoid books or papers printed indistinctly or in small type. Never read with the sun shining directly on the book. Wash your eyes night and morning with pure water. Be sure that the light is clear and good. Never face the light in reading.

Dr. Maxwell, superintendent of public instruction, who has just returned from Europe, where he made a study of schools, found the German schools far in advance of ours as regards cleanliness and neatness of both rooms and pupils.

NORTH CAROLINA

Land Deeded to Hospital.—The town of Woolsey having lost its charter and become a part of the city of Asheville, the executors of the late Colonel Woolsey have deeded, without reservation, the town hall and adjoining lots to the Mission Hospital, Asheville.

Antituberculosis Association Organized. On August 23, the Edgecombe County Antituberculosis Association was organized in Tarboro. Dr. S. P. Bass, superintendent of the local board of health, presided, and at the election of officers was made secretary-treasurer of the association.

Personal.—Dr. William H. Moss, who has resided for the last seven years at Atlanta, Ga., has returned to his former home, Charlotte, and will resume practice there.——Dr. William T. Carstarphen, Kittrell, has been elected professor of physiology in Wake Forest Medical School.——Dr. Hubert A. Royster, Raleigh, has been unanimously elected president of the Chamber of Commerce of that city.

Hookworm Investigation. Dr. John A. Ferrall, assistant secretary of the State Board of Health for Hookworm, working under the Board and the Rockefeller Commission, has completed a careful canvass of the state, and has demonstrated the presence of hookworm in every county. The field is divided into districts and is being actively worked in order to familiarize both the profession and the public with the symptoms, results and treatment of the disorder. The commission is expending $20,000 a year in the state for this work.

OKLAHOMA

College Opens.—The Oklahoma City department of the State University Medical Society opened for its annual session, September 16, with an address by President A. Grant Evans of the university.

Medical Association to Meet.—The Central Oklahoma Medical Association, which was announced to meet in Chickasha in June last, will hold its meeting in that place October 4, as the guest of the Grady County Medical Association.

Personal. Dr. Joseph Hensley, Oklahoma City, has resigned as a member of the State Board of Medical Examiners.——Dr. Franklin P. Davis, Enid, secretary of the State Medical Board, has been elected superintendent of the State School for Feeble-Minded, Enid.

OREGON

Raise Money for Hospital. The first two days in September $5,000 was subscribed toward the hospital which the Sisters of Providence are planning to erect in Medford at a cost of $100,000.

State Association Meeting.—The thirty sixth annual meeting of the Oregon State Medical Association was held in Portland September 7-9. The following officers were elected: President, F. W. Vandyke, Grant's Pass; vice-presidents, Drs. Robert C. Yenney, Portland; Samuel T. Linklater, Hillsboro, and Robert E. Ringo, Pendleton; secretary, Dr. Calvin S. White, Portland; treasurer, Dr. Edna D. Timms, Portland (reelected), and councilors, Drs. William House and Noble W. Jones, Portland. The Baker County Medical Association was granted a charter by the association.

PENNSYLVANIA

Physicians of Three Counties Meet.—At the annual meeting of physicians of Dauphin, Lebanon and Lancaster counties, held at Pequa, August 25, the following officers were elected: President, Dr. Warren F. Klein; vice president, Dr. William M. Guilford, and secretary, Dr. William R. Roedel, all of Lebanon. Lebanon was decided on as the place of meeting for 1911

Individual Drinking Cups Used.—State Health Commissioner Dixon made public, September 14, the report given him by the Pennsylvania Railroad of the results of the campaign against the common drinking cup. In the Harrisburg Station alone, during the month of August, 3,700 individual drinking cups were used and at Lancaster, 1,540. The figures for other stations were: Parkersburg 200; Coatesville, 300; Downington, 195; Wayne, 579; Bryn Mawr, 643; Ardmore, 286, and Columbia 559.

Personal. Dr. Herbert S. VanKirk, McKeesport, sustained injuries to the foot by contact with the propeller shaft of a gasoline launch in which he was riding.——Dr. Edward R. Plank, Carlisle, has been reelected a member of the local board of health.——Dr. Elmer P. Norris, Newcastle, has been appointed surgeon of the Pennsylvania Brigade, Uniform Rank, K. of P.——Dr. John W. Luther, chief surgeon of the Palmerton Hospital, underwent operation for appendicitis at the University of Pennsylvania Hospital, September 8.

Philadelphia

Personal. Dr. Donnel Hughes returned from Europe September 13.——Dr. Charles H. Gardner has been elected surgeon-general of the Union Veterans' Legion.

Hospital Society Elects. At the June meeting of the Woman's Hospital Medical Society, the following officers were chosen to serve for the ensuing year: President, Dr. Mary Getty; vice president, Dr. Annie L. Connor; secretary, Dr. Margaret A. Warlaw, and treasurer, Dr. Mary T. Miller.

Fire in Tuberculosis Institute.—A fire which originated on the fourth floor of Henry Phipps Institute, August 29, did little damage but caused great excitement. Twenty-five patients were quickly removed from the building, which was saved by the speedy action of a volunteer fire brigade of physicians and nurses.

Asks Money for Home for Feeble-Minded.—A message has been sent to City Councils by Mayor Reyburn asking that body to appropriate $150,000 for the purchase of 120 acres of woodland as a site for the erection of a home for the indigent and feeble minded children. This land is on the Delaware River, immediately north of the Torresdale filtration plant.

English Ophthalmologist in Philadelphia. Dr. Sydney Stephenson, the noted English ophthalmologist, was the guest of honor at a number of entertainments while in this city. On September 13, Dr. Wendell Reber gave a luncheon; on September 11, Dr. W. Campbell Posey gave a luncheon at the University Club and in the evening he was the guest of honor at a dinner given by Drs. L. Webster Fox and S. Lewis Ziegler at the Union League Club.

New Factors in Tuberculosis Fight. The dedication exercises of the new home of the Jewish Consumptive Institute at Fourth and Water streets, began September 11, and continued throughout the week. The building is equipped with a dispensary for clinical service, a laboratory for microscopic research, and has a staff of physicians, and also one of nurses for visiting patients at their homes.——The Philadelphia Jewish Sanatorium for Consumptives has completed plans for a children's pavilion soon to be erected at the farm in Eaglesville.

Opening of University. The annual opening exercises of the University of Pennsylvania were held September 23. A new department of tropical medicine has been inaugurated. Among the new members of the faculty of the medical school are, Dr. R. M. Pearce, professor of pathology and research medicine; Dr. A. E. Taylor, professor of physiologic chemistry; Dr. A. N. Richards, professor of pharmacology, and Dr. David L. Edsall, professor of medicine; Dr. Allen J. Smith, formerly professor of pathology, becomes professor of tropical medicine and comparative pathology, with Dr. Damaso Rivas as assistant; Dr. James H. Austin has been appointed demonstrator of pathology and Dr. A. B. Eisenbrey, assistant in research medicine. Dr. Louis A. Duhring, who has held the chair of dermatology for many years and a professorship since 1876, has resigned.

The Tyson Portrait for the College of Physicians. The committee of arrangements for the dinner given to Dr. James Tyson on May 5 finds, after the payment of all bills, that it has a surplus that has been increased by an unsolicited and generous donation from one of Dr. Tyson's friends, who is not a physician. It desires to add to this surplus a sum sufficient to enable it to employ a competent artist to paint a portrait of Dr. Tyson to be presented to the College of Physicians, of which he is an ex-president, as a further and enduring evidence of the esteem in which he is held by the medical profession. In order to accomplish this, the committee invites contributions from all fellows of the college and especially from those who, from various causes, were unable to subscribe to the dinner. Checks should be drawn to the order of Dr. W. C. Posey, treasurer, and forwarded to him at 2049 Chestnut street.

SOUTH DAKOTA

Change in Medical Board.—Dr. Frank S. Howe, Deadwood, has been appointed a member of the State Board of Medical Examiners to fill the vacancy caused by the resignation of Dr. Hiram E. McNutt, Aberdeen.

State Association to Meet.—The twenty-ninth annual session of the South Dakota State Medical Association will be held in Hot Springs, September 27-29. On the evening of the second day, the society will be guests of Dr. Miller, governor of the Battle Mountain National Sanatorium.

Contracts for Sanatorium Building Let.—The contract has been let to a Rapid City firm of contractors for the following buildings for the South Dakota State Sanatorium for Tuberculosis, Custer: Pavilion for patients, cottage for dining room and kitchen, and superintendent's residence. The house already on the site is to be used for quarters for the help. It is expected that the buildings will be completed by December 1, and that patients will be admitted a month later.

TENNESSEE

Eastern Tennessee Physicians to Meet.—The annual meeting of the East Tennessee Medical Society will be held in Bristol, September 29 and 30.

Personal.—Dr. and Mrs. Edwin G. Wood, Nashville, have sailed for Europe, and on their return expect to locate in Toronto, Ont.——Dr. Isaac N. Frost, Memphis, has been appointed local medical examiner for the Panama Canal Commission.

College Opens.—The sixtieth annual session of the Medical Department of the University of Nashville and the University of Tennessee opened September 5. Dr. Robert O. Tucker, dean of the faculty, presided, and in his opening address mentioned that a laboratory of pharmacology, the only one in the state, had been equipped and placed in charge of Dr. Joseph P. Keller; that new equipment to the value of several thousand dollars had been purchased, and that forty new microscopes for the use of students had been ordered and delivered.

TEXAS

State Health Officers' Conference.—The State Health Board announces that the annual meeting of health officers of the state will be held in Houston, September 25-27.

Medical College Opening.—The Medical Department, University of Texas, Galveston, will be opened for its fall term, October 1. Dr. George F. Gracey has succeeded Dr. Arthur E. Austin as professor of chemistry, and Dr. George H. Lee has succeeded Dr. John F. Y. Paine as professor of obstetrics.

Personal.—Dr. Lane B. Kline has been appointed medical missionary to the Philippine Islands under the Foreign Missionary Society of the Christian church.——Dr. Otto Ehlinger, Lagrange, has been elected surgeon to the Agricultural and Mechanical College of Texas, College Station, vice Dr. Joseph B. Lay, resigned.——Dr. Rupes F. Minnock, city physician of Waco, has been appointed chairman of the city health department.——Dr. Frederick J. Combe has been appointed district surgeon for the St. Louis, Brownsville and Mexico Railway, vice Dr. Harry K. Loew, resigned, with headquarters at Brownsville.——Dr. A. Philo Howard, Houston, has been appointed surgeon for the Frisco lines east of Houston.

UTAH

State Association to Meet.—The annual meeting of the Utah State Medical Association will be held in Salt Lake City, October 3 and 4, under the presidency of Dr. Joseph S. Richards.

Personal.—Dr. Patrick S. Keogh of the Keogh-Hammond Hospital, Salt Lake City, who was seriously injured, September 5, is reported to be recovering.——Dr. Frederick Clift, for more than five years assistant physician at the State Mental Hospital, Provo, has resigned, and will assume a similar position in the Kaysville Hospital. Dr. Clift has also resigned as secretary-treasurer of the Utah County Medical Society, and has been succeeded by Dr. Horace G. Merrill.

School Medical Staff Appointed.—The Board of Education of Salt Lake City has nominated the following staff for inspection of children in the public schools: Chief of staff, Dr. Eugene W. Whitney; secretary, Dr. Theodore B. Beatty, secretary of the State Board of Health, and Drs. Samuel G. Paul, city physician, Samuel H. Allen, Stephen L. Richards, Clarence Snow, Jane W. Skolfield, Charles F. Wilcox, Charles I. Douglas, Parley P. Musser, Harry N. Mayo, Luella P. Miles and John F. Critchlow.

VIRGINIA

Medical College Opens.—The Medical College of Virginia opened for its annual session, September 11, with an address of welcome by Dr. Christopher Tompkins.

Personal.—Dr. Sparrell S. Gale, Roanoke, has gone to attend clinics at Rochester, Minn.——Dr. Powhatan S. Schenck has succeeded Dr. Harry R. Dupuy as health commissioner of Norfolk.——Dr. F. L. Banks, Madison county, one of the assistant physicians of the Central State Hospital, Petersburg, has resigned, and has been succeeded by Dr. B. L. Carleton of Essex county.

GENERAL NEWS

Coming Meetings.—The Southern Medical Association will hold its annual meeting in Nashville, November 8-10.——The Medical Association of the Southwest will hold its annual meeting in Wichita, Kan., October 11 and 12.——The American Association for the Study and Prevention of Infant Mortality will hold its annual meeting in Baltimore, November 9-11.

Meeting of French-Speaking Physicians.—At the fourth annual meeting of the Association of French-Speaking Physicians of North America, held in Sherbrooke, Quebec, August 24 and 25, the following officers were elected: Honorary presidents, Drs. J. J. Guerin, and A. Achille Foucher, Montreal; president, Dr. Henri Hervieux, Montreal; vice-presidents, Drs. J. M. Arthur Rousseau, Quebec; Joseph O. Ledoux, Sherbrooke; and Joseph C. H. Gauthier, St. Ephrem d'Upton; secretary, Dr. Joseph Gagnon, Montreal, and treasurer, Dr. Benjamin G. Bourgeois, Montreal.

Mississippi Valley Meeting.—At the thirty-sixth annual meeting of the Mississippi Valley Medical Association, held in Detroit, September 13 to 15, the following officers were elected: President, Dr. Robert H. Babcock, Chicago; vice-presidents, Drs. Arthur D. Holmes, Detroit, and Charles E. Barnett, Fort Wayne, Ind.; secretary, Dr. Henry Enos Tuley, Louisville (reelected); and treasurer, Dr. S. C. Stanton, Chicago (reelected). The selection of a place of meeting and of the chairman of the committee of arrangements for 1911 was left to the Executive Committee with power to act.

Electro-Therapeutists Meet.—The twentieth annual meeting of the American Electro-Therapeutic Association was held in Saratoga Springs, N. Y., September 13-15, and the following officers were elected: President, Dr. Frederick DeKraft, New York City; vice presidents, Drs. F. Howard Humphris, London, England, and Frank B. Granger, Boston; secretary, Dr. J. Willard Travell, New York City (re-elected); treasurer, Dr. Emil Henel, New York City; registrar, Dr. Frederick M. Law, New York City (reelected); and trustees, Drs. Charles R. Dickson, Toronto, Ont., and Thomas D. Crothers, Hartford, Conn.

Death Rate for 1909.—The death rate in the registration area of the United States for 1909, is lower than that for any previous year; the U. S. Census bulletin on mortality statistics gives the death rate, based on the provisionally estimated population for that year, as 15 per thousand, as against 15.4 for 1908. The bulletin states that it is evident that an era of low mortality has begun and cites the fact that the death rate in England and Wales for the same year was 14.5 and for London was 14. This latter fact demonstrates the fallacy of the idea that high death rates are necessarily found in large cities. The largest number of deaths returned for any month of 1909 was 70,093 for March, and the month having fewest deaths was June. The registration area comprised 55.5 per cent of the estimated population for that year.

Health of the Philippine Islands.—In the report of the Bureau of Health of the Philippine Islands for the quarter ended March 31, Dr. Victor G. Heiser, the director, notes a decrease of 1,025 Americans, 639 Spaniards, 333 other Europeans and 3,935 Chinese between 1907 and 1910, and an increase of 16,567 Philippinos and 132 of other nationalities, making a net increase of 10,867.—At the first biennial meeting of the Far-Eastern Association of Tropical Medicine, held in Manila, March 5 to 12 and in Baguio, March 13 and 14, work of especial value was reported in beriberi by Fraser, of the Straits Settlements and Aron, of the Philippine Medical School, showing that an outbreak of the disease in most cases is caused by the continued consumption of polished rice and that the disease is probably due to the deprivation of phosphorus which is polished away during the milling process. It is hoped that by prohibiting the use of polished rice in public institutions, the disease may be eradicated from such places.—Dr. Heiser also notes that the experiments with cancer vaccine made by Dr. Coca and P. K. Gilman, met with excellent preliminary results.—A description of the means by which the leprosy organism may be grown outside of the human body was presented and a paper was also presented by Dr. Strong on his experiences with the Ehrlich method of using arsenophenylglycin for the treatment of surra in horses.—There were reported 578 cases of cholera in the islands. In 1909 there were 2,221 and in 1908, 806 cases. More than 2,500,000 doses of quinin have been purchased and arrangements have been made for gratuitous distribution of the medicine in the malarious sections of the islands.—The outdoor treatment of tuberculosis in the mountains of Benguet has been commenced and a number of patients are now under treatment and making encouraging progress.—The tuberculosis camp at San Juan, near Manila, is being transformed into a suitable sanitary site and soon will be ready to receive patients.

MANILA LETTER

(From Our Regular Correspondent)

Manila, August 9, 1910.

Prevention of Tuberculosis in the Philippines

Another step forward is to be noted in the progress of preventive medicine in the Philippines. This is expressed in the organization of the National Society for the Study and Prevention of Tuberculosis in the Philippine Islands. In many respects one feels agreeably surprised to find that in this comparatively new country (that is from an American point of view), medicine and the medical sciences are so much to the front and are of such a high standard. From the central government's having a more direct control of sanitation and quarantine than is the case in America, and from the fact that good health is so extremely important and desirable in the tropics, this condition of affairs is in a measure to be expected among the Americans and Europeans. But in spite of this the popular support given to medical problems in general by the Americans and a great number of the Filipinos, and the good spirit in which these are received by the masses of the people, are rather gratifying. Many measures are more easily put into practice in the Philippine Islands than in America. The new National Society for the Study and Prevention of Tuberculosis in the Philippine Islands was organized and had its first meeting in the assembly room of the insular capitol building. It was presided over by the governor-general, and the U. S. Secretary of War, Hon. Jacob M. Dickinson, delivered an address. The organization is about equally well represented by Americans and Filipinos and many of the latter are on important committees. The first main object of the association is one of education and the protection of the people from the infectious cases.

The association starts its work under the most auspicious circumstances. It has the undivided support of the government, the medical profession, the laity, the church (both Protestant and Catholic) and the press. It was brought out at the first meeting that tuberculosis is general throughout the Philippines, that about 20 per cent. of the people of the islands are infected in one form or another, and that the annual financial loss due directly to tuberculosis is from $20,000,000 to $60,000,000. The annual death-rate in Manila from tuberculosis is from 5 to 6 per 1,000. In a country whose climate is never severe, where there is little abject poverty and plenty of fresh air this condition of affairs is hardly to be expected. Moreover, the houses are built so that they can be thrown wide open to both sun and air. But the filthy condition in which the people live, the low standard of living, with often insufficient food, and the decided overcrowding in the homes are taken to be the principal factors in the prevalence and spread of tuberculosis. It is even said that the condition in which the inhabitants sleep is directly responsible for the major part of the tuberculosis. From 6 to 20 people usually eat, live and sleep in 1 or 2 small rooms. At night the house is closed up as tight as it is possible to close a nipa house. All windows, doors and cracks are closed and a little kerosene lamp is kept burning all night to keep out the night air and to drive away the evil spirits. When there are one or two individuals with advanced tuberculosis sleeping among the others and spitting promiscuously about the place it is easy to see how the disease is spread. This overcrowding and the superstition which usually accompanies it promise to be the most difficult obstacles in the fight against tuberculosis.

Among the factors which are calculated not only to improve the general health of the people of the islands but also to aid materially in their education is to be mentioned and particularly emphasized, the work being accomplished by the Bureau of Public Works. This bureau is building good roads throughout the islands, trying to establish a sanitary water supply for every community and is draining many cholera-laden rice marshes and establishing sanitary irrigation. The attempt to give every barrio pure water is meeting with great success and widespread commendation. Unfortunately the capacity of the bureau in this regard is by no means as great as desirable. In the municipalities and larger towns of the provinces public artesian wells are being dug just as fast as possible. In the smaller towns deep wells enclosed and covered over with concrete encasements and fitted with pumps are being installed. These are usually near the center of the town and near the American schoolhouse. It is useless to add that the health conditions in these communities almost immediately improve. In those regions where cholera is endemic wells are especially urged. In some of these remote districts it almost seems like a liberal education when the native has learned to use and appreciate pure drinking water. To these cholera endemic regions the attention of the Bureau of Public Works has recently been directed. It is proposed to establish a system of irrigation to supplant the present system of stagnant irrigation, and to have it so arranged that the rice fields may be flooded and drained at will, either by a high tide in those districts along the coast, or in the hills from a river or reservoir.

Such is another phase of the American campaign of sanitation and irrigation in the Philippine Islands.

LONDON LETTER

(From Our Regular Correspondent)

London, September 10, 1910.

A Nurse's Mistake: The Danger of the Similarity of the Dram and the Ounce Symbols

It is curious that the danger of the similarity of the dram and the ounce symbols of pharmacy has not received more attention and that cases of poisoning from confounding them are not recorded. Probably the great difference in dose prevents a mistake on the part of the pharmacist, however bad the writing in a prescription. But in the case of nurses, or other persons ignorant of pharmacy, who may have to administer medicine, there is no such safeguard. The reality of the danger is shown by the following case. A woman, aged 45, was admitted into St. Thomas' Hospital suffering from exophthalmic goiter and advanced pulmonary tuberculosis. Her nurse was responsible for giving a sleeping draught of liquor morphinae hydrochloridi which was prescribed on the bed-card. The solution was kept in a poison chest in the ward, which was lighted by electricity when the nurse poured out the dose into a graduated measure. The amount ordered was a dram, but the nurse mistook the symbol for ounce and administered that dose. After five minutes she discovered her mistake and called the house physician. He could find no signs of morphin poisoning then or up to the time of the patient's death, and at the inquest he stated that the patient might have died at any time from disease. He did not think that the morphin accelerated death. The nurse said that the symbols for dram and ounce were very similar and that nurses were not trained as to the fatal doses of poisons; they had to find out for themselves. The coroner commented on the danger of having a number of closely-written lines containing the names of several poisons on a bed-card and on the danger of permitting nurses to measure poisons. The jury found that the woman died from the effects of disease accelerated by the shock following the treatment made necessary by the nurse's mistake, and recommended that directions for administering medicine should be written in plain English instead of "hieroglyphics."

Mortality Due to Wild Animals in India

The "Statistical Abstract" relating to British India, which has just been published, shows a decline in the deaths due to wild animals. Whereas in 1899 these amounted to 27,585, in 1908 they had fallen to 21,904. Of these deaths the snake is responsible for the overwhelming majority—24,619 in 1899 and 19,738 in 1908. There are curious fluctuations in the man-eating propensities of the tiger. In 1908 he killed 1,908 persons: in 1906, 690, and in 1901, 1,171. The killing of cattle by wild animals is a fairly constant factor—98,687 in 1899 and 98,307 in 1908. In these figures the leopard is an easy first and the tiger a good second. These animals alone ate over 71,000 cattle while wolves accounted for another 10,000. On the other side of the account there is the satisfactory total of 17,296 wild animals and 70,494 snakes killed in 1908.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 9, 1910.

Liquor Dealers Protest Against Temperance Agitation

A committee representing the organized restaurant and saloon keepers has recently presented a protest to the government against the "campaign being waged in the name of hygiene by the temperance societies." This protest against the antialcohol crusade is eloquent testimony to the disregard for public health interests on the part of the liquor dealers and should suffice to discredit certain other demands they are making at this time.

Proposed Changes in the Outlay for Public Charities

Since 1905, when the law went into effect which provided for old age pensions, it has been felt more and more that it would be better policy to do more for the welfare of the children who are some day to become the vital force of the nation. At present the city of Paris, for example, expends yearly scarcely two million dollars for all its maternities, children's hospitals and asylums, milk stations, day nurseries, fresh-air schools, etc. On the other hand, for the aged and the insane it expends over ten millions. This lack of proportion between the provisions for the rising and the declining generations is particularly shocking on account of the prevailing low birth-rate, which renders it peculiarly imperative to save as many as possible of the children that are born and to reduce the number of stillbirths by proper care of pregnant women. These ideas have inspired M. A. Rendu, a member of the city council and at one time president of the board in charge of the public charities, the *Assistance Publique*, to propose in the council a measure designed to divert more of the funds to the care of young girls, mothers, infants and children, instead of devoting them so predominantly to the care of the aged and the insane. His plan does not contemplate depriving the aged and the insane of their support, but it proposes to board them out in rural districts. All the aged who were not born in Paris and have not founded a family there would be removed to their native province and supported there either in local asylums or with relatives, their pension of 30 francs ($6) a month to be forwarded regularly to them. This would relieve the Paris asylums where most are now housed and where it costs for each over $160 a year; only those too infirm to be moved or without any relatives would be retained there. The same plan could be followed with the insane, whose support in the Paris asylums costs over $200 a year apiece. Rendu believes that large sums would thus be saved; this amount would then be available for increasing the number and scope of the institutions and agencies for aiding pregnant women and mothers, infants and older children; that is, the elements on which the future of the race depends and which at present rank second or third in the outlay for public charities.

Contract Practice in France

The lodges and sick benefit societies have multiplied so rapidly in France that now they list about five million members. Unfortunately this development has taken place in large part at the expense of the medical profession. The lodges assume the expense of medical attendance for their members and contract with certain physicians at a very low rate. Many young doctors just entering on practice contract with the societies in this way, hoping that the number of patients will make up for the smallness of the individual fees. Some physicians are even complaisant enough to accept the deplorable system of contracting to attend the members for a certain lump sum, determined in advance, representing a certain small sum per member per year. The result of this contract work is that physicians may receive $480 a year and have to make 4,000 calls for this, which is only a little over ten cents a visit. This situation is particularly distressing at present, when physicians in various parts of the country, and especially at Paris, are striving to raise their fees. The lodges and benefit societies are also beginning to see the folly of attempting to estimate in advance the demands that will be made on the lodge doctor, and the members are beginning to realize that at a ten-cent rate the physician may be inclined to neglect them for his more remunerative patients. The French law compels the societies of this kind to keep a certain proportion of their funds in reserve so that they are unable to dispose of them at will, but the members' fees might be raised a little, enough to do some justice to their medical attendants. Another point on which the profession and the lodges are disputing is that the members should not be restricted in their choice of a physician but should be entitled to call on any medical man; this "free choice" would distribute the work more evenly among the local physicians while guaranteeing better their absolute independence. The lodges state that they cannot permit this free choice without a certain guarantee and right of control to eliminate abuses. A solution of the difficulty has been proposed by M. Emile Loubet, the former president of France, who is much interested in the development of the mutual aid societies; he proposes the organization of boards of arbitration at Paris and in the various provinces to settle all disputes that may arise in the course of contract practice. Conditions at present are threatening the welfare both of the physicians and of the societies.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 2, 1910.

Marriage Statistics of the German Empire

If the marriageable age for males is placed at 21 as the lower limit and 70 as the upper, there were on December 1, 1900, when the last official census was taken 14,045,033 males of marriageable age. Of these 4,044,206 were single, 9,456,241 married, 544,586 widowed or separated. There were therefore at that time in Germany 4,588,792 marriageable males. In the course of ten years from 1899 to 1908, 4,803,399 marriages were celebrated, 480,400 males, on the average being married yearly, i. e., 1,047 for every 10,000 marriageable men.

If we place the begining of marriageable age for women at the end of the fourteenth year and the upper limit at 70, there were on December 1, 1900, in Germany 18,540,081 female persons of marriageable age; of these 7,105,906 were single, 9,622,246 married, 1,811,929 widowed or separated. There were therefore in Germany 8,917,835 marriageable women. In the decennium from 1899 to 1908, 480,400 women on the average married yearly, or 539 for every 10,000 marriageable women. In 1899 the number of marriages in the German empire was 471,519. The number of marriages sank in 1902 to 457,208, and has risen from that time to 1907. Last year it amounted to 503,964. In the last five years ending in 1905 the number of marriages had risen 10.3 per cent. while the population and probably also the number of marriageable persons had risen in the same time only 7.6 per cent. In 1908 the figure had again sunk to 500,620.

Tuberculosis in Bavaria

At one of the latest sessions of the Munich medical society, Professor Dieudonné announced that the mortality from tuberculosis in Bavaria had materially improved. In general the mortality of infectious diseases in Bavaria has markedly diminished in the last few years, from 77.7 per cent. in the year 1877 to 38.4 per cent. for the year 1905, or reckoned for 10,000 inhabitants, from 270 to 187. But the records show that among the religious sisterhoods (*die barmherzigen Schwestern*), who are mostly engaged in nursing, 1,360 or 56.2 per cent. died of tuberculosis in the years from 1899 to 1908. As to the methods of infection by tuberculosis, a number of cases have been observed in Bavaria in which children lived for a long time exclusively on raw milk from cows with tuberculosis of the udder without becoming sick. In one case the calf of a cow with diseased udder perished from bovine tuberculosis (*Perlsucht*) while two persons who drank the same milk at the same time remained healthy. As to the question of inhalation and intestinal tuberculosis, the result of experiments has shown that a primary tuberculosis from feeding may be brought about, but that a much larger number of bacilli are necessary than in the case of infection by inhalation. The number of bacilli necessary to produce disease by inhalation and by feeding stand in the relation of 62 to 6,000,000. The bovine type was never found in the sputum of adults.

Marriages

David I. Macht, M.D., to Miss Sarah Adler, both of Baltimore, September 5.

John Charles Falk, M.D., to Miss Ida Curtman, both of St. Louis, September 8.

Thomas P. Lynam, M.D., to Miss Mary Ellen Boyle, both of Chicago, September 14.

Fremont C. Knight, M.D., Waukegan, Ill., to Miss Iva M. Fischer of Chicago, September 6.

John E. McArdle, M.D., to Miss Henrietta Grimme, both of Fort Wayne, Ind., September 6 .

Ranulph Hudston, M.D., to Miss Ethel Jean Simpson, both of Denver, Colo., September 7.

Clyde Whitney Dick, M.D., Wilcoe, W. Va., to Miss Mattie Ellen Selfe of Tazewell, Va., July 14.

Angelo John Smith, M.D., to Miss Lucy Stuart Bradley, both of Yonkers, N. Y., September 8.

William H. Thearle, M.D., U. S. Army, to Miss Bertha Mills of Waynesboro, Pa., September 5.

William J. Wills, M.D., Sedalia, Mo., to Miss Lulu E. Nichols of Springfield, Mo., September 1.

George William Miller, M.D., Norristown, Pa., to Miss Mary E. Platt of Philadelphia, September 10.

Julius Henry Powers, M.D., Saginaw, Mich., to Miss Lenore M. Beattie of Ionia, Mich., September 5.

Ira Norman Gates, M.D., Panama, Canal Zone, to Miss Bessie Annis of Kennewick, Wash., August 30.

George Bruce Lemmon, M.D., Springfield, Mo., to Miss Mary Eugenia Harrell of Pasadena, Cal., September 8.

Jacob Wheeler Bird, M.D., Sandy Springs, Md., to Miss Mary McIntire Wilson of Centreville, Md., September 7.

Clinton Kitto Smith, M.D., Alamosa, Colo., to Miss Jane Esther Thayer of Evanston, Ill., in St. Louis, September 7.

Deaths

Edward Ely Van De Warker, M.D. Albany (N. Y.) Medical College, 1863; chairman of the section on obstetrics and diseases of women of the American Medical Association in 1887; formerly assistant surgeon and surgeon of the One Hundred and Sixty-second New York Volunteer Infantry; surgeon in chief of the Third Brigade First Division Nineteenth Army Corps; medical director of the First Provisional Division of Georgia, and chief medical officer of the District of the Oemulgee during the Civil War; formerly president of the Onondaga County Medical Society, Central New York Medical Society, Syracuse Medical Society, and Syracuse Academy of Medicine; a member of the American Gynecological Association; surgeon to the Central New York Hospital; senior surgeon to the Woman's and Children's Hospital, and consulting surgeon to St. Anne's Maternity Hospital; formerly school commissioner; died at his home in Syracuse, September 6, aged 68.

Marcus Rosenwasser, M.D. University of Würzburg, Germany, 1867; a member of the American Medical Association; formerly professor of diseases of women in Wooster University Medical College, and afterwards at the College of Physicians and Surgeons, Cleveland; once vice-president of the American Association of Obstetricians and Gynecologists; gynecologist to the Cleveland General and Mount Sinai hospitals; consulting gynecologist to the City Hospital, and physician to the Jewish Orphan Asylum; during 1901 and 1902, president of the local board of health; died at his home in Cleveland, September 4, from angina pectoris, aged 64. At the funeral services, held September 6, Drs. George W. Crile, John H. Lowman, Charles F. Hoover, and Charles B. Parker, former colleagues of Dr. Rossenwasser, acted as honorary pallbearers.

Simeon Starkweather French, M.D. Geneva (N. Y.) Medical College, 1842; for many years a member of the American Medical Association; formerly president of the Michigan State Medical Society, Calhoun County Medical Society, Battle Creek Academy of Medicine, and Kalamazoo Academy of Medicine; for three years surgeon of volunteers during the Civil War; local surgeon of the Grand Trunk Railroad for eighteen years; for twelve years health officer; two terms mayor, one term alderman, two years superintendent of schools, eight years inspector of schools, and four years supervisor of Battle Creek, Mich., who is said to have presented the resolutions which resulted in the "Under the Oaks" meeting at the organization of the Republican party; died at his home in Battle Creek, September 10, aged 94.

Sidney L. Theard, M.D. Tulane University, New Orleans, 1891; a member of the American Medical Association; in 1898 appointed sanitary officer of the State Board of Health, and a few months later made secretary, sanitary officer and treasurer of the New Orleans City Board of Health, holding these offices up to the time of his death; died at his home September 5, from paralysis, aged 42. The funeral was attended by more than fifty members of the parish medical society, and the mortuary committee of that association acted as honorary pallbearers.

James Donnelly, M.D. University of Michigan, Ann Arbor, 1883; a member of the American Medical Association; associate professor of surgery in and dean of Toledo Medical College; local surgeon in Toledo for the Lake Shore and Michigan Southern Railway, and the city fire department; a member of the school board for several terms; United States pension examiner for the district; died in St. Vincent's Hospital, Toledo, September 4, from typhoid fever, aged 53.

Adam B. Dundor, M.D. Jefferson Medical College, 1864; a member of the American Medical Association, and American Academy of Medicine; for about twenty five years a member of the board of health of Reading, Pa., and president of the board for nine years; one of the founders and a member of the staff of the dispensary and Reading Hospital for nearly a quarter of a century; died at his home in Reading, September 3, from paralysis, aged 72.

Emory M. Lyon, M.D. University of Vermont, Burlington, 1862; a member of the Medical Society of the State of New York, and formerly president, secretary, and treasurer of the Clinton County Medical Society; health officer of Plattsburg, a member of the pension board for eighteen years, and surgeon for the Home for the Friendless; a veteran of the Civil War; died at his home in Plattsburg, September 7, aged 74.

Stephen Albert Russell, M.D. University of Buffalo (N. Y.) 1871; a member of the American Medical Association; city physician and health officer and alderman of Fulton, N. Y.; attending physician to the City Hospital, and consulting physician to the Oswego County Hospital; local surgeon for the New York, Ontario and Western Railroad; died at the Lee Memorial Hospital, Fulton, September 5, from cerebral edema, aged 60.

John Troutman, M.D. Missouri Medical College, St. Louis, 1877; of Kansas City, Kan.; a member of the American Medical Association, and American Electrotherapeutic Association; a member of the medical staff of Bethany Hospital, Kansas City, Kan.; professor of electrotherapeutics in the Kansas State University; died at his old home in Wooster, Ohio, September 4, after a surgical operation, aged 65.

Francis Hart Stuart, M.D. Long Island College Hospital, Brooklyn, 1873; a member of the American Medical Association and American Academy of Medicine; formerly president of the Brooklyn Pathological Society; obstetrician to the Brooklyn Hospital; died at his home in that city, September 4, from heart disease, aged 64.

J. A. Gray, M.D. Toronto School of Medicine, 1872; for many years coroner for the county of Peterboro, Ont., and local surgeon for the Canadian Pacific Railway at Peterboro; fell from a window of his house, June 11, and sustained injuries from which he died in the Nicholls Hospital, June 14.

Joseph Orpheus Lieuellen, M.D. Starling Medical College, Columbus, Ohio, 1898; a member of the American Medical Association; died at his home in Maineville, Ohio, September 5, from the effects of a gunshot wound of the head, self inflicted it is believed while despondent on account of illness, aged 36.

William Henry Path Evatt, L.R.C.S., Ireland, 1879; of Chicago; a member of the Illinois State Medical Society; while walking on the tracks of the Metropolitan Elevated Railroad, September 12, was struck by a train and received injuries from which he died a few hours later, aged 55.

Sturley C. Fetzer, M.D. Western Pennsylvania Medical College, Pittsburg, 1901; of Sheridan, Pa.; a member of the Chartiers Valley Medical Society; died in the Allegheny General Hospital, September 3, from appendicitis for which four operations had been performed, aged 28

Louis Edmonds, M.D. Harvard Medical School, 1893; of Boston; a member of the American Medical Association; superintendent of Penikese Hospital for Lepers for more than two years; died in the City Hospital, Boston, September 1, from cancer of the stomach, aged 64.

John Conway Rogers, M.D. Harvard Medical School, 1864; vice-president of the Washington County (Maine) Medical Association; assistant surgeon in the army for one year during the Civil War; died at his home in Pembroke, August 22, from heart disease, aged 75.

William Robert Wall, (license, Iowa, 1886); a member of the Iowa State Medical Society; a veteran of the Mexican and Civil wars; for more than forty years a practitioner of Bentonville, Iowa; died suddenly at his home, September 4, from heart disease, aged 88.

Emil Wahl, M.D. University of Leipsic, Germany, 1884; a member of the American Medical Association; one of the best known practitioners of Milwaukee; accidentally shot and killed himself in a boat while hunting at Muskego Lake, September, 9, aged 48.

Lydia Sayre Hasbrouck, M.D. New York Hygieo-Therapeutic College, New York City; for nearly half a century a practitioner; a lecturer and pioneer in the dress-reform movement; died at her home in Middletown, N. Y., August 27, aged 83.

John W. Dashiell, M.D. University of Maryland, Baltimore, 1843; one of the oldest and most widely known practitioners of Somerset county, Md.; for several years town commissioner of Princess Anne; died at his home in that town, September 4, aged 93.

John Edmond Faber, M.D. Washington University, St. Louis; 1869; a member of the Missouri State Medical Association; while working in the laboratory of his son in St. Louis, September 5, died suddenly from cerebral hemorrhage, aged 78.

Stuart Arthur Ashton, M.D. University College of Medicine, Richmond, Va., 1907; of Colonial Beach, Va.; a member of the Medical Society of Virginia; died in Garfield Hospital, Washington, September 9, from anterior poliomyelitis, aged 25.

James Henry McInerny, M.D. Yale University, New Haven, 1891 of New York City; assistant surgeon of the New York General Memorial Hospital; died at his summer home in Mount Vernon, September 5, from heart disease, aged 50.

Nathaniel T. Dulaney, M.D. Jefferson Medical College, 1856; formerly president of the Tennessee State Medical Association; and for six years a member of the state legislature; died at his home in Bristol, September 3, aged 76.

Morris Clifford Hutton, M.D. University of Kansas, Kansas City, 1906; of Kansas City, Kan.; physician to the Swift Packing Company; died from gangrene at the Bell Memorial Hospital, Rosedale, Kan., August 31, aged 26.

John P. Malcolm (license, Delaware); for thirty-five years a practitioner of Wilmington; at one time coroner's physician and for several terms city vaccine physician; died at his home, September 7, from paralysis, aged 61.

William Howell Drake, M.D. Victoria College, Coburg, Ont., 1857; a member of the College of Physicians and Surgeons of Ontario; died at his home in Windsor, September 6, from arteriosclerosis, aged 78.

James A. Atkisson, M.D. University of Nashville, 1880; a member of the American Medical Association; local surgeon at Morehouse, Mo., for the Frisco System; died at his home, September 1, aged 54.

William M Yater, M.D. Tulane University, New Orleans, 1885, a member of the State Medical Association of Texas; died suddenly at his home in Cleburne, September 9, from heart disease aged 47.

Homer K Castle, M D. Eclectic Medical University, Kansas City Mo., 1903; a practitioner for twelve years; died at his home in Kansas City, September 5, from heart disease, aged 61

Sarah Elizabeth Wilder, M.D. Boston University School of Medicine, 1879, of Dorchester, Boston; died recently at her summer home in Agawam, Mass., from cerebral hemorrhage, aged 74

Edward D. Yeates, M.D. Tulane University, New Orleans, 1870 of Starkville, Miss.; a Confederate veteran; died at the home of his son in Grenada, Miss., September 1, aged 65.

Ferdinand A. Steffen, M.D University of Greifswald, Germany 1882, died at his home in College Point, Long Island, N. Y. September 9, from cerebral hemorrhage, aged 56.

William Thomas Evans, M.D. Tulane University, New Orleans 1871, a member of the State Medical Association of Texas; died at his home in Jewett May 28, aged 69.

Pharmacology

STRYCHNIN ARSENATE REFUSED RECOGNITION

Report of the Council on Pharmacy and Chemistry

The Council, after considering the advisability of admitting to New and Nonofficial Remedies the unofficial, non-proprietary preparation, strychnin arsenate, decided not to admit it, and authorized publication of the following report.

W. A. PUCKNER, Secretary.

Strychnin arsenate is a compound of the alkaloid strychnin with arsenic acid, containing between 68 and 70 per cent. of anhydrous strychnin. It is a white, crystalline powder of small, colorless or faintly yellowish, transparent or slightly opaque prisms, or in white acicular crystals, odorless but extremely bitter. It is slowly soluble in about 20 parts of water at 25 C., more readily soluble in hot water, slightly soluble in alcohol, insoluble in chloroform or ether.

After considering the properties of this substance the Council voted not to accept it for N. N. R., as there is no sufficient reason for combining two powerful remedies in such form. As a chemical combination there appears to be no objection to it, as the compound is sufficiently definite, but the readiness with which the salt separates into its constituents, strychnin and arsenic acid, indicates that it can present no advantages over a mixture of its components so far as pharmacologic action and therapeutic use are concerned. On the other hand, it is both unscientific and irrational to prescribe two such energetic remedies having quite different indications under such a fixed form that the efficient dose of one may involve an unsuitable and perhaps dangerous dose of the other.

If a dose of strychnin arsenate equivalent to 0.002 gm. (1/32 grain) of strychnin sulphate is given, the patient would receive about 0.00063 gm. (1/100 grain) of arsenic acid, which is about one-fifth the official dose. On the other hand, strychnin arsenate cannot be used to bring out the therapeutic effects of arsenic in cases in which it is necessary to push the latter remedy, because this would necessitate the giving of dangerous doses of strychnin. A much more appropriate and scientific procedure would be to prescribe the medicines separately or in an extemporaneous pill or solution in which the proportions of the two ingredients could be changed from time to time according to the varying indications in the particular case.

FRUITOLA

Olive Oil and Seidlitz Powders as a Fake Gallstone Cure

The quack and the exploiter of "patent medicines" revel in the spectacular; any unusual property possessed by a drug, whether as a physical characteristic or in pharmacologic action, is quickly utilized by the nostrum vender for his financial profit.

For years an enterprising faker who advertised a "cure" for Bright's disease sent out small vials—free—containing a weak solution of silver nitrate. The victim was instructed to make a "uranalysis" by adding the contents of the vial to a small quantity of his urine. "If a white precipitate follows," wrote the quack, "you have Bright's disease!" As the chlorids naturally present in every urine caused a precipitate the layman was duly impressed with his dangerous (?) condition and bought the "cure."

Another bright mind took advantage of the physical properties of an acidulated solution of quinin sulphate. This solution, as all physicians know, has a very decided fluorescence, and the somewhat uncommon appearance was ascribed by the medical faker to radium. This "radium solution" was sold at an outrageously high price as a "sure cure" for cancer.

For many years the kidney disease "curer" has taken advantage of the power of methylene blue to color the urine of the person taking it, and no doubt thousands of laymen ignorant of this property have been frightened by its use into believing that the integrity of their kidneys was seriously impaired.

Of more recent origin is what may be called the "fake gallstone trick" which is now being industriously worked in many parts of the country. Originally operated by traveling fakers, it has lately been adapted to the exigencies of the "patent medicine" industry. The principle on which this fake depends is the well-known fact that giving a patient massive doses of some bland oil will result in the passing of soapy concretions. These lumps, greenish in color and of varying sizes, are easily mistaken by the layman for "gallstones."

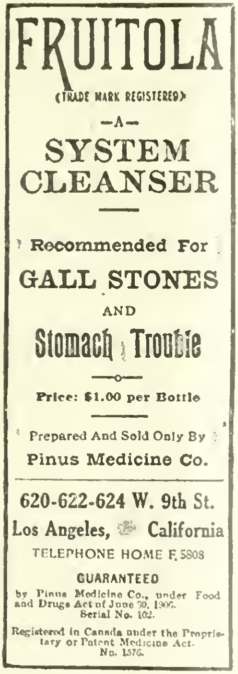
There are several modifications of this "gallstone cure" fake, but the most widely advertised is that sold by the Pinus Medicine Company of Los Angeles under the name "Fruitola." It is usually exploited in connection with another nostrum—"Traxo"—put out by the same concern. Many physicians have written to THE JOURNAL telling the experiences of some of their patients who had taken "Fruitola" for the "removal of gallstones." The following from Dr. James C. Gill of Chicago is typical:

> "I am sending an advertisement of a 'patent medicine' called 'Fruitola,' which has been extensively advertised for some time. The fraudulent character is so evident that it is a great imposition on the public to allow such a fraud to be perpetrated. I am also sending what they claim to be able to rid the system of, namely, 'gallstones' (?).
>
> "One of my patients, a young woman, took the contents of this bottle, as well as the powders which accompany the liquid as part of the treatment. Several hours after taking the medicine there were several painful evacuations, in which there appeared a large number, probably two dozen or more, small greenish masses about the size of an ordinary garden pea. The young woman was very much frightened, thinking that they were really gallstones and that she was in a serious condition."

Of course the "gallstones" were simply soapy concretions that usually follow the administration of massive doses of oil.

"Fruitola" consists of an 8-ounce bottle of oil and six powders, four of the latter being in blue papers and two in white. The following directions are given on the bottle:

> "At 3 o'clock in the afternoon, dissolve the contents of two blue papers in a half glass of water, add the contents of one white paper and drink. At bed-time squeeze a little lemon juice into a glass, pour in the contents of the bottle, squeeze a little lemon on top and drink at once. Keep a little lemon near in case it shows a tendency to rise.
>
> "As early as possible in the morning take the rest of the powders. When the medicine operates use a vessel partly filled with water, pour in more water or stir the contents, and the gallstones will float on top in the shape of dark green lumps, varying in size from a pin head to a hickory nut, in bad cases even larger."


FRUITOLA
(TRADE MARK REGISTERED)
—A—
SYSTEM
CLEANSER

Recommended For
GALL STONES
AND
Stomach Trouble

Price: $1.00 per Bottle

Prepared And Sold Only By
Pinus Medicine Co.

620-622-624 W. 9th St.
Los Angeles, California
TELEPHONE HOME F 5808

GUARANTEED
by Pinus Medicine Co., under Food and Drugs Act of June 30, 1906.
Serial No. 102.

Registered in Canada under the Proprietary or Patent Medicine Act.
No. 1576.

Photographic reproduction of label from a bottle of "Fruitola."

To determine the character of the oil and the composition of the powders an analysis of "Fruitola" was made in the Association laboratory. The chemists' report follows:

LABORATORY REPORT

An original package of "Fruitola" purchased on the open market was submitted to the Association laboratory for examination. The accompanying labels [One of these labels is reproduced on this page.—ED.] appeared on the carton and bottle.

Other labels describing the use of the preparation were also on the bottle. The carton contained besides the bottle, two sets of powders, one set wrapped in white, and the other in blue paper.

The bottle contained a transparent amber-colored oil, having an odor of anise and a bland taste. From its physical properties and chemical composition[1] it was concluded that the substance was olive oil, flavored with a trace of anise.

The powder in the white papers was subjected to chemical tests,[2] and found to be tartaric acid. The identity of the constituents and their quantitative estimation indicated that the powder in the blue papers was a mixture of approximately one part sodium bicarbonate and two parts Rochelle salts—sodium potassium tartrate.

From the foregoing it is concluded that the liquid portion of "Fruitola" is olive oil flavored with anise while the powders accompanying the liquid are the well known seidlitz powders.

CONCLUSION

Here, then, we have the fake in a nutshell: Olive oil and seidlitz powders. That this combination will produce a good imitation of what the average man imagines to be gallstones is undoubtedly a fact. A thorough cleansing of the intestinal tract by means of laxatives not too drastic in action will produce a temporary feeling of well-being in a person who is chronically constipated, and this fact alone should make it easy for the exploiters of "Fruitola" to get all the "testimonials" they want.

That persons should be mulcted of a dollar, however, for the privilege of having their bowels moved and being made into a peripatetic soap factory may seem humorous but it is an outrage nevertheless. To such as wish to make the experiment—and it is one that is by no means free from danger in all cases—we would suggest the following procedure as equally efficacious and much less expensive: Buy 20 cents' worth of olive oil and a nickel's worth of seidlitz powders. You then have all the paraphernalia necessary for the production of home made gallstones. All that is required is to take the oil and powders and then practice watchful expectancy. The expected will happen.

---

[1] The oil was insoluble in alcohol but soluble in chloroform. The saponification number of the oil was found to be 190.6. This with the other properties of the oil indicated that it was olive or cotton-seed oil. Identity tests were made indicating the absence of cotton-seed oil and suggesting olive oil. As a further check the iodin absorption number was measured and found to be practically that of olive oil.

[2] The contents of the powders in the white papers weighed 4 gm. each. The substance was white in color, odorless with an acid taste and readily soluble in water. Ignition caused decomposition and combustion of the powder and an odor of burnt sugar. The aqueous solution of the powder was acid in reaction and appeared to be free from metallic elements. These properties suggested some solid organic acid. The substance responded to identity tests for tartaric acid. As a verification, quantitative estimations were made and the substance found to be tartaric acid.

[3] The contents of the powders in the blue papers weighed 8 gm. each. The substance was found to be a white odorless powder soluble in water and having at first a cooling and then a bitter salty taste. The aqueous solution of the powder effervesced on the addition of acid. Qualitative tests indicated the presence of sodium, potassium, carbonate and tartrate. The presence of other metals or acid radicles could not be demonstrated. The test indicated the powder to be a mixture of a bicarbonate, probably sodium bicarbonate, and a tartrate, probably sodium potassium tartrate. Titration of the aqueous solution of this powder required an amount of standard acid equivalent to approximately 32 per cent. sodium bicarbonate. To check this estimation and also to determine whether or not the other constituents were present in the proportions to form sodium potassium tartrate, the substance was converted to carbonate by charring, the char leached, and the aqueous solution titrated with standard acid. The quantity of standard acid required in the direct titration was subtracted from the total acid used, leaving the quantity of acid required to neutralize the carbonates formed by charring. The acid thus required for the carbonate corresponded to approximately 68 per cent. sodium potassium tartrate. Showing the powders in the blue papers to be a mixture of one part sodium bicarbonate and two parts sodium potassium tartrate.

ODOL

A correspondent asks for the formula of "Odol," a somewhat expensive English toothwash. It is advertised to an enormous extent in Great Britain, but has not as yet been given any great degree of publicity in this country. It has been claimed that the preparation is a by-product of the salol factories, though this has been denied. Formulas representing the results of various analyses have appeared in German pharmaceutical journals, and the following, by Aufrecht is from Hager's *Handbuch der Pharmaceutischen Praxis*, Ergänzungsband, Ed. 1908.

Alcohol	89.00 per cent
Water	8.00 per cent.
Menthol	2.00 per cent
Saccharin	0.05 per cent.
Peppermint oil	0.05 per cent.
Clove oil	0.10 per cent.
Salol-like substance	0.05 per cent.

Correspondence

Hexamethylenamin in Poliomyelitis

To the Editor:—The article in The Journal, September 17, has crystallized my intention to send you a suggestion in regard to the treatment of the epidemic anterior poliomyelitis. There can no longer be any question as to the nature of this disease, undoubtedly an infection localizing in the spinal canal. The well established fact that hexamethylenamin is excreted or secreted in the cerebrospinal fluid suggests its possible use in this disease.

Within the past few weeks I have seen two instances of this disease, shortly after the onset of paralytic phenomena and have given large doses of urotropin (hexamethylenamin). In neither instance did the paralysis extend and both patients made good recoveries.

It is superfluous to say that nothing can be concluded from such an experience, but in view of our desperate helplessness in such cases, a drug, backed as hexamethylenamin is by some experimental work, may be tried.

Robert B. Preble, Chicago.

Medical Bibliography

To the Editor: Medical bibliography is a subject of which the average practitioner knows little, and cares less. Yet with the constantly increasing mass of medical literature, and the growing army of investigators, some familiarity with what is being done in medical science is highly desirable to every intelligent member of the profession, and indispensable to any one who is attempting to do original work. The lack of this knowledge has often led to much that is both laughable and tragic in the breathless announcement, by men whose enthusiasm has outrun their learning, of facts already old and well known.

We must first of all realize that the living, growing body of medical science is in its periodical literature, and that text-books are only imperfect abstracts or summaries made for convenience, by which some acquaintance with certain facts is made possible for those to whom the more extended sources of information are inaccessible or to whom more detailed knowledge is unnecessary. Medical literature at large, that is, in what may be called its raw state, contains a large mass of very diverse material; some of it no more than a gathering together of commonplaces; some of it a valuable generalization from known facts, and some of it, first hand additions to scientific knowledge. A reference is usually made for the purpose of giving the authority for some statement or a series of references, forming a "bibliography," for the purpose of giving the sources from which the present state of knowledge about a given subject has been derived. The proper work of the bibliographer is to digest the raw material of medical literature and to eliminate that which is irrelevant and useless so that in the end his "bibliography" may be complete in all essential particulars, carrying no waste matter to confuse future students and squander their time.

In order that this may be done most effectively, and with the utmost economy in labor and time both to the bibliographer and student, certain conventions as to the form and arrangement of references should be adopted. It would be well if we could all agree that all references appearing in medical literature should be made to conform to the type or form adopted by the *Index Medicus* (e. g., Doe, (J.). The functions of lymphoid structures, Amer. Jour. Physiol., 1909, xx, 617.) Where the author has examined the original of the references, this would always be possible, and it would materially facilitate their use. Second-hand references, those which a writer incorporates in a bibliography on the authority of some other person, knowing nothing personally of their content or accuracy, should be marked in some distinguishing fashion.

I have before me a reprint, just received, from a young and brilliant colleague, containing the account of some interesting original researches. A bibliography is appended, containing about 500 references. Of these, not one gives the title of the paper referred to; many give no page numbers; many give no year of publication, and many others fail to give the volume. The verification of such a bibliography, even if one were in the Surgeon-General's Library, would be an interminable labor. On the whole, it looks more like a purely ornamental addendum to the simple account of some scientific investigations, than like anything of real assistance to future students.

If our medical colleges could add to their courses a few lectures on the use of medical literature, or a definite course in bibliographic research, it would be not only of immense value but of fascinating interest to all so fortunate as to participate. We should soon have a class of medical graduates whose horizon would not be limited by the text-books they used in college and what their professor said.

And, finally, medical editors have at their command the most powerful means of improving the whole situation, not only by the publication of "Indexes," as some now do, nor by abstracts of current medical literature, which is most useful, but by educating their contributors and readers in addition, to that accuracy and uniformity in bibliographic matters which would eventually be helpful to us all.

Harold Wilson, Detroit.

[Comment:—The failure of authors to give complete bibliographic references, accurately and uniformly, constitutes one of the trials of the editor. The Journal has prepared a pamphlet[1] on "Bibliographic Style" to which all references in The Journal and in *The Archives* are made to conform. Authors generally fail to follow any consistent system in preparing their references to other articles. In some cases, doubtless, it is too much to expect that they shall provide every detail. It is a far different matter, however, for an author to have his stenographer copy on his manuscript a lot of references that he finds tacked on some other article on the same subject. Often this seems to have been done without verification, without completion, without any reason apparent save the desire to have a bibliography with the article. Some one has said that this ought to be made gross unprofessional conduct a sentiment with which many will sympathize who have tried to make use of such an abomination.—Ed.]

Maritime Quarantine. In Bulletin 34 of the Public Health and Marine Hospital Service the facts of maritime quarantine practice are arranged in a compact and interesting form. The boarding, inspection and judgment of vessels, quarantine treatment, station management, descriptions of stations, duties of officers, disinfection and disinfectants, apparatus, etc., are all concisely described and freely illustrated with halftones. It contains valuable information not only for the maritime quarantine service, but for sanitarians and health officers generally.

---

[1] Sent on receipt of 10 cents in stamps.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ARGYLL ROBERTSON—A BIOGRAPHIC NOTE

To the Editor:—Please give a brief account of Argyll Robertson

B.

Answer.—Douglas Argyll Robertson was born at Edinburgh in 1837, his father being a distinguished surgeon. He received his medical training in Edinburgh and St. Andrews, from which latter university he graduated in 1857. He then studied ophthalmology in Prague under Arlt, and in Berlin under Graefe. He took the fellowship of the Edinburgh College of Surgeons in 1862. In 1867 he was appointed assistant ophthalmic surgeon to the Royal Infirmary; in 1870 he was made co-equal with his senior colleague, Mr. William Walter, and in 1882 had for a time sole charge of the ophthalmic department. He continued to hold the senior post until his hospital retirement in 1897, when he was appointed consulting ophthalmic surgeon. Dr. Robertson was president of the Royal College of Surgeons in 1886; in 1893 and 1894 he was president of the Ophthalmological Society of the United Kingdom. In the latter year he was also president of the International Congress of Ophthalmology which met at Edinburgh. He was surgeon oculist in ordinary in Scotland to Queen Victoria and to King Edward. In 1896 the university of Edinburgh conferred on him the degree of LL.D. Robertson's contributions to ophthalmology were many, and several were of the first importance. In 1863 appeared his paper on the Calabar bean, and in 1869 and 1870 his papers on spinal myosis, in which he described that condition of the pupil which has since been known by his name. He was a first-class operator and an excellent teacher. He was also a good shot, but golf was his chief recreation. In 1904 Dr. Robertson gave up practice and returned to his seat, "Mon Plaisir," in Jersey, dying Jan. 3, 1909, at Gondal, India, while on a visit to the Thakur of Gondal. (*Ophthalmic Review*, February, 1909, p. 39, with portrait. See also abstract in the "Ophthalmic Year-Book," Vol. VII, 1910.)

STAINS DESCRIBED BY GIEMSA AND LEVADITI

To the Editor:—Please give me the formula and the technic for Giemsa's stain and for Levaditi's stain.

Lynn M. Barnes, M.D., Decatur, Ill.

Answer.—1. The formula of the Giemsa stain is as follows:

Azur II eosin	3 gm.
Azur III	0.8 gm.
Glycerin	250 c.c.
Methyl alcohol	250 c.c.

Smears from chancres, etc., are fixed for ten minutes in absolute alcohol. The preparations are then stained in a dilute solution of the Giemsa stain (made by adding one drop of Giemsa stain to 1 c.c. of distilled water, and rendering alkaline with a few drops of 1 per cent. solution of potassium carbonate) for from two to twenty-four hours or in the undiluted stain for from one-half to six hours. Afterward they are washed in distilled water, dried and mounted.

2. Levaditi's method may be employed for sections: (1) Fix pieces of tissue about 1 mm. thick in 4 per cent. formaldehyd solution, 1 part of liquor formaldehyd to 9 parts water, for twenty-four hours. (2) Wash in water and harden in 96 per cent. alcohol for twenty-four hours. (3) Wash in water for some minutes (until pieces sink). (4) Place in 3 per cent. silver nitrate solution at 37 C. for from three to five days in the dark. (5) Wash in distilled water for some minutes, and then place in the following solution at room temperature for from twenty-four to forty-eight hours:

Pyrogallol	2 to 4 gm.
Formaldehyd solution	5 c.c.
Distilled water	100 c.c.

(6) Wash in distilled water, dehydrate in absolute alcohol, clear in xylol, embed in paraffin, cut, and mount.

PAINLESS INSERTION OF HYPODERMIC NEEDLE—ORIGIN OF TERM "STONE BLIND"

To the Editor:—If the skin of the arm, etc., be carefully inspected, especially after lightly brushing it with the palm of the hand, a minutely mottled pink and white coloration will be noted. The nerve supply of the body is everywhere closely related to the blood-vessels, even to capillary distribution, hence the white blotches are poorest in nerve tissue and therefore least susceptible to pain. If these white areas be the points of choice and the needle be applied perpendicularly to the surface of the skin little or no pain will be experienced.

Referring to the note at the foot of page 848 of The Journal, September 3, anent the origin of the popular term "stone blind," should we not look to a popular source for the explanation of such terms rather than to the medical literature? The lay mind knows little or nothing of glaucoma, but has always been familiar with the eyes of marble statuary that see not, and the sculptured ears of stone that hear not, and the unfeeling rocks in general. Should we not therefore look to this fact for the origin of such terms as "stony-hearted," "stone deaf" and "stone blind" rather than to the far-fetched suggestion in the footnote referred to?

F. B. Knerr, M.D., Kansas City, Mo.

The Public Service

Medical Department, U. S. Army

Changes for the week ended Sept. 17, 1910.

Tenney, Elmer S., M. R. C., September 9, granted leave of absence for twenty days, terminated not later than Nov. 3, 1910.

Marietta, Shelley U., M. R. C., September 9, relieved from duty at Camp of Instruction, Fort Benjamin Harrison, Ind., about Sept. 15, 1910, and will return to his proper station, Fort Des Moines, Iowa.

Bierbower, Henry C., M. R. C., September 9, ordered to proceed to Fort Benjamin Harrison, Ind., for duty with the Sixth Cavalry, at Camp of Instruction.

Schreiner, E. R., major, September 9, on the abandonment of Fort Walla Walla, Wash., will proceed to Boise Barracks, Idaho, for duty at that station.

Usher, F. M. C., major, September 9, granted leave of absence for one month.

McCown, Thomas B., M. R. C., September 11, left Fort Barrancas, en route to Fort Dade, Fla., on temporary duty.

Bundesen, H. N., M. R. C., September 11, left Fort D. A. Russell, Wyo., on fifteen days' leave of absence.

Sherwood, John W., M. R. C., September 12, granted twenty days' leave of absence.

Knox, Howard H., lieut., September 12, granted 10 days' leave of absence.

Walkup, Joseph O., M. R. C., September 10, granted fifteen days' leave of absence.

Jackson, T. W., M. R. C., September 13, left Fort Hunt, Va., on ten days' leave of absence.

Cullen, Charles W., M. R. C., September 13, ordered to Fort D. A. Russell, Wyo., and granted two months' leave to take effect on arrival at station.

Bartlett, William K., capt., September 12, granted five days' leave of absence.

Medical Corps, U. S. Navy

Changes during the week ended Sept. 17, 1910.

Longabaugh, R. I., P. A. surgeon, commissioned passed assistant surgeon from May 4, 1910.

Donelson, M., P. A. surgeon, detached from the naval hospital, naval home, Philadelphia, and ordered to duty at the naval hospital, Newport, R. I.

Reed, E. U., P. A. surgeon, detached from the *Philadelphia* and ordered to the *Princeton*.

Miller, J. T., P. A. surgeon, commissioned passed assistant surgeon from June 27, 1910.

Casto, D. H., asst.-surgeon, detached from the *Princeton* and ordered to the *Philadelphia*.

Hermesch, P. A. surgeon, commissioned passed assistant surgeon from July 12, 1910.

McDowell, R. W., asst. surgeon, discharged from treatment at the naval hospital, Norfolk, Va., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Sept. 14, 1910.

McIntosh, W. P., surgeon, detailed as member of a Revenue-Cutter Service Retiring Board, Baltimore, Sept. 15, 1910.

Wertenbaker, C. P., surgeon, granted 1 month's leave of absence from Sept. 12, 1910.

Robinson, D. E., P. A. surgeon, granted 1 months' leave of absence from Sept. 8, 1910.

Gwyn, M. K., P. A. surgeon, detailed as member of a Revenue-Cutter Service Retiring Board, Baltimore, Sept. 15, 1910.

Pettyjohn, Joseph, P. A. surgeon, granted 1 month's leave of absence from Sept. 15, 1910, on account of sickness.

Warner, H. J., asst. surgeon, granted 7 days' leave of absence from Sept. 17, 1910.

Preble, Paul, asst. surgeon, granted 10 days' leave of absence from Sept. 8, 1910.

Grimm, R. M., asst. surgeon, leave of absence for 4 days from Sept. 1, 1910, amended to read 4 days from Sept. 13, 1910.

Thompson, Lewis R., asst. surgeon, directed to proceed to Chicago, and report to the Medical Officer in command for duty and assignment to quarters.

Bingham, E. O., acting asst. surgeon, granted 15 days' leave of absence from Aug. 16, 1910, on account of sickness.

Horning, Henry, acting asst. surgeon, granted 7 days' leave of absence from Sept. 6, 1910, under paragraph 210, Service Regulations.

Hume, Lea, acting asst. surgeon, granted 5 days' leave of absence from Aug. 1, 1910.

Mason, William C., acting asst.-surgeon, granted 7 days' leave of absence from Sept. 18, 1910.

Sinclair, A. N., acting asst. surgeon, granted 4 days' leave of absence from August 23, 1910, under Paragraph 210, Service Regulations.

Wallace, C. R., acting asst.-surgeon, granted 19 days' extension of leave from Aug. 3, 1910, on account of sickness.

Walkley, W. S., acting asst.-surgeon, granted 3 days' leave of absence from Sept. 16, 1910.

Dr. Lewis R. Thompson commissioned (recess) an assistant surgeon in the Public Health and Marine-Hospital Service, Sept. 6, 1910.

Board of medical officers convened to meet at the marine-hospital, San Francisco, Sept. 21, 1910, for the purpose of making physical examinations of officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon R. E. Ebersole, chairman; Assistant Surgeon R. A. Kearney, recorder.

Board of medical officers convened to meet at the marine-hospital, Baltimore, Sept. 21, 1910, for the purpose of making physical examinations of officers of the Revenue Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon M. K. Gwyn, recorder.

Society Proceedings

COMING MEETINGS

Amer. Roentgen Ray Association, Detroit, September 28—October 1.
American Association of Railway Surgeons, Chicago, October 19-21.
Idaho State Medical Association, Boise, October 6-7.
Indiana State Medical Association, Fort Wayne, September 29-30.
Kentucky State Medical Association, Lexington, September 27-29.
Medical Association of the Southwest, Wichita, Kan., October 11-12.
Michigan State Medical Society, Bay City, September 28-29.
Minnesota State Medical Association, Minneapolis, October 6-7.
New Mexico Medical Society, Albuquerque, September 29—October 1.
Pennsylvania, Medical Society of State of, Pittsburg, October 3-6.
Utah State Medical Association, Salt Lake City, October 3-4.
Vermont State Medical Society, St. Albans, October 13-14.
Virginia, Medical Society of, Norfolk, October 25-28.
West Virginia State Medical Assn., Parkersburg, Oct. 5-7.
Wyoming State Medical Society, Casper, September 27.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION

Thirty-Sixth Annual Meeting, Held at Detroit, Sept. 13-15, 1910

The President, Dr. Frank P. Norbury, Hospital, Ill., in the Chair

Pain in Abdominal Diseases

Dr. William M. Harsha, Chicago: In order to interpret pain properly, a careful history is necessary as pain must be considered in relation to other factors in a given case, and without these it loses its chief importance. The relation of pain to taking food is also of great value, particularly in duodenal or gastric ulcer or the various stenoses, benign or malignant. The direction and extent of painful radiations and the association with hyperesthesia, local tenderness, and muscular rigidity are of great importance as indications of the site and gravity of the lesion. The arm pain in angina pectoris, the shoulder or upward radiation in gall bladder disease and downward, forward, and testicular pain in nephritic colic are well known examples. The pain of abdominal disease may be either spontaneous or elicited by pressure, body movement or position, and it may be influenced by psychical, thermic, mechanical or chemical means, all of which may be utilized in cases to aid in exact diagnosis. Diseased viscera cause pain at or near their various sites, but there are many exceptions which lend importance to the reflex or referred pains. A number of abdominal diseases, especially of the more acute variety, are first heralded by pain rather than by change of size, position, or other physical conditions. The surgeon can often gage the urgency in a given case by the character and severity of pain. Taking cognizance of the value of pain associated with local distentions and peristalsis, or the absence of peristalsis, we may locate stenosis or other forms of obstruction, calling to our aid submerged palpation or palpation in the bath, which will enable us to detect induration which is otherwise not palpable. By observing the time relation of pain to other symptoms, the effect of food, drugs, cathartics, cold, fatigue, movement, position, pressure, percussion, anesthetics or electric stimulation, we should be able to increase the percentage of correct diagnoses.

The safety of abdominal section may have caused us to relax our efforts at exact diagnosis. It has frequently happened that laparotomy has been done for appendicitis when a movable kidney, pyelonephritis, ureteral stone, typhoid, diaphragmatic pleurisy, salpingitis, or some other condition is present. Age, sex, occupation, or previous history may give valuable aid. In childhood intestinal troubles prevail, and we are likely to encounter appendicitis, intussusception, or tuberculosis, and in advanced age malignant disease. In women, the pelvic organs are frequent sites of disease, while gall-stones are frequent. Lead colic may simulate organic disease. A history of indigestion, with vague epigastric pain, may aid in determining a perforation of the duodenum or stomach, and a record of previous inflammatory trouble in the abdomen may explain a sudden intestinal obstruction. Among the less frequent conditions may be mentioned the meteorism with abdominal pain, resulting from the embarrassed portal circulation in cardiac insufficiency. I have recently seen a case of this kind in which the pain was so pronounced and distentions so great that abdominal tumor was suspected by one physician. We should consider the possibility of disease of the central nervous system, such as tabes, herpes, or hysteria, disease of the spine, as caries, or spondylitis deformans. We should also consider the possibility of disease of the thorax, referring pain and rigidity to the abdomen; or to one kidney referring the pain from stone to the kidney of the opposite side. Excluding pain from the cord, spine or reflex causes, we should remember that diseased viscera may be at the normal site, displaced especially by prolapse, or transposed. On the surgeon falls the burden of responsibility for exact diagnosis, as his operative experience should add to his knowledge.

DISCUSSION

Dr. William Fuller, Chicago: The man who can best interpret the significance of pain is the one who has suffered some pain. While I do not think it necessary to have all the acute abdominal diseases in which there is great pain to make a diagnosis, I think a little knowledge gained in a practical way helps out very much. Dr. Harsha's paper contains two excellent points: First, is the emphasis that he lays on the fact that abdominal pains may be severe from trivial abdominal affections; second, is his statement that very serious abdominal affections may be unattended by pain.

Dr. Channing W. Barrett, Chicago: When a patient complains of pain generally over the abdomen from appendicitis or gall-bladder trouble, we find frequently by putting the finger on the point that is affected, or supposed to be affected, and making a little pressure that the surrounding pain disappears. We can then go over the rest of the abdomen, and while the patient may complain of local pain, the rest of the pain is gone. An anesthetic is of great value sometimes in pelvic and abdominal cases, but I think we gain more knowledge of these conditions by examining the patient first without an anesthetic.

Dr. L. W. Bremerman, Chicago: In diseases of the kidney or the ureter, I have seen cases in which there was hematuria, with marked pain over the region of the kidney, the kidney being felt on palpation, excessive tenderness over the kidney, a kidney lesion diagnosed, and surgical intervention recommended. On cystoscopic examination of the individual, I discovered that the hematuria was developing from the supposedly healthy kidney, the urine from the supposedly diseased kidney being normal. Every method of examination should be resorted to before an absolute diagnosis is made.

The Cause and Significance of Tubal Rupture in Extrauterine Pregnancy

Dr. Channing W. Barrett, Chicago, read a paper on this subject in which he drew the following conclusions:

1. Pregnancy, which is considered to be always extrauterine in the beginning, assumes pathologic significance when it undergoes ectopic attachment.

2. The ovum attached in the tube has a parasitic action, having a malignant tendency in that it destroys maternal tissues, embeds itself in the tube wall and tends toward death of the mother "but in making its bed digs its own grave."

3. The growth of the ovum or enlargement of dead ovum mass together with the destruction and thinning of the tube wall leads to almost certain rupture of the tube.

4. The primary rupture may be partial and even slight, or it may be complete and even fatal.

5. If incomplete, a subsequent rupture or ruptures are the rule.

6. With rupture there is free hemorrhage more or less severe, which is never to be looked on lightly and which may prove fatal.

7. The loss of blood may be through one rapid fatal hemorrhage or there may be a series of lesser hemorrhages.

8. If the patient does not succumb to loss of blood the presence of the blood and the ovum in the abdominal cavity act as irritating foreign substances leading to loss of function and pathologic changes in the viscera, and perhaps to local or general infection, thrombosis, embolism, etc.

9. The dead ovum is only slightly less harmful from the standpoint of infection.

10. A study of the pathology makes all treatment looking toward killing the ovum appear irrational.

11 Patients in good condition with or without ruptures are almost certain to have future trouble and should have an operation as soon as is consistent with good work.

12. Patients in bad condition with concealed hemorrhage from the cause in question have collapse in proportion to the amount of blood lost, and rational treatment must look with certainty toward the stopping of further hemorrhage.

13. An opening of the abdomen with clamping or ligating of the vessels is the only reliable means of controlling internal hemorrhage and if done rapidly and with care is little tax on the patient

14. The clinical experience of the world and a study of the pathology of this condition points to the danger of delay.

15. The more desperate the case while the patient yet lives, the greater the call for immediate action.

DISCUSSION

Dr. Edwin Walker, Evansville, Indiana: I know of one death from repeated hemorrhages, but most of the deaths have been in delayed cases in which sepsis has occurred after operation. The teaching that we should wait in these cases is not sound. I feel that the position taken by Robb is untenable. These patients who have been operated on promptly in my experience have recovered.

Dr. Joseph Rilus Eastman, Indianapolis: This is 1910, and it is a pity that it is necessary for Dr. Barrett to present a paper like the one he has read. The teaching that it is wise to allow a woman to bleed into her own abdomen, or into her tube or uterus, while the surgeon stands by with his arms folded and falls back on soft pillows or relies on Providence, is absolutely pernicious. If a vessel were bleeding on the surface of her body, what man would be so negligent or so indolent as to stand by and allow the patient to bleed to death?

Dr. Charles Stoltz, South Bend, Ind.: I think that the more energy we expend in teaching that these conditions are to be met and not dallied with the better. The men who have received the proper teaching will recognize these conditions, and they will usually find some one who is competent to meet the conditions speedily, or they may be competent to operate themselves, because if there is any delay, or if the patient is carried from one place to another, she may die. I would rather act on the theory that shock is hemorrhage, and hemorrhage is shock.

Special Points in Advanced Extrauterine Pregnancy

Dr. Shelby C. Carson, Greensboro, Ala.: Although my experience is *nil*, I venture the suggestion that the operation for advanced extrauterine pregnancy be done in two stages when necessary or advisable, at an interval of from 48 to 60 hours, according to the judgment of the operator. In the first place, let the abdomen be opened, the child delivered, and the ovarian and uterine arteries clamped by rubber covered forceps, if they can be approached. In the second stage, separate the sac, release the blood-vessels after ligating the anomalous one, and closing the abdomen. Sometimes hysterectomy is imperative. This differs from and apparently is superior to the old method of uniting the sac to the incision and waiting weeks for its separation, since by this method the danger from sepsis is eliminated.

DISCUSSION

Dr. J. H. Carstens, Detroit: I had one patient who went to term, a general practitioner having made the diagnosis. I operated on her in two stages. The placenta seemed to be attached to the intestines and the rectum, and I did not have the courage to remove it. I thought the best thing would be to leave the placenta alone, and so I removed the fetus, separated the peritoneum with the sac, and drained. The woman was septic at the time of operation, and finally died from sepsis. The placenta did not separate. Little shreds came away through the abdominal incision.

Dr. W. M. Harsha, Chicago: I have never heard satisfactorily explained the cause of the intense pain that comes on in cases of tubal rupture. The extent of pain and the broad radiations of it are great in comparison to the very small area apparently involved. A woman with tubal rupture suffers pain from her chest to her thighs—sometimes, at least. The broad radiation with the intense character of the pain make it almost impossible to get from these patients a rational explanation or history. These are the cases in which I believe a good dose of morphin is indicated: First, it will abolish the cardinal or reflex pains to a certain degree and help to localize the trouble; second, it will limit the hemorrhage. Before administering morphin one should observe carefully the character of the pain, the extent of the radiations, the time, and the urgency of the condition. After recognizing these, morphin will answer two indications, namely, to relieve the shock and put the patient in a better condition for operation, and to some degree arrest the hemorrhage.

Dr. Channing W. Barrett, Chicago: In dealing with advanced extrauterine pregnancy we find that in the early months the ovum is not considered. The probabilities are that so far as the ovum is concerned it will die, and the chances are that it will kill the woman sooner or later. A few years ago, we would have said that at any time during the extrauterine pregnancy, early or late, the ovum should be removed at the earliest possible time. The teaching has been that if the ovum has passed the fifth month we should wait for viability. I would be inclined yet, even in spite of that teaching, to remove the ovum when found.

Acetabular Fracture With Intrapelvic or Central Dislocation of the Femoral Head

Dr. William Fuller, Chicago: So close is the relation between fractures and the changes that take place in the bone, whatever they may be, that all such injuries resulting from trivial or slight degrees of violence, or possibly in unusual fractures with greater degrees of violence, should be regarded as possibly belonging to this class. Efforts have been made by several observers to put the etiology of fractures on a physical basis by studying the mechanical capabilities of bone. The great strength of the pelvic bones their peculiar and powerful articulations and liberal muscular supply, are factors which singly and combined contribute much to the neutralization of all forms of direct violence exerted on this portion of the body. While Katz's theory of the mechanism of certain acetabular fractures will probably hold good, it is also worthy of mention that the experiments of Kusmin demonstrated that this fracture could or would not occur unless the force be applied with the femur in abduction. When the legs were kept parallel the acetabulum remained unfractured. From impacted fractures of the femoral neck central dislocation of the femoral head may be differentiated by the age of the patient and the comparatively high degree of injury in the latter instance. The remarkably sunken appearance of the greater trochanter and its slightly altered relation to Nelaton's line are points which distinguish the dislocation The certainty with which the femoral head may be palpated in either of the anterior dislocations of the femur and its increase in length in the thyroid dislocation will serve to differentiate any one of these dislocations from a central one. In the dorsal dislocation especially one above the obturator internus tendon, the trochanter is far above Nelaton's line, the thigh is adducted, flexed, and the axis of the dislocated femur crosses the lower end of the opposite one. Moreover, in the simple dislocation all movements will be less free than when the head and neck occupy a central position. I do not intend that the symptoms of acetabular fracture given here are to minimize in the least the importance of the radiograph, but that each and every manifestation of all hip injuries of whatever nature should be carefully and cautiously considered. In no instance should the clinical findings settle the diagnosis, as they are frequently misleading, and the conclusions based thereon should invariably be corroborated by the roentgenologist. In case of failure to replace the head of the femur within the acetabulum, operation may offer the only hope of satisfactorily dealing with such a condition; but the particular type of operation and the advantages to be gained by it will depend much on factors opposing the reduction.

Gastrostomy as a Curative Measure per se in Non-Malignant Strictures of the Esophagus

Dr. Joseph Rilus Eastman, Indianapolis: The directly beneficial effects of gastrostomy in cases of so-called benign strictures of the esophagus are not generally appreciated. We have been too slow to break away from old notions, which were developed in the pre-aseptic era when the performance of gastrostomy was attended with considerable danger. Ewald, in discussing a report of successful dilatation of a diphtheritic stricture by Rosenheim, referred to a peculiar observation which he had made in dealing with such benign stenoses, namely, the remarkable circumstance that cicatricial strictures for which gastrostomy had been made nearly always improved steadily after the stomach fistula had been provided and food had been introduced through the fistula instead of through the gullet, that is, the stricture gradually developed a larger caliber without any other treatment whatsoever.

Ewald explained these phenomena in the following manner: After the gastrostomy is made it becomes possible to fill the stomach with food. The pull of the full stomach downward gradually stretches to some degree the elastic esophagus. When the stomach becomes empty the downward pull ceases, then the pressure of the food mass above the stricture has its effect on the stretch and more yielding strictured segment. More compact masses of food may then squeeze through. The explanation of the phenomena given by Ewald can hardly be applied to all cases. After the swallowing of a hot or caustic fluid, the mucosa of the gullet may become deformed in many ways. Among many interesting deforming processes are, for example, the complete tube cast-like separation of the mucous membrane described by Strauss, the esophagitis dessicans superficialis of Rosenberg, and esophagitis exfoliativa. In these conditions after the mucosa has become loosened from the underlying tissues and thrown into folds or ridges or pockets, it is easy to understand that the passage of food or of a bougie must be attended with great mechanical difficulty. It also seems fair to believe that the downward traction due to the filled stomach must have the effect in some instances of smoothing the valve-like folds and irregularities of the loosened membrane, thus permitting the passage of food through a previously impassable esophageal lumen. Gastrostomy is curative *per se* for another and more important reason. The rest afforded the esophagus is of the greatest value in allaying the inflammation which precedes or attends practically all benign strictures. If ulceration be present, the passage of food, or what is worse, the arrest of food, with consequent fermentation, must maintain or increase the activity.

Fracture-Dislocation of the Atlas and Axis

Dr. Carl L. Black, Jacksonville, Ill.: Called attention to the essential diagnostic points and gave reasons why operative interference has not been adopted more frequently. He summarized the treatment of such injuries as follows:

Immediate reduction may be done under an anesthetic. Walton has his patient sit in a chair while he turns the head still farther from the dislocated side. The head is then tilted to the sound side and extended while the column is rotated back into place. Hueter's method by rotation may be used. When the atlas is dislocated, before any method of reduction is undertaken, we should be sure that the odontoid process is not fractured. If the odontoid process is fractured we are advised by some to place the patient in a plaster cast which will immobilize the seat of injury until healing can take place, and then reduce the deformity. The objections to this plan are that it fails to give the patient any opportunity for relief before degeneration of the cord can take place, and subjects him to further pressure from callus, and finally it will usually be found impossible to effect reduction after so long a time. Another plan is operative interference. While considerations of the cord are all important in such injuries, we should not be deterred from making every reasonable effort to restore the dislocated or fractured spinal vertebræ, because many questions regarding the degeneration and regeneration of the cord are in the stage of controversy and remain unsettled. It would seem to be our plain duty to effect a restoration of the bony column as far as it can be done without further endangering the cord, except in those cases in which the cord is hopelessly crushed beyond the possibility of the recovery of lost functions. The mechanical difficulties are great and often insurmountable, but perseverance with reasonable efforts to overcome them will certainly tell in time. It is a reasonable proposition that an injured cord has a better chance in a spinal canal with sufficient room than it has when held under even mild compression. From this reason, the second indication should usually be omitted and the injured parts exposed thoroughly. If the case is one of dislocation, efforts at reduction can be repeated under the direction of the eye and finger, and failing in this a laminectomy may be done.

Preparation Required for the Practice of General Surgery

Dr. G. W. Green, Chicago: The public has a right to demand of the surgeon (1) a good foundation in the shape of a diploma from a good school; (2) considerable time spent with a master of surgery, so that he has the following knowledge: (a) sufficient experience to make a correct diagnosis; (b) sufficient experience to know what is the best to do when the diagnosis is made; (c) that he shall know just how to do the work and have enough practice to have a definite surgical technic of his own, so that he is capable of performing the operation he essays, or any complication which might arise from that operation, in an average length of time; (d) that his mortality shall be as low, and his postoperative results as good, as those of the average surgeon. In return the surgeon has a right to expect fair remuneration and respect from the public, but no more than any other member with equal qualifications, specializing in any other branch of this, one of the noblest professions on the face of the earth.

Tuberculosis of Bones and Joints

Dr. Edward M. Brown, Chicago: The treatment of tuberculous joint disease is (1) general or constitutional; (2) specific or serum treatment; (3) local. For practical purposes the local treatment may be divided into injection treatment, mechanical and operative. The advantages of operative treatment are: 1. The disease can at once be thoroughly eradicated, or nearly so that the patient easily overcomes the disease. 2. Dissemination of the disease is prevented. 3. The treatment is shortened. 4. The general condition of the patient rapidly improves. 5. The length of the limb and function of the joint are preserved to the best possible degree.

The Responsibility of Physicians in the Traumatic Neuroses

Dr. H. H. Drysdale, Cleveland, Ohio: In studying these conditions etiologically I have arrived at the conclusion that the true genesis, in a large majority of cases, is psychic, and that it is fright, fear of death, anticipated pain and anguish received unexpectedly by a totally unprepared sensorium which is the chief element to be considered. Psychologically, fright is a fundamental emotion. Violent in action, it will under certain conditions of mind pervert the sense faculty, disturb the kinesthetic equipoise and deform the physical and psychical personality. I consider the manifestations of these conditions to be the involuntary expression of a break in the bodily feeling. These by degrees tend to organize and combine to form a morbid mental state, a delusive conception, as it were, toward which every thought converges. A faulty environment frequently does more harm than the actual injury, as it tends to make the individual introspective and depressed, and as a consequence he throws aside the normal weapons of defense and surrenders himself to the misfortune which has assailed him. From an experience of 108 cases investigated from the standpoint of the corporation as well as that of the patient, and which included in many instances the prelitigation, also the postlitigation period, I have made several observations which I believe, if put into practice, would place the responsibility of adjusting these trying conditions on a scientific basis, and thus obliterate much of the confusion and disquietude which surrounds the traumatic functional disorders of the nervous system.

Hygroma of the Testicle

Dr. Charles M. Harpster, Toledo, Ohio: A hygroma is essentially a serous cyst. The bacillus of tuberculosis is often found, and the hygroma, if a true one, always contains hard caseous masses and rice bodies. A true hygroma of the testicle and cord is rare. In the case of a man, aged 45, the patient suffered from a hydrocele for a number of years, and this was frequently tapped by his family physician. Some months ago it was tapped and considerable blood and some pus were withdrawn. This alarmed the patient, and in consultation with the attending physician I found the testicle considerably enlarged and very painful, with some slight general disturbance. The cord and testicle were removed. Tubercle bacilli were found in the rice bodies and tissue of the sac. Syphilis undoubtedly had been contracted, but was denied by the patient.

The Tubercle Bacillus Cultivated from Cases of Primary Tuberculous Cervical Adenitis

Dr. William Litterer, Nashville, Tenn.: Nine consecutive cases of primary tuberculous cervical adenitis were examined, which resulted in the isolation of five cultures of bacillus tuberculosis of the human type, and the four cultures of the bovine type. The classification of the types being made on the basis of four tests, to wit: First, the morphologic characters of the bacilli; second, the dysgenetic or eugenetic characters of the cultures; third, the relative virulence toward rabbits, and, fourth, the reaction curve in 5 per cent. glycerin bouillon. This latter test serves admirably to distinguish between the two types, provided repeated application and careful control over a period, in some instances, of 18 months. I have found that the differences in the growth of the two types dysgenetic and eugenetic on Dorcet's egg medium to be very valuable in differentiating the bovine from the human type of bacillus. Rabbit virulence has probably been more uniformly satisfactory than any of the tests in determining the differences between the two types of bacilli.

(*To be continued*)

AMERICAN PUBLIC HEALTH ASSOCIATION

Thirty-Eighth Annual Meeting, Held at Milwaukee, Wisconsin, Sept. 6-9, 1910

(Concluded from page 1036)

SYMPOSIUM ON MENTAL CONDITIONS

The Prevention of Mental Defects and Mental Diseases

Dr. William A. White, Washington, D. C.: The practical things that may be done at once in any community are these: 1. Legislation should be secured placing the responsibility for the care of the insane previous to commitment in the local health office. 2. Every city of 100,000 inhabitants, or over, should have a psychopathic ward connected with its municipal hospital, which is as accessible for the mental case as the other wards are for general medical and surgical cases. This ward should have an out patient department. 3. An after-care society should be organized to assist persons who have been discharged from a hospital for the insane to get on their feet and to point out to them ways of avoiding the conditions which led to their breakdown. 4. Adequate laws should be passed for the control of the labor of women and children. 5. There should be a campaign of popular education. By the use of this term I am not merely dealing in a glittering generality that may mean nothing or everything. We have in this country nearly 200 state hospitals for the care of the insane. Each of these hospitals should be a center of information for the community in which it exists, and its medical officers should use their positions to spread information about mental disorders. The superintendent, or a member of the staff, should deliver one or more popular lectures each winter to which the public should be invited. Much might be accomplished in this way if all hospitals would do this. 6. Field work should be carried on from the state hospitals and psychopathic wards as centers to study conditions under which insanity has developed, to furnish assistance to the hospital in dealing with its patients, and to cooperate with the after care society. 7. More liberal support should be given by city and state for scientific research work in this field, especially along the lines of etiology and prophylaxis."

Prevention of Feeblemindedness

Dr. E. R. Johnstone, Vineland, N. J.: Two or three states have passed laws authorizing the unsexing of degenerates after they get into institutions, but please note that these individuals must get in the institutions first. I heartily approve of the operation of castration and merely agree to vasectomy and salpingectomy. After these operations have been performed a fair percentage of the patients may be returned with safety to their homes, and thus make room for others in the institutions, but the ideal way is to gather all the feeble-minded into institutions, and train them in so far as possible to be self supporting—plenty of industrial occupation and very little academic training. From 30 to 50 per cent. can be made entirely self-supporting after 10 years' training. Take the women of child bearing age first and teach them to raise and can small fruits, raise poultry and garden truck, knit underwear, weave rugs, carpets, etc. Then take the others as young as possible and the economic problem comes close to solution. But do not talk—get to work. The numbers are increasing. If they are not cared for in well-conducted training schools, where they may learn to contribute toward their own support, they must be kept in almshouses, reformatories, prisons and other institutions, and when they are led into evil ways the taxpayers pay for their arrest, their trial and the damage they have done. If feeblemindedness is to be checked, physicians personally must do something.

Preventable Neuroses

Dr. C. H. Hughes, St. Louis: I wish to speak about the prevention of the neuroses which underly the physical, the moral and the mental integrity of the people, and which, if not considered and timely regarded, will eventuate in degeneration and degradation of our people, such as have visited the people who have gone before. The neuroses constitute the bane of our civilization. It was the neglect to care for a neurosis that caused the greatest of human generals to fall. It was a neglected epileptoid condition that caused Napoleon Bonaparte to lose the battle of Waterloo. As physicians we are for prevention of the neuroses, those conditions of mind and of the nerve centers that have so much to do with the individual in the community, with the individual on the firing line in the battle of life, and with the individual who has to meet the duties and obligations of our modern civilization, with its strenuous demands, in order to conserve the vitality of the race and save America. We must prevent neuroses because they are the bane of civilization; they are the bane of the family life; they are the bane of social life. The incongruities and unhappiness that exist in families and revealed so largely in the divorce courts are the product on one side or the other, and often on both, of the dominance of the neuropathic element in one or the other, or both members of the family. Lawyers speak of incompatibilities, but these individuals are instances of neurotic ill adaptability. They are psychical misfits. By neuroses I mean not alone functional conditions of the nervous system, because the line of demarcation between functional and organic disease is only a question of time and of study and further observation, but the functional affections of yesterday which are the organic troubles of to-day. The time is coming when we will understand hysteria to be an organic disease. Insanity comes down to us in its predisposing element in the majority of instances as an inherent predilection, an inherent organic tendency, and superadded to it comes the disturbance or influence of environment, the disturbing influences of depressive passion, the influences of conditions of over-strain, over-worry, which over-annoy the human mind. We should have a reasonable regard for the powers of the growing child, so that he may not be overstrained. He should have an adequate amount of fresh air, abundant nutrition, ample time for rest; and the prevention of those conditions which come from excesses is the cardinal principle which underlies the prevention and evolution and final destructive development of all neuroses.

Discussion on Mental Conditions

DR. JOHN N. HURTY, Indianapolis: What if we do save a child from diphtheria or scarlet fever, and yet fail to save it from some neurosis. The child is lost just the same. The longer I live and work in the science of hygiene, the more I am convinced that it is hopeless to work with the adult. We must go back and instruct the child: that being done we have taken the first step. Under our present form of education we do not do that except to a limited degree. The thought is gradually penetrating our minds that the child must have playgrounds and fresh air. We have been shutting out the air from the school room and calling it economy. We have been buying sites for school houses without playgrounds, and calling that economy, and it is the worst kind of extravagance. Something must be done to prevent the building of insane asylums, taxing the people, raising the rates, and having insane on every hand, and the way to do this is to begin with the child.

DR. HENRY A. NORDEN, Sturgeon Bay, Wis.: Aside from trying to make a living in the practice of medicine, I have been riding a hobby—the education of children. Neurotic conditions are superinduced by night studies on the part of children. Do not blame the teachers; do not blame the school board, but blame the people who are behind them and have them prevent the school board from doing what they should do. It is absolutely necessary, considering the way education is carried on to-day, for the child to study at night or to sacrifice the playtime of the day. It is almost impossible for children to study in school while one section of the school room is reciting. I have suggested frequently in my work that the number of hours of school sessions be cut down; that we use the school session for the recitations and explanations, and allow a part of the day to be used for pleasure and part for study. In that way we can prevent neurotic conditions that are produced by night studies.

DR. E. C. ROGERS, Faribault, Minn.: Wherever there is a family with two feeble-minded children, that family ought to be studied carefully, its ancestry gone into, and the mental condition of these children studied carefully, and from the work that is now being carried on we hope to have data which will give us the facts necessary to make statements as to what shall be done toward prevention of feeblemindedness.

SYMPOSIUM ON VENEREAL DISEASES

Report of Committee on Education of the Public as to Communicability and Prevention of Gonorrhea and Syphilis

DR. GEORGE M. KOBER, Chairman, Washington, D. C., presented the report which contained several recommendations, which were referred to the executive committee for consideration and which were reported back to the general meeting subsequently in the following amended form: The committee recommends:

1. The recognition, study and control of the prevalence of these as with all other communicable preventable diseases, in order to ascertain their distribution.

2. An educational campaign for parents of all social classes, and children of all ages and sexes. This teaching should be not only moral but also medical in the widest sense.

(a) Proper distribution of circulars, pamphlets and other literature by state health departments through all suitable channels.

(b) State health departments to instruct all of its local health officers in sexual matters, and direct them to make a systematic effort to educate the people in their respective communities.

(c) State health departments to make a definite and determined effort to awaken and interest the medical profession in this fight against venereal diseases.

(d) State health departments to send out specially trained paid teachers and lecturers of their own, supported by exhibits and lantern slides to address special meetings of parents, health officers, medical men, teachers and others in schools, colleges, churches, etc., on these and other preventable diseases.

(e) State health departments to encourage the organization of local leagues or associations whose purpose shall be the support of and control of a crusade against the spread of all communicable diseases. Said societies to include every profession and walk of life; to depend on philanthropists for necessary funds, rather than on paid subscriptions for fundamental support.

(f) Health departments to interest and provide for the authorities having charge of the educational curriculum in public and in private schools. (1) By introduction of biology into the graded courses of all schools; (2) To provide instruction in sexual matters for students of the upper grades; (3) by special instruction to normal school students who are to become the instructors. To impress on presidents, deans, preceptors, and teachers the necessity of exercising their influence on students in reference to the communicability of syphilis and gonorrhea, and to inculcate a morale of protection among the college fraternities.

(g) To utilize the public press for the proper occasional presentation of the subject, and to discourage the display of advertising matter which encourages the exposure to dangers in these diseases.

(h) To utilize church clubs, fraternal societies, trade unions, women's clubs, and especially, mother's clubs for instruction of parents.

(i) Health departments to recommend the enactment of laws for: (1) Physical inspection and segregation of prostitutes. (2) Notification and report (by number, if desired) of venereal cases. (3) Physical examination of men before marriage, male applicants for marriage license in order to obtain it being required to submit to an examination by a duly qualified physician for the purpose of ascertaining whether said applicants are free from venereal diseases. 4. To make it a crime to spread any venereal disease. 5. By keeping open free night dispensaries and maintenance of special dispensaries and hospitals for these diseases.

(j) Advocacy of temperance on account of the relationship between alcoholism and venereal diseases.

(k) Advocacy of personal cleanliness and venereal prophylaxis. Advocacy of early marriages.

These recommendations were adopted.

Venereal Diseases Among Seamen of the Merchant Marine

DR. J. W. KERR, Washington, D. C.: There were treated 1,281,427 cases of sickness from all causes, or an average of 53,392 patients annually. Of the total number, 106,090 were cases of syphilis in one of the three stages, 4,420+ being the annual average; 117,336 cases of gonorrhea (including gleet), representing an annual average of 4,889 cases; and 39,819 were cases of chancroid (including ulcer of the genitals), or an average annually of 1,659+ cases. The total number of venereal cases treated and classified as above during the period mentioned was 263,245, or an average annually of 10,969 cases. It will thus be seen that these venereal cases represented 20.5 per cent. of the total number treated. This percentage it will be understood represents cases of syphilis, gonorrhea and chancroid, and does not include complications or sequelæ of those diseases.

Plea for Application of Methods of Preventive Medicine to Venereal Disease

DR. J. R. KEAN, Washington, D. C.: I do not think that it is either wise or necessary for scientific men interested in the good of the race and of the country to take any part in the discussion of the relation of this evil to society. The prostitute is a present confrontation of the problem. There is no reason to think that these diseases are beyond the reach of preventive medicine any more than other contagious diseases, and their immunity from restriction, must be attributed to the public disinclination to discuss them and legislate concerning them. I hope that this association will not be deterred, by the outcry of certain classes of persons who are accustomed to think with their emotions rather than their brains, from taking the bold stand in this matter which is justified by science, by common sense, and by the demands of the public good.

Venereal Prophylaxis in the U. S. Navy for the Benefit of Public Health Officials

DR. CHARLES N. FISKE, Washington, D. C.: About 50 per cent. of the enlisted men of the Navy have a venereal disease during an average of 4 years. During 1908, there were 4,681 original venereal infections which entailed a loss of service and expense for treatment of 106,526 sick days; there were 1,001 cases of syphilis which represented nearly 7 per cent. of the total physical disability of the Navy for that year. While the morale has steadily and vastly improved during the past 10 years in other respects the damage resulting from this class of affection had assumed such proportions 4 years ago that numerous medical officers no longer felt justified in waiting indefinitely for moral regeneration; they felt that military efficiency demanded activities promising more immediate results; they instituted personal prophylaxis by the use of antiseptic irrigation and inunctions following exposure and on return to the ship or station. Certain results achieved caused the Navy Department nearly 2 years ago to authorize the extension of this work in connection with the customary educational propaganda, and distribution of confidential circulars throughout the service. Sailors and marines do not contract venereal disease from the navy, but from civil communities which are as notoriously indifferent to venereal disease as they were formerly to typhoid and other widespread infections. Military services have practiced compulsory notification of venereal disease for years and expect civil authorities to undertake similar measures for control. The source of the Navy's 15,000 first enlistment recruits, and the destination of a similar number of men discharged each year, is the civil population; its statistics would indicate that one youth out of every 6 in our urban population between the ages of 17 and 24 contracts a venereal infection each year. Venereal disease has by no means yet been conquered in the Navy, but there is evidence that its ravages are being materially lessened, and that instead of encouraging vice through the hope of immunity, the margin of failure of this prophylaxis is sufficiently wide to deter an increasing proportion of the personnel from sexual indulgence. The desire for clean men on clean ships has been stimulated, and no sense of security has been engendered.

Discussion on Venereal Diseases

Dr. Gardner T. Swarts, Providence, R. I.: Last year, as president of this Association, I took the liberty of appointing a committee to take up the subject of venereal prophylaxis, with the idea that the people of our country were prepared to receive instruction in these matters. These communicable diseases are preventable, and if boards of health are to conserve the public health, then these diseases should be put on the reportable list and steps taken to prevent their prevalence as far as possible.

Dr. J. S. Neff, Philadelphia: I think that it is not possible to compel physicians to reveal the existence of these diseases among their patients, and they will not report such cases to health departments.

Dr. John N. Hurty, Indianapolis: I believe that the road leading to the prevention of venereal diseases is the longest and roughest which hygiene and sanitary science has to travel. At this time, every tribe, every nation, and people of the earth are thoroughly syphilized. Think of that, and now we are proposing to eradicate it. The first man to propose education to eradicate these diseases was Solomon, and he began 5,000 years ago, and with education, such as he gave, and such as we propose to give, these diseases have increased and multiplied. Until we put aside that prudery which now prevents us from attacking this problem correctly, and which prevents us from teaching the child about his sexual nature and procreation, we can make no progress. Let us begin with the child.

Remarks by Colonel Theodore Roosevelt

Col. Theodore Roosevelt, who was unable to address the Association at the Auditorium, as expected, went out to Whitefish Bay in an automobile, and addressed the Association there. He said in part: I regret very much that I was unable to meet you this morning. I could not do so, as the schedule mapped out for me was three times as much as I could do. Like any other man in public affairs, I am awake to the needs of the public health. It is necessary to join our efforts for the preservation of the public health. It is important not only to keep the health of the individual, but also to keep the health of the nation. Yellow fever is a distinctive national problem. Several nationalities in the western hemisphere have dealt with it and must deal with it effectively to prevent the ravages of this scourge. The question of dealing with the public health is a matter of the last two generations. Half a century ago comparatively nothing was known of diseases which were a scourge to the human race. About 600 years ago the black death desolated Europe, a disease which undoubtedly we could deal with now. Then it took off two-thirds of the population of Europe. I have just come from a trip to the middle of Africa, where disease ravages mankind as it did our ancestors. I passed through regions where the sleeping sickness has to its credit over 200,000 deaths in one neighborhood.

The advances made in the medical profession during the last half century are incalculable. The work on the Isthmus of Panama could not have been done in its present shape a decade ago. The authorities could not have grappled with disease as they do now. The prime requisite in every nation is to have every man and woman an effective unit. You are dealing with the basic problem of citizenship. Men cannot be good unless they are healthy.

I welcome to this convention the delegates who come from foreign countries, especially from the Americas. In the two Americas we are solving the problem of living peacefully together. Our only rivalry, far different from Europe, is the endeavor to see which is best able to cope with the problems that confront us all. I welcome you as our rivals, who are doing all in your power to uplift and care for the physical well-being of the human race.

Disappearance of Yellow Fever from the Mexican Republic

Dr. E. Liceaga, of Mexico City, contributed a paper in which he stated that from the twentieth of December, 1909, not a single case of yellow fever had been observed either there or in any other part of the Mexican Republic. In spite of the success obtained, the sanitary service continues its action with the same regularity as in previous years, although it is now directing its energies especially against malaria.

Quarantine or Isolation in Diphtheria

Dr. James Roberts, Hamilton, Ont.: I wish to call attention to the dominance of the personal contact factor in the spread of this disease. Defective drains, bad ventilation, etc., although prejudicial to health, cannot cause diphtheria which is due to the presence of certain bacteria Overcrowding assists the spread of diphtheria; 45 per cent. of my cases, representing not more than one-quarter of the school population, come from the districts where the industrial classes are centered. The presence of an ignorant foreign element hinders the work of sanitation and favors the spread of disease. Diphtheria, owing to the manner by which it is spread, is a school disease. The Boston board of health, after an exhaustive investigation, concluded that it would be impracticable to isolate bacillus carriers who did not themselves suffer from the disease, as these constitute 1 per cent. of all healthy school children and these germs are ordinarily of little virulence. The restriction of this disease is for practical purposes limited to isolation of clinical cases and control of the contacts in connection with these. When isolation cannot be strictly carried out at home hospitalization is the best method. But isolation hospitals are very unpopular, owing to their usually poor equipment, the danger of cross infection, etc. They safeguard the community, but often at the expense of the individual. Our present day conception of diphtheria as pre-eminently a school disease makes it imperative that the inspection of school children should be thorough enough for the detection of early cases, and of those children harboring virulent bacilli. When this has been accomplished, regulations intelligently enforced providing for the proper isolation of all cases, either at home or in suitable institutions, will be productive of better results and much less annoyance and hardship than the continued enforcement of antiquated laws and regulations incompatible with our present knowledge of diphtheria.

The Ventilation of Sleeping Cars

Dr. T. R. Crowder, Chicago: The only available method of accurately estimating the air supply of running cars is by determining the amount of carbonic acid gas which their atmosphere contains, and from this computing the amount of air which enters. The problem is mathematically simple, and rests on the known amount of carbonic acid thrown off by respiration. This method has been applied in the study of sleeping-car ventilation. About 2,000 samples of air have been analyzed from these cars. It shows that an average of approximately 40,000 cubic feet of air is supplied hourly to the main sleeping compartment of standard cars, which are equipped with the ventilating system now in common use by the Pullman Company, and that the amount is rarely, if ever, under 20,000 cubic feet. There are rarely more than 20 people in a sleeping car; hence each person is supplied with about 2,000 cubic feet of air each hour. This applies to the findings in occupied berths, both lower and upper, as well as to the car in which the berths are not made up. The high wind pressure to which running railway cars are subjected results in fair ventilation even when they have no special ventilating devices. The amount of air which they receive will vary from 15,000 to 50,000 cubic feet an hour, depending on various conditions.

When cars are uncomfortable and feel "stuffy" the fault is not generally to be laid to an inefficient air supply, as is commonly supposed. It rarely happens that the air supply is so inadequate to bring about this condition, though it may at times contribute to it. The fault generally lies chiefly in an improper control and regulation of the heat supply. The degree of humidity of the atmosphere is also an important factor; but its control is difficult, and often impossible. In my opinion, heat control is a more important problem in maintaining comfort in sleeping cars than is the furnishing of a greater air supply; and relatively greater attention should be concentrated on this element of the problem of maintaining a hygienic atmosphere in cars.

Owen Bill Endorsed

The Association endorsed the principles embodied in the Owen Bill for the establishment of a national department of health.

New Sections

Two new sections, the Section on Sociology, and the Section on Sanitary Engineering were formed.

Resolutions Adopted

INSTRUCTION IN HYGIENE AND SANITATION

A resolution was adopted recommending that a committee be appointed to consider and report next year a scheme (of which Dr. Probst shall be chairman) for instruction in hygiene and sanitation in high schools, and in colleges and universities, with the view to bringing the necessity for such instruction with definite recommendations to the attention of educational authorities. Other resolutions were adopted as follows:

TERMINAL DISINFECTION

Whereas, A considerable number of municipal health officers believe terminal disinfection at the conclusion of communicable diseases is of questionable value and extravagant in practice; and

Whereas, A few municipal health officers of sound judgment and [illegible] have abandoned this practice as a prophylactic [illegible], therefore be it

Resolved, That the Municipal Health Officers Section refer to the executive committee a recommendation that the American Public Health Association appoint a committee to study the end results and practice in communities where terminal disinfection is no longer practiced at the conclusion of cases of communicable disease.

COOPERATION WITH CENSUS BUREAU

Resolved, That this Association appoint a committee to cooperate with the Bureau of the Census in establishing standard methods of [illegible] for municipal sanitation.

INSTRUCTION OF CHILDREN IN SEXUAL MATTERS

Resolved, That this Association offers and accords its hearty [illegible] and commendation of the educational work carried on by the *Ladies' Home Journal* regarding the necessity and ways of [illegible] children the truth about reproduction and the sexual life

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

An Overcrowded Profession in Nevada

A Nevada correspondent writes regarding the proportion between physicians and population as given in the Educational Number of The Journal:

"In this state about thirty-five new physicians locate each year, with little or no increase in the population and no likelihood of there being much increase. These new men usually 'go broke' in a short time. Those of us who are here, and who are not crowded out by the new men who are able to stay, have all that we possess invested in property and consequently are unable to leave. Of course, there are exceptions, as some have made investments which have been good ones, but the fact remains that few physicians here are out of debt and physicians are not looked on at the stores as good credit. Many eastern physicians read the boom accounts of some mining camp and think that there are splendid openings in Nevada, but long before they get here, the place may have dozens of roving physicians who have located there. Ethics do not count for much in these new towns. If a doctor gets a contract with a mine for a year, he seldom gets it renewed, as the competition for the place is so keen that some other physician underbids him. The fact that physicians will look for desirable locations where the population is the lowest and the health is the best speaks volumes for the lack of business sense displayed by the average physician. The fact remains that new physicians arrive here at the rate of about thirty-five a year in a state with a population of only about 40,000. What would you think if thirty-five new doctors located each year in a town like South Bend, Indiana? Yet the total population of the state of Nevada is not much greater than that of South Bend, while health conditions are naturally much better."

Our correspondent calls attention to a serious situation. A state with as small a population as Nevada (42,325, according to the 1909 estimate) and with this population widely scattered, can support only a limited number of physicians. Each new arrival means increased competition and more difficult conditions for all. The proportion of physicians to population in the United States is one to 655 if we count only those legally entitled to practice and in active practice—while in Nevada the relative number of physicians is nearly three times as great, there being one to every 239 inhabitants. These conditions make it almost impossible for newcomers to hope for success or even for a living. The facts should be kept in mind and local conditions carefully considered by young physicians before deciding on a location, for Nevada is by no means the only place that is overcrowded, so far as physicians are concerned.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course. Several weeks' programs are given in this issue so that hereafter the programs may appear from week to week well in advance of the time for their use.]

First Month—Third Weekly Meeting

Congenital Syphilis

1. Dystrophies Syphilitic in Origin: Syphilitic stigmata. Small child, slight resistance to diseases, subject to rickets. Asymmetry of skull, microcephaly, flat nose, palate. Spinal deformities, dactylism, flat foot, luxation of hip. Aural and ocular defects. Retarded mental development, idiocy. Malformation of teeth.
2. Early Congenital Syphilis: Time of onset of symptoms. Coryza, facies, saddle nose, rhagades, anemia. Cutaneous lesions, macular eruptions, psoriaform syphilide, mucous patches, pemphigus neonatorum. Nails. Hemorrhages.

Bony changes, skull, pseudoparalysis of Parrot, osteochondritis syphilitica. Involvement of liver, spleen, testicle.

3. Late Congenital Syphilis: Age at onset. Earlier manifestations. Development, infantilism. Teeth. Keratitis, chronic otitis. Nose and palate. Skin lesions, gummata and ulcers. Bone lesions, lymph nodes.

Fourth Weekly Meeting

Diagnosis of Syphilis

Early: Microscopic diagnosis, *Spirochæta pallida*, primary and secondary lesions.

Late: Previous history, scars, discolorations of skin, alopecia, bone nodes, frequent miscarriages.

Serum Diagnosis: Wassermann reaction, theory, technic. Noguchi modification. Value of reaction, occurrence in different stages of syphilis, in other diseases, prognostic value.

Therapeutic Test: Value of antisyphilitic treatment in obscure conditions.

Treatment

Prophylaxis: 1. Control of prostitution. 2. Control of the syphilitic, by reporting the disease, by providing hospitals, by vaccination. 3. Legal measures, regarding marriage, occupations, "private-disease" quacks. 4. Education of the medical profession, of the public. 5. Personal prophylaxis. 6. Prophylaxis of hereditary syphilis.

Abortive Treatment: 1. Excision or cauterization of the chancre; practical value of each. 2. Constitutional abortive treatment.

Constitutional Treatment: Methods of treatment; expectant, interrupted, continuous. 1. Mercury. Physiologic action. Administration by ingestion, inunction, injection, fumigation, baths and plasters; advantages and disadvantages of each.

2. Potassium iodid. Physiologic action of iodin. Therapeutic effects. Methods of administration, preparations, dosage, untoward effects. 3. Mixed treatment. Indications, advantages. 4. Serum treatment.

Treatment of Local Manifestations: 1 Chancre. 2. Skin and mucous lesions. 3. The eye.

General Treatment: Diet, hygiene, etc.

Monthly Meeting

Etiology and Early Diagnosis of Syphilis.
The Methods of Treatment of Syphilis.
Syphilis as a Factor in the Social Life of the Community.

Reference Books for the First Month

Works on "Syphilis," by Keyes, Hutchinson, Fournier, and Power and Murphy.

Morrow: Genitourinary Diseases, Syphilology and Dermatology.

Bangs and Hardaway: Genitourinary Diseases, Syphilis and Diseases of the Skin.

Taylor: Genitourinary and Venereal Diseases.

Second Month—First Weekly Meeting

General Subject for the Month: Diseases of the Blood-Vessels

Anatomy

Arteries: Gross anatomy, size, shape, course, anastomoses, terminal arteries. Microscopic anatomy, the three coats, vasa vasorum. Lymphatics and nerves. Arterioles.

Capillaries: Structure, size.

Veins: Histologic structure; anastomoses; sinuses.

Physiology

Velocity of blood flow in arteries, veins and capillaries, methods of determination, variations in flow and causes.

Blood-Pressure: Methods of determination, the sphygmomanometer. Arterial pressure, systolic, diastolic and mean. Capillary pressure. Venous pressure. Production of normal pressure: (1) heart beat, (2) resistance to blood-flow, (3) elasticity of arteries, (4) quantity of blood. Effect on blood-pressure of variations in each of above-named factors. Effect of muscular efforts; of respiratory movements.

The Pulse: Pulse wave, velocity, form of wave, sphygmograph, anacrotic and catacrotic limbs. Pulse wave in health and in disease. Venous pulse.

Vasomotor Nerves

Vasoconstrictors: Origin, center in medulla, course, general distribution, tonicity. Vasoconstrictor reflexes, pressors and depressors.

Vasodilators: Origin, general course and distribution, properties. Vasodilator reflexes.

Reference Books for the Second Month

Babcock: Diseases of the Heart and Arterial System.
Meigs: Human Blood-vessels
Russell: Arterial Hypertonus, Sclerosis and Blood-pressure.
Janeway: Clinical Study of Blood-pressure.
Text-books on Practice of Medicine and on General Surgery.

Second Weekly Meeting

DISEASES OF THE ARTERIES

Arteriosclerosis

Etiology: Age, sex, occupation, hypertension, syphilis. Chronic intoxications, mode of living, renal disease. Rôle of poisons in production of arteriosclerosis. Relation between arterial and kidney lesions.

Pathology: 1. Nodular form. Gross and microscopic changes. 2. Senile form. 3. Diffuse arteriosclerosis. Frequency with which different arteries are involved. Involvement of visceral arteries. Sclerosis of veins.

Symptoms: Increased blood-pressure, thickening of arteries, hypertrophy of heart, change in heart sound. Cardiac symptoms, due to involvement of coronary arteries. Cerebral symptoms, transient paralysis, aphasia, vertigo, hemorrhage, cerebral degenerations. Renal symptoms. Arteriosclerosis of the splanchnic region. Sclerosis of arteries of lower limbs, intermittent claudication.

Treatment: Prophylactic, diet, exercise, habits. Curative, physiologic and therapeutic actions of iodin, mode of administration.

Symptomatic: Vaso-dilators, purgative, venesection, etc.

State Boards of Registration

COMING EXAMINATIONS

Arizona: Phœnix, October 3-4. Sec., Dr. Ancil Martin.

Colorado: The Capitol, Denver, October 4. Sec., Dr. S. D. Van Meter, 1723 Tremont Place.

Georgia: Regular, The Capitol, Atlanta, October 11. Sec., Dr. I. H. Goss, Athens; Homeopathic, Atlanta, October 3. Sec., Dr. R. E. Hinman, 153 Whitehall Street.

Idaho: Boise, October 4. Sec., Dr. O. J. Allen, Bellevue.

Illinois: Coliseum Annex, Chicago, October 19-21. Sec., Dr. James A. Egan, Springfield.

Kansas: Topeka, October 13. Sec., Dr. H. A. Dykes, Lebanon.

Louisiana: New Orleans, October 18-19. Sec., Dr. A. B. Brown, 108 Baronne Street.

Michigan: Lansing, October 11-13. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: State University, Minneapolis, October 4-6. Sec., Dr. W. S. Fullerton, St. Paul.

Mississippi: Jackson, October 11-12. Sec., Dr. S. H. McLean.

Montana: The Capitol, Helena, October 4. Sec., Dr. William C. Riddell.

New Jersey: State House, Trenton, October 18. Sec., Dr. H. G. Norton.

New York: Albany, September 27-30. Chief of Examinations Division, Dr. Charles F. Wheelock.

North Dakota: Grand Forks, October 4-6. Sec., Dr. H. M. Wheeler.

Oklahoma: Muskogee, October 11. Sec., Dr. Frank P. Davis, Enid.

Rhode Island: State House, Providence, October 6. Sec., Dr. Gardner T. Swarts.

Wyoming: State Capitol, Cheyenne, October 12-14. Sec., Dr. S. B. Miller, Laramie.

West Virginia July Report

Dr. H. A. Barbee, secretary of the West Virginia State Board of Health, reports the written examination held at Charleston, July 11-13, 1910. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 67 of whom 48 passed and 19 failed. The following colleges were represented:

PASSED

College	Year Grad	Per Cent.
University of Louisville	(1910)	80, 83, 83, 84, 85, 86, 90
Johns Hopkins University	(1910)	86
University of Maryland	(1910)	82
College of Physicians and Surgeons, Baltimore	(1910)	80, 82, 82, 82, 82, 83, 83, 83, 83, 83, 84, 84, 84, 85, 85, 86, 87, 90.
Baltimore Medical College	(1908) 85; (1910)	85
Maryland Medical College	(1910)	80, 81, 86
Barnes Medical College	(1910)	85
Cornell University Medical College	(1910)	86
North Carolina Medical College	(1910)	81
Eclectic Medical College, Cincinnati	(1910)	84
Jefferson Medical College	(1910)	84, 86, 87, 89, 89
University College of Medicine, Richmond	(1910)	82
Medical College of Virginia	(1910)	81, 82, 83, 85, 85
University of Virginia	(1910)	87

FAILED

College	Year Grad	Per Cent.
College of Physicians and Surgeons, Chicago	(1910)	78
University of Louisville	(1908) 67; (1910)	74, 75, 75, 78, 78, 78, 79.
College of Physicians and Surgeons, Baltimore	(1910)	76, 77, 77
Eclectic Medical College, Cincinnati	(1910)	71, 74, 75
Meharry Medical College	(1908) 77; (1910)	74
Chattanooga Medical College	(1903) 77; (1910)	77

The following questions were asked:

OBSTETRICS AND GYNECOLOGY

1. What forms of hemorrhage are met with before, during or after labor, treatment of each? 2. Define puerperal eclampsia and give its treatment. 3. Name the source, character, relative quantity, and functions of the liquor amnii. 4. What are the most serious complications met with in breech presentation? 5. How would you treat a case of hour-glass contraction? 6. How would you treat a case of face presentation? 7. How would you treat a case of gonorrheal conjunctivitis in an infant? 8. Give five causes of metrorrhagia. 9. Give in full your treatment of gonorrheal endometritis. 10. Give symptoms and treatment of cystitis.

PRACTICE OF MEDICINE AND PEDIATRICS

1. Give the diagnosis and treatment of acute follicular tonsillitis. 2. What is the practical import of hematuria, and how can its source be diagnosed? 3. Give the etiology and treatment of St. Vitus' dance. 4. Give the symptoms indicative of impacted gallstone. 5. Give some suggestions for diet after weaning and the feeding of children between the ages of one and two years. 6. State some rules regarding bathing, exercising and clothing infants. 7. Describe and treat infantile syphilis. 8. Differentiate pneumonia from capillary bronchitis, give treatment of each. 9. Thrush: State conditions that favor its development. Give treatment. 10. What diseases in infancy usually precede congestion of the brain? Give necessary precautions to prevent.

CHEMISTRY AND MEDICAL JURISPRUDENCE

1. Explain the following terms: atom, molecule, oxidation, reduction, analysis, synthesis. 2. Write the formulas for calomel, bichlorid of mercury, nitrate of silver, copperas, saltpeter. 3. What are the source, properties and uses of quinin, strychnin and cocain? 4. Name any five organic acids and give their source and uses. 5. Distinguish between wood alcohol and grain alcohol as to their properties and uses. 6. Explain the chemistry of respiration. 7. What are the sources and properties of phenol (carbolic acid)? How would you treat a case of phenol poisoning? 8. Define insanity and give some of its various forms. 9. What is senile dementia? 10. What is the hydrostatic test and what is its value in a case of suspected infanticide?

ANATOMY AND EMBRYOLOGY

1. Into what classes are the bones divided and give a few instances of each. 2. Describe the antrum of highmore. 3. Trace a drop of blood from the tip of the tongue to the index finger. 4. Name the lobes and fissures of the brain. 5. Describe the solar plexus of nerves. 6. Describe the stomach. 7. Name the abdominal viscera. 8. Describe the aorta and name its branches. 9. What changes take place in the vascular system at birth? 10. Describe the embryo at end of six weeks of gestation.

SURGERY

1. Describe the treatment of a bullet wound of the leg. 2. Define thrombosis, embolism. Describe the symptoms of venous thrombosis of the leg. 3. Treat a compound comminuted fracture of the middle third of femur. 4. How would you distinguish between a fracture at the neck of the femur without impaction and a dislocation? 5. Burns: Define, classify; give prognosis and treatment. 6. Give the nature and treatment of Potts' fracture. 7. Name the dangers and give the treatment of carbuncle. 8. What is hemorrhage? Divide anatomically and clinically. Treat mechanically and therapeutically. 9. How would you determine that a limb was injured beyond hope in a crushing accident? 10. Give the cause and treatment of varicose ulcers.

BACTERIOLOGY AND HYGIENE

1. What are pyogenic bacteria? 2. Define germicide, antiseptic, [illegible] disinfectant. 3. Define immunity. What is natural [illegible] acquired immunity, inherited immunity? 4. How is diphtheria antitoxin obtained? What is the usual dose? 5. What disease is transmitted by a bite of the infected *Stegomyia fasciata*? 6. How do forests benefit public health? 7. Give six desirable factors in the location of a tuberculosis sanitarium. 8. What four diseases may be acquired from drinking cow's milk? 9. What [illegible] are advanced against vaccination? 10. Name five good [illegible] and give indications for their use.

MATERIA MEDICA AND THERAPEUTICS

1. What are antiseptic remedies? Name three and give indications for their use. 2. What are excito-motors? Name three and explain therapeutic action of each. 3. Give two cerebral sedatives and give therapeutic action. 4. Aconite: Physiologic action. Therapy and dose of tincture. 5. Apomorphin: From what derived, physiologic action, therapy and dose. 6. Nitroglycerin: Give properties, physiologic action, therapy and dose. 7. Digitalis: Dose and indications for use. 8. Name three emetics with dose of each. 9. Ferrum: Name four preparations and dose of each. 10. Atropin: Source, physiologic action and dose.

PHYSIOLOGY AND HISTOLOGY

1. Food: Divided into how many classes, give example and chemical composition of each. 2. Respiration: Describe it, give number in adult and in child one year old. 3. Animal heat: Describe it, give temperature in mouth, axilla and rectum and daily variation. 4. Describe the course and changes nitrogenous, foods undergo in the body. 5. What is the effect of alcohol long continued on the human body? 6. Red corpuscles: Describe them, where formed and destroyed and give function. 7. Describe the general, pulmonic and portal circulation. 8. How is the heart nourished and how is arterial tension maintained? 9. Give histology of skin. 10. Give histology of lobule of human lung.

SPECIAL MEDICINE

1. Define Pott's disease. Make early diagnosis. 2. Define blood pressure. How determined? Give diagnostic value. 3. Give pathology, diagnosis and treatment of progressive muscular atrophy. 4. Name the cardinal symptoms of tumor of the brain. 5. Give etiology, diagnosis and treatment of optic neuritis and optic atrophy. 6. For what conditions and in what strength would you use the following in the eye: boric acid, sulphate zinc, nitrate silver, atropin sulphate, cocain, bichlorid of mercury and yellow oxid of mercury. 7. Describe, diagnose and treat nasal polypi. 8. Give the etiology, pathology and treatment of the symptom ozena. 9. Diagnose and treat hysteric aphonia. 10. Give etiology, symptoms, diagnosis and treatment of spasm of the larynx in children.

Missouri June Report

Dr. Frank B. Hiller, secretary of the Missouri State Board of Health, reports the written examinations held at St. Louis, and Kansas City, June 13-15, 1910. The number of subjects examined in was 12; total number of questions asked 90, percentage required to pass, 75.

At the examination held at St. Louis, the total number of candidates examined was 125 of whom 114 passed and 11 failed. The following colleges were represented:

PASSED

College.	Year Grad	Per Cent.
Yale Medical School	(1909)	87.3
Northwestern University Medical School	(1897)	78.6
College of Physicians and Surgeons, Chicago	(1910)	82.2
Harvard Medical School	(1907)	87.4
American Medical College St. Louis	(1910)	75, 76, 81.2
St. Louis College of Physicians and Surgeons	(1909)	81.2
Barnes Medical College	(1909) 75; (1910)	75, 75.2, 75.2, 77.2, 79.4, 82.5, 83.4, 83.8, 84.2, 85.7, 87.3, 87.3, 87.8.
St. Louis University	(1909) 84.6, 86.4; (1910)	75.2, 78.3, 78.3, 78.4, 80.1, 80.6, 81.6, 81.9, 82.1, 82.2, 82.4, 82.6, 82.7, 83, 83.2, 83.2, 83.2, 83.6, 83.6, 84, 84.1, 84.3, 84.8, 85, 85.2, 85.5, 85.7, 86.1, 86.2, 86.3, 86.4, 86.6, 86.6, 88.2, 88.4, 88.6, 88.9, 89.6.
Washington University, St. Louis	(1908) 75.1; (1910)	77.2, 78.2, 78.6, 78.8, 78.9, 79.1, 79.2, 79.4, 79.7, 80.5, 80.6, 80.8, 81.1, 81.2, 81.3, 81.5, 81.7, 82.3, 82.6, 82.7, 82.8, 83.2, 83.3, 83.3, 83.4, 83.5, 83.6, 83.6, 83.9, 84, 84, 84, 84.1, 84.2, 84.5, 84.8, 85.1, 85.2, 85.6, 86.2, 86.8, 86.9, 87.2, 87.5, 87.9, 88.8, 92.5.
Woman's Medical College of Pennsylvania	(1908)	83.6
Meharry Medical College	(1907) 76; (1909)	75.9
University of Nashville	(1901)	75

FAILED

College.	Year Grad	Per Cent.
St Louis College of Physicians and Surgeons	(1906) 56.7; (1909)	66.5
Homeopathic Medical College of Missouri	(1909)	70.6
Barnes Medical College	(1907) 53.2; (1910)	62.5, 65.6, 67.7, 68.8
Ensworth Medical College	(1910)	64.1
American Medical College, St. Louis	(1909)	63.1
Vanderbilt University	(1910)	30

At the examination held at Kansas City, the total number of candidates examined was 31 of whom 29 passed and 2 failed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
University of Kansas	(1910)	82.2
Kansas Medical College	(1894)	75
Hospital College of Medicine, Louisville	(1901)	79.1
University Medical College, Kansas City	(1910)	75, 75.3, 78.2, 79.1, 79.2, 79.6, 80.1, 80.6, 80.8, 81.2, 82.8, 84.6, 85.2, 85.3, 87.2
Ensworth Medical College	(1910)	79.6, 82.9, 83.8, 84.1, 85.7
Kansas City Hahnemann Medical College	(1910)	80.8, 82.9, 88
St. Louis College of Physicians and Surgeons	(1907)	76.1
St Louis University	(1910)	86.3
Columbia Univ., Coll. of P. & S.	(1907)	87.1

FAILED

College	Year Grad.	Per Cent
Ensworth Medical College	(1910)	69.7
University Medical College, Kansas City	(1908)	65.8

Book Notices

Radiumtherapy. By Dr. Louis Wickham, Physician in Saint Lazarre, and Dr. Degrais, Chief of the Laboratory in the Hôpital Saint-Louis. Translated by S. Ernest Dore, M.D., Cantab. With an Introduction by Sir Malcolm Morris, K.C.V.O. Cloth. Price, $5 net. Pp. 306, with 92 Illustrations. New York: Funk and Wagnalls Co., 1910.

This is a personal book, and being at the same time scientific it is all the more interesting and valuable for that fact. It is a temperate effort to state the results of the work which Wickham with the collaboration of Degrais has done in this field. There is first a full consideration of the physics of radium as it bears on its therapeutic use, of its effects on tissues and the reasons therefore, and of the technic of the therapeutic use of the agent. All of this is valuable, but the account of technic is particularly so, as this is in great part the result of Wickham's pioneer work. A large part of the work is devoted to therapeutic results and this is conservative and convincing. The results obtained are for the most part those we have learned to expect from *x*-rays in epithelioma, leukoplakia, keloid and other scars, and tuberculosis of the skin. The results shown in these conditions are excellent, but they are not superior to those which have been obtained from *x*-rays in equally competent hands. Indeed, they are striking in their similarity, and support the view that the actinic energy of radium rays and *x*-rays differ very slightly from each other in their effects on living tissues. A very full description is given of the results in cutaneous angiomas; the subject deserves this, for it is with these lesions that the authors have had their most striking results. The results of the treatment of angiomas with radium are beautiful, surpassing any that have been obtained by any other method of treatment except the still more recent one of refrigeration with liquid air or solid carbon dioxid. Equally good results are shown in pigmented nevi.

The book constitutes a report of original research in therapeutics of the highest interest and of practical value. And the book is worthy of the research; it is scientific in spirit, accurate, without loose or overstatement, and conservative. Even without practical interest in the subject, one should find the book entertaining as showing the marvelous results that are being obtained by scientific workers in these new therapeutic fields.

Duodenal Ulcer. By B. G. A. Moynihan, M S., Senior Assistant Surgeon at Leeds General Infirmary, Eng. Cloth. Price, $4 net. Pp. 367, with 63 Illustrations. Philadelphia: W. B. Saunders Co., 1910.

This volume is written in that clear, concise style, which carries the conviction to the reader that the author is master of the subject. There are four short chapters dealing respectively with ulceration of the duodenum in cases of burns or scalds; uremic ulcer; tuberculous ulcer, and ulcer in melenaneonatorum. Then follows a chapter on the important subject, "Symptoms and Diagnosis of Chronic Duodenal Ulcer." The clinical history is so clearly stated that it would seem that the diagnosis should be made almost as easily as the diagnosis of an ordinary case of appendicitis. Some internists perhaps will be somewhat shocked to read: "A dedescription of these symptoms (chronic duodenal ulcer) is to be met with in most of the text-books of medicine under the caption 'hyperchlorhydria' or 'acid gastritis' and the belief that these words are a sufficient diagnosis is very general. After giving a diagnosis of duodenal ulcer I am not infrequently met with the objection that the patient's symptoms are indicative of nothing more than 'persistent hyperchlorhydria.' This is the medical term for the surgical condition duodenal ulcer. Recurrent severe 'hyperchlorhydria' *is* duodenal ulcer." These are rather strong statements but they are backed up by the unusually large experience of a careful observer who has demonstrated the condition present by operation, therefore must have great weight.

The treatment of duodenal ulcer by gastro-enterostomy and the various accessory operations is well discussed, and the technic of the operations clearly illustrated. The use of the terms "vertical" and "horizontal" to define the direction of the incision or line of suture in the intestine or stomach is confusing and unfortunate, as these words have a very definite meaning when used to indicate direction, which is in no sense synonymous with "transverse" and "longitudinal." The clinical picture of perforating ulcer is so clearly drawn that it would seem as though failure to recognize these cases in the future should be the exception. In an appendix is found a detailed report of all of the cases operated on by the author up to date.

This is an excellent work and should be carefully studied by every physician who is treating this class of cases, as there are altogether too many patients going the rounds being treated for so-called dyspepsia and indigestion who ought to be relieved permanently by suitable operation.

Practical Radium. By Heber Robarts, M.D., 5899 Cates Ave., St. Louis. Cloth. 1910.

This is one of those books that begin with the author's portrait. And as that would indicate, it is a personal book. The tone of it reminds one of Mr. Dooley's title for Roosevelt's book on the San Juan campaign, "Alone in Cuby." It is filled, not with accepted knowledge of radium and the therapeutic uses of radium, but with the author's peculiar views of this subject. These are curious, often naïve, and by no means lacking in confidence. "Practical Radium. The Causation of Cancer and Its Curability with Radium" (this from the front page). "I have simplified the exposition of cancer . . . so that no error may creep in to divert my meaning. It is therefore within the province of every physician . . . to be able to have at least a well-defined reason for the cause and continuance of cancer, and the methods employed for its relief." "Radium has done more to relieve and eradicate cancer than all other remedies." "Where medicine is employed for the treatment of skin diseases [no qualifications anywhere as to the kind], radium is more effective . . . and requires less time to effect a cure." "In all the varieties of cancer, internal and external, the treatment calls for radium . . ." These sentences selected in five minutes give some idea of the author's restraint. Thirty pages are given to what is called "the exposition of cancer and radium technic." This is in the form of a dialogue and constitutes as gross a piece of balderdash as it is easy to find. It is not instructive; it is not amusing; it is just stupid bombast. In our opinion the book is an offense to the already overtaxed subject of radium therapeutics.

La Greffe Ovarienne: Historique; Résultats Cliniques et Thérapeutiques. Par le Docteur Ivan Scheurer. Paper. Price, 4.50 francs. Pp. 182, with 9 Illustrations. Paris: G. Steinheil, 2, rue Casimir-Delavigne, 1910.

This monograph of about 180 pages contains a historical review of the experimental work done on animals on the grafting of ovaries, together with the work done by others on the grafting or transplanting of ovaries in the human subject. This part of the subject occupies about 133 pages and is quite complete. Following is a detailed report of the results of the work of Professor Tuffier on the grafting of ovaries in the human subject at the Beaujon Hospital. At the present time Tuffier has had more experience in the grafting of ovaries in women than perhaps any other surgeon and his results demonstrate beyond doubt that the ovary may be successfully grafted. Not only has menstruation become reestablished in women with grafted ovaries but pregnancy has taken place. The ovary has been successfully grafted on the peritoneum near its normal site, on the psoas muscle retroperitoneally, in the cornua of the uterus, in the Fallopian tube, in the subcutaneous tissue of the abdominal wall and in the subperitoneal connective tissue. Success, therefore, does not depend on the location. Tuffier has successfully grafted ovaries that have been kept in cold storage for several days.

The monograph is an interesting one and contains many useful hints regarding the grafting of organs and their subsequent behavior.

Die Röntgentherapie in der Dermatologie Von Dr Frank Sheultz, Privatdozent, Oberarzt der Abteilung für Lichtbehandlung and der Kgl. Universitätspoliklinik für Hautkrankheiten zu Berlin. Paper. Price, 6 marks. Pp 143, with 130 Illustrations Berlin: Julius Springer, 1910.

This monograph gives an excellent statement of the present position of Roentgentherapy in dermatology. The author devotes the first 40 pages to a consideration of technic and apparatus. This is a valuable part of the book, because a satisfactory and not overburdened description of the present day technic and apparatus of x-ray therapy is difficult to find. The remaining 100 pages are given to therapeutics, 40 pages to general therapy and the remaining 60 to special therapy. Under special therapy the various dermatoses treated with x-rays are considered. The author considers the uses of x-rays in various dermatoses from the standpoint of one with large clinical experience, and his views are scientific and temperate. It is interesting to see him confirm again the findings of earlier conservative authors of the value of x-rays in dermatology. He gives a convincing summary of the usefulness of x-rays in various dermatoses, fortifying his statements with many beautiful reproductions of photographs. These are striking proof of the value of this agent when employed by one who is as well an expert in dermatology as in the use of x-rays. It is a valuable addition to the literature of a subject which at present is being undervalued. It well deserves translation and publication in English.

Handbuch der gesamten medizinischen Anwendungen der Elektrizität einschliesslich der Röntgenlehre. Herausgegeben von Prof. Dr. med. H. Boruttau, Privatdozent für Physiologie an der Universität Berlin, und Prof. Dr. med. L. Mann, Privatdozent für Nervenheilkunde an der Universität Breslau. Band I. Paper. Pp. 599, with illustrations. Leipzig: Dr. Werner Klinkhardt, 1909.

In the first volume of this work, which is to consist of three volumes, is found a very elaborate presentation of the physics and physiochemics of electricity. The various devices, both chemical and mechanical, for the generation of electricity are described in detail as well as all accessory devices such as galvanometers, interrupters, rheostats, commutators, etc. The difference in the physical and chemical properties of the various electric currents such as the direct, alternating, and induced, etc., are explained, following which is an interesting chapter on electro-physiology. A chapter on electropathology or the injurious effects of electricity as seen in lightning stroke or contact with strong industrial currents closes this volume.

The use of electricity is increasing so rapidly and the harmful effects of the strong currents found in the industries are manifested in such a variety of ways that it is necessary for every physician to be familiar with these harmful effects even though he does not make use of electricity as a therapeutic agent. The subject is so important that it would be well if this work were translated so that those who are unable to read it in the original might become familiar with its contents.

Medicolegal

Responsibility for Gauze Left in Kidney Cavity—Obligations of Surgeon—Evidence of Local Custom Excluded—Surgeons Not Liable for Negligence of Hospital Nurses and Interns

The United States Circuit Court of Appeals, Seventh Circuit, says that Harris vs. Fall (177 Fed. R. 79), was an action for alleged malpractice brought by the latter party, a resident of Ohio, who authorized his local physician to correspond with the defendant, a Chicago surgeon, with reference to performing an operation, which it was arranged should be performed in a Chicago hospital. The operation was for stone in the right ureter, but none was found, and a subsequent operation was performed wherein the right kidney was removed. The suit arose out of the latter operation and ensuing treatment of the wound, as at some stage of treatment a band of gauze used therein was deposited and left in the kidney cavity, causing serious disturbance until removed long afterwards through another operation.

In reference to the treatment, the defendant testified that he used fabrics to clean out the wound, but left nothing in the wound when finished, that he then packed with drainage, by inserting successively strips of gauze, by means of an instrument, with the strips reaching the bottom of the cavity, the next two inches farther up, and so graduating their locations; that he thus put in five or six strips—making no count or record of the exact number—each strip for such use being seven or eight inches wide and a yard long; that the outer end of each strip was held in a clamp during the process and each remained outside the wound, for removal at the next dressing; that he then sewed up the wound, leaving an opening for packing two to two and one-half inches in length, and then put on the outside dressing.

The patient remained at the hospital some seven weeks after the second operation, under the charge of the defendant, who made frequent examinations of wound and dressings, and on occasions attended to the dressing. Generally, however, one or another of two interns of the hospital attended to the packing and dressing under instructions given them by the defendant.

There was no question but that the defendant was of excellent repute for skill in surgery, and that the removal of the kidney was skillfully performed. But in undertaking this professional work, the obligation was incurred by him to exercise throughout the performance of his engagement both "the ordinary care and skill of his profession, in the light of modern advancement and learning on the subject," and his own best ability, skill, and care. That the facts stated, therefore, established a case of malpractice and serious injury, well within the rule, if the defendant was responsible for the leaving of the gauze in the kidney cavity, was unquestionable.

There was no error in the exclusion of testimony offered by the defendant to show "that at the time and place of the treatment by defendant of plaintiff it was the custom of reasonably careful" surgeons in treating similar cases to leave the "subsequent care of patients in the matter of dressing, packing, and unpacking of such wounds to the house doctor." In each form of tender the proof of custom was thus limited either to Chicago or to the hospital in question—not a general custom. The rule is elementary that such local custom cannot enter into the contract made with a stranger to locality and custom without evidence tending to show notice, and, no offer appearing to prove that either the plaintiff or his Ohio physician, who represented him in the arrangement, was familiar with the alleged local custom, the exclusion of the offered evidence was proper.

The trial resulted in a judgment in favor of the plaintiff for $4,000 damages, but that is reversed, and a new trial ordered, on account of error in an instruction given the jury that: "The defendant has claimed that even though plaintiff did carry the gauze from Chicago in his body when he left here in March that the defendant is not to be held responsible for that, unless it appears that the defendant was responsible for allowing the plaintiff to go away from here with the gauze in his body as distinguished from the house surgeon, who the testimony shows participated in the treatment and care of the plaintiff during his entire stay at the hospital. But on that question I charge you as a matter of law that the defendant in this case cannot defend himself by saying that what was negligently done to this plaintiff, if negligence there was, is attributable to some one or more of the house surgeons at the hospital. It was his case, and he must discharge his obligation to the plaintiff under the facts in this case as if he had no house physician associated with, or participating with, him in the care and treatment of this plaintiff."

Support for this instruction rested on this proposition: That the engagement of the defendant, under the circumstances in evidence, conclusively implied his obligation, not only to perform and complete the operation—which, as defined in Akridge vs. Noble, 114 Ga. 949, "begins when the opening is made into the body and ends when this opening has been closed in a proper way after all appliances necessary to the successful operation have been removed from the body"—but to attend, either personally to all care, dressings and treatment required, or employ professional assistants therefor, until recovery or discharge from such care. The court believes that no such undertaking on the part of the defendant can reasonably be presumed under the evidence, and that it is without sanction under any authority called to attention. The proposition ignored these potent facts: The patient entered the hospital, contracted there for his room and accommodations, and received care and treatment from its nurses and house physicians throughout his stay, for which he made weekly payments, and the hospital was incorporated for general hospital purposes, under management of a board of trustees, was neither owned nor controlled by the defendant, nor were the house physicians selected or engaged by him, or within his control, except as their services were tendered as a part of the hospital service.

The court believes, moreover, that proof of a local custom in respect of such hospital service was not needful; that the general custom of incorporated general hospitals in like localities, to furnish like service, and of reliance thereon by an independent operating surgeon and by patients therein for the usual care and after-treatment incidental to an operation, are matters within common knowledge and entitled to notice accordingly. In Baker vs. Wentworth, 155 Mass. 338, this custom in respect of nurses is recognized, and the operating surgeon held exempt from liability for negligence of the nurses, although the patient supposed (in the absence of representations) that the hospital was owned by the surgeon; and in Perionowski vs. Freeman, 4 Foster & F. 977, Chief Justice Cockburn remarked on the practice (there proven) of surgeons leaving care of their patients in various details to the hospital nurses that such practice was "indispensable," and the operating surgeon was not liable for their negligence.

So, these hospital attendants, known as "interns" (usually young physicians), are furnished at the general hospitals to attend to the ordinary work of dressing and treating the wound (left by an operation) on the way to recovery; and the mere undertaking of the surgeon to operate, under call or engagement therefore, cannot, as the court believes, imply his further personal undertaking for the ordinary details of after-treatment, to make the doctrine of respondeat superior (let the superior answer; the principal or master must answer, or is responsible, for the acts of his agent or servant) applicable, to charge him for fault or negligence on the part of such hospital attendants, neither known nor discoverable by the surgeon in the exercise of care and skill throughout his engagement.

No doubt is entertainable, however, that the professional undertaking in this case extended as well to the subsequent visits, observations, and personal treatment in evidence with the attendant obligation for the exercise of skill and care therein.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

September 10

1 Contribution of Ignatz Philip Semmelweis to Modern Medicine. R. C. Newton, Montclair, N. J.
2 Etiology of Prostatic Hypertrophy. E. G. Ballinger, Atlanta, Ga.
3 The Anti-Tuberculosis Propaganda. J. B. Huber, New York.
4 Acute Inflammations of the Middle Ear and Their Treatment. M. D. Lederman, New York.
5 Hospital Noise. H. A. Royce, Kingston, Ont., Canada.
6 *The Catching Cold Phobia. W. Brady, Elmira, N. Y.
7 Treatment of Pellagra. G. M. Niles, Atlanta, Ga.

6. **Catching Cold Phobia.**—Laying aside unfounded traditions and depending solely on our present knowledge, Brady says that it may be confidently affirmed that the vulgarly listed causes of respiratory disease, such as cold, dampness, exposure, wet feet, and draughts, are, for all practical purposes, entirely negligible factors, and the only precaution necessary against them is the effort to secure bodily comfort, which is purely instinctive, though very commonly misguided. Cold has no demonstrable etiologic relation with respiratory disease. Clean draughts are not only harmless, but salutary, being requisite for perfect ventilation. The phrase "catching cold" is meaningless, misleading, undignified and obsolete. The groundless fear of cold, fostered by the abuse of this misleading phrase, constitutes, he declares, a form of hysteria that opposes and embarrasses earnest therapeutic measures. So far as we now know, the true predisposing factors of the various respiratory diseases (acute and chronic) are dietetic sins, unhygienic clothing, overheated apartments and defective ventilation. Prophylaxis, therefore, consists in directing intelligently man's instinctive effort to secure bodily comfort, together with reasonable isolation of every case of respiratory disease.

Boston Medical and Surgical Journal

September 8

8 Indications for Abdominal Hysterectomy. W. P. Graves, Boston.
9 *Acute Pancreatitis. F. G. Balch and G. G. Smith, Boston
10 *Surgery of the Vascular System. J. C. Hubbard, Boston
11 *Disease of the Maxillary Antrum. J. P. Clark, Boston.
12 *Certain Aspects of the Bacteriology of Bacillary Dysentery. A. I. Kendall, Boston

9. **Acute Pancreatitis.** From the literature and the cases which the authors have looked up they conclude that almost all the acute diseases of the pancreas begin as an acute hemorrhagic inflammation, accompanied usually by free fluid in the peritoneal cavity and by disseminated fat necrosis. Operation is the treatment indicated, unless the patient is in such severe collapse that the additional shock would surely be fatal. The object of operation is to drain the pancreatic secretion and the products of infection; this is best done by incising the tissue of the gland, as advised by Porter, and by carrying the drainage through the gastrohepatic omentum close above the lesser curvature of the stomach. They report in detail 16 cases of acute hemorrhagic pancreatitis and 2 cases of suppurative pancreatitis.

10. **Surgery of the Vascular System.** Hubbard believes that it may be fairly said that direct transfusion of blood is now a recognized method of treatment in hemorrhage and shock, and in hemorrhagic disease of the new-born; that it is perhaps of benefit in some cases of eclampsia and illuminating gas poisoning, and perhaps in hemophilia, and as a means of improving the condition of a feeble patient to such a point that an operation may be undertaken.

11. **Disease of the Maxillary Antrum.** These were cases of what Clark says might very appropriately be called "mucous" disease of the antrum. They were characterized by the presence of a thick, viscid, tenacious mucus in the antrum with an apparently unusually large ostium maxillare. The vasomotor symptoms were prominent.

12. **The Bacteriology of Bacillary Dysentery.**—Kendall presents briefly certain facts concerning the bacteriology and biochemistry of the dysentery bacillus and associated intestinal flora in bacillary dysentery, with the fundamental principles relating to their activity in the alimentary canal, and mentions the procedures which are theoretically logical for the restoration of a normal intestinal flora. The bacterial flora of the intestinal tract in cases of bacillary dysentery, he says, is putrefactive, chemically speaking, because, as a rule, there is little or no sugar present in the intestinal tract of the body for them to act on. This is equally true for those organisms which succeed in penetrating into the body itself, since the small amounts of dextrose normally present in the blood are usually metabolized early in the disease, particularly under a starvation diet. The remedy for this condition, from the standpoint of bacteriology, is to add an excess of sugar which can be utilized by the bacteria within the intestinal tract and to restore to normal the amount of dextrose in the blood, so that even those organisms which have succeeded in penetrating within the body itself may have an opportunity to act upon sugar rather than on the nitrogen of the tissues of the body.

Dextrose infusions (25 per cent. chemically pure dextrose in normal saline solution) tend to restore this normal dextrose, and also to furnish the body with a considerable amount of fluid. Feeding lactose by mouth (5 per cent. solution) brings about a similar change in the chemistry of the intestinal bacteria.

New York Medical Journal

September 10

13 Social Plagues and the Public Schools. I. S. Wile, New York.
14 A Universal X-Ray Frame. A. Granger, New Orleans.
15 *Pustular Typhoid Roseola. C. Eggleston, New York.
16 *Treatment of Pulmonary Tuberculosis by Immobilization of Portions of the Trunk. B. G. R. Williams, Paris, Ill.
17 Osteomyelitis of the Temporal Bone. E. Amberg, Detroit.

18 Functional Exercises in Some Nervous Diseases. W. Burdick, Philadelphia.
19 Fatal Case of Toxic Pyelitis in Infancy. S. Neuhof, New York.
20 Treatment of Pulmonary Tuberculosis. T. Y. Hull, San Antonio, Texas.

15. **Pustular Typhoid Roseola.**—On the abdomen and lower anterior portion of the chest of Eggleston's patient there were from 12 to 15, or more, "spots." The majority was small, about 2 or 3 mm. across, rose-red, maculopapular, fading on pressure, and typical typhoid rose spots. Several were somewhat larger and were capped with small vesicles, containing a clear fluid. Two or 3 were very large; each from 10 to 12 mm. in diameter and deep rose-red at the base, which was infiltrated and somewhat elevated, forming a distinct areola about a central yellow pustule. These pustules were tender on direct pressure. They bore no relation to the hair follicles. The vesicles and pustules closely resembled those of variola and varicella. They were, however, somewhat larger and at no time umbilicated. The ninth day of the disease 3 new typical rose spots were observed. A number more appeared on each of the 2 succeeding days. The rose spots, in several instances, became capped with vesicles shortly after their appearance. Some remained vesicular, but a few rapidly went on to form pustules similar to those already described. No new spots appeared after the twelfth day of the disease. The entire eruption was closely confined to the front of the body from the lower chest to the groins. There was no lymphadenitis associated with the pustulation. Those which remained typical rose spots faded in the customary 2 and 3 days after their appearance. The vesicles dried up and were gone in 4 or 5 more days. The pustules disappeared slowly, requiring from 10 to 14 days for resorption. Two of the large ones were opened and the pus expressed. The pus was a very thick, stringy, yellow material, unlike ordinary staphylococcus pus in gross appearance. Smears showed a few leukocytes and pus cells, many threads of mucus, and a few unidentified bacteria. Cultures made from the pus developed a pure growth of the *Staphylococcus aureus*. The patient was noticeably clean and free from any form of skin disease such as acne or parasites. No bathing or hydrotherapy was used in the treatment. The only drug employed was liquor ammonii acetatis. The course of the disease in general was very mild. Only 4 similar cases were found recorded in the literature by Eggleston.

16. **Partial Immobilization of Trunk.**—Williams proposes to immobolize certain parts of the chest for certain periods during the day in the treatment of pulmonary tuberculosis. Although he has used continuous immobilization in some cases for periods of several days, he prefers to run no risks of weakening the sound lung by over-endeavor. He has found it of advantage in many cases, therefore, to apply temporary immobilization, i. e., during certain hours only, these depending on many conditions—stage of the disease, weather conditions, etc. Although he hesitates to lay down rules, he believes that the forenoon is usually the best time for the immobilization. In attempting temporary immobilization of portions of the chest with adhesive plaster there arise at once serious questions of expense in using so many plasters, and the time and trouble spent in their application and removal. To obviate these difficulties he has devised the lacing method. Here the plasters are left in position, being tightened by lacing during certain hours. It is scarcely necessary to state that lacing should be done after a forced expiration, and that enough room should be left between the edges to provide for tight lacing. When any degree of permanency is desired, he prefers strong ticking or canvas. Williams has at present a number of patients under observation, some of whom have been under observation for many months, and though several have been dismissed from active treatment none has been pronounced cured. On some he has applied temporary or permanent half corsets and on others the abdominal binder. He uses hygiene and medical treatment in each case.

Lancet-Clinic, Cincinnati

September 10

21 Bronchopneumonia. F. A. Kantz, Cincinnati.
22 Pistol-Shot Wound of the Brain. A. H. Barkley, Lexington, Ky.

Virginia Medical Semi-Monthly, Richmond

August 26

23 Poliomyelitis—Misconceptions About Treatment. T. A. Williams, Washington, D. C.
24 What Can be Done for Relief of Urinary Discomforts of Elderly Men? R. C. Bryan, Richmond.
25 Vasectomy for the Defective Negro with His Consent. B. Barrow, Barrow's Store.
26 Congenital Hypertrophic Stenosis of the Pylorus. E. P. Copeland, Washington, D. C.

Medical Fortnightly, St. Louis

August 25

27 Physical and Psychical Effects of Hydrotherapy. G. F. Butler, Chicago.
28 Personal Experience in Treatment of Venereal Disease. J. D. Sheba, Bland, Mo.

Journal of the Michigan State Medical Society, Battle Creek

September

29 *Experiments in Intestinal Anastomosis. C. Georg, Ann Arbor.
30 Practical Considerations of Crossed Eye and Other Muscular Eye Troubles. F. J. Bernstein, Kalamazoo.
31 Cancer of the Penis and Extirpation of the Organ with Perineal Transplantation of the Urethra. S. R. C. Graves, Grand Rapids.
32 Holoacardius Acephalus. A. E. Budde, Norway.
33 Diagnosis of Abdominal Tumors. H. E. Randall, Flint.

29. **Intestinal Anastomosis.**—The results of experiments by Georg which have extended over a period of two years, have convinced him that the method of Parker and Kerr is the most practical for end-to-end anastomosis and that of Copek for lateral anastomosis and gastro-enterostomy.

Journal Tennessee State Medical Association, Nashville

August

34 *Pellagra. J. A. Sewell, Rockwood.
35 *Amebiasis. J. L. Jelks, Memphis.
36 *Trifacial Neuralgia. W. T. Swink, Milan.
37 The Subinvoluted Uterus. W. G. Bogart, Chattanooga.

34. Abstracted in The Journal, April 23, 1910, p. 1400.

35, 36.—Abstracted in The Journal, April 30, 1910, p. 1465, 1466.

Journal South Carolina Medical Association, Charleston

July

38 Serotherapy of Epidemic Cerebrospinal Meningitis. C. H. Dunn, Boston.
39 Early Symptoms and Early Diagnosis of Uterine Carcinoma. C. F. Ross, Anderson.
40 *Uncinariasis in the Negro. W. J. Burdell, Lugoff.
41 Increase of Blindness. C. W. Kollock, Charleston, S. C.
42 Gastric and Duodenal Ulcers in Contradistinction to Their Sequelæ. A. B. Knowlton, Columbia.

40. Abstracted in The Journal, May 28, 1910, p. 1876.

Interstate Medical Journal, St. Louis

September

43 Theory, Methods and Psychotherapeutic Value of Psycho-Analysis. William A. White, Washington, D. C.
44 Indications for and a New Technic Pertaining to the Operations of Cecostomy and Appendicostomy in Treatment of Intestinal Lesions. S. G. Gant, New York.
45 Factors that Shape the Successful Treatment of Nervous Diseases. J. Collins, New York.
46 Paget's Disease of the Nipple. E. Jonas, St. Louis.
47 *Operation for Cystocele: An Improved Method. D. T. Gilliam, Columbus, Ohio.

47. **Cystocele.**—Gilliam has slightly modified his original operation as follows: (1) an oval denudation of the most prominent part of the cystocele as in the old time operation; (2) dissecting flaps from the vaginal wall on either side of the denuded area with which to cover the latter; (3) bringing the flaps together over the denuded area and suturing them to it and to each other. The result is that the cystocele is effaced, and the site of the cystocele is strengthened by an additional layer of fascia that taken from the sides of the vaginal wall.

Alabama Medical Journal, Birmingham

August

48 The Toxemia of Pregnancy. C. B. Jackson, Jasper.
49 Relation of the Medical Profession to the Practice of Optometry. J. F. Orr, Edinburgh.

Annals of Surgery, New York

September

50 *Symptomatology and Surgical Treatment of Spinal Cord Tumors. J. R. Hunt and G. Woolsey, New York.
51 *Intestinal Lesions Produced by Blunt Force. H. B. Stone, Charlottesville, Va.

52 *Transgastric Jejunal Feeding. A. Schwyzer, St. Paul, Minn
53 *Proposed Fistulo-Enterostomy of von Stubenrauch. W. S. Sutton, Kansas City, Mo.
54 *Permanent Colostomy. H. Lilienthal, New York.
55 Myeloma of the Long Bones. F. S. Mathews, New York

50. **Spinal-Cord Tumors.**—The series of cases forming the basis of this paper represents Hunt's clinical experience in this field during the past 10 years. Thirteen cases in all are recorded, of which 6 were extramedullary neoplasms. Of this latter group, one patient died as the result of the operative procedure; one survived the operation for nearly a year, the growth eventually recurring; and the 4 remaining cases may be regarded as successful, all the patients making fair recoveries from their paralysis and after a considerable lapse of time showing no symptoms of recurrence. In 5 other cases, an exploratory laminectomy was performed, but the nature of localization of the growth precluded removal. In a recent case of intramedullary tumor of the cervical region, an exploratory operation was performed and the cord was punctured, with the evacuation of 2 drams of cystic fluid. Of the remaining 2 cases, the diagnosis was confirmed at autopsy, and these are included as contribution to the symptomatology of the subject. Hunt says that the differential diagnosis of intramedullary and extramedullary growths is often so difficult that in many cases it is impossible to reach a definite conclusion. As the extramedullary tumor alone offers the hope of successful extirpation, the recognition of this group is most important. But here again, when the clinician is in doubt, exploration is indicated and should be undertaken before the disease has progressed too far. Hunt has more than once had occasion to witness exploratory laminectomy in doubtful cases, in which, even if the tumor could have been removed, the cord was already irretrievably damaged. The clinical picture of intramedullary tumor resembles somewhat that of a subacute or chronic transverse myelitis. The tendency to extension of the symptoms in an upward direction is frequently observed, and is another distinguishing feature from growths without the cord. In extramedullary neoplasms, on the other hand, the course of the affection suggests that the tumor is growing in width and not increasing in length. In central tumors (gliosis and glioma), vasomotor and trophic disturbances are of frequent occurrence, as well as spinal deformity without pain or tenderness (kyphoscoliosis). Very characteristic also is a homolateral dissociated anesthesia of segmental distribution (posterior horn anesthesia). In extramedullary growths, root pains and root anesthesia are present on the side of the tumor and a contralateral anesthesia below the level of the lesion. A dissociated anesthesia (loss of pain and temperature sense) cannot be regarded as characteristic of central tumors, and may be encountered in verteral and extramedullary localizations as well. Hunt has observed, however, that the tactile sense, under these circumstances while present, is definitely obtunded when compared with a normal area, which in some cases serves to separate this form of sensory disturbance from the dissociated anesthesia of the syringomyelitic type. He emphasizes a symptom which he has repeatedly observed in cases of extramedullary tumor in the cervical region. This consists of a distinct girdle sensation, or constriction, situated at the umbilical level or in the lower thoracic zones.

51. **Intestinal Lesions Produced by Blunt Force.**—According to Stone, these accidents are most frequently encountered in males during youth and early manhood, and in females, during childhood, these of course being the periods of greatest exposure to trauma from the habits of life. Preëxisting lesions, such as hernias, ulcers, adhesions, etc., increase the liability of rupture should trauma occur. Lax abdominal muscles afford less protection than a wall which is contracted, and hence very sudden accidents are more frequently the cause of visceral lesion than those in which the patient has some warning. All parts of the gastro-intestinal tract have been injured, to say nothing of the other abdominal viscera, but the ileum and jejunum are more often involved, the colon and stomach less frequently. Thus in 219 cases, the small intestine was affected 172 times, the large 26 times and the stomach only 21 times. Lesions may be multiple, or may be associated with rupture of other organs. Stone is inclined to feel that vomiting is apt to arise sooner if the lesion be above the level of the umbilicus than if it be below.

52. **Transgastric Jejunal Feeding.**—Schwyzer cites a case of severest gastric ulcer, in which he combined a gastro-enterostomy with gastrostomy, and passed a gastrostomy tube through the opening in the anterior wall of the stomach and across the stomach through the gastro-enterostomy opening some distance into the jejunum. By the use of a rather large Murphy button a rubber catheter could be passed through its opening into the lower arm of the jejunal loop, and since this catheter would nearly but not tightly fill the lumen of the button, the tendency would be to retain the infused food in the intestine, though some drainage was possible along the tube and through the side walls of the button for the gastric and other regurgitated secretions. In accordance with these purposes, the wound was reopened. The omentum again seemed to be down in the pelvis. It was raised up, and with as little eventration as possible, the first part of the jejunum was secured and an antero-inferior gastro-enterostomy was done, the smaller half of the button being inserted into the stomach. Then a good distance from the gastro-enterostomy opening, a tiny opening was made into the stomach wall, just enough to make it possible to force a soft rubber catheter through, which was, however, rigid enough so as not to double up too easily, and thus not to have its jejunal end eventually expelled back into the stomach by the collection of a greater quantity of food in the intestine. This catheter was then brought out through the gastric half of the button, then inserted into the lower half, and the button closed. The catheter was pushed in far enough to reach about 10 or 12 cm. beyond the button into the lower loop of the jejunum. The button seemed a little large for the intestine, and therefore in order to support the line of union a continuous silk Lembert suture was applied over the two anterior thirds of the circumference. Two silk pucker-strings inverted the stomach walls around the catheter, the inner one catching the catheter, the outer one being fixed to the fascia of the abdominal walls, which were now closed by figure of 8 silkworm sutures. The patient eventually made a complete recovery.

53. **Fistulo-Enterostomy.**—Sutton reports what he claims to be the first instance in the human being where the proposed fistulo-enterostomy of von Subenrauch was carried out successfully. This procedure uses a diverted segment of intestine as a canal to carry the discharge from a biliary fistula back into the intestinal tract.

54. **Permanent Colostomy.**—Lilienthal says that he has been performing an operation which obviates nearly all the discomfort and filthiness of colostomy. The patients have absolute control of the bowels and can even hold a considerable quantity of fluid injected into the colon. The bowels move once or twice a day, the patient knows when the movements are about to occur and—not by any means the least advantage—he is not annoyed by the necessity for wearing an appliance for obturation. The operation has been tested many times and the patients have been for the most part carefully followed up. The sigmoid is brought through the rectus muscle and twisted on its axis. Thus two sphincters were secured—one at the twist and one at the point of peritoneal fixation. For detailed description of the operation the original article must be consulted.

Wisconsin Medical Journal, Milwaukee

August

56 *Medical and Surgical Aspects of Tumors, Including Inflammatory and Neoplastic Formations. J. C. Bloodgood, Baltimore.
57 The Pure Milk Question in Country Districts. B. O. Baird, Galesburg, Ill.
58 Medical Inspection of Schools of Milwaukee. G. P. Barth, Milwaukee.

56. Abstracted in The Journal, July 23, 1910, p. 344.

New Orleans Medical and Surgical Journal

September

59 Chronic or Recurring Diarrheas, Their Diagnosis and Treatment. J. T. Halsey, New Orleans.
60 *The "*Methode Oxigenee*"—Oxygen as an Antiseptic. A. Delcourt, Houma, La.

61 Injuries to Nerves of the Upper Extremity. E. M. Hummel, New Orleans.
62 Treatment of Compound Fracture of Femur and Leg. L. Sexton, New Orleans.
63 Primary Carcinoma of the Body of the Uterus. M. A. Shlenker, New Orleans.

60. **Oxygen as an Antiseptic.** The conclusion is drawn by Detcourt that a mixture of oxygen and peroxid of hydrogen is an antiseptic and an antibactericide of first order, superior to those actually used, having no odor and no toxicity. It is specially powerful and specific against infection produced by anaerobic bacteria, and represents our best, and very likely our only, efficacious weapon against gaseous gangrene. It is moreover, a most precious and harmless agent against common suppuration and ordinary infections, irrespective of the offending bacteria. Most of all, those common infections of the skin, be they streptococcus or staphylococcus, vanish as if by magic, before a few peroxid of hydrogen applications.

Journal Indiana State Medical Association, Fort Wayne

August

64 The Inter-Relationship of Gall-Stone Disease and Appendicitis. F. W. Foxworthy, Indianapolis.
65 Cyclic Vomiting in Children. C. G. Beall, Fort Wayne.
66 Angioneurotic Edema. H. O. Bruggeman, Fort Wayne.
67 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
68 Importance of Stomach Lavage for Removal of Blood Swallowed During Operations. J. R. Eastman, Indianapolis.

Albany Medical Annals

September

69 *Early Diagnosis of Pulmonary Tuberculosis. A. H. Garvin, Raybrook, N. Y.
70 *Alcoholic Psychoses. R. E. Doran, Willard, N. Y.
71 The Albany Guild for the Care of the Sick. S. L. Dawes, Albany.

69. **Diagnosis of Pulmonary Tuberculosis.**—Three points are emphasized by Garvin in the early diagnosis of the disease. The first is the insidious onset. The second point is the most important physical procedure in the diagnosis, which is auscultated cough. A lung examination which does not necessitate the patient's coughing is not a complete examination, for a case with definite signs will be passed over and marked as negative if this is forgotten. The suspected area can be re-examined again and again during the physical examination in an attempt to develop the suspected signs. Third, the most important working rule for the general practitioner in the fight against this disease is family examination. In 4,500 new cases of pulmonary tuberculosis that applied for treatment at the public clinics in Berlin, under the direction of Dr. Kaiserling, the families of these 4,500 new cases were systematically examined for a discovery of concealed and unknown cases, and as the result of this systematic family examination in these 4,500 cases, 4,500 additional cases of unknown tuberculosis were discovered, many of the patients being in an early and favorable stage for treatment, while many had gone on insidiously and were concealed and unknown bacilli bearers, even to themselves.

70. **Alcoholic Psychoses.** Doran endeavors to show that while alcohol is a factor in the production of insanity, it is only one of many, and that even in the forms of insanity commonly considered as due to alcohol, every factor must be given due weight. The exact bearing of alcoholism on the development of insanity is not yet known. He believes, however, that alcohol is more potent in filling poorhouses and penal institutions than asylums, and physicians should do all in their power to educate the people on the possibility of danger in this direction. Certainly they should discourage drinking among those who are hereditarily predisposed, or among the weak minded and epileptic, because they know that in such cases alcohol is truly a poison and frequently converts such people into dangerous and unsocial lunatics.

Woman's Medical Journal, Cincinnati

August

72 Preventive Medicine. J. L. Means, Des Moines, Iowa.
73 Hemorrhage. J. Mendenhall, Des Moines, Iowa.
74 Toxemia and Eclampsia. F. Sherbon, Colfax, Iowa.
75 The Physician's Opportunity. A. V. Holmes, Omaha, Neb.
76 Instrumental Interference in Obstetrics. J. Peo, Boone, Iowa.

Journal of Experimental Medicine, New York

September

77 Effect of Various Agents on the Blood Flow Through the Coronary Arteries and Veins. G. S. Bond, Baltimore.
78 Resemblance Between Anaphylactic Intoxication and Poisoning with Witte's Pepton. A. D. Hirschfelder, Baltimore.
79 *Immunity in Cancers of the White Rat. I. Levin, New York.
80 *Relation of Fatty Degeneration to Oxidation of Purins by Liver Cells. H. G. Wells, Chicago.
81 Experimental Yaws in Monkey and Rabbit. H. J. Nichols, New York.
82 Changes in the Hemosiderin Content of the Rabbit's Liver During Autolysis. W. H. Brown, Madison, Wis.
83 Effect of Vagus Section on Anaphylaxis in Guinea-Pigs. J. Auer, New York.
84 *Cultivation of the Leprosy Bacillus and Experimental Production of Leprosy in the Japanese Dancing Mouse. C. W. Duval, New Orleans.
85 Intracellular Proteolytic Enzymes of Liver. A. R. Dochez, New York.
86 Cell Changes in Amaurotic Family Idiocy. B. Sachs and I. Strauss, New York.
87 A Transmissible Avian Neoplasm (Sarcoma of the Common Fowl). P. Rous, New York.

79. **Immunity in Cancers of White Rat.**—Forty rats were treated by Levin for 6 weeks, by hypodermic injections of 1 c.c. of 4 per cent. solution of arsazetin, first every 2 days and then every 4 days. Three weeks after the beginning of the treatment the tumor was inoculated. The arsazetin had no influence on the growth of the tumor, though the quantity of the drug was sufficient to impair considerably the general health of the animals. In nearly every animal a condition was created similar to the state of a waltzing mouse. Another series of animals was treated with autolyzed tissue. The organ for immunization was the liver of "Nullers," that is, rats naturally resistant to tumor implantation. The tissue was kept under aseptic precautions at body temperature for two weeks, then the autolyzed tissue was mixed with about double the quantity of normal salt solution, ground thoroughly with sand, filtered, and 1 c.c. of the solution injected subcutaneously. The results compare favorably with those of the investigators who induced immunity with normal tissue. Thus it seems possible to produce in rats a certain amount of resistance to growth of tumor by treatment with tissue of which the cells are killed, but the endocellular ferments apparently remain active. It is interesting to note here that autolyzed liver tissue seems to immunize equally well, whether used before or after the inoculation of the tumor, which fact may be of importance in view of the possibility that the resisting influence of the host may be of two kinds, one to the tumor implantation, the other to tumor growth. Another method consisted in ligating all the vessels of the spleen and from 4 to 12 days after the operation the tumor was inoculated. In another experiment the operation was done 9 days after the inoculation. The results show that the immunizing influence of such a ligated spleen is not so strong as the influence of autolyzed liver injected subcutaneously, and also that this immunizing influence is exerted only on the grafting of the tumor and not on its continued growth. The action of the ligated spleen is probably comparatively weak on account of the rapid absorption of the organ, which prevents the autolysis, and, indeed, no traces of such a spleen were found in the abdominal cavity two days after the operation. A third series of experiments was undertaken which consisted in the subcutaneous inoculation into a rat, of the normal skin and spleen tissue of a mouse, followed in a few days by a subcutaneous inoculation of the tumor. The aim of this treatment was to accustom the tumor cells to mouse tissue and then to observe whether such a rat tumor, which had the opportunity to obtain during its growth the food supplied by the inoculated normal mouse tissue, would not grow more readily when subsequently inoculated into a mouse. The results of this investigation were negative, but the extremely interesting fact was observed that a certain number of the rats treated with mouse tissue appeared immune against growth of the rat sarcoma.

80. **Oxidation of Purins by Liver Cells.**—Wells' experiments show that it is possible, by proper use of hydrazin and phosphorus, to cause a high degree of fatty change in the liver with a minimum of necrosis, involving alike both peripheral and central portions of the lobule and thus eliminating the

"factor of safety" or residual normal cells. Nevertheless, it is found that such fatty liver tissue has not lost in the least its power to oxidize uric acid when acting on it *in vitro* with abundant air supply, nor is the power to oxidize xanthin to uric acid noticeably diminished. While these experiments merely prove that extreme fatty degeneration does not destroy or appreciably diminish the power of liver cells to oxidize uric acid and xanthin *in vitro*, yet they suggest that in general, fatty degeneration is probably not essentially incompatible with a high degree of metabolic activity by the affected cells. It is possible that in the living tissue functional activity may be decreased secondarily by fatty metamorphosis, as for example, by the enlarged fatty cells compressing the capillaries and reducing circulatory activity, or by modification or diffusion through the cell by the fat deposits, independently of any deleterious influence on the cellular enzymes themselves.

84. **Cultivation of Leprosy Bacillus.**—The medium on which Duval grew the lepra bacillus was prepared as follows: The rind was carefully removed from the fruit portion of fully matured green bananas, every precaution to avoid contamination being used, and large blocks of the fruit, after slanting one surface with a sharp knife, were introduced into suitable sterile glass cylinders provided at the bottom with cotton plugs saturated in sterile distilled water. These plugs served not only as support for the banana, but as a source of constant supply of moisture. Sterile 1 per cent. solutions of tryptophan, cystein (made from protein) and leucin were next prepared and a portion of each poured on and allowed to saturate the banana. These solutions were used separately and in varying combinations, in order to determine on which the *B. lepræ* would grow best or grow at all. Both the banana and agar, which was saturated in a 1 per cent. solution of cystein, proved an excellent medium for the artificial cultivation of the leprosy bacilli when incubated at from 32 to 35 degrees C. The maximum growth occurred at a temperature of 32 degrees C. Light seems to favor the growth of *B. lepræ*; cultures kept in a glass incubator regulated at 32 degrees C. grew more rapidly than those in the dark chamber under similar conditions. Multiplication began early in the transplants and visible growth developed in the form of small, glistening, white colonies in from 4 to 6 weeks. Growth also occurred on the banana and agar when a solution of cystein and tryptophan had been added. The fact that growth occurred on the protein-cystein medium, and not on the others except in the presence of it, shows very conclusively that *B. lepræ* utilizes the end-products of digestion and not the products of cell metabolism. At least it is reasonable to assume that this is the case, if deductions may be drawn from these experiments. Multiplication *in vitro* of an acid-fast organism was obtained from the transplanted leprosy tissue on the above mentioned media from four cases of leprosy which corresponded in every essential to the leprosy bacillus. Not only did the leprosy bacilli develop in the original cultures but they continued to grow in subcultures. That the artificial growth is *B. lepræ* there can be no doubt, as the morphologic and cultural features and the animal tests have clearly proved.

St. Louis Medical Review

August

88 Amenorrhea. G. Gellhorn, St. Louis
89 The Reflexes in Hysteria T. A. Williams, Washington, D. C.
90 Vegetations and Condylomata. C. C. Vanderbeck, St. Louis.
91 Animal Therapy J. Knott, Dublin, Ireland
92 Complement Fixation W. T. Burdick, St. Louis.
93 Sparteln. H. H. Redfield, Chicago.
94 Laboratory Diagnosis. G. L. Servoss, Fairview, Nev.

Journal of Cutaneous Diseases, New York

August

95 *Extramammary Paget's Disease: Case Occurring on Forearm, Associated with a Nevo-Carcinoma. M. B. Hartzell, Philadelphia.
96 Rhinoscleroma Cured by X-Ray Treatment. S. Pollitzer, New York.
97 Lupus Annularis R. L. Sutton, Kansas City.
98 Larva Migrans. M. Haase, Memphis.
99 A Pipette Pump for Wassermann-Neisser-Bruck Serodiagnosis of Syphilis and General Laboratory Work. C. W. McMurtry, New York.

95. **Extramammary Paget's Disease.**—A man, aged 64, was referred to Hartzell on account of a cutaneous affection of the arm, presenting at the time of his first visit the following unusual clinical features: On the outer side of the left forearm, beginning a little above the elbow joint and extending downward, was a palm-sized, circumscribed, irregularly oval patch with a bright red surface, for the most part smooth, but in places slightly scaly, over which were scattered a few pea-sized erosions covered with yellowish crusts, and about the border and within the upper portion a number of flat, shot-sized nodules covered with brownish crusts. In the center of the upper margin of this patch was a rather superficial ulcer about an inch in diameter, with a slightly infiltrated border, covered with exuberant granulations over which were scattered a number of irregularly shaped islands of bluish-white epidermis. The subjective symptoms were trifling, consisting chiefly of moderate itching. The disease had lasted about 15 years, and had until recently, at least, been regarded by the patient and his physician as an eczema and had been treated as such, but with little success. Sections made from the margin of the ulcer presented the histologic features characteristic of a nevo-carcinoma. Sections made from the large patch surrounding the ulcer exhibited some interesting changes, most of them more or less characteristic of Paget's disease. Sections made from the nodule excised showed a sharply circumscribed acanthosis in which the cells were decidedly smaller than normal and had for the most part lost their prickles. The most striking feature of these sections, however, was the narrow, deeply stained band of fibrous tissue and flat cells with elongated and deeply stained nuclei which separated the epithelial mass from the corium beneath, and dipping into it at intervals produced a partial lobulation of it. So far as Hartzell is aware, this is the first reported case in which a nevo-carcinoma has been associated with anything resembling, even remotely, Paget's disease. Moreover, there was apparently a reversal of the usual sequence of events, since the history makes it probable that the carcinomatous degeneration of the nevus preceded the appearance of the Paget's disease.

Journal of Advanced Therapeutics, New York

August

100 Resuscitation by Electric Currents of Subjects in a Condition of Apparent Death Caused by Chloroform, Ether, Electrocution, Drowning and Other Forms of Asphyxia L. G. Robinovitch, Paris.
101 Electrostatic Effects in Arteriosclerosis. F. H. Morse, Boston.

Southern Medical Journal, Nashville

August

102 Pure Milk as a Factor in Public Health R. L. Jones, Nashville
103 Diagnosis and Treatment of Intestinal Perforation with Report of Two Successful Cases W. W. Battey, Augusta, Ga
104 *Cancer of the Breast W. A. Bryan, Nashville
105 The Anesthetist: A Specialist C. O. Abernethy, Raleigh, N. C.
106 Some Difficulties in Gastric Diagnosis W. H. Witt, Nashville
107 *Inguinal Herniotomy with Special Reference to Cocain Anesthesia. P. DeWitt, Nashville.
108 *Diuretic Action of Spartein. W. de B. MacNider, Chapel Hill, N. C.
109 Tuberculous Meningitis. J. Overton, Nashville
110 Psychoneuroses and the Doctor's Relations to the Public. False Assumption and Innuendos of Christian Scientists T. A. Williams, Washington, D. C.
111 Uncinariasis in Tennessee N. Evans, Nashville

104. **Cancer of the Breast.** The following classification of cases of breast cancer is made by Bryan:

1. Those cases which are seen early, accurately diagnosed by a competent pathologist as cancer This class offers the best chance of permanent cure by radical surgery from 50 to 81 per cent

2. Those cases in which axillary involvement is observed, but without supraclavicular node enlargement This class gives possibly 25 per cent. cures Certainly some patients are cured, and the radical operation should be done Of course, the smaller and fewer the lymph nodes enlarged in the axilla at the time of the operation, the better the chance of cure The author does not think we are justified by the history of cancer of the breast in condemning all cases with axillary involvement to a hopeless prognosis.

3. Those patients who have ulcerated cancer and who have infiltration of the pectoral muscles, will perhaps give a very small percentage of cures This reduces the prognosis much more than enlargement of the axillary nodes does

4. Those cases in which there is supraclavicular enlargement of the lymph nodes offer very little or no hope of permanent cure, but the limits of life are considerably extended by extirpation

5. Patients with thoracic and abdominal infiltration (including the spread along lymph channels) and remote (blood) metastases are not curable by surgery, and are to be operated on only for pallia-

tive purposes, such as will add to the comfort of the patient and her attendants or reduce the probability of complications such as infection in the ulcerative cases, or avoid the loss of vitality by hemorrhage or the constant leakage of serum.

107. **Inguinal Herniotomy with Special Reference to Cocain Anesthesia.**—Dewitt's plea for cocain anesthesia is based on the following points:

1. Many patients are induced to submit to a cure who would not do so with general narcosis, and the anesthesia mortality is removed.
2. The integrity of the nerves is maintained, thus preventing muscle atrophy.
3. There is no vomiting, thus relieving strains on sutures and allowing early administration of food.
4. The danger of ether pneumonia is removed, and there is much less liability to renal insufficiency.
5. Every step in the operation is done with cocain that is carried out with general narcosis.

108. **The Diuretic Action of Spartein.**—MacNider found that an active preparation of spartein used in a sufficiently large dose produces a rise of general arterial pressure. Following the rise in blood pressure there is an increase in the output of urine, which is likely due to an increase of local blood pressure in the kidney. Following surgical procedures, where the amount of urine is greatly reduced, or where anuria has developed as a result of low general arterial pressure, the amount of urine may be increased and the anuria relieved, through the action of spartein on general blood-pressure, and indirectly on the local kidney-pressure, raising the latter and rendering the kidney functionally more active.

Maryland Medical Journal, Baltimore

September

112 Prevention of Racial Deterioration and Degeneracy. L. F. Barker, Baltimore.
113 Pathology of Pellagra. C. W. G. Rohrer, Baltimore.

Mississippi Medical Monthly, Vicksburg

September

114 What the Practitioner and the County Society May Do to Aid the Council on Pharmacy and Chemistry. R. M. Boyd, Houston.
115 Bismuth Paste in Empyema. J. H. Johnson, Brookhaven.
116 Laceration of the Cervix and Perineum: A Factor in Nervous Troubles of Women. T. H. Henry, Columbus.

Southern California Practitioner, Los Angeles

August

117 Arteriosclerosis: Observations on Blood Pressure. B. Reed, Alhambra, Cal.
118 Similia Similibus Curantur. W. W. Watkins, Phoenix, Ariz.
119 The Los Angeles Health Department and the Milk Supply. C. F. Edson, Los Angeles.
120 Surgical Treatment of Ulcerative Perforation of the Hollow Viscera. A. S. Lobingier, Los Angeles.
121 Salivary Calculi. J. M. King, Los Angeles.

West Virginia Medical Journal, Wheeling

September

122 Mental Influence Over the Bodily Functions. S. L. Jepson, Wheeling.
123 Poliomyelitis, Apropos of the Spread Southward of This Disease. T. A. Williams, Washington, D. C.
124 Treatment of Diphtheria. W. J. Judy, Kerens.
125 Spina Bifida—Report of a Case. J. E. Cannaday, Charleston.
126 *Nutmeg Poisoning. G. D. Lind, Johnstown.

126. **Nutmeg Poisoning.**—In this case the boy seemed to be suffering from the effects of some narcotic. His pupils were dilated, he staggered in attempting to walk, and on being awakened from sleep would immediately go to sleep again. He complained of a fullness in his stomach, and said that he was drunk. Pulse and respiration were slow, he had no nausea or pain. He said that he had eaten some candy given him by another boy about 4 p. m. He did not recover from the effects until the next morning, when it was discovered that the so-called candy was five or six nutmegs.

St. Paul Medical Journal

September

127 Hysteria in the Light of the Analytic Method. I. H. Coriat, Boston.
128 Migraine. L. A. Nelson, St. Paul.
129 The Public Drinking Cup. J. L. Desthult, Milwaukee.
130 Dr. Alexander J. Stone: An Appreciation. J. L. Rothrock, St. Paul.

Louisville Monthly Journal of Medicine and Surgery

September

131 Surgery of the Ureters. L. S. McMurtry, Louisville.
132 The Louisville Water Supply and Typhoid. J. B. Morrison, Louisville.
133 Value of Spontaneous and Induced Labyrinthine Irritation in Diagnosis. J. M. Ray, Louisville.

American Medicine, New York

August

134 Gonorrheal Conjunctivitis in an Adult Aborted by Application of Two Per Cent. Nitrate of Silver. J. H. Claiborne, New York.
135 Social and Clinical Aspects of Trachoma. A. Bray, Philadelphia.
136 Hysterical Amaurosis. H. K. Fleckenstein, Baltimore.
137 Redisplacement in Adjusted Colles' Deformity. C. I. West, Washington, D. C.
138 Common Sense at the Bedside. C. H. Maxwell, Morgantown, W. Va.
139 Physostigmin. W. C. Abbott, Chicago.
140 Hysterical Mutism. M. Neustaedter, New York.
141 Serotherapy of Gonorrheal Arthritis. R. H. Herbst, Chicago.
142 Optic Nerve Affections Due to Ethmoiditis. O. Schimer, New York.

Western Medical Review, Omaha

September

143 Two Cases of Rupture of the Bladder. B. A. McDermott, Omaha.
144 Practical Observations in Syphilis. A. Schalek, Omaha.
145 Pseudomastoiditis. J. M. Patton, Omaha.
146 When Not to Operate. J. M. Mathew, Lincoln.
147 *Sources of Remedies. E. W. Rowe, Lincoln.

147. **Remedies.**—The practitioner, says Rowe, has not the time, inclination or ability to investigate his drugs thoroughly. This necessitates a reliable source to which he may have access at all times. All drug remedies may be found in one of the following sources: (1) The Pharmacopeia; (2) the National Formulary; (3) the current literature, and (4) New and Nonofficial Remedies. Speaking of the latter Rowe says that proprietary articles not included in New and Nonofficial remedies are not worthy of a physician's attention. The Council on Pharmacy and Chemistry has shown up fraud and misrepresentation connected with the exploitation of many proprietary articles. It has done more to raise the commercial ethics of pharmaceutical manufacturers than any other agency, not excepting the national Food and Drugs Act. It has given the profession a reliable source of information regarding the value of numerous nonofficial remedies. It has made plainer a scientific drug therapy as contrasted with the haphazard and vicious results of nostrum prescribing.

Buffalo Medical Journal

September

148 Obstetrics and Gynecology. J. C. Webster, Chicago.
149 Important Factors in Diagnosis and Treatment of Surgical Tuberculosis. M. B. Tinker, Ithaca, N. Y.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 27

1 *Treatment of Gastric Ulcer. C. Bolton.
2 *Necessity for Operation in Gastro-Duodenal Ulceration. K. W. Monsarrat.
3 Hepatic Abscess Following Acute Appendicitis. L. A. Bidwell.
4 *Cause of Death After Operation for Appendicitis. H. H. Brown.
5 *Direct Esophagoscopy. T. J. Faulder.

1. **Treatment of Gastric Ulcer.**—This is a detailed exposition of the treatment of gastric ulcer as employed by internists.

2. **Necessity for Operation in Gastroduodenal Ulceration.**—Monsarrat urges operation in all these cases, even in the absence of any complications.

4. **Cause of Death after Operation for Appendicitis.**—When suffering from an ordinary attack of appendicitis there are, according to Brown, three lines of defense by which the organism protects itself. The first line is the lymph agglutination of mesentery, intestines, etc., around the appendix, which limits the abscess, and prevents infection of the general peritoneal cavity with pus. It is these adhesions which surgeons are so careful to preserve, and fearful of breaking down. The second line of defense is a more important one. This is a layer of lymph covering the surface of the intestine and omentum and forming the wall of the abscess cavity. Brown believes that this lymph acts as a filter, allowing soluble toxins to pass through into the lymphatics and blood stream of the surrounding viscera, but presenting a barrier to the passage of bacilli, like the porcelain of a Berkefeld filter. It is this barrier which it is all important to preserve until

the third line of defense has been established. The third line is in the blood itself; the passage of toxins into the circulation results in a rise of temperature, quickening of pulse, etc., and the formation of protective antibodies in the serum. More and more toxin passes through as time goes on, and the abscess becomes larger, until, in course of time, generally during the second week of an attack, the temperature may fall to normal, or nearly so, and the serum become saturated with antibodies.

By this time the patient has become protected. If the abscess is opened, foul-smelling pus flows freely over the abdominal wound, which may afterward be sutured for the greater part of its extent and heal by first intention, without even any sign of redness around the stitches. There is no more danger to the patient than in opening an abscess anywhere else. The moral, Brown says, is obviously this: 1. Do not be in a hurry to operate, unless an operation can be performed within the first 24 hours, when the mischief is presumably confined to the appendix itself, or when general peritoneal infection is impending or has already taken place. 2. When definite abscess has formed, wait until after the first week; when about ten days have elapsed it is probable that protection will be complete. During this period the patient should, of course, be kept under close observation, so that an operation can take place at any time, if necessary. 3. Be contented to drain the cavity. Gentle flushing may be employed at the time of the operation if preferred, but do not do more than is necessary for this purpose. 4. Above all things, if operating early, simply evacuate the pus without touching the abscess wall, and leave the appendix to be dealt with at a later date when all infection has subsided.

5. **Direct Esophagoscopy.**—These 8 examinations recorded by Faulder were made on patients varying from 30 to 70 years of age, 4 males, 3 females. Two of them took place under general anesthesia: in the others no anesthetic was used, or only a little cocain brushed over the pharynx. He is convinced that these examinations show that esophagoscopy is safe and practical. As regards anesthesia, a sensible patient can be of great assistance to the surgeon if he be conscious. He can swallow when directed to do so, he can alter the position of head or neck as required, and his sensations are to some extent a safeguard against damage. For these reasons a beginner should not use general anesthesia, although it spares the patient much discomfort and permits of a longer and more careful examination than would otherwise be the case.

Lancet, London

August 27

6 Students' Number, Session 1910-1911.

Indian Medical Gazette, Calcutta

August

7 Dengue or Phlebotomus Fever. C. N. C. Wimberley.
8 Rationale of Quinin Prophylaxis. H. W. Acton.
9 Ascariasis. Is there a Round-Worm Fever? P. Hehir
10 Leukemia and Pseudoleukemia. R. H. H. Goheen.
11 Mixed Tumor of the Parotid. J. Davidson
12 Case of Pneumonia, Terminating in Gangrene of the Lung and Presenting Several Unusual Features. T. C. Rutherfoord.
13 Subconjunctival Injections of Cyanid of Mercury in Trachomatous Conditions. H. Smith.
14 Kala-Azar in Patna. D. N. Prashad.

Australasian Medical Gazette, Sydney

July 20

15 Influence of the Medical Profession on the National Life in Australia. W. A. Verco.
16 *Snake Venom. D. A. Welsh and H. G. Chapman
17 *Symptom-Complex in Ruptured Abdominal Hydatid. J. E. Barling and D. A. Welsh.
18 *Two Interesting Cases of Fibromyoma of the Uterus. R. Worrall.
19 Etiology of Ectopic Gestation, with Remarks on Diagnosis Based on an Experience of 114 Cases. G. Craig.
20 Tubal Pregnancy Based on 108 Consecutive Cases. H. C. T. Young.
21 Prevalence of Syphilis in Brisbane, and Consideration of Certain Other Matters in Connection with Public Mortality. E. S. Jackson.
22 Treatment of Malignant Diphtheria. W. F. Litchfield.

16. **Snake Venom.**—It is with the hemolysins of Australian venoms that the authors have mostly worked, and they give a descriptive account of their action, and note their bearing on the general question of immunity. These venoms include those of the black snake (*Pseudechis porphyriacus*), the fierce snake (*Pseudechis ferox*), the brown snake (*Diemenia textilis*), the tiger snake (*Notechis scutatus s. Hoplocephalus curtus*), the death adder (*Acanthophis antarcticus*), the broad-headed snake (*Hoplocephalus bungaroides s. variegatus*), and, among monotremes, the poison gland of *Echidna aculeata*. Among the red blood cells tested with one or more of these venoms were those of man, the dog, horse, pig, sheep, ox, and snake. The experiments were designed to test the interaction of varying quantities of venom with (1) red blood cells washed free of serum, (2) red cells and fresh serum, and (3) red cells and serum heated to (a) from 56 to 60 C., (b) 85 c., and (c) 100 C.

The following general results were obtained:

1. As in the case of Indian and American species, the venoms of different Australian snakes vary greatly in their hemolytic effects, and, by testing with the washed corpuscles of some relatively susceptible species, it is possible to grade the venoms according to their toxicity for the hemocytes.

2. The washed corpuscles of different species of mammals differ greatly in their susceptibility and resistance to individual venoms, and may be grouped accordingly. Corpuscles which are most sensitive to one venom are found to be most sensitive to others also; and corpuscles which are most resistant to one venom are most resistant to others.

3. The presence of the fresh homologous serum, in minute or moderate quantity, has not, in their experience, activated any venom for corpuscles that are insusceptible when washed. With susceptible corpuscles in the fresh serum has in some instances reinforced the action of venom, that is, serum complement or serum lecithin has been superadded to the endolecithin. With other susceptible corpuscles, however, the fresh serum has inhibited the hemolytic action of the venom, that is, inhibitory substances in the serum have predominated.

4. Heating the serum does not produce much change for or against activation at the lower temperature, 56 to 60 C., indicating that serum complements are not much concerned in the interaction. But, at higher temperatures, 85 C. and notably at 100 C. a marked effect is noted. When the venom can dissolve the washed corpuscles, the addition of serum heated to 100 C. accelerates and extends the hemolysis; and, in some instances where the washed corpuscles are not affected by venom, the presence of serum similarly heated so activates the venom as to induce hemolysis probably by liberation of lecithin.

5. In some combinations of venom corpuscles and heated homologous serum, no hemolysis occurs, and yet, with the same venom, the same corpuscles and a heated heterologous serum marked hemolysis may take place, indicating that heating different sera renders available very different amounts of a venom activator, probably lecithin.

17. **Symptom-Complex in Ruptured Abdominal Hydatid.**—The facts presented by Barling and Welsh have reference to a series of 6 cases of hydatid disease complicated by rupture or leakage of the cyst into the peritoneal cavity. In 5 of the cases the cyst was situated in the liver, in the remaining case in the spleen. In 50 per cent. of the cases examined the blood change was a marked one, in another 25 per cent. the change was moderate, while in the remaining 25 per cent. it was entirely absent or so slight that it was of no use from a diagnostic point of view. The authors found eosinophilia to be a marked feature of every case in which the cyst had ruptured or leaked into the abdominal cavity. The actual number of the eosinophils present in the blood in the 6 cases varied considerably. In 3 the reaction was excessive, the actual figures being in the first case 8,580 eosinophils per c.mm., or a number equal to 54 per cent. of the leukocyte content of the blood; in the second case there were 8,200 eosinophils per c.mm., or a number equal to 47 per cent. of the leukocytes; in the third case there were 5,440 eosinophils per c.mm., or a number equal to 31 per cent. of the total leukocytes. In two of the remaining cases the blood change was a marked one, there being in one of them 1,628 eosinophils per c.mm., a number equal to 22 per cent. of the total leukocytes, and in the other 1,320 eosinophils per c.mm., a number equal to 12 per cent. of the leukocytes present. In the one remaining case the reaction, though slight, was definite, there being 354 eosinophils per c.mm., a number equal to 5.6 per cent. of the total leukocytes.

The second outstanding feature of these cases of ruptured abdominal hydatid is the peritonitis set up by the presence of the hydatid material in the peritoneal sac. The most noticeable feature of this peritonitis is the large amount of fluid which is poured forth. The third feature is the urticaria which attends the rupture of the hydatid cyst. In the cases which have come under the author's notice it was invariably present.

In 2 of the 6 patients no history of a rash could be obtained, although careful inquiries were made on this point. In the other 4 cases urticarial rashes were noticed by the patients, coming on soon after the rupture, lasting for a day or two, and then passing off. In one case there was a history of recurring attacks of urticaria, the attacks in all probability coinciding with a periodic escape of hydatid fluid into the abdominal cavity.

18. **Fibromyoma of the Uterus.**—The first case, a fibromyoma of the uterus, causing symptoms in a virgin, aged 63, Worrall says is a proof that the menopause does not cause atrophy and disappearance of these tumors, as was for many years maintained by writers on the subject, and although at the present time this opinion is generally held by all authorities to be fallacious, it is far from being extinct in the profession. The second case is a remarkable example of genitalia the seat of three different varieties of neoplasm at the same time, viz.: (1) Proliferating papillary ovarian cyst; (2) multinodular fibromyoma of the uterus; (3) adenocarcinoma of the uterine body. But its greatest importance is that it adds another to the rapidly lengthening list of reported cases of myomata associated with malignant disease of the uterus. Both cases bear witness to the favoring influence of celibacy in the development of fibromyoma of the uterus.

Medical Press and Circular, London

August 24

23 Occurrence of Pain and Other Sensory Disturbances in the Chronic Stage of Infantile Paralysis. F. Hernaman-Johnson
24 Treatment of Parasyphilis of the Nervous System in the Light of Recent Research: Paresis and Tabes Dorsalis. T. A. Williams.
25 Disinfecting Power of "Sanitas Fluid" on Certain Pathogenic Microbes in Morbid Products. E. Klein and F. W. Andrews.

Quarterly Journal of Medicine, Oxford

April

26 *Question of the Side Affected in Hemiplegia and in Arterial Lesions of the Brain. E. Jones.
27 Acute Pyelitis Due to *Bacillus Coli* as It Occurs in Infancy. S. McDonald.
28 *So-Called Bigeminy of the Heart. T. Lewis.
29 *Complete Heart-Block and Auricular Fibrillation. T. Lewis and E. G. Mack.
30 Presence of Hemagglutinins, Hemopsonins and Hemolysins in the Blood Obtained from Infectious and Non-Infectious Diseases in Man. L. S. Dudgeon and H. A. F. Wilson.
31 Work of Andrew Connal. A Study of Cerebrospinal Fluid in Meningitis. R. v. Jaksch, Prague.
32 *Ventricular Venous Pulse of Regular Rhythm. E. E. Laslett.
33 *Chylous and Pseudochylous Ascites. R. L. M. Wallis and H. A. Scholberg.
34 *Myopathies or Muscular Dystrophies. F. E. Batten.

July

35 *Ochronosis Associated with Carboluria. A. P. Beddard.
36 *Bigeminy of the Ventricle and Auricular Fibrillation. T. Lewis.
37 *Simple Clinical Method of Demonstrating and Measuring Dysergia. T. A. Williams.
38 Modern English Cardiovascular Teaching. E. M. BrockBank.
39 Motor Functions of the Stomach. A. F. Hertz.
40 Morbid Histologic Changes Met in the Lymph Glands: Especially in the Formation of Hemolymph Glands. W. O. Meek
41 Lactic Acid in Metabolism. J. H. Ryffel.

26. **The Side Affected in Hemiplegia and in Arterial Lesions of the Brain.**—Jones studied 5,281 cases of cerebral hemorrhage, thrombosis and embolism, and hysterical hemiplegia from the point of view of the side of the lesion or of the hemiplegia; in 3,539 cases of these the nature of the lesion was definitely determined by post-mortem examination. With none of these conditions was any evidence obtained to indicate that either the lesion or the hemiplegia is more apt to affect one side rather than the other. The general teaching to the contrary is therefore not founded on any critical evidence.

28. **So-Called Bigeminy of the Heart.**—Lewis considers it advisable that the term bigeminy, employed in any sense other than that of the coupling of beats, should be allowed to lapse; at all events until the time when we are in fuller possession of the facts in regard to the irregularities which have been under consideration.

29. **Complete Heart-Block and Auricular Fibrillation.**—A case is described by Lewis and Mack in which a slow action of the ventricle is associated with the ventricular form of venous pulse and with seizures of a syncopal or epileptic nature. Evidence is brought forward to show that the slow beats of the ventricle start from a point in the ventricular musculature at which it is joined by the tissues uniting it to the auricle, and that the impulses originating the rhythm start at a point not far removed from the auriculoventricular ring. The rhythm of the ventricle is interrupted by extra beats arising at an identical focus, and this focus is near that from which the ventricular rhythm of complete heart-block springs. It can be shown, on the other hand, that the auricle is fibrillating, but that the impulses so created are not transmitted to the ventricle, for its rhythm is regular. It is concluded that a lesion is present which completely breaks the functional continuity of auricle and ventricle. In brief, the heart mechanism is the result of (1) auricular fibrillation and (2) complete heart-block. The fits recorded are of two kinds: the one is similar to those recognized as commonly accompanying *a-v* heart-block, and is ascribed to cessation of ventricular contraction; in the second variety, a great increase of ventricular rate was observed. Such increased frequency of ventricular contraction, during the prolongation of heart-block seizures, has been previously recorded on several occasions, and the suggestion is offered that in some such instances it may result from an irritation produced in the ventricle as a consequence of diminished blood supply to this chamber of the heart.

32. **Ventricular Venous Pulse of Regular Rhythm.**—The outstanding feature in Laslett's case is the remarkable regularity of the rhythm associated with a moderate frequency, a regularity which under various conditions showed great constancy and was maintained for a period of at least six months. At the last the pulse showed occasional intermissions, and it appeared that the intermissions were due to premature ventricular contractions too weak to affect the radial artery.

33. **Chylous and Pseudochylous Ascites.**—According to Wallis and Scholberg the milky appearance of a pseudochylous ascitic fluid is due to a lecithin-globulin complex, which is held in suspension by the inorganic salts present. Removal of the inorganic salts present by dialysis results in the precipitation of the lecithin-globulin complex, and the disappearance of the opalescence. The milky appearance of the fluid is not due to free lecithin, fat, or a mucinoid substance. The power of resisting putrefaction is due to the presence of lecithin.

34. **Myopathies or Muscular Dystrophies.**—The object of Batten's paper is to consider the present standpoint of our knowledge with regard to the myopathies or muscular dystrophies. In addition to the ordinary well-recognized types, *viz.*, the pseudo-hypertrophic, the juvenile, and the facio-scapulo-humeral type, the following types have been added, *viz.*, the simple atrophic type (myotonia congenita), the distal type, and the myotonia atrophica type. It has been shown that the condition described under the title "myotonia congenita" is a true myopathy, both on clinical and pathologic grounds, and that it should be included in the simple atrophic type, or the name myotonia congenita might replace the name "simple atrophic type." It has been shown that the distal type is a true myopathy and distinct from the disease described by Charcot, Marie, and Tooth (peroneal type), which is a myelopathic affection and should not be included under the myopathies.

The group myotonia atrophica has been placed with the myopathies and not with myotonia or with the myelopathic affections, since the evidence, both clinical and pathological, is in favor of such a view; it is admitted, however, that in the only case which has been fully examined pathologically certain changes have been found in the posterior columns of the cord. If in further examination this is found to be a constant feature it will necessitate the removal of this group from the primary myopathic affections.

It is recognized that there are many cases of myopathy which do not correspond in all particulars to the characteristics of any one type, but may possess the features of two or more types. These should be placed with the type to which they bear the strongest resemblance, or, if that is not possible, in the group of mixed and transitional cases. The myopathies or muscular dystrophies must be regarded as a whole, and though for clinical purposes it is convenient to separate them into types yet there is no hard and fast line of distinction between one type and another.

35. **Ochronosis Associated with Carboluria.**—Beddard's case is said to be the twentieth recorded case of ochronosis. Five of these cases, including his, have been associated with a prolonged application of carbolic oil to ulcers on the leg. The length of time during which the oil was used, and before the pigmentation was observed, has varied between 24 years in Reid's case and 3 years in the present one; in both cases the strength of the oil was 1 to 20. In all of them alcaptonuria was almost certainly absent. In regard to the clinical symptoms they have all shown the characteristic pigmentation of the ears and eyes. There are 8 cases on record in which ochronosis has been associated with undoubted alcaptonuria. In Hacker and Wolf's 2 cases melanuria and not alcaptonuria was present. In one case, although the urine was black, both melanuria and alcaptonuria appear to have been absent. In the remaining 5 cases no abnormality in the urine is known.

36. **Bigeminy of the Ventricle and Auricular Fibrillation.**—The ventricular bigeminy which occurs in clinical instances of auricular fibrillation, either spontaneously or in the wake of digitalis administration, according to Lewis is due to disturbance of the irregular series of responses to auricle, by ectopic beats arising in the ventricular musculature itself.

37. **Simple Clinical Method to Demonstrate and Measure Dysergia.**—This method depends on the fact that when a dysmetric patient endeavors abruptly to arrest any movement he has begun, he can neither do so nor prevent an excessive movement from occurring in the reverse direction.

Journal of Tropical Medicine and Hygiene, London

August 15

42 Blackwater Fever in Tangier. G. Breeze.
43 Beriberi and White Rice: An Experiment with Parrots. L. G. Fink.

Clinical Journal, London

August 24

44 Hysteria in Childhood. R. Hutchison.
45 Tuberculosis; Surgical Emphysema of Abdominal Wall. W. H. Battle.
46 Practice of Inoculation of Small-Pox. F. M. Sandwith.

Bulletins de la Société de Pédiatrie, Paris

June, XII, No. 6, pp. 289-366

47 *Operative Treatment of Congenital Stenosis of the Biliary Passages. (Rétrécissements congénitaux des voies biliaires.) V. Veau.
48 Dwarf Growth Possibly of Suprarenal Origin. (Nanisme avec dystrophie osseuse et cutanée spéciales.) Variot and Pironneau.
49 Appendicitis in Two Infants. M. Nageotte-Wilbouchewitch.
50 *Experiences with Epidemic Cerebrospinal Meningitis. H. Richardière and E. Merle.
51 Removal under Bronchoscopy of Foreign Bodies in Bronchi of Two Infants. Guisez.
52 Peritoneal Complications of Scarlet Fever. A. Touraine and H. Fenestre.

47. **Congenital Stenosis of Biliary Passages.**—Veau has compiled 24 cases of congenital stenosis of the pylorus and states that 2 of the patients were saved out of 11 operated on. One of the patients thus cured, a child not quite 4 years old, was in his own practice. Jaundice and tumefaction are the symptoms compelling operation. He urges prompt operation as the only hope of saving the patients in these conditions.

50. **Epidemic Cerebrospinal Meningitis.**—In one of the 10 cases reported there was an eruption of rose-colored spots the seventh day of the disease resembling in every respect the spots of typhoid fever, but subsiding again entirely in 3 days. Except for one case of cerebral hemiplegia all the children have recovered completely from the disease without sequels, this series demonstrating anew the efficacy of serotherapy.

Presse Médicale, Paris

August 17, XVIII, No. 66, pp. 625-632

53 The Physiologic Bases of Medical Electricity. Value of Electricity in Treatment of Muscular Atrophy. A. Zimmern and P. Cottenot.
54 History of Puncture in Treatment of Cold Abscesses. (Le traitement des abcès par congestion au commencement du siècle dernier.) M. J. Doche.
55 Hematocele in the Pelvis from Cicatricial Stenosis of the Cervix Uteri. M. J. Caraven.
56 Caseous Rhinitis. M. N. Taptas.
57 Professional Neuroses Among Telephone Attendants. M. V. Thebault.
58 *Pseudopregnancy from Ovarian Insufficiency. (La fausse grossesse par insuffisance ovarienne.) G. Sardou.

August 20, No. 67, pp. 633-640

59 *Postoperative Occlusion of the Duodenum. P. Hardouin.
60 Acute Ileocolic Invagination in 17-Months' Babe. Kirmisson and Moulonguet.
61 Ehrlich's "606" in Treatment of Syphilis. J. Dumont.

58. **Pseudopregnancy from Ovarian Insufficiency.**—Sardou has encountered several cases in which the suspension of menstruation and progressive enlargement of the abdomen suggested pregnancy but the genital findings were dubious. In one typical case the woman was drowsy much of the time and disinclined to effort, readily getting out of breath. Her appetite was poor although digestion was apparently normal. He ascribed the amenorrhea to ovarian insufficiency and this assumption was confirmed by the return of menstruation after 2 weeks of ovarian organotherapy. The results were equally good in 3 similar cases. In another case the woman was actually pregnant, but the brief ovarian treatment did no harm.

59. **Postoperative Occlusion of the Duodenum.**—Hardouin reports 5 cases of this mishap. The true cause of the disturbances was recognized in time in 3 cases but not in the others and these 2 patients succumbed. The causes for the postoperative occlusion are evidently multiple as it develops after the most diverse abdominal operations, but the primary dilatation of the stomach and the preponderant rôle of the peripheral nervous system are features common to nearly all the cases on record. Although the occlusion of the duodenum is secondary, it soon assumes the most prominent part in the syndrome and is the cause of the lack of results from lavage of the stomach and other measures. The importance of this duodenal factor is abundantly demonstrated further, he states, by the immediate relief and often the entire cessation of all the disturbances when the mesentery is relaxed by turning the patient over on the abdomen or in the knee-chest position. In Hardouin's first case the patient was doing well the second day after hysterectomy for fibroma when serious symptoms suddenly developed—incessant vomiting, small rapid pulse and ballooning of the epigastrium. Lavage of the stomach gave only slight transient relief, but placing the patient in the knee-chest position put an end almost immediately to all the symptoms. The patient was then left in the ventral decubitus and in half an hour the bowels moved and all disturbance was at an end. In the second case, the woman was placed in the knee-chest position at the first sign of trouble, and there was no further disturbance. In the fourth case the knee-chest position was used but not until after the syndrome had lasted for about 4 days and the patient died in collapse after subsidence of the special symptoms. In the other case no attempt was made to change the position of the patient and she died the next day; this case occurred in a country practice.

Semaine Médicale, Paris

August 24, XXX, No. [illegible], pp. [illegible]

62 Autochthonous Ameba Dysentery. C. Garin.

Archiv für Verdauungs-Krankheiten, Berlin

August, XVI, No. 4, pp. 419-536

63 *High Diaphragm and the Circulation. (Zwerchfellhochstand und Kreislauf.) E. Jürgensen.
64 Permeability of the Intestine for Diastases. (Durchlässigkeit des Darmes für Diastasen.) J. Wassertal.
65 *Importance of Proctoscopy for Diagnosis and Treatment of Rectal Disease. (Bedeutung der Rekto-Romanoskopie für die Diagnose und Therapie der Erkrankungen des Darmkanals.) M. Pewsner.
66 Dilatation of the Esophagus. (Zur Pathologie und Therapie der Speiseröhrenerweiterungen.) F. Best.
67 *Tuberculosis of the Esophagus. A. Staehelin-Burckhardt.

63. **High Diaphragm and its Influence on the Circulation.**—Jürgensen calls attention to the importance of free excursions of the diaphragm in maintenance of normal conditions in the circulation. The x-rays have shown that comparative immobility of the diaphragm is the explanation for many puzzling symptoms; Jürgensen has encountered a number of cases of high, unyielding diaphragm generally in persons of sedentary habits—men from 40 to 60 years old, mostly in

high responsible positions and brain workers. They presented various degrees of obesity, flatulence or aerophagy but all had in common a tendency to dizziness, oppression in the heart region, palpitations, scotoma, enlargement of the veins, especially in the neck, and a gray or yellowish complexion sometimes suggesting cachexia. A little shortness of breath after muscular exertion was the only complaint in regard to dyspnea. In this condition, as the patient breathes the thorax is seen to be less movable than normal. The maximal blood pressure is high, averaging from 125 mm. mercury for the minimum to 170 or 180 mm. maximum (Gaertner's tonometer), but the pressure returns to normal when normal conditions in the respiration are restored. Sometimes in the cases reported the blood-pressure differed in the right and left sides. Treatment should aim to promote diaphragmatic respiration by training the costal muscles to perform their task, exercising them to increase their tonicity, while regulating the diet to strengthen the muscles. In conclusion the author warns that the atony of the stomach and intestines in the corpulent with considerable meteorism may simulate a higher degree of obesity than actually exists. In treating obesity the aim should be, he says, not so much to reduce the weight as to render the patient's muscles more functionally capable. The greater demands on the muscular capacity, however, require a corresponding amount of albumin in the food; the diets which neglect this fail to supply conditions favorable for correction of the atony of the stomach.

65. **Importance of Direct Visual Inspection in Rectal Disease.**—Pewsner has applied recto-sigmoidoscopy in 73 cases in the last 5 years and has found it valuable in detection of inflammation and cancer in the incipient phases. In some cases the only complaint was severe constipation, in others merely tenesmus. Even ulceration in the lower segment of the bowel may occur without symptoms to attract attention to the lesion. He was able by this early direct visual inspection to discover cancer in 3 cases, 13, 16 and over 18 cm. above the anus which had escaped digital examination. The only symptoms had been occasional false impulses for defecation. The technic of direct visual inspection is simple and easy, far more so than cystoscopy, he says, and he urges internists to adopt it as a routine measure.

67. **Tuberculosis of the Esophagus.**—Burckhardt reviews the cases on record of this perhaps rarest of all localizations of tuberculosis, and then describes a personal case in a man of 60; the lesion was evidently secondary to advanced processes in the lungs. In a second personal case there was no chronic lung affection and no tuberculous sputum to be swallowed but there were tuberculous meningitis and tuberculous lesions in the fibula, etc.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

August 13, XIII, No 14, pp 529-560

68 *Thrombosis and Embolism of the Mesenteric Vessels. D. G Zesas. Commenced in No. 9.

68. **Thrombosis and Embolism of the Mesenteric Vessels.**—Zesas found 363 articles in the literature bearing on this subject, all of which he reviews. The results to date of operative treatment are not very encouraging only 5 cases of recovery out of 13 in which the infarcted part of the bowel involved was resected. Only 7 cases are known of simultaneous obliteration of both vein and artery. Massage is particularly dangerous if mesenteric thrombosis or embolism is suspected. Exploratory laparotomy is indispensable. In 13 cases conditions were found inoperable but Tschudy cured a patient by packing with gauze to shut off the infarcted region, keeping the abdominal wound open. Symptoms of ileus had come on 3 days after an interval appendicectomy; the entire cecum was transformed into a bluish solid tumor but there was no gangrene, and the permeability of the bowel was restored in a few hours. Mouchet has reported a similar case but the patient succumbed. The details of 6 other cases are related in which an artificial anus was made but none of the patients survived the embolism. Kölbing has reported a case in which gastroenterostomy was done after resection of the infarcted loop, with recovery of the patient, a woman of 31 who had had diarrhea for several days with increasing abdominal pain and vomiting and tympanitic resonance over a loop of intestine on the left side. In 13 other cases the loop of intestine involved was resected, with recovery of 5 of the patients. Thrombosis of a mesenteric vessel has been observed in a month-old babe and in 2 children of 5 and 8, but the majority of patients were between 30 and 60.

Deutsche medizinische Wochenschrift, Berlin

August 18, XXXVI, No. 33, pp. 1513-1552

69 *Ehrlich's "606" in Syphilis. (Arsenobenzol und Syphilis.) K Herxheimer.
70 The Contents of the Duodenum. (Erfahrungen über den Duodenalinhalt.) M. Einhorn.
71 Cause of Retention of Bromin and Displacement of Chlorin in the Blood by Bromin. (Ursache der Bromretention und die Verdrängung von Chlor durch Brom im Blute.) E. Frey.
72 Syringomyelia in Mother and Daughter. H. Goldbladt.
73 Case of Pure Sensory Alcoholic Polyneuritis. A. Pelz.
74 *Painless Operations on the Face and Mouth. (Schmerzlose Operationen im Gebiete des Gesichtsschädels und Mundes unter Leitungsanästhesie.) H. K. Offerhaus.
75 Primary Tuberculosis of the Fallopian Tubes. A. Müller.
76 *Extension in Treatment of Nervous Disease. A. Heermann.
77 Biologic Method of Developing Photographs. (Die Pepsinfestigkeit der belichteten Chromgelatine als Grundlage eines biologischen photographischen Entwicklungsverfahrens.) L. Jacobsohn.

69. **Ehrlich's "606" in Syphilis.**—Herxheimer states that in 11 weeks' experience with "606" and 83 cases of syphilis no by-effects of consequence were noticed beyond the local painfulness and febrile reaction, all of which are avoided by the later improved technic. There was transient retention of urine in one neurasthenic patient, but urination became normal again at once after a sitz bath. The reflexes behaved normally in all cases. According to Ehrlich's directions, the fundus of the eye, the heart, lungs, liver and kidneys were investigated in every case before the drug was given and any pathologic findings caused the patient to be excluded from this method of treatment. The findings in regard to spirochetes, the blood count and the Wassermann reaction were also recorded. No spirochetes could be discovered in 82 cases 48 hours after the injection, nor has recurrence been observed during the 11 weeks to date. In the other case the spirochetes did not seem to be affected by the drug, and A. Glück has encountered 2 similar cases; it seems as if certain rare strains of spirochetes must be insusceptible to the action of the drug, just as some have been known to be mercury-fast. In a case of universal psoriasis of 18 years' standing there was extensive desquamation after the injection but after 48 hours conditions had returned apparently to the same as before the injection. Otherwise, Herxheimer's experience has been favorable in regard to the efficacy of the drug and, like others, he mentions especially its prompt and effectual action in malignant syphilis. [Jellinek raises a warning voice not to be too hasty in judgment of the new remedy for syphilis, saying that the lay press throughout Germany is proclaiming it far and near as a prompt and radical cure for syphilis and is thus throwing down the barriers against venereal infection by removing the fear of syphilis. Jellinek comments further on the actual criminal optimism which is being fostered among the masses by the marvelous stories in regard to "606" that are issuing from the hospitals. He says this in the *Klin.-therap. Wochenschrift*, 1910, XVII, 80, in commending a pamphlet on sexual hygiene by Prof. S. Ribbing of Lund, Sweden, which he regards as a model work for young men on this subject.]

74. **Painless Operations on the Bones of the Face and the Mouth Under Local Anesthesia.**—Offerhaus' method of obtaining access to the trigeminal nerve for relief of neuralgia by injection of alcohol was described in The Journal, August 13, 1910, page 630. He here states that the method is proving valuable for local anesthesia for operations on the face, jaws and mouth in which the cooperation of the patient is of inestimable advantage. By the technic described it is possible, he says, to locate the foramen desired without the least trouble and without previous trials on the cadaver, except under very unusual conditions. He has applied this technic for injection of a local anesthetic in 11 cases and the results were good in 9, the failure in the others being due to the displacement of the nerve by the cancerous growth for which the operation was undertaken. He usually gives a sedative to the patients before injecting the anesthetic, and

he does not attempt to apply this technic for local anesthesia in case the patient is very nervous and excitable. In the cases adapted for it, however, the advantages are great. The illustrations explain the technic described. He has applied the technic for treatment of severe trigeminal neuralgia in 12 more cases since those reported in his previous communi-

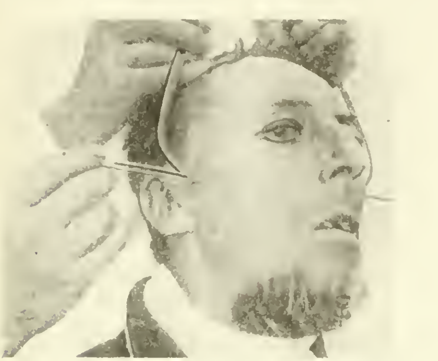


Fig. 1. Application of calipers to measure the distances and locate imaginary connecting line.

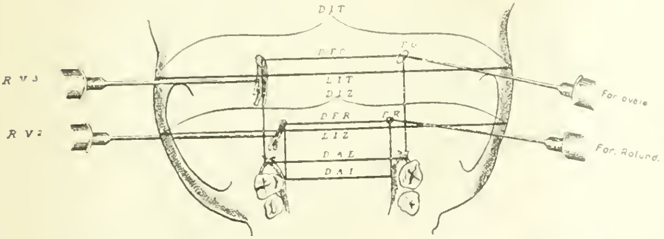


Fig. 2.—Third Branch of the Trigeminal nerve: D.F.O. = D.A.E. Needle to be inserted to a depth of ½ (D.I.T.—D.A.E.) D.I.T. = Distantia intertubercularis. L.I.T. = Linea intertubercularis. D.F.O. = Distantia Foram. oval. D.A.E. = Distantia inter alveolaris externa.

Second Branch of the Trigeminal Nerve: D.F.R. = D.A.I. Needle to be inserted to a depth of ½ (D.I.Z.—D.A.I.) D.I.Z. = Distantia interzygomatica. L.I.Z. Linea inter zygomatica. D.F.R. = Distantia Foram. rotund. D.A.I. = Distantia interalveolaris interna.

cation; in 10 of the cases a complete cure was realized and material improvement in another case while in still another case the trouble was of central origin and naturally no benefit was derived. Except for a few weeks of stiffness and pain in chewing in one case, no untoward by-effects were observed.

76. Stretching the Nerve in Treatment of Sciatica and Other Nervous Disease.—Heermann pulls on the leg of the reclining patient, exerting about as much force as for pulling off a boot. If this relieves the pain of the sciatica, he applies extension systematically, raising the extended leg once or twice a day to the point borne without special pain and then applying extension to the foot with the leg resting on an inclined plane. This is repeated cautiously once or twice a day for from 5 to 30 seconds at a time. This stretching is supplemented by stretching the leg backward for a few seconds as the patient lies on the side. The ordinary measures are also applied but the nerve stretching often proves successful alone. For adjuvant massage he places his hands flat and gently on the abdomen and sacrum of the patient as he lies on his side. If the patient shrinks, he stops at once, but if the pressure is gratefully received he massages with the flat hand, making circular motions and gradually approaching nearer and nearer to the points of greatest pain. This massage in combination with the extension relieved the pain better than sedatives in some of his cases. Pressure from a dry rubber sponge inside a girdle is useful in the cases in which pressure relieves the pain.

Medizinische Klinik, Berlin

August 21, VI, No. 34, pp. 1323-1358

78 Treatment of Otitis Media (Behandlung der akuten und subakuten Erkrankungen des Mittelohrs.) P. Stenger.
79 *Importance of Constitutional Factors in Etiology of Certain Nervous Disturbances. (Bedeutung des Konstitutionalismus für die Aetiologie einiger Nervenkrankheiten. Rezidivierende Okulomotoriuslähmung und toxische Polyneuritis.) A. Margulies.
80 Iodin-Benzin for Skin Sterilization and for Treatment of Wounds. G. Meyer.
81 *Experiences with Ehrlich's "606." Braendle and Clingestein.
82 Congenital Atresia of the Duodenum. W. Weber. Commenced in No. 33.
83 *Diagnosis of Acute Pancreatitis in General Practice. Stuparich.
84 Morphologic Changes in the Blood with Goiter. (Ueber morphologische Blutveränderungen bei Struma.) C. Muller.

79. Constitutional Factor in Nervous Disturbances.—Margulies writes from the clinic in charge of von Jaksch at Prague to relate a number of cases of recurring oculomotor paralysis or toxic polyneuritis in which the evidence seems to sustain the assumption that certain nerves or nervous systems are congenitally predisposed to yield more readily to injurious influences than those in other persons. This assumption is confirmed by the occurrence of certain affections in families. Some parts of the nervous system, especially the peripheral, are peculiarly non-resistant in these persons and yield readily to injurious external influences, while other regions and other individuals escape. In conclusion, he reports a case of toxic polyneuritis in a father and 2 sons, the symptoms suggesting cholera and being followed by pains and paralysis in the legs, all coming on simultaneously in the 3 men after eating heartily of a dish of rice. The father succumbed by the end of the second week, with all the extremities paralyzed. The young men have recovered some ability to walk during the year since, but suffer from pains in the legs and early exhaustion. The syndrome suggested beriberi, especially as it came on immediately after eating rice. There had been no disturbances elsewhere in the town from eating the rice from the same bag, and nothing abnormal could be discovered about the rice when examined by the authorities. Everything speaks for the assumption, he is convinced, of a constitutional susceptibility on the part of the nervous system involved; the clinician should strive to distinguish this constitutional factor in the syndrome observed from the symptoms peculiar to the affection in question.

81. Ehrlich's "606" in Syphilis.—Braendle and Clingestein report their experiences with 27 cases of syphilis. The results were sometimes brilliant but in others not particularly satisfactory, fully as good results being attainable, they say, under the ordinary measures. The promptly favorable action of the drug in malignant syphilis, however, was particularly striking. By-effects were observed in the vascular system; in several patients the blood-pressure was increased immediately after the injection while from the second to the third day the pulse was inclined to be accelerated and small but there were no threatening symptoms. Three patients, however, presented signs of collapse of brief duration. (Spatz has reported similar experiences in the *Wiener med. Wochenschrift*, 1910, No. 27.) The pulse kept fast longer than corresponded to the fever. Other symptoms eventually ascribable to arsenic intoxication were headache, dizziness, nausea and vomiting which were observed in several cases. Only slight by-effects on the part of the nervous system were noted; in about a fourth of the cases the tendon reflexes were exaggerated for a few days after the injections. Most of the patients gained greatly in weight after the injection, a gain of from 6 to 15 pounds in a few weeks being the rule. The Wassermann reaction has persisted positive to date in all [illegible] of the patients. The authors add in conclusion that the possibility of local persistence of traces of the arsenic suggests that serious results might follow continued or repeated use of the drug, similar to the tragedies that have followed the use of gray oil, that is, an oil suspension of metallic mercury.

83. **Acute Pancreatitis.**—Stuparich was called to a middle-aged man taken suddenly ill after eating fish. The entire abdomen was painful throughout and there were also spontaneous pains, especially severe across the back, on a level with the lower thoracic and upper lumbar vertebræ. After excluding the diagnosis of angina pectoris, perforation of a viscus and appendicitis, Stuparich differentiated the trouble as acute pancreatitis and ordered the patient taken at once to a hospital for an eventual operation. The hospital authorities, however, ascribed the disturbances to botulism; after some improvement under medical measures alone the patient died on the sixth day. There was a history of pain in the epigastrium years before and symptoms which had then been diagnosed as echinococcus disease of the liver, but autopsy revealed merely the scar of a healed duodenal ulcer and recent acute pancreatitis.

Münchener medizinische Wochenschrift

August 16, LVII, No. 33, pp. 1721-1768

85 Cause and Prevention of Puerperal Fever. (Entstehung und Verhütung des Puerperalfiebers.) A. Döderlein.
86 *Ehrlich's "606" in Syphilis. J. Iversen.
87 *Successful Treatment of Syphilitic Nursling by Giving Its Mother Ehrlich's "606." (Erfolgreiche Behandlung eines syphilitischen Säuglings durch Behandlung seiner stillenden Mutter mit "606.") K. Taege.
88 Pyramidon in Treatment of Typhoid. L. Jacob.
89 Epidemic Cerebrospinal Meningitis. Eschbaum.
90 *Outcome of Treatment of Scoliosis with Creeping Exercises. (Ergebnisse der Kriechbehandlung.) J. Fränkel.
91 *Behavior of the Heart in Scoliosis. (Verhalten des Herzens bei Skoliose.) T. Brugsch.
92 *Bismuth Paste in Diagnosis and Treatment of Chronic Suppuration. E. G. Beck.
93 *The Personal Factor in Tuberculin Treatment. L. Saathoff.
94 Tuberculin in Reduction of Fever in Tuberculous Patients. (Zur Entfieberung Tuberkulöser durch Kochsches Alttuberkulin.) H. Engel.
95 Origin of Congenital Luxation. (Ein experimentell-embryologischer Beitrag zur Entstehungsgeschichte der angeborenen Luxation.) H. Braus.
96 Eucodal Chloromorphid Associated with and as Antagonist to Apomorphin. E. Harnack and H. Hildebrandt.

86 and 87. **Treatment of Syphilis with Ehrlich's "606."**—Iversen reports favorable experiences with "606," which he [illegible] specific action on the *Spirochæta pallida*, and is able to banish the manifestations of syphilitic infection in the [illegible]. The rapidity of the subsidence depends, of course, largely on the severity of the lesions. In his experience at St. Petersburg with 60 patients, the Wassermann reaction was invariably negative by the twentieth or fortieth day after the injection of the drug and in 2 cases it became negative by the eighth and tenth day. Immediately after the injection the reaction became more intense and then gradually subsided. He found spirochetes constantly in the primary chancres before treatment but was unable to find them 2 or 3 days after the injection. In 10 cases he aspirated fluid from the enlarged inguinal glands and found spirochetes constantly before treatment but none could be discovered 3 or 4 days after the injection of "606." He states that no disagreeable by-effects were observed in any of his cases.

Taege reports a case in which the infant of a syphilitic mother weighed only a little over 5 pounds at birth and was [illegible] and would not thrive. On the ninth day it developed progressive pemphigus on the soles, and paronychia. The mother was then given 0.3 gm. of "606" subcutaneously [illegible] of the nursling's symptoms began to subside and within [illegible] days the infant was transformed into an apparently healthy [illegible] and rosy babe. He explains this transformation [illegible] as the result of the production of antibodies [illegible] from the sudden destruction of the spirochetes and formation of these antibodies. It was ascertained that [illegible] into the mother's milk. Ehrlich has [illegible] against treating infants directly with the [illegible] the sudden destruction of the spirochetes might [illegible] and cause serious [illegible]. By treating the mother it seems possible to obtain the desired result without this danger. Iversen adds that in seeking a wet nurse for a syphilitic infant, one that is already syphilitic should be given the preference, an injection of "606" being given as a preliminary.

90 and 91. **Creeping Exercises in Treatment of Scoliosis.** Fränkel reviews the experiences with Klapp's method of creeping gymnastics at the Berlin surgical clinic in charge of Bier. (It was described in THE JOURNAL, Feb. 24, 1906, page 625.) He states that it is proving all that was hoped for it at first not only for prevention and treatment of the scoliosis but for the secondary heart disturbances, as he shows by a number of case reports and illustrations "before and after." The position assumed in this creeping counteracts the tendency to abnormal curvature of the spine. As a typical example of the benefit that can be derived he cites the case of a girl of 16 with dorsolumbal scoliosis who for 8 years had suffered from palpitation of the heart and shortness of breath, fainting occasionally when standing long. She had tried orthopedic gymnastics but had been obliged to give up all exercises of the kind and had been warned against them. The right heart was enlarged and also the left auricle, and there were signs of mitral stenosis. She has been doing the creeping exercises now for 11 months; the kyphosis and scoliosis have been materially loosened up and the heart disturbances have entirely subsided. The girl now plays tennis and dances without fatigue and has a very healthy aspect. The creeping has not only a symptomatic action but by loosening up the spine changes the location of the heart, large vessels and lungs. In 2 cases a heart defect had developed in consequence of an infectious disease and the curvature of the spine was of minor importance; the favorable influence of the creeping exercises in these cases opens up new prospects for treatment of organic heart disease. In one of the cases a concomitant area of dulness over the left apex cleared up during the exercises; it seems evident that the creeping by mobilizing the thorax provides better conditions for ventilation and circulation in the lungs. Klapp's experiences with these creeping exercises in treatment of disturbances entailed by Stiller's universal asthenia and also in orthostatic albuminuria are encouraging. Fränkel remarks in conclusion that the creeping exercises represent great progress even if considered only as an effectual means of prophylaxis of scoliosis and for active mobilization of the chest and thoracic vertebræ. Brugsch, from the standpoint of the internist, adds an endorsement of Fränkel's assertions. Radioscopy shows that the heart is inclined to be unusually small in these cases; this sustains the assumption that the scoliosis is to some extent one manifestation of Stiller's universal asthenia, that is, the orthogenetic degenerative constitutional type. For the aplastic heart nothing could be better adapted, he adds in conclusion, to answer the urgent indications for improving conditions in the circulation and respiration than Klapp's technic for creeping exercises for children and adults.

92. **Bismuth Paste in Chronic Suppurative Processes.** Dr. Beck's work in this line is familiar to all readers of THE JOURNAL.

93. **The Personal Equation in Tuberculin Treatment.** Saathoff remarks that the present year has witnessed a revolution in the matter of tuberculin treatment; although opinions still differ as to the best mode of application there is no longer any question that tuberculin treatment has won a permanent place for itself in the treatment of tuberculosis. The divergences of opinion that still prevail, he remarks, are due to the facts ignored by too many that each individual has his own special type of reaction to the tuberculin and that the reacting capacity varies from time to time. The personal factor is too often overlooked. The individual reacting capacity can be estimated from the local reaction at the point of injection or site of the Pirquet skin test, the changes here presumably paralleling the changes that occur in the focus and thus serving as an index of the reacting capacity. It is preferable, he states, to make the subcutaneous injection in the outside of the forearm; injected into the looser tissue on the trunk the tuberculin diffuses too rapidly to permit any estimate of the skin sensitiveness. Real progress in the fight against tuberculosis will never be attained, he remarks, until tuberculin treatment becomes

a routine measure in general practice and thus the masses are enabled to get the benefit of it. The reaction to the Pirquet test shows the reacting capacity of the patient, whether intense or weak, and the local skin sensitiveness at the first subcutaneous injection shows whether the dose should be increased or reduced. The optimal reaction at the point of injection is an infiltration of the subcutis extending over an area between the size of a silver quarter and that of a silver dollar, with a slight redness, swelling and painfulness of the skin above. If the local reaction is of this type he continues with the same dose; if less than this he increases and if more intense he reduces the dose. He waits about 3 days after the complete subsidence of the skin reaction before making another injection. With this technic there are no appreciable signs of a focal reaction, but he assumes that there is a similar reaction in the focus as in the skin, combining all the curative factors of serous imbibition, cellular exudation, etc. Three months is the minimal duration of a course of tuberculin treatment, he says.

Therapeutische Monatshefte, Berlin

August, XXIV, No. 8, pp. 405-460

97 *Ehrlich's "606" in Syphilis. (Die experimentelle Chemotherapie der Spirillosen.) W. Heubner.
98 Treatment of Erections in Children. A. Niemann.
99 Subpreputial Method of Applying Mercury in Treatment and Prophylaxis of Syphilis. P. Schrumpf.

97. **Ehrlich's "606" in Syphilis.**—This article is the opening chapter of a work on chemotherapy of spirilloses, now in press, written by Ehrlich, Hata and several collaborators.

Wiener klinische Wochenschrift, Vienna

August 18, XXIII, No. 33, pp 1193-1220

100 *Ehrlich's "606" in Syphilis. (Bericht über die bisherigen Resultate der Behandlung der Syphilis mit dem Präparate von Ehrlich-Hata.) W. Pick.
101 Asurol in Treatment of Syphilis. H. Rock.
102 Proteolytic Ferment Index in Human Blood. (Die Methode der quantitativen Bestimmung des proteolytischen Leukozytenfermentes und über proteolytischen, "Fermentindex." Index proteolyticus, der Leukozyten im menschlichen Blute.) M. Franke.
103 The Meiostagmin Reaction in Serous Effusions. (Die Meiostagminreaktion in serösen Ergüssen.) A. Gasbarrini.

100. **Ehrlich's "606" in Syphilis.**—Pick says that the specific action of "606" resembles that of quinin in malaria, and that the fact that the cure is not always complete with the small dose used to date does not detract from its importance. Its action is most apparent in malignant syphilis, all the manifestations of which disappeared completely in the 8 cases of this type in his experience. In the 10 cases in which the "606" was applied before the development of secondary phenomena none has developed to date. Rebellious lesions on the mucosa vanished in some cases the day after the injection and by the fourth day in all, although in some of these cases these lesions had persisted for years refractory to all treatment. In one such case an ulcerative syphilid involving the whole of the hard and part of the soft palate, which had persisted for 8 years practically unmodified by vigorous mercurial and iodid treatment, cleaned up by the third day after the injection and by the end of another week had entirely healed over. The amount of urine voided was often much reduced after the injection for a few days, the total not surpassing 400 or 500 c.c.; the patients also lost their appetite and experienced a dryness in the throat while the pulse increased to 90 up to 108. A febrile reaction was frequent, but the temperature reached 39.8 C. (103.5 F.) in only one case.

Zentralblatt für Chirurgie, Leipsic

August 20, XXXVII, No 34, pp 1113-1152

104 *Suture of Fractured Neck of the Humerus with Strip of Fascia from Patient's Thigh. (Knochennaht mit Fascienstreifen.) C. Ritter.
105 Treatment of Non-Malignant Tumors in the Bladder with High-Frequency Current. (Behandlung von gutartigen Geschwülsten der Harnblase mittels Oudinstrahlen.) E. Beer.

104. **Suture of Fractured Bone with Strip of Patient's Fascia.**—Ritter sutured the broken surgical neck of the humerus in a woman of 80 with strips of fascia taken from her right thigh. He twisted each strip as it was passed through the holes bored in the bone and then sutured the strips together and to the periosteum. The splint was removed and massage commenced in 2 weeks and consolidation was complete in less than 2 months. The arm has not been shortened and can be lifted and twisted to 65 degrees without moving the scapula. The fascia healed solid with the periosteum. He is now experimenting on animals to learn the ultimate fate of strips of fascia used in this way for suturing bones.

Zentralblatt für Gynäkologie, Leipsic

August 20, XXXIV, No 34, pp 1129-1160

106 *Local Anesthesia for Alexander-Adams Operation in Thirteen Cases. A. Kraatz.
107 *Manual Stretching of the Pelvic Outlet as Aid to Delivery (Ueber Beckendehnung der Kreissenden.) K. W. Krug.

106. **Local Anesthesia for the Alexander-Adams Operation.** Kraatz has performed this operation in 13 cases under local anesthesia. For very excitable patients he applied the ether mask and used a few drops of ether for a sham anesthesia and was able to continue without further trouble. The only death that has occurred in the clinic with which he is connected among the many hundreds of cases in which this operation has been performed was due to the general anesthesia, and consequently the successful substitution of local anesthesia has been welcome.

107. **To Stretch the Pelvis of Parturients.**—One centimeter may be added to the true conjugate diameter, Krug states, by inducing lordosis by an interposed cushion or by the Walcher position and the diameter can be still more enlarged by stretching the parts further apart by introducing three fingers of each hand deep into the vagina and pushing the bony prominences apart, using the backs of the hands for the lever. The pressure is applied only during the acme of a labor pain, the pelvis being lifted a little at the same time. The woman whom he delivered in this way after protracted ineffectual labor said that the pressure materially reduced the intensity of the labor pain.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 16, XXXI, No 98, pp. 1033-1040

108 Echinococcus Cysts in the Ligaments Supporting the Liver (Cisti da echinococco nel legamento sospensore del fegato.) I. Bruchi.

August 18, No 99, pp 1041-1048

109 *Acute Influenzal Arthritis. G. Ghedini.

109. **Influenzal Arthritis.**—Ghedini reports a case in which the influenza bacillus, cultivated from the blood, was evidently responsible for the swelling and pain in various joints observed after a few days of general symptoms of influenza. The multiple arthritis changed its localizations and finally subsided entirely by the end of a month. The fever kept up for about 25 days. Among the articulations involved were the sternoclavicular and the temporomaxillary. The disturbance in the single joints was comparatively brief and the whole syndrome proved unexpectedly mild with nothing at any time to indicate that the endocardium has suffered.

Policlinico, Rome

August 21, XVII, No 34 pp 1059-1090

110 Experimental Research on Origin of "Estival Fever." N. Melchiorre and T. M. Napolitano and A. Tedeschi.

August, Medical Section, No. 8, pp. 33[illegible]-380

111 Research on Uncinariasis. (Contributo allo studio dell'anemia da *Necator americanus* Stiles.) G. Quadri.
112 *Infected Anopheles in Certain Malarial Zones in Italy. G. Noè.
113 *Sahli's Desmoid Reaction. G. Cantoni.
114 Action on Endocardium of Extracts of Malignant Tumors. L. Panichi. Commenced in No. 7.

112. **Infected Mosquitoes in Malarial Zones in Italy.**—Noè found about the same proportion of infected anopheles as in former years although the number of cases of malaria is growing smaller with each year. An encouraging feature, however, is that the percentage of mosquitoes found to be infected diminished as the season advanced, contrary to the experience in previous years. He ascribes this to the screening of the houses which not only protects against the mosquitoes outside but it also retains in the houses the mosquitoes which have found their way inside and become infected.

113. **The Desmoid Reaction.**—Cantoni has found this test extremely valuable in his practice, and reports 43 cases with

positive and 23 with negative findings, the latter group including 5 cancer cases.

Riforma Medica, Naples

August 15, XXV, No. 33, pp. 897-924

115 Graphic Record of the Knee-Jerk. (Contributo allo studio grafico del clono della rotula.) G. Breccia.
116 Form of Neuritis with Hypertrophy of the Nerves Occurring in Several Members of a Family. (Nuova forma di nevrite ipertrofica famigliare. Il tipo Pierre Marie.) P. Boveri
117 Primary Cancer in Herniated Appendix. F. Gangitano.

Hygiea, Stockholm

July, LXXII, No. 7, pp. 705-783

118 *Successful Puncture of Intestine or Enterotomy in Six Cases of Ileus. (Sex fall af ileus, med framgång behandlade med tarmpunktion resp. enterotomi, jämte några ord om den därvid använda operationstekniken.) E. A. Eriksson.
119 *Gumma at the Cardia. (Till den viscerala syfilis' kasuistik. Gumma cardiæ.) C. Cronquist.
120 Case of Rupture of Brain Tissue. (Ett fall af hjärnbräck.) H. Malmqvist.
121 Successful Cesarean Section in Patient with Contracted Pelvis and Heart Defect. (Kejsarsnitt med lycklig utgang vid traugt bäcken och hjärtfel.) A. Troell.
122 Rupture of Bladder During Alcohol Intoxication. (Ett fall af blåsruptur i samband med alkoholrus.) T. Frieberg.
123 Case of Acardius Amorphus. C. F. Heijl.

118. **Puncture of Intestine or Enterotomy for Ileus.** The ileus was due to volvulus of the cecum and colon or sigmoid flexure, paralysis of the bowel after herniotomy, coprostasis and adhesions or diverticulitis in Eriksson's 6 cases. Treatment in each was by a laparotomy and puncture of the bowel; in only a few of the cases was it necessary to make an actual enterotomy, the lesser operation generally sufficing. Since Eriksson has restricted his ileus operations to mere puncture the outcome has been generally good; he has lost only one patient, a man of 64 with ileocecal invagination and bronchitis, who succumbed to chloroform intoxication.

119. **Gumma in the Cardia.** Cronquist's patient was a man of 42 who had had some difficulty in swallowing for three years, gradually growing more and more severe. The presumptive diagnosis was cancer of the cardia, but a casual remark led to the discovery of a history of certain symptoms years before suggesting possible syphilis. Under tentative mercurial treatment the stenosis at the cardia rapidly subsided.

Norsk Magazin for Lægevidenskaben, Christiania

August, LXXI, No. 8, pp. 785-864

124 *How Long Should the Lying-In Woman Stay in Bed? (Hvorlænge bør en barselkvinde ligge tilsengs?) K. Brandt and J. Horn.
125 *Infected Cystic Kidney. Recovery After Nephrectomy. (Inficeret cystenyre, nefrektomi; helbredelse.) P. Bull.
126 Functional Tests of the Heart. (Den funktionelle diagnostik, dens maal og midler, specielt med hensyn till hjertets funktion.) S. Madsen.

124. **How Long Should Women Stay in Bed After Delivery?**—Brandt and Horn state that their investigation of the subject has shown that involution and healing are not well under way before the tenth or twelfth day. If the woman gets up before this date infection is liable to occur and may easily be overlooked while a predisposition to genital prolapse may develop.

125. **Infected Cystic Kidney.**—Bull remarks that the diagnosis is generally very difficult, as the physician seldom thinks of the possibility of this rare condition. The cystic kidney is peculiarly liable to become infected. Sieber found infection mentioned in 10 per cent. of 200 cases on record, and Borelius in 1 of his 4 cases. Bull calls attention to the family tendency in his cases; a man and 3 of his 11 children and a brother and sister had cystic kidneys, the diagnosis being confirmed by operation or autopsy. The symptoms came on about the age of 21, and none of the third generation has reached this age yet. Notwithstanding that the tendency to cystic kidney is bilateral as a rule, if one kidney is predominantly affected while its mate is still functionally capable, nephrectomy may be indicated. He reviews the northland literature on the subject and Sieber's monograph. In only 9 of the 200 cases was only 1 kidney involved, as determined at autopsy; both were involved in 150. In about 12 per cent. of all the cases the lesion had never induced appreciable symptoms. The urine may be normal but generally is like that with contracted kidney. The kidney region is usually tender and there may be vague or sharp pains, constant or paroxysmal. Intermittent hematuria was observed in 20 per cent. of the cases, hypertrophy of the heart in 50 per cent. and a hemorrhagic tendency was frequently apparent, apoplexy even in the young, epistaxis, intestinal hemorrhage and hemoptysis. Nephrectomy was done in 61 cases with 20 fatalities; 8 of the patients are still living after from 3 to 7 years. Nephrotomy was done in 10 cases, on both kidneys in 4, with 2 fatalities.

Ugeskrift for Læger, Copenhagen

August 11, LXXII, No. 32, pp. 913-968

127 *The Leukocyte Count in Different Parts of the Circulation at the Same Time. (Om Leukocyttælling og Inhomogenitet.) V. Ellermann and A. Erlandsen.

August 18, No. 33, pp. 969-996

128 Indications for Treatment in Appendicitis. E. Müller.

127. **The Leukocyte Count and Inhomogeneity.**—This latter term has been coined by Kjer-Petersen to express a variability in the leukocyte count in blood taken from different points in the circulation at about the same time. He found wide variations in this respect, but Ellermann and Erlandsen were unable to discover any tendency of the kind in 110 double examinations of the blood of 64 women patients.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

A Laboratory Text-Book of Embryology. By Charles S. Minot, LL.D. (Yale and Toronto), James Stillman, Professor of Comparative Anatomy in the Harvard Medical School. Second Edition. Cloth. Price, $3.50 net. Pp. 402, with 262 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

The Effects of a Restricted Diet and of Various Diets on the Resistance of Animals to Certain Poisons. By Reid Hunt. Paper. Pp. 93. Bull. 69, Hyg. Lab., P. H. and M. H. S. Washington: Government Printing Office, 1910.

Vaccine Therapy. Its Theory and Practice. By R. W. Allen, M.D., Late Clinical Pathologist to the Mount Vernon Hospital for Diseases of the Chest. Third Edition. Cloth. Price, $2 net. Pp. 277. P. Blakiston's Son & Co., 1910.

New Patents

Recent patents of interest to physicians:

956258	Window tent. John G. Allen, Peoria, Ill.
955937.	Atomizer. John R. Ballentine, Toledo, Ohio.
955938.	Atomizer. John R. Ballentine, Toledo, Ohio
956052.	Pocket atomizer. Frank C. Dorment, Detroit, Mich.
956325.	Massage cup or tip. Joseph B. Fey, Columbus, Ohio.
956120.	Producing manganates, permanganates, halogens and hydroxids. Florentine J. Machalske, Chicago
956155.	Invalid's chair. Rosa M. Olmsted, Columbus, Ind.
956438.	Crutch tip. Edward H. Seibert, St. Louis
956221.	Magnetic tachometer. John K. Stewart, Chicago
957035	Pasteurizer. Hans Christensen, Fort Atkinson, Wis
956731	Manufacturing methane or mixtures of methane and hydrogen. Paul Sabatier, Toulouse, France.
957295.	Recovering potash salts. Augusto Alberti, Rome, Italy
957548	Inhaler. Walter S. Doane, Worcester, Mass.
957758.	Swing for osteopathic tables. William E. Fogle, Bath, N. Y.
957761	Making sodium sulfite and ammonium chlorid. Richard Friedrich, Gloss, near Chemnitz, Germany, and F. Hirsh, Vienna, A. H.
957204	Making a medicinal compound. Anton Garlesan, Chicago.
957718.	Device for the correction of flat foot, weak feet or fallen arch of the foot. Frederick C. Schumacher, New York
957267	Prophylactic drinking vessel. James L. Sowell, Jasper, Ala
957449.	Disinfectant holder. Charles J. Walz, New Haven, Conn.
958607	Atomizer. Frank C. Dorment, Detroit.
958488.	X-ray tube. Henry Green, Hartford, Conn.
958153.	Sterilizer and drier. Aage Jensen, Eureka, Cal
958259.	Disinfecting device. Fernand Le Fagunys, Nantes, France
957976.	Atomizer and the like. Owen D. Lucas, Bayswater, London, England
958267	Truss. Thomas E. Martin, Buffalo, N. Y.
957982	Electric vibrator. Sampson W. Moon, Chicago
958527	Respirator (smoke protector). Martin Panian, Eveleth, Minn
958536	Spraying attachment. Charles H. Rath, Philadelphia
958179	Surgical instrument. John S. Rydell, Minneapolis
958180	Producing tantalum. Johannes Schilling, Halensee, near Berlin, Germany
958569	Respirator and inhaler. Richard Venner, Barre, Vt
958166	Corn and bunion plaster. Eugene J. Ward, New York
40760	Design prescription case. Charles F. Kurz, Cleveland, O.

American Medical Association.
Journal

R
15
A48
v.55
pt.1
cop.2

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY

STORAGE